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Health Sciences Research in the Globalizing World

Editors
Elena ALEXANDROVA
Nelya Lukpanovna SHAPEKOVA
Bilal AK
Fügen ÖZCANASLAN

Health Sciences Research in the Globalizing World

St. Kliment Ohridski University Press, Sofia

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ISBN 978-954-07-4525-1

ST. KLIMENT OHRIDSKI UNIVERSITY PRESS
SOFIA • 2018

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Cover Design: Murat Poyraz

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Preface

This book contains seven sections and 115 chapters written by different authors who are experts in their field. A brief description of each of the sections follows:

Section one identifies and discusses the general medicine issues including diabetes and infections.

Section two examines some challenges on nursing. The section has 40 chapters including cancer psychology, multicultural counseling, care needs of cancer patients, premenstrual syndrome in university students, pressure injury and nursing care, innovation management and nursing, physical activity and reducing cancer risk, importance of nursing informatics in practice, ways of managing difficult people, mobbing among hospital nurses, nursing approach in pediatric epilepsy, the professional benefits to nurses and midwives of providing care to foreign patients, self-awareness in the nurse-patient relationship, statistical methods used in health sciences.

Section three has 15 chapters on Nutrition and Dietetics including alternative treatments in menopausal period, circadian rhythm, nutrition problems and social innovation, the effects of linoleic acid on obesity, innovation in dieting; the short and long term outcomes of maternal obesity, living with phenylketonuria, obesity and sarcopenia in the elderly, effects of polyphenols on diabetes mellitus

Section four contains chapters on Child Development and Child Health. The topics included here are; child neglect and abuse, re/habilitation of children with hearing loss, overview of the attachment process, the role of child temperament in education, child and game in hospital.

Section five has seven chapters related to the themes on Midwifery. The main topics included here are; hyperemesis gravidarum treatment, postpartum care in obese pregnant women, organization in midwifery, traditional practices and transcultural midwifery, importance of oocyte and embryo cryopreservation in fertility.

Section six explores the challenges on Physical Therapy and Rehabilitation including evidence-based protective exercises approaches for protection from osteoporosis.

Section seven presents an analysis of issues and concerns in health management. This section has 36 chapters including ethics in health services, total quality management in hospitals, multi criteria decision-making techniques in health care, strategic leadership in healthcare, health informatics, medical malpractice, evaluation of medical benefits toward poor people, the role of municipalities in healthcare, communication management in health services, outsourcing in hospitals, health services and policies for elderly health, benchmarking in health, the impact of social responsibility projects on health care services,

Section eight is devoted to the Dentistry and dental health in elderly.

This book will serve as a useful guide and resource for nurses, midwives, specialists, academics, health science student and general health practitioners.

We would like to express our gratitude to all contributors for bearing with us as the volume has taken time to come to fruition.

We particularly wish to express our thanks to the team at St. Kliment Ohridski University Publishing House for preparing the book for publication.

The Editors

Medicine

Chapter 1

A New Strategy in Diabetes

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INTRODUCTION

Diabetes mellitus is a variable and widespread disease worldwide. The disease is getting more common day by day and it is estimated that worldwide prevalence of adult diabetes rises to around 439 million (7.7%) by 2030 (Shaw *et al.*, 2010). Heterogeneity, onset variability, symptom variability are the base features of the disease. Generally, two types of Diabetes Mellitus (DM), Type 1 Diabetes mellitus (T1DM) and Type 2 Diabetes mellitus (T2DM) are common types of diabetes. Type 1 Diabetes Mellitus (T1DM), basically is an autoimmune disease in which insulin-secreting pancreatic beta cells are destroyed predominantly by autoreactive T cells (Shaw *et al.*, 2010). T2DM is the main cause of diabetes and 90-95% of people with diabetes are have this type. Patients with T2DM may show just insulin resistance or insulin secretion abnormalities as well (Association, 2010). Here, we are about to concentrate on type 1 diabetes, the main abnormalities associated with the disease, therapeutic approaches in this field and a new well-promising strategy, converting alpha cells into beta cells.

TYPE 1 DIABETES MELLITUS

T1D is a multifactorial disease. Both genetical and environmental factors are engaged in developing the disease(Noble & Erlich, 2012). In the type 1 diabetes mellitus, insulin production is the key problem and early onset is observed. Hence, sometimes it's named as juvenile onset diabetes or insulin-dependent diabetes. It is estimated that about 10% of the diabetic population have T1DM (Association, 2010). It is one of the most widespread chronic diseases in children (Karvonen et al. 2000; Gale 2005). The disease is very complicated and heterogeneous. T cells, B cells, dendritic cells, and macrophages are engaged in beta cell ablation (Ozougwu *et al.*, 2013). Based on former studies more than 50 gene loci are implicated in the disease (Zendehdel *et al.*, 2003) and a chronic, strict inflammation causes tissue damage (Laub & Rutter, 1983). Altogether, necessitate a multidisciplinary approach in T1D treatment.

Abnormalities Associated with Type 1 Diabetes

Lack of insulin or insulin resistance leads to an abnormal glucose metabolism abnormal, inefficient uptake and utilization of glucose by the most cells, blood glucose concentration, increasing utilization of fats and proteins (Ozougwu *et al.*, 2013). These metabolism problems result in other disorders like nephropathies, neuropathies, and retinopathy. The disease is associated with elevated stomach, cervix and endometrium cancer (Zendehdel *et al.*, 2003).

Basic Therapeutic Approaches In Type 1 Diabetes

T1DM treatment has been limited to insulin injection and pancreas transplantation up to now. Insulin injection protects patients from nephropathy, neuropathy, and retinopathy, but it does not cure hypoglycaemia, injection dependence is a hard and limiting situation as well. Pancreas transplantation can prolong and improve the quality of life, but the surgery and long-term immunosuppression, pancreas scarcity are problems confine this approach. Hence, a great effort has been being done to find a new way for the problem. New emerging molecular strategies are promising but for clinical translation obstacles and back-sets must be amended. Here we discuss the basic molecular strategies including Insulin gene therapy, Beta cell regeneration, Beta-cell differentiation induction, Beta-cell differentiation from adult, pancreatic stem/progenitor cells, Beta-cell differentiation from Embryonic Stem Cells (ESCs), Beta-cell differentiation from Induced Pluripotent Stem Cells (IPSCs), Beta-cell differentiation from Adult Mesenchymal Stem Cells (MSCs), Non-Beta Cells Trans-Differentiation into Beta Cells, Pancreatic Exocrine cells trans-differentiation into beta cells, Trans-differentiation of non-pancreatic cells into beta cells and Pancreatic endocrine cells trans-differentiation into beta cells. Alpha cell reprogramming into the beta cells is a promising strategy which has advantages comparing to other approaches. This strategy will be explained in detail.

MOLECULAR APPROACHES IN TYPE 1 DIABETES TREATMENT

Insulin Gene Therapy

In insulin gene therapy proinsulin gene or modified proinsulin gene is expressed in none-beta cells. This strategy is an efficient approach for hyperglycaemia amelioration. Theoretically, the strategy is robust and reasonable means for treating T1D, and animal models have shown very good results (Laub & Rutter, 1983; Iwata *et al.*, 1994). However, practically many problems confine the feasibility of the approach. The target cells for insulin gene therapy must be appropriate, because these cells can storage insulin and secret it in response a tiny change in glucose amount, in other words, secreted insulin must be glucose responsive. In addition, secreted insulin must be biologically active. Glucose transporter-2 (GLUT2) and glucokinase (GK) expressed in beta cells are important factors in glucose sensing in these cells (Newgard & McGarry, 1995). The proconvertase (PC)2 and PC3 proteases are responsible for processing proinsulin to biologically active insulin (Kaufmann *et al.*, 1995; Steiner, 1998).

Beta Cell Regeneration

The main goal of this approach is compensating destroyed beta cells by beta cell by newly generated beta cells. It is known that different hormones, growth factors, and nutrients are influential on increasing the beta-cell mass (Nielsen *et al.*, 2001). Different methods have been applied for this purpose. Beta cell proliferation induction, beta cell differentiation from pancreatic stem or progenitor cells, beta cell differentiation from embryonic stem cells, beta cell differentiation from Induced Pluripotent Stem Cells (IPSCs), Beta-cell differentiation from Adult Mesenchymal Stem Cells (MSCs), Pancreatic Exocrine cells trans-differentiation into beta cells, Pancreatic endocrine cells trans-differentiation into beta cells are the important strategies have taken for beta cell regeneration. All of these efforts have advantages and disadvantages. Here we discuss them in brief, then describe the last method, Pancreatic endocrine cells trans-differentiation into beta cells, in detail.

Beta Cell Proliferation Induction

Beta cell proliferation is decreased dramatically by age. However, during postnatal period proliferation is the main mechanism for beta cell regeneration and growth (Murtaugh & Melton, 2003; Meier *et al.*, 2008). Generally, it is believed that adult beta cells are constant and do not go under proliferation process. But, recent pieces of evidence have shown that a small population of the beta cell can proliferate repopulate under special conditions like using mitogens (Reers *et al.*, 2009). Extrinsic mitogens including glucose, insulin-like growth factors, amino acids, prolactin (PRL), placental lactogen (PL), glucagon-like peptide-1 (GLP-1), growth hormone, hepatocyte growth factor (HGF), epidermal growth factors, transforming growth factor (TGF), and extracellular matrix (ECM) are important factors that can be applied for beta cell proliferation induction (Newgard & McGarry, 1995). On the other hand, intrinsic mitogens including cyclins, cyclin-dependent kinases, and cyclin-dependent kinase inhibitors are also important in beta cell proliferation induction (Heit *et al.*, 2006). In addition to aforementioned factors, some small molecules are also proposed as mitogens for beta cell proliferation induction (Shen *et al.*, 2013; Boerner *et al.*, 2015).

Beta Cell Differentiation from the Stem Cells

Existing real pancreatic stem/progenitor cells is a controversial issue and many studies have tried to show the presence of adult pancreatic stem/progenitor cells (Levine & Mercola, 2004; Bonner-Weir & Sharma, 2006). Supposing the existence of adult pancreatic stem/progenitor cells, other issues like the specific location of them and an efficient method for isolation of these cells remain challenging and need more extensive efforts.

Many research groups have tried to differentiate functional beta cells from embryonic stem cells (Jiang *et al.*, 2007a; Jiang *et al.*, 2007b), mesenchymal stem cells (Tayaramma *et al.*, 2006; Allahverdi *et al.*, 2015), and induced pluripotent stem cells (Tateishi *et al.*, 2008). Although some very robust protocols for beta cell differentiation from hESCs have been developed (Rezania *et al.*, 2014), potential teratogenicity, immunogenicity, and ethical concerns limit the using embryonic stem cells. Human introduced pluripotent stem cells are resistant to differentiation. Hence, high throughput protocols must be developed for differentiating functional beta cell from iPSCs. Mesenchymal stem cells have immunomodulatory features and these cells are the most appropriate stem cells for differentiating functional beta cells and numerous studies are underway on this stem cells.

Reprogramming Pancreatic Cells into the Beta Cells

The pancreas is a very specialized organ is made of exocrine and endocrine cells. Exocrine cells acinar and ductal cells are more abundant comparing to endocrine cells, α-, β-, δ-, and PP-cells (Lacy & Greider, 1979). Endocrine cells are rooted from epithelial cells and are scarce in islet comparing to exocrine cells. Different efforts have been done to trans-differentiate functional beta cells from exocrine cells including acinar and ductal cells (Bonner-Weir *et al.*, 2000; Zhou *et al.*, 2008). However, epigenetically the promoter region of exocrine and endocrine cells is very different. It causes many problems for endocrine beta cell trans-differentiation from and exocrine cell (Bramswig *et al.*, 2013). In differentiating beta cells from other pancreatic endocrine cells including alpha cells this problem is solved. Because they are originated from the same germ cells and epigenetically are very similar.

Alpha Cell Conversion into the Beta Cell as A New Promising Strategy

Former studies have shown that after total or near total beta cell depletion delta and alpha cells are converted into beta cells (Thorel *et al.*, 2012; Chera *et al.*, 2014). The molecular mechanism underlying this conversion is very important because getting insight into this mechanism enables us to convert alpha/delta cells successfully into beta cells for therapeutic purposes. Manipulating some critical factors, which are important in beta/alpha cell fate, have yield into successful results. Arx is an important factor for alpha cell fate and its maintenance. Inactivation of this factor leads to conversion of alpha cells into beta cells (Courtney *et al.*, 2013). Pax4 is an important factor for beta cell speciation and maintenance and ectopic expression of this factor in progenitor cells leads to the alpha cell into beta cell conversion (Collombat *et al.*, 2009). But, the converted cells did not fully functional. Forced expression of HNF4a factor in alpha cell line alpha TC1-9 leads to glucagon suppression and insulin secretion (Sangan *et al.*, 2015). MAFA is a transcription factor which causes insulin gene expression (Matsuoka *et al.*, 2004). Pdx1 is an essential factor for pancreatic development in the embryonic period (Holland *et al.*, 2002). Co-expression of MAFA and Pdx1 resulted in alpha cell conversion to beta cell (Matsuoka *et al.*, 2017).

Although endocrine cells are very similar to each other in terms of epigenetic, even tiny differences among cell lineages are important and must be taken into account in reprogramming alpha cell to beta cell. Hence, recent researches are concentrating on epigenetic and genetic manipulation simultaneously. In accordance with this view, researchers targeted both Arx, an important factor in alpha cell identity, and Dnmt1, an important methyl transferase, in alpha cells. After knocking out of these factors they obtained very functional insulin-secreting beta cells. The obtained cells were physiologically and functionally similar to native beta cells and its RNA profile was also similar to beta cells (Chakravarthy *et al.*, 2017). Reprogramed alpha cells reverse diabetes. This is a great and really worthy of attention outcome.

Concluding Remark

Diabetes Mellitus is a multifactorial disease, various genetic, epigenetic, environmental, and immune factors are implicated in the disorder. Insulin-secreting beta cells are really specialized cells and work in a great surprising accordance with other factors. Insulin secretion in response to a tiny change in the amount of glucose is carefully tuned and controlled by a complex signalling pathway. Any therapeutic approach must take all of these delicacies into account. However, reprogramming pancreatic alpha cells into the beta cells is a really well promising method. The results of former studies are inspiring and encouraging. Of course, a combination of this strategy with other approaches like immunomodulation would be worthy of attention.

REFERENCES

Allahverdi A, Abroun S, Jafarian A, Soleimani M, Taghikhani M, Eskandari F. (2015). Differentiation of human mesenchymal stem cells into insulin producing cells by using a lentiviral vector carrying PDX1. Cell Journal (Yakhteh) 17:(2), 231

Association AD. (2010). Diagnosis and classification of diabetes mellitus. Diabetes care 33:(Suppl 1), S62

Boerner BP, George NM, Mir SU, Sarvetnick NE. (2015). WS6 induces both alpha and beta cell proliferation without affecting differentiation or viability. Endocrine journal 62:(4), 379-86

Bonner-Weir S, Sharma A. (2006). Are there pancreatic progenitor cells from which new islets form after birth? Nature Clinical Practice Endocrinology & Metabolism 2:(5), 240-241

Bonner-Weir S, Taneja M, Weir GC, Tatarkiewicz K, Song K-H, et al. (2000). In vitro cultivation of human islets from expanded ductal tissue. Proceedings of the National Academy of Sciences 97:(14), 7999-8004

Bramswig NC, Everett LJ, Schug J, Dorrell C, Liu C, et al. (2013). Epigenomic plasticity enables human pancreatic α to β cell reprogramming. The Journal of clinical investigation 123:(3), 1275-84

Chakravarthy H, Gu X, Enge M, Dai X, Wang Y, et al. (2017). Converting adult pancreatic islet α cells into β cells by targeting both Dnmt1 and Arx. Cell metabolism 25:(3), 622-34

Chera S, Baronnier D, Ghila L, Cigliola V, Jensen JN, et al. (2014). Diabetes recovery by age-dependent conversion of pancreatic δ-cells into insulin producers. Nature 514:(7523), 503

Collombat P, Xu X, Ravassard P, Sosa-Pineda B, Dussaud S, et al. (2009). The ectopic expression of Pax4 in the mouse pancreas converts progenitor cells into α and subsequently β cells. Cell 138:(3), 449-62

Courtney M, Gjernes E, Druelle N, Ravaud C, Vieira A, et al. (2013). The inactivation of Arx in pancreatic α-cells triggers their neogenesis and conversion into functional β-like cells. PLoS genetics 9:(10), e1003934

Heit JJ, Karnik SK, Kim SK. (2006). Intrinsic regulators of pancreatic β-cell proliferation. Annu. Rev. Cell Dev. Biol. 22311-38

Holland AM, Hale MA, Kagami H, Hammer RE, MacDonald RJ. (2002). Experimental control of pancreatic development and maintenance. Proceedings of the National Academy of Sciences 99:(19), 12236-41

Iwata H, Ogawa N, Takagi T, Mizoguchi J. 1994. Preparation of Insulin-Releasing Chinese Hamster Ovary Cell by Transfection of Human Insulin Gene: Its Implantation into Diabetic Mice: ACS Publications

Jiang J, Au M, Lu K, Eshpeter A, Korbutt G, et al. (2007a). Generation of insulin-producing islet-like clusters from human embryonic stem cells. Stem cells 25:(8), 1940-53

Jiang W, Shi Y, Zhao D, Chen S, Yong J, et al. (2007b). In vitro derivation of functional insulin-producing cells from human embryonic stem cells. Cell research 17:(4), 333

Kaufmann JE, Irminger J-C, Halban PA. (1995). Sequence requirements for proinsulin processing at the B-chain/C-peptide junction. Biochemical Journal 310:(3), 869-74

Lacy P, Greider M. (1979). Anatomy and ultrastructural organization of pancreatic islets. Endocrinology, Grune and Stratton, New York 907-19

Laub O, Rutter WJ. (1983). Expression of the human insulin gene and cDNA in a heterologous mammalian system. Journal of Biological Chemistry 258:(10), 6043-50

Levine F, Mercola M. (2004). No pancreatic endocrine stem cells? New England Journal of Medicine 351:(10), 1024-26

Matsuoka T-a, Artner I, Henderson E, Means A, Sander M, Stein R. (2004). The MafA transcription factor appears to be responsible for tissue-specific expression of insulin. Proceedings of the National Academy of Sciences of the United States of America 101:(9), 2930-33

Matsuoka T-a, Kawashima S, Miyatsuka T, Sasaki S, Shimo N, et al. (2017). Mafa enables Pdx1 to effectively convert pancreatic islet progenitors and committed islet α-cells into β-cells in vivo. Diabetes 66:(5), 1293-300

Meier JJ, Butler AE, Saisho Y, Monchamp T, Galasso R, et al. (2008). β-Cell replication is the primary mechanism subserving the postnatal expansion of β-cell mass in humans. Diabetes 57:(6), 1584-94

Murtaugh LC, Melton DA. (2003). Genes, signals, and lineages in pancreas development. Annual review of cell and developmental biology 19:(1), 71-89

Newgard CB, McGarry JD. (1995). Metabolic coupling factors in pancreatic β-cell signal transduction. Annual review of biochemistry 64:(1), 689-719

Nielsen JH, Galsgaard ED, Møldrup A, Friedrichsen BN, Billestrup N, et al. (2001). Regulation of beta-cell mass by hormones and growth factors. Diabetes 50:(suppl 1), S25

Noble JA, Erlich HA. (2012). Genetics of type 1 diabetes. Cold Spring Harbor perspectives in medicine 2:(1), a007732

Ozougwu J, Obimba K, Belonwu C, Unakalamba C. (2013). The pathogenesis and pathophysiology of type 1 and type 2 diabetes mellitus. Journal of Physiology and Pathophysiology 4:(4), 46-57

Reers C, Erbel S, Esposito I, Schmied B, Büchler MW, et al. (2009). Impaired islet turnover in human donor pancreata with aging. European Journal of Endocrinology 160:(2), 185-91

Rezania A, Bruin JE, Arora P, Rubin A, Batushansky I, et al. (2014). Reversal of diabetes with insulin-producing cells derived in vitro from human pluripotent stem cells. Nature biotechnology 32:(11), 1121

Sangan CB, Jover R, Heimberg H, Tosh D. (2015). In vitro reprogramming of pancreatic alpha cells towards a beta cell phenotype following ectopic HNF4α expression. Molecular and cellular endocrinology 39950-59

Shaw JE, Sicree RA, Zimmet PZ. (2010). Global estimates of the prevalence of diabetes for 2010 and 2030. Diabetes research and clinical practice 87:(1), 4-14

Shen W, Tremblay MS, Deshmukh VA, Wang W, Filippi CM, et al. (2013). Small-molecule inducer of β cell proliferation identified by high-throughput screening. Journal of the American Chemical Society 135:(5), 1669-72

Steiner DF. (1998). The proprotein convertases. Current opinion in chemical biology 2:(1), 31-39

Tateishi K, He J, Taranova O, Liang G, D'Alessio AC, Zhang Y. (2008). Generation of insulin-secreting islet-like clusters from human skin fibroblasts. Journal of Biological Chemistry 283:(46), 31601-07

Tayaramma T, Ma B, Rohde M, Mayer H. (2006). Chromatin-Remodeling Factors Allow Differentiation of Bone Marrow Cells into Insulin-Producing Cells. Stem Cells 24:(12), 2858-67

Thorel F, Népote V, Avril I, Kohno K, Desgraz R, et al. (2012). Conversion of adult pancreatic α-cells to β-cells after extreme β-cell loss. Nature 464:(7292), 1149

Zendehdel K, Nyrén O, Östenson C-G, Adami H-O, Ekbom A, Ye W. (2003). Cancer incidence in patients with type 1 diabetes mellitus: a population-based cohort study in Sweden. Journal of the National Cancer Institute 95:(23), 1797-800

Zhou Q, Brown J, Kanarek A, Rajagopal J, Melton DA. (2008). In vivo reprogramming of adult pancreatic exocrine cells to β-cells. nature 455:(7213), 627

Chapter 2

Overview of Sexually Transmitted Infections

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INTRODUCTION

A group of contagious diseases, whose primary mode of transmission is the penetration of the penis into the mouth, vagina, or anus without any protective barrier, are defined as sexually transmitted diseases (STD) (Özgülnar & Rasekh, 2010). They are frequent in most countries and most of them are notifiable (Hickey et al., 2011). Although the most common of these infections are gonorrhea, syphilis, chlamydia, and IV, more than 30 sexually transmittable microorganisms that can cause infection/disease conditions falling into this category were identified. These microorganisms are various, including viruses, bacteria, protozoa, and fungi, and the diseases they cause can lead to genital, oral, anal, oropharyngeal, ophthalmic, or systemic symptoms (Özgülnar & Rasekh, 2010).

Sexually transmitted disease rates in developing countries, especially in sub-Saharan Africa countries, exceed the STD rates from developed countries. However, it is one of the important health issues in both developing and developed countries (Coşkun, 2012). The negative conditions of STDs are not only limited to health, but are also a global burden on the socioeconomic scene (Aral & Gorbach, 2002).

Sexually transmitted diseases (STD) pose a great problem to women in general (Aral & Gorbach, 2002). Women are biologically more susceptible to STDs than men. Main reasons of this:

- Marrying women at a younger age
- Having sexual intercourse at a younger age
- Having excess vaginal mucosa surfaces
- Presence of cervical ectopia in young women
- Gender role/discrimination (social factors)
- A large number of sexual partners (Şirin, 2008)

Classification of sexually transmitted diseases are given in Table 1.

Table 1. Classification of sexually transmitted diseases

Classification	Factor	Disease
Bacterial	Treponema palidum	Syphilis
	Neisseria gonorrhoeae	Gonorrhoeae
	Chlamydia trachomatis	Chlamydia
	Gardnerella vaginalis	Bacterial Vaginosis
	Haemophilus ducreyi	Chancroid

Viral	HIV	AIDS
	Hepatitis B Virus	Hepatitis B
	Herpes Simplex Virus Type 1 and 2	Genital Herpes
	Molluscum Contagiosum Virus	Genital Papule
	Human Papilloma Virus	Genital Warts
Fungal	Candida albicans	Candida Vaginitis
Protozoon	Trichomonas vaginalis	Trichomonas vaginalis
Parasite	Pediculus pubis Sarcoptes scabiei	Pubic Lice Pubic Scabies

People at Risk for Sexually Transmitted Infections are;

- People who engage in unprotected sexual intercourse with more than one person
- Women and men sex workers
- Customers of sex workers
- People or their partners who have a previous history of STDs.
- Alcohol and drug users (usage of the injector used by the infected person by other people or risky sexual behaviour)
- People who share objects like manicure, pedicure tools and razors
- People on whom contaminated tools were used during circumcision, acupuncture, depilation, piercing, tattoo procedures
- People on whom sterile tools were not used during dental treatment
- People to whom blood and blood components were transfused
- Adolescent
- People who have to be separated from their spouse for a long time because of their job
- Street children
- Convicts (Coşkun 2012, Çetin 2015)

Importance of STDs

- In the 21st century, a high incidence of Sexually Transmitted Diseases (STDs) is observed at an unacceptable level. Furthermore, more than one million STDs are came across every day in the world (WHO 2017, Hickey et al., 2011).
- Having no symptoms or mild symptoms that do not disturb the individual is important in the transmission of STDs. For this reason, it can be transmitted quietly and quickly and can reach to large mass.
- It is observed that approximately 291 million women have Human Papilloma Virus (HPV) infection (WHO, 2013).
- Due to the tendency of those caught by STDs to conceal this situation, the disease can reach more serious dimensions and be transmitted to others (Coşkun, 2012).
- The individual who is caught by one of the STDs is more likely to be caught with other STDs (Coşkun, 2012).
- STDs not only cause acute morbidity in adults but also cause genital malignities such as Ectopic Pregnancy, Cervix, Uterus, Vulva, Vagina, Penis, Anus Cancers; Gonorrhea and Chlamydial Secondary Arthritis; Liver Failure and Liver Cancer,

Central Nervous System Diseases after Syphilis, infertility in both men and women, long-term chronic infections and premature death (Sevgi et al., 2006).

- HPV infection causes approximately 530.000 cervical cancer cases and 275.000 cervical cancer deaths each year.
- Like Gonorrhea and chlamydia, STDs are important causes of infertility; untreated genital infection in sub-Saharan Africa is the reason for the infertility in 85% of the women who suffer from infertility (WHO, 2013).
- The possession of sexually transmitted diseases eases the transmission of other infections, HIV in particular, due to damage to the mucous membrane (Kaya et al., 2001, Aktaş et al., 2012).
- In newborns, it can cause complications such as Congenital Syphilis and Fetal death, Low Birth Weight, Prematurity and Ophthalmia.

Distribution of the World Health Organization Estimates of Sexually Transmitted Infections in Figure 1.

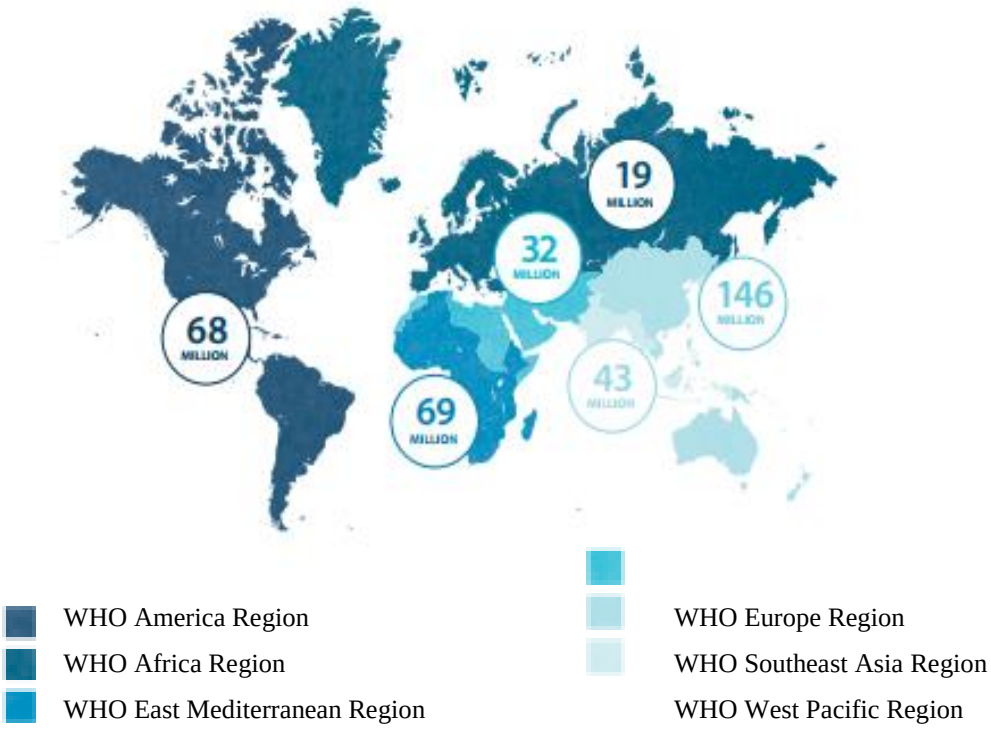


Figure 1: WHO estimations (2012): Chlamydia, Gonorrhea, Syphilis, Trichomoniasis and Herpes Simplex Virus type 2 (HSV-2) Total number of cases is 377 million (WHO, 2017)

SYPHILIS

Syphilis is a systemic type of STD caused by Treponema Pallidum. Syphilis complex is characterized by many clinical signs and can lead to severe systemic diseases (Şirin, 2008). It has three phases: **Primer, Seconder, and tertiary syphilis**

(Janier et al., 2014). The tendency of syphilis to spread in society can also be regarded as an indication of the tendency of HIV to spread. In addition, causing congenital cases and latent progression are other important reasons for the surveillance of the disease (Özgülnar & Rasekh, 2010).

Primer syphilis: With the infection of Treponema pallidum, it forms an ulcer (canker) with regional lymphadenopathy. Canker appears primarily as a superficial, monolithic, painless, red papule appearance and frequently in external reproductive organs. It has a clean base endurance that leaves clean serum in the infected area. Canker disappears spontaneously within 4-6 weeks and does not leave a trace (Janier et al., 2014).

Secondary Syphilis: Widespread lymphadenopathy begins 2-6 weeks after the primary syphilis period has passed. Later on, it is characterized by papules with maculopapular stains on the skin, plaque in mouth, very high potential for contagion and colorless papules called Condyloma Lata in anal and genital area. In addition, fever, hepatitis, splenomegaly, periostitis, arthritis and glomerulonephritis can be seen (Janier et al., 2014).

Tertiary Syphilis: Cardiovascular system and central nervous system stop working and serious disease tables (such as speech disorders, paralysis, valve disorders, etc.) arise at the last stage. One of the most important of these is the aortic aneurysm and rupture. In this period, swelling also occurs in many organs, especially skin and bone, called "gom" (Özgülnar & Rasekh, 2010).

Congenital syphilis

1) Syphilis fetalis: There is little intrauterine infection before the fourth month of pregnancy. Abortus, IUGR, Stillbirth, Neonatal Death, Neonatal Disease and Latent Infection can be seen after the fourth month according to the severity of the infection.

2) Congenital Syphilis Symptoms occur at birth or 2-3 weeks after birth. Newborn has an old image and his skin is wrinkled. Rhinitis is the earliest symptom, followed by maculopapular lesions of palms, feet, mouth, and diffuse in anus.

3) Late Congenital Syphilis: Untreated children experience a latent period if they live six or twelve months. Symptoms occur after four years old. Many defects and multisystem involvements can be seen such as half-moon notch in the incisors (Hutchinson teeth), dropped nose (saddle or Socrates nose), deafness, blindness, mental and growth deficiency, MSS (Taşkın, 2014).

Diagnosis

✓ Verification of the positive serological evidence obtained with one of the non-treponemal screening tests (VDRL, RPR) with TPHA or FTA-ABS,

✓ Genital ulcer or secondary syphilis phase is diagnosed by observing exanthematous lesions in dark field microscopy or by observing the microorganism with DFA (Coşkun 2012, Janier et al., 2014, Özgülnar & Rasekh 2010).

Treatment: Penicillin G can be used in all phases of syphilis treatment. The types to be used (Benzathine, Aqueous Procaine and Aqueous Crystallized), dose, treatment time vary according to clinical findings and phase.

GONORRHEA

Gonorrhea caused by neisseria gonorrhoeae is the second most common type of STD caused by bacteria. Infection is transmitted to the newborn when the baby passes

through birth canal during birth and rarely through the contact with infected secretion to open wound. It results in worldwide morbidity and economic cost (WHO 2016, Unemo & Shafer 2014).

In 2008, The World Health Organization (WHO) estimated that, 106 million new cases in adults worldwide were found each year (WHO 2016, Unemo & Shafer 2014).

Gonococci can spread throughout the body, primarily by infecting the mucosal surfaces of the urethra and vagina (WHO, 2016). As a result of the spread of the infection by blood, arthritis, endocarditis and meningitis can develop (Taşkın 2014, Şirin 2008, Tabak 2002).

Symptom and findings: The incubation period of gonococci is 2-8 days (Tabak, 2002). It is usually asymptomatic in women. The most common symptom is dysuria, frequent urine and green-yellow, malodorous vaginal discharge. Edema, redness, itching and pain may be seen in the vulva due to the discharge. Severe complications such as pelvic inflammatory disease, ectopic pregnancy and infertility may be seen after the spread of the infection (Coşkun 2012, WHO 2016, Xiong et al. 2016). Infants who have gonococcal mothers may have neonatal conjunctivitis that may cause blindness if not treated (WHO, 2016).

It may cause urethral infection, epididymitis, urethral stricture and infertility in men (WHO, 2016).

Diagnosis: Diagnosis is based on discharge, cervical secretions, rectal swab, pharyngeal swab, and examination of Gram stain spreading from joint fluid Gram stain may be misleading in female patients. Thayer-Martin medium is used for culture. The presence of oxidase-positive colonies consisting of gram-negative diplococci as a result of culture is diagnostic (Tabak, 2002).

Treatment: In oral treatment in uncomplicated gonorrhea, ciprofloxacin (500 mg, single dose), ofloxacin (400 mg, single dose), cefixime (400 mg single dose), levofloxacin (250 mg single dose), in parenteral treatment ceftriaxone (125 mg, IM, single dose) are the distinguished antibiotics. Ciprofloxacin may be used in patients with beta lactam allergy, and ceftriaxone may be used in pregnant women (Tabak, 2002).

CHLAMYDIA

Chlamydia is an important sexually transmitted infection caused by Chlamydia trachomatis and is estimated to be infected more than 100 million people worldwide every year (Lanjouw, 2016). Chlamydia causes serious morbidity and economic costs worldwide (WHO, 2016). It can infect through bad hygiene conditions and birth (Taşkın 2014, Coşkun, 2012). People with anogenital C. trachomatis infection is unaware of their infections because the majority of people with the infection are often asymptomatic (Lanjouw, 2016).

Chlamydial infection can be seen in three forms: chlamydia cervicitis, mucopurulent cervicitis and lymphogronuloma venereum (LGV) (Taşkın 2014, Coşkun, 2012).

Symptoms and Findings

- **Chlamydia Cervicitis:** Mucopurulent vaginal discharge, abdominal, pelvis and lower back pain, frequent and painful urine related to urethritis.
- **Mucopuruluyan Cervicitis:** Yellow mucopurulent endocervical discharge, dyspareunia, postcoital bleeding.

- **LGV:** Small painless irregular ulcerative lesions in labia, clitoris and urethra small pustules (1st phase) inguinal and iliac lymphadenopathy, vulva edema (2nd phase), external genital deformity and elephantiasis are seen 1-3 weeks after taking the agent (Coşkun, 2012).

In women it also causes; PID, Chronic pelvic pain, infertility, ectopic pregnancy, sexually acquired reactive arthritis (SARA) (< 1%). Pregnancy complications such as postpartum endometritis, premature membrane rupture, premature birth, stillbirth and low birth weight are seen in C. trachomatis infections during pregnancy. More than 50% is symptomatic in men and causes clinical signs such as urethritis, dysuria, epididymitis, prostatitis, testicular pain, SARA (<1%) (Öztoklu, & Yücel 2012, Lanjouw, 2016).

Diagnosis: Cytochemistry, cell culture, antigen determination, direct fluorescent antibody (DFA), enzyme immunoassay (EIA) and nucleic acid antigen amplification tests (NAAT) are used for C. trachomatis diagnosis.

Treatment: Tetracyclines, macrolides and their derivatives and some quinolone antibiotics which are effective against C. trachomatis are used. Antibiotics that can be used for the treatment of C. trachomatis infections in pregnancy are erythromycin and amoxicillin.

CHANCROID

Chancroid is a sexually transmitted infection caused by the gram-negative bacterium Haemophilus Ducreyi (Lewis, 2003). It is more common in tropical countries, especially in the South Pacific region. In Western Europe, there are reports of chancroid cases that are misdiagnosed as genital herpes. The first lesion in the genital region is a small, erythematous, sensitive papule or pustule that rapidly ulcerates. Its base may be yellowish and there might be purulent discharge. It may lead to local unilateral LAP (Tabak, 2002).

Half of the cases, however, are accompanied by inguinal lymphadenitis. If not treated, they can reach to skin to form sinuses (Serdaroğlu, 2008).

Diagnosis

The appearance defined as the fish swarm or train path formed by bacteria on the cytological examination of the exenter (Giemsa-Gram stain) taken from the ulcer base is diagnostic. Its culture is hard to identify.

The diagnostic criteria defined in the diagnosis can be used:

1. One or more painful ulcers
2. Laboratory negative findings of syphilis
3. Clinically negative HSV tests with typical ulcer appearance (Tabak, 2002).

Treatment: Azithromycin (1 g, oral, single dose), ceftriaxone (250 mg, IM, single dose), ciprofloxacin (2 x 500 mg, 3 days), erythromycin (4 x 500, 7 days) can be used (Lautenschlager et al., 2017, Tabak, 2002).

BACTERIAL VAGINOSIS

Until the 1950s, what is now known as bacterial vaginosis (BV) was called "nonspecific vaginitis". Even today, BV has become a widely discussed subject (Leitich et al., 2003). BV is characterized by the increase in the pH as a result of decrease in the majority of lactobacilli in normal vaginal flora, and an overgrowth of microorganisms

such as Gardnerella vaginalis, anaerobic bacteria, Mycoplasma and Mobiluncus types. Approximately half of the patients are asymptomatic (Kılıçer Nazlı et al., 2015).

BV can lead to early membrane rupture, preterm labor, chorioamnionitis, post-abortion fever, post hysterectomy fever, postpartum endometritis and PID. It also increases sensitivity to STDs (Şirin, 2008)

Risk Factors: Vaginal douche, polygamy, spermicidal condoms, intra uterine device (IUD), STDs such as gonorrhea and chlamydia, genital tract infections, endometrial biopsy and invasive procedures involving teratopathic abortions etc. includes the risk factors (Şirin, 2008).

Symptom and Finding

BV cases are asymptomatic or typically have malodorous vaginal discharge (Kılıçer Nazlı et al., 2015). Vaginal discharge has a bad smell like a rotten fish in a small amount with a thin aqueous, homogeneous gray-white color. Unlike abnormal vaginal discharge reasons, leukocyte is very rare in vaginal secretions. After relationship, the discharge and the odor complaints increase. Itching with vaginal or vaginal irritation is common. Abdominal pain, dysuria and dyspareunia can also be seen (Şirin, 2008).

Diagnosis

BV is diagnosed with at least three of the following four criteria developed by Amsel et al.:

1. Vaginal pH $\geq$ 4.5,

2. Thin, white, homogeneous discharge,

3. Clue Cell existence in microscopy,

4. Positive Amine (Whiff) test. The formation of rotten fish smell when 10% potassium hydroxide is added to vaginal secretion indicates that the test is positive (Kılıçer Nazlı et al., 2015, Şirin 2008).

Treatment: Application of 500 mg oral metronidazole taken twice a day for 7 days, 2% clindamycin vaginal cream or 0,75% metronidazole vaginal gel is the BV treatment in non-pregnant patients; alternative treatments are 2 gr oral single dose of alternate treatments 2 g oral metronidazole or 300 mg oral clindamycin taken twice a day for seven days (Kılıçer Nazlı et al., 2015).

AIDS

Acquired immunodeficiency syndrome (AIDS) is an acquired immune deficiency syndrome that was first reported in the United States in 1981 (Babayiğit & Bakir 2004, Selik et al., 2014), with opportunistic infections and cancers and resulting in death when left untreated. HIV (Human Immunodeficiency Virus) is the cause of AIDS (Çetin C, 2015).

There are two types of HIV. HIV-1 is responsible for most of the world's infections and AIDS cases. HIV-2 is more common in West Africa and its transmission rate is slower than HIV1 (Özgülnar & Rasekh, 2010).

Mode of Transmission

1. Any sexual contact,

2. With blood and blood products,

3. It can infect to babies from mothers during pregnancy, birth or during breastfeeding (Babayiğit & Bakir 2004).

The following do not cause HIV transmission:

- Sneeze, cough
- Body excretions such as saliva, tear, sweat, urine, stool.
- Handshaking, hand holding, hugging, touching the skin, fondling, embracing, kissing
- Eating from the same container, drinking from the same glass, using a common fork, spoon, glass, plate, and phone.
- Using the same bathroom, shower, tap
- Swimming in the same swimming pool, using common places such as sea, sauna, bathhouse and using common towel
- Mosquito and similar insect stings (Turkish Society of Clinical Microbiology Infectious Diseases, 2016)

Symptoms and Findings

In the early and middle stages of HIV infection, most people have no symptoms. Immediately after the infection, some people may develop mild, transient flu-like symptoms or lymphadenopathies (Özgülnar & Rasekh, 2010).

Some symptoms that can be seen in people carrying HIV:

1. Losing weight for unexplained reasons for at least one month
2. Diarrhea for several weeks
3. Fungal infection on the tongue (moniliasis)
4. General lymphadenopathies, especially in the neck, underarm and/or groin
5. Cough for more than one month
6. Constant fever and/or sweating at nights
7. Constant vaginal fungal infection in women (Özgülnar & Rasekh, 2010).

Diagnosis

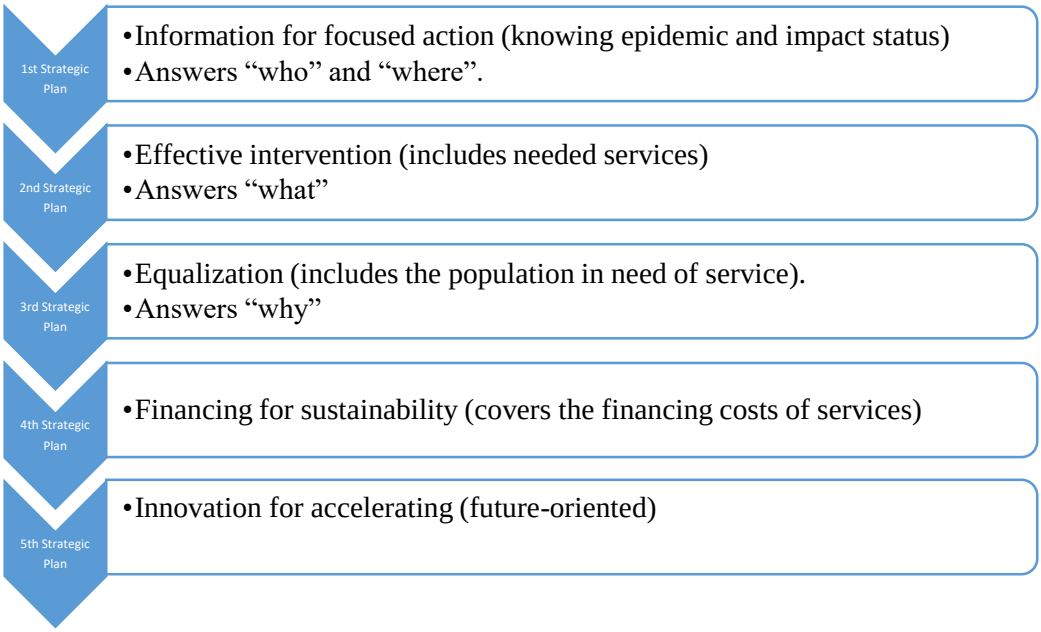
- The first step of diagnosis begins with screening tests
- A positive result from HIV antibody screening tests or combination antigen / antibody test (ELISA test)
- Tests such as HIV-1 viral load test, HIV-2 Western blot / immunoblot antibody are applied to confirm the test after a positive result (Selik et al., 2014).

Treatment: AIDS has no definitive treatment. However, antiretroviral therapy (HIV RNA and CD4 according to lymphocyte quantities and the clinical condition of the patient) is used to prevent a person's viral proliferation in the body and to strengthen and restore the immune system's capacity to fight infections, and to reduce the rate of mortality and morbidity associated with HIV.

In 2016, WHO, in Consolidated Guidelines about the usage of antiretroviral drugs to treat and prevent the HIV infection, offers a lifelong ART to all people living with HIV, including children, adolescents and adults, pregnant and lactating women, regardless of clinical condition or CD4 cell count (WHO, 2016)

Protection

Figure 2. Five strategic plans of the global HIV-related health sector strategy between 2016-2021,



(WHO, 2016)

HEPATITIS B

Viral hepatitis has 5 types: A B C D E B and D types of viral hepatitis can be transmitted sexually (Taşkın, 2014) There is only a protective vaccine against hepatitis B (Özgülnar & Rasekh, 2010). Hepatitis B (HBV) is a DNA virus and HBV transmits through:

- Sexual intercourse
- Transmission of blood and blood products or usage of cutting tools
- From mother to baby during childbirth or intrauterine period (Taşkın, 2014, Şirin 2008).

Symptoms: Symptoms are generally asymptomatic. Symptoms include fatigue, fever, loss of appetite, abdominal pain, nausea, vomiting, jaundice, darkening of urine color, arthralgia / polyarthritis, rash (Özgülnar & Rasekh, 2010). Chronic Hepatitis, Cirrhosis, Liver Failure and death can be seen as the disease progresses (Coşkun, 2012).

Diagnosis: In a patient diagnosed with viral hepatitis, liver function tests (transaminases increase at least 8 times), anti-HAV IgM, anti-HAV IgG, HBsAg, anti-HBc IgM, and anti-HCV and if necessary HCV RNA should be examined in a serum (Özgülnar & Rasekh, 2010).

Treatment: Acute Hepatitis B has no effective treatment. The disease usually limits itself with bed rest and supportive care. Different treatment methods are used in chronic infections.

Diagnosis and evaluation of STDs is necessary for sexual partners, viral hepatitis patients and their sexual partners. If a viral hepatitis develops after a sexual intercourse within the last 2 weeks and the person is not already immunized, hepatitis B immunoglobulin and vaccine are made. Active immunization is one of the most important means of protection.

Hepatitis B vaccine is applied on newborn babies in Turkey as a routine vaccine program. Hepatitis B vaccine may be administered to people at risk for sexually transmitted infection according to the results of HBsAg, anti-HBc and anti-HBs studies (such as those who have more than one sexual partner in the last six months, those who are treated at STD clinics, sex workers, people who take blood products). In those who have not been previously vaccinated or are considered vaccinated, the vaccine is given 1 ml, 3 doses into the deltoid muscle at 0,1 and 6 months.

HUMAN PAPILLOMA VIRUS (HPV) (Condyloma Acuminatum)

Human papilloma virus (HPV) infection is one of the most viral infection that transmitted sexually. There are more than 100 HPV types (Insinga et al., 2003, Gall 2001). 2003, Gall 2001). More than 40 of them can be transmitted sexually and infects genital region. In women it causes cervical cancer, in both women and men it can cause other cancer types and genital warts (WHO, 2017).

HPV globally is responsible for 70% of cervical cancer genotypes 16 and 18, 50% of high-grade cervical intraepithelial neoplasia (CIN2 / 3), and 25% of low-grade cervical intraepithelial neoplasia (CIN1). In addition to cervical cancers, it is an important part of vulva, vaginal and anal cancers and the causative agent of intraepithelial dysplastic lesions (Garland et al., 2009).

Symptoms: When clinical symptoms are present, there may be bleeding, itching, burning and tenderness in the wart area (anus, urethra, vagina). In addition, the diagnosis and treatment of genital warts have been found to cause anxiety, shame, anger and embarrassment among patients, and negatively affect sexual inclination and activity (Insinga et al., 2003).

Risk Factors That Cause HPV to Transform into Cancer

Premature and multi-partner sexual life, long-term cigarette use, presence of other STDs, long-term use of oral contraceptives, malnutrition, immunosuppressed conditions are risk factors for malignant transformation of HPV virus (Sanjosé et al., 2017, Taşkın 2014).

Diagnosis: Diagnosis history is based on the appearance of warts in inspection, appearance of white regions in colposcopy when 3-5% acetic acid is applied, biopsy and Pap smear (Şirin, 2008)

Protection

HPV Vaccine: The vaccination studies started in 1993 have been licensed and offered for use since 2006. The HPV vaccine has been routinely scheduled for vaccination in many countries, including the United States, Canada, Australia, Germany, France and Israel. Quadrivalent vaccine in 2007, bivalent vaccine in 2008 got licensed in Turkey. The leading difficulty that prevents HPV vaccine to be applied routinely is the non-standardization of reaching the vaccine. This vaccine is not covered by social security and is not covered by the Ministry of Health's free vaccinations. HPV vaccine is recommended for all women aged 9-26 who have not previously been exposed to these viruses (Eroğlu & Koç 2014).

The vaccine should be done 3 times in 6 months for 0,5 ml to arm or leg with i.m injection.

3 different types of HPV vaccine is licensed by FDA:

1. Gardasil (quadrivalent HPV vaccine) includes VBPs of four HPV types (6, 11, 16, and 18).

2. Cervarix (Bivalan HPV vaccine) includes VBPs of two HPV types (16, 18) (Şahbaz & Erol, 2014)

3. Gardasil 9; includes 6, 11, 16, 18, 31, 33, 45, 52 and 58 species of HPV (FDA, 2018).

The vaccination does not involve cervical cancer screening or Pap smear application, and these screenings needs to be done regularly.

Treatment: There is no definitive treatment. Drugs such as acyclovir, famciclovir and valaciclovir taken in the acute phase can be used to improve the symptoms more quickly and to keep the contagiousness shorter. Cryotherapy, laser therapy and cervical conization can also be used (Özgülnar & Rasekh, 2010). During treatment, sexual intercourse should be avoided, should be regularly controlled and pap-smear test should be done (Taşkın, 2014).

GENITAL HERPES

It is a chronic viral infection type caused by Herpes Simplex virus which transmits sexually, has recurrence and characterized with ulcer. It has 2 types: Herpes Simplex Virus type 1 (HSV-1) and type 2 (HSV-2). They are DNA viruses (Gupta et al., 2007).

HSV-2 forms 80% of the genital ulcer (Şirin). HSV-2 usually effects women's vagina, vulva, cervices, urethra, anus and legs, men's penis and rectal area (Şirin, 2008). HSV-1 effects mouth and lips in general (Coşkun, 2012). However, HSV-1 can be transmitted through oral sex to genitalia and especially in high income countries, are increasingly seen as the cause of genital HSV. In 2012, approximately 140 million people worldwide have suffered genital infection caused by HSV-1 (WHO, 2016).

Symptoms and Findings

It is seen as primer and recurrent infections.

Primer Infection: It is seen 5-7 days after infection. Half of the phenomena are asymptomatic. Symptomatic ones are fluid-filled vesicles, also seen in the cervix, vagina and vulva. These vesicles quickly unite and form a painful vulva ulcer. Especially cervical lesions are widespread. There is a dense aqueous purulent discharge due to cervical ulceration. Lesions pass within 2-6 weeks. One week after lesions start symptoms such as fever, fatigue, nausea, vomiting and headache are seen. As the infection spreads, these cause serious problems such as viremia, meningitis and encephalitis (Coşkun 2012, Şirin 2008).

Seconder Infection: Infection occurs by latent HSV, which is located in the ganglia of S2, S3 and S4 and is active for various reasons. It is less painful compared to primer lesions and heals faster. However it is permanent and much more serious (Şirin, 2008)

Diagnosis: Isolation in cell culture, antigen screening and nucleic acid screening tests, which are important for the diagnosis of the disease, are not commonly used in

Turkey. Diagnosis is usually based on clinical manifestation (Özgülnar & Rasekh, 2010).

Treatment: There is no definitive treatment. Rapid recovery of symptoms and shorter duration of infectivity can be achieved with drugs such as acyclovir, famciclovir and valaciclovir which are taken orally in the acute phase for about 5-10 days (Özgülnar & Rasekh 2010, Serdaroğlu 2008). Drug treatment does not prevent latency and recurrent episodes. For people whose lesions repeat too often, suppressive treatments can be applied which require continuous medication for several years.

CANDIDA VAGINITIS

Vaginal candidiasis is a fungal infection of the vulva and/or vagina caused by C. glabrata and C. tropicalis 85% of the time and by candida albicans 15% of the time. A fragrant, dense, white-yellowish discharge (usually described as cheese crumbs / whey) forms a table often accompanied by itching, burning and swelling (Şatıroğlu & Aydınuraz, 2007). In addition to sexual transmission of vaginal candidiasis, diabetes, malnutrition and poor hygiene, antibiotic use, and oral or injected contraceptives are also risk factors (Sobel et al., 1998).

Symptoms and Findings: Symptoms that occur in women; discomfort during sexual intercourse, burning on the vulva during urination, itching, vaginal discharge, whey appearance or cheesy white discharge, hyperemia and inflammation in the vaginal walls, edema in the vulva.

Symptoms in men; penis glans and itching in the skin, if the person is not circumcised, white discharge under the curvature of the skin, edema in the foreskin, adhesions in the foreskin or cracks on the skin, urethritis is formed with mild urethral discharge (Neyzi & Özgülnar).

Diagnosis: On the clinical examination, 10% potassium hydroxide (KOH) solution is mixed on the lamina with the discharge from the patient's vagina (Nyirjesy, 2008). Characteristic spores of candida are distinguished in the microscope environment (Nyirjesy 2008, Taşkın 2014).

Treatment: Predisposing factors should be examined before treatment. Diabetes, immunodeficiency should be investigated, drugs used by patient should be learned. In recurrent cases, a partner examination should be performed and sexual intercourse without a condom should be prohibited.

Various antifungal drugs such as miconazole nitrate, clotrimazole, butoconazole nitrate, fluconazole, ketoconazole, itraconazole and nistatin are applied intravaginal or orally (Şatıroğlu & Aydınuraz, 2007).

TRICHOMONAS VAGINITIS

Trichomonas vaginitis (TV) is a sexually transmitted and often neglected type of protozoal infection caused by Trichomonas vaginalis (Gratrix et al., 2017). Trichomonas is a vaginal infection affecting the labia and vulva, and is probably the most common non-viral sexually transmitted infection type in the world (Kissinger 2015, Taşkın 2014).

Symptoms: 85% of women and 77% of men with TV are asymptomatic. One third of asymptomatic women become symptomatic within 6 months. Common sites of infection in women include vagina, urethra and endocervix. Symptoms in women are vaginal discharge (usually diffuse, malodorous, yellow-green), dysuria, itching, vulvar

irritation and abdominal pain. Normal vaginal pH is 4,5, but it increases with TV infection, usually becomes >5. Symptoms in men are epididymitis, prostatitis, and decreased sperm cell activity (Kissinger, 2015).

Struggle against TV, preterm birth, negative pregnancy outcomes, pelvic inflammatory disease and HIV has increased 2-3 times (Gratrix et al., 2017).

Diagnosis: Direct microscopy and culture methods are routinely used in the diagnosis. Staining methods such as Giemsa and acridine orange and chain polymerase reaction can be applied for diagnosis (Akarsu, 2006)

Treatment: This infection can be treated with antibiotics even though it is not caused by bacteria. The healing rate is 95%, and sexual partners should be treated simultaneously to prevent re-infection or infection. The most commonly used antibiotic is metronidazole (Özgülnar & Rasekh, 2010).

General Precautions to Protect from STDs

- Sexual life should be maintained with a single partner
- Barrier methods (condom, diaphragm) should be used before sexual intercourse
- Uncontrolled blood and blood products should not be used
- Private objects such as razor blade, razor, toothbrush should not be used common
- Sexually active people should be vaccinated against Hepatitis B and HPV to protect against STDs
- Where appropriate, voluntary male circumcision should be encouraged
- Necessary tests should be done against STDs in the early period of pregnancy
- A baby born from an HIV-positive mother should not be breastfed unless it is recommended
- Hygiene of genital area should be provided In its absence, bacterial vaginosis develops and bacterial vaginosis increases the risk of sexually transmitted infections such as HIV
- Preventive sexual health education and counseling should be provided from STDs to the risk groups such as adolescents, women, uneducated and street children, sex workers, migrants (Coşkun 2012, Çetin 2015, Holmes et al. 2004, Marrazzo & Cates, 2011, WHO 2015, Taşkın 2014)

REFERENCES

Akarsu, G. A. (2006). Investigation of Trichomonas vaginalis in Patients with Nonspecific Vaginal Discharge. *Turkish Journal of Parasitology, 30*, 19-21

Aral, S. O., & Gorbach, P. M. (2002). Sexually Transmitted İnfections. In *Handbook of women's sexual and reproductive health* (pp. 255-279). Springer US

Aydoğan, K., Dicle, Ö., Doğan, B., Keçici, A. S., Köse, O., & Serdaroğlu, S. (2015). Sexually Transmitted Diseases Treatment Guidelines. Galenos Publishing House, İstanbul.

Aktaş D., Şahin E., İlknur M., Some Common Gynecologic Problems Affecting Women's Health and Nursing Approaches. Journal of Health Science, Ankara 2012 1(2)

Babayiğit, M. A., & Bakir, B. (2004). HIV Infection and AIDS: Epidemiology and Protection. *Turkey Institutes of Health Preventive Medicine Bulletin, 3*(11), 280-90.

Çoşkun A.M., Women's Health and Diseases Handbook, Koç University Press, İstanbul, 2012

Çetin C. Investigation of Students Knowledge Level about Sexually Transmitted Infections at One the Private University, Institute of Medical Sciences, Department of Nursing İstanbul Medipol University, 2015.

Eroğlu, K., & Koç, G. (2014). Gyneacological Cancer Control and Nursing. *Journal of Hacettepe University Faculty of Nursing*, *1*(2).

Gall, S. A. (2001). Female genital warts: global trends and treatments. *Infectious diseases in obstetrics and gynecology*, *9*(3), 149-154.

Garland, S. M., Steben, M., Sings, H. L., James, M., Lu, S., Railkar, R., & Joura, E. A. (2009). Natural history of genital warts: analysis of the placebo arm of 2 randomized phase III trials of a quadrivalent human papillomavirus (types 6, 11, 16, and 18) vaccine. *The Journal of infectious diseases*, *199*(6), 805-814.

Gratrix, J., Plitt, S., Turnbull, L., Smyczek, P., Brandley, J., Scarrott, R., & Singh, A. E. (2017). Trichomonas vaginalis Prevalence and Correlates in Women and Men Attending STI Clinics in Western Canada. *Sexually Transmitted Diseases*, 44(10):627-629

Gupta, R., Warren, T., & Wald, A. (2007). Genital herpes. *The Lancet*, *370*(9605), 2127-2137)

Hickey, D. K., Patel, M. V., Fahey, J. V., & Wira, C. R. (2011). Innate and adaptive immunity at mucosal surfaces of the female reproductive tract: stratification and integration of immune protection against the transmission of sexually transmitted infections. *Journal of reproductive immunology*, *88*(2), 185-194.

Holmes, K. K., Levine, R., & Weaver, M. (2004). Effectiveness of condoms in preventing sexually transmitted infections. *Bulletin of the World Health Organization*, *82*(6), 454-461.

Insinga, R. P., Dasbach, E. J., & Myers, E. R. (2003). The health and economic burden of genital warts in a set of private health plans in the United States. *Clinical Infectious Diseases*, 1397-1403.

Janier, Á., Hegyi, V., Dupin, N., Unemo, M., Tiplica, G. S., Potočnik, M., & Patel, R. (2014). 2014 European guideline on the management of syphilis. *Journal of the European Academy of Dermatology and Venereology*, *28*(12), 1581-1593.4

Kaya, C., Yılmazer, M. and Şatıroğlu, H. (2001). New Approaches in Sexually Transmitted Diseases (STDs): Review. T Klin Jinekol Obst, 11,1-14.

Kissinger, P. (2015). Trichomonas vaginalis: a review of epidemiologic, clinical and treatment issues. *BMC infectious diseases*, *15*(1).

Lanjouw, E., Ouburg, S., De Vries, H. J., Stary, A., Radcliffe, K., & Unemo, M. (2016). 2015 European guideline on the management of Chlamydia trachomatis infections. *International journal of STD & AIDS*, *27*(5), 333-348

Lautenschlager, S., Kemp, M., Christensen, J. J., Mayans, M. V., & Moi, H. (2017). 2017 European guideline for the management of chancroid. *International journal of STD & AIDS*, *28*(4), 324-329.

Leitich, H., Bodner-Adler, B., Brunbauer, M., Kaider, A., Egarter, C., & Husslein, P. (2003). Bacterial vaginosis as a risk factor for preterm delivery: a meta-analysis. *American journal of obstetrics and gynecology*, *189*(1), 139-147

Lewis, D. A. (2003). Chancroid: clinical manifestations, diagnosis, and management. *Sexually transmitted infections*, *79*(1), 68-71.

Marrazzo, J. M., & Cates, W. (2011). Interventions to prevent sexually transmitted infections, including HIV infection. *Clinical infectious diseases*, *53*(3), 64-S78.

Nazlı, Kılıçer, N., Haberal, A., Özdeğirmenci, Ö., Karadağ, B. (2015). Comparison of the Cost-Effectivity for Bacterial Vaginosis Treatment Protocols, Selçuk Medical Journal, 31(2): 52-56

Neyzi,O., Özgülnar N. Sexually Transmitted Diseases Treatment Guidelines. Özek, B., Eren B (Ed). Vulvovaginitis ve Cervicisit. 3rd Print, 5th Chapter, 49-69. Human Resource Development Foundation UNFPA United Nations Population Fund. https://www.researchgate.net/profile/Berna_Eren/publication/267034238_Vulvovajinit_ve_Servisit/links/54424b620cf2a76a3cca22a3/Vulvovajinit-ve-Servisit.pdf

Nyirjesy, P. (2008). Vulvovaginal candidiasis and bacterial vaginosis. *Infectious disease clinics of North America*, *22*(4), 637-652

Özgülnar, N., Rasekh, H. (2010). Sexually Transmitted Diseases (STD/HIV/AIDS) Participants Guide, T.R. Ministry of Health General Directorate of Mother and Child Health and Family Planning Printing House, Ankara.

Öztoklu, İ., & Yücel, A. (2012). Chlamydia Trachomatis Infections. Ankara Medical Journal, 12(1):32-36

Sanjosé, S., Brotons, M., & Pavon, M. A. (2017). The natural history of human papillomavirus infection. Best Practice & Research Clinical Obstetrics & Gynaecology.

Selik, R. M., Mokotoff, E. D., Branson, B., Owen, S. M., Whitmore, S., Hall, H. I., & Centers for Disease Control and Prevention (CDC. (2014). Revised surveillance case definition for HIV infection—United States, 2014. *MMWR Recomm Rep*, *63*(3), 1-10

Serdaroğlu, S. (2008). Genital Ulcers. I.U. Cerrahpaşa Medical Faculty Continuous Medical Education Activities: Practical Approaches to Society-Acquired Infections Symposium Series, 61, 183-200

Selik, R. M., Mokotoff, E. D., Branson, B., Owen, S. M., Whitmore, S., Hall, H. I., & Centers for Disease Control and Prevention CDC. (2014). Revised surveillance case definition for HIV infection—United States. *MMWR Recomm Rep*, *63*(3), 1-10.

Sevgi O. Aral, S. O., Over, M., Manhart, L., Holmes, K. K. (2006). Sexually Transmitted Infections. İn: Alleyne, G., Claeson, M., Evans, D. B., Jha, P., Mills, A., Musgrove, P. Disease. Control Priorities in Developing Countries. The International Bank for Reconstruction and Development/ The World Bank Group. Chapter 17. Oxford University Press. Washington. New York.

Sobel, J. D., Faro, S., Force, R. W., Foxman, B., Ledger, W. J., Nyirjesy, P. R., ... & Summers, P. R. (1998). Vulvovaginal candidiasis: epidemiologic, diagnostic, and therapeutic considerations. *American journal of obstetrics and gynecology*, *178*(2), 203-211.

Şahbaz, A., & Erol, O. (2014). HPV Vaccination Practices. *Journal of Turkish Society of Obstetrics & Gynecology*, *11*(2).

Şatıroğlu H., Aydınuraz B. (2007). Vaginal Candidiasis Journal of Internal Medicine, 14(3): 168-170

Şirin A, Women's Health, Bedray Publishing, İstanbul, 2008

Taşkın L. Birth and Women's Health Nursing, Ankara, Sistem Offset Printing, 2014

Tabak, F. (2002). Sexually Transmitted Diseases I.U. Cerrahpaşa Medical Faculty Continuous Medical Education Activities: Rational Antibiotic Usage and Infections Acquired from Society in Adults Symposium Series, 31, 233-242

Turkish Society of Clinical Microbiology Infectious Diseases. (2016). HIV Information Book, http://www.klimik.org.tr/wp

Unemo, M., & Shafer, W. M. (2014). Antimicrobial resistance in Neisseria gonorrhoeae in the 21st century: past, evolution, and future. *Clinical microbiology reviews*, *27*(3), 587-613.

World Health Organization. (2013). Sexually transmitted infections (STIs): the importance of a renewed commitment to STI prevention and control in achieving global sexual and reproductive health

World Health Organization. (2016). Global health sector strategy on HIV 2016-2021. Towards ending AIDS.

World Health Organization. (2016). WHO guidelines for the treatment of genital herpes simplex virus.

World Health Organization. (2016). WHO guidelines for the treatment of Neisseria gonorrhoeae. World Health Organization. (2016). WHO guidelines for the treatment of Neisseria gonorrhoeae.

World Health Organization. (2016). *Consolidated guidelines on the use of antiretroviral drugs for treating and preventing HIV infection: recommendations for a public health approach*. World Health Organization.

World Health Organization. (2016). WHO guidelines for the treatment of Chlamydia trachomatis

World Health Organization. (2017). Sexually transmitted infections: implementing the global STI strategy

World Health Organization. (2017). Casting light on old shadows: ending sexually transmitted infection epidemics as public health concerns by 2030: advocacy brief.

World Health Organization (2017). Immunization coverage**,** http://www.who.int/mediacentre/factsheets/fs378/en/

Xiong, M., Lan, L., Feng, T., Zhao, G., Wang, F., Hong, F., & Best, J. M. (2016). Analysis of the sex ratio of reported gonorrhoea incidence in Shenzhen, China. *BMJ open*, *6*(3), e009629

Nursing

Chapter 3

Type 2 Diabetic Patients' Perceptions about Insulin Therapy

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INTRODUCTION

Type 2 diabetes is a common disorder often accompanied by numerous metabolic abnormalities leading to a high risk of cardiovascular morbidity and mortality. The World Health Organization has predicted a rise of 170% in the incidence of diabetes mellitus in the developing world, with an estimated 228 million sufferers in developing countries accounting for as much as 75% of the world's diabetic population by 2025 (Wild *et al.*, 2004).

The results showed that diabetes prevalence and the rate of newly diagnosed diabetes in Southeast Anatolia were above the average for Turkey (Satman *et al.*, 2002; Olgun *et al.*, 2005). The disease shortens life expectancy by approximately 15 years, and 70% of patients with type 2 diabetes die of cardiovascular disease (Kauffmann, 2002). Insulin therapy is integral to the treatment of diabetes mellitus. Results from the UKPDS have confirmed that intensive glucose control delays the onset and retards the progression of microvascular disease and possibly of macrovascular disease in patients with type 2 diabetes (CDC, 2002; Turner *et al.*, 1999). But use of insulin is hampered by barriers common to patients (Funnel & Anderson, 2000; Peyrot *et al.*, 2005; Mudaliar & Edelman 2001). Common barriers among patients include beliefs that insulin is a personal failure, that insulin is not effective, that insulin causes complications or even death, or that insulin injections are painful, as well as fear of hypoglycemia, loss of independence, weight gain, and cost (Funnel & Anderson, 2000).

Determination of the patients' beliefs about insulin treatment may guide the development of management strategies for insulin dependent diabetic patients.

The aim of this descriptive study is determinate of the patients' negative and positive beliefs regarding to insulin treatment.

MATERIALS AND METHODS

Participants: The purpose of this descriptive study is determining of the patients' negative and positive beliefs regarding to insulin treatment. This research was conducted with 78 type 2 diabetes patients. All participants volunteered to take part in this study. The inclusion criteria included: age (18 years or older) and diagnosis (a formal medical diagnosis of type 2 diabetes for at least six months). People who had gestational diabetes, or who had a cognitive deficit (as evaluated by the interviewer when someone called to express interest in participating in the study) were excluded.

Data collection: Data were collected by using the insulin treatment appraisal scale and the questionnaire (including questions about the socio-demographical characteristics) prepared by the researchers.

Insulin Treatment Appraisal Scale (ITAS).

The ITAS was developed by Snoek et al. (10). The instrument assesses both positive and negative attitudes. The respondent is asked to indicate on a 5-point Likert scale to what extent he/she agrees with 20 statements, from "strongly disagree to "strongly agree". The ITAS was conceptualized as a two-dimensional instrument, with "appraisal of insulin therapy" as a single underlying construct, allowing for calculating a total score and two subscale scores.

Statistical analysis

SPSS version 12.01 for Windows was used to analyze the data. For the analysis of data, frequencies, Mann–Whitney U and Kruskal–Wallis tests have been employed.

RESULTS

A comparison of the demographic characteristics of the patients is shown in Table.

Table 1. Characteristics of Patients (N=78)

Characteristics		N	%
Gender	Female	42	53,8
	Male	36	46.2
Education	Illiterate	40	51,3
	literacy	24	30,8
	Primary	8	10,3
	High school	6	7,7
	University	2	2,2
Occupation	Housewife	44	56,4
	Worker	19	24.4
	Officer	10	12,8
	Other	5	6,4
Marital status	Single	5	6,4
	Married	73	93,6
Health Assurance	Yes	78	100.0
HbA1C	Normal	15	19,2
	Little high	15	19,2
	Very high	48	61,5
Insulin applier person	By him/her self	47	60,3
	Partner	12	15,4
	Family members	10	12,8
	Health personnel	9	11,5
Insulin injection number (day)	1 times	5	6,4
	2 times	39	50,4
	3 times	11	14,1
	4 times	23	29,5
Insulin injection method	Flacon	8	10,3
	Pen	70	89,7
Development of diabetes complication	No	25	32,1
	Yes	53	67,9

	Normal	15	19,2
Body Mass Index	High	48	61,5
	Obesity	15	19,2

Seventy-eight participants took part in this study. The mean age of participants was 53.6 ± 8.2 years. Forty-two people (58.8%) were female, 73 people (93.6%) were married and 40participants (51.3%) were illerate. The mean number of years insulin use of the participants was 3.7±2.8 and mean HbA1C value was 10.2±2.8.

Table 2. Distribution of patients thoughts about insulin therapy (N=78)

Item content	**N**	**%**
1. Failed on pre-insulin therapy	34	43.5
2. Diabetes has gotten worse	23	38.5
3. Prevent complications	38	48.7
4. Perceived by others as more sick	20	25.6
5. Life less flexible	16	20.5
6. Fear of injecting with needle	24	30.7
7. Risk of hypoglycaemia	26	33.3
8. Improves health	37	47.5
9. Causes weight gain	27	34.6
10. Takes time and energy	18	23.1
11. Give up activities I enjoy	22	28.2
12. My health will deteriorate	17	21.8
13. Injecting is embarrassing	15	19.2
14. Injecting is painful	34	43.5
15. Difficult to always inject correctly	15	19.2
16. Difficult to fulfil responsibilities	31	39.8
17. Helps to control blood glucose	33	42.3
18. Family/friends more concerned	17	21.8
19. Helps to improve energy levels	26	33.3
20. More dependent on doctor	25	32.1

The patients who were thinking positive about insulin therapy explained their thoughts as such: the majority, 34 (43.5%) thought that they failed on pre-insulin therapy, 38 (48.7%) said that insulin injection prevented complications, 37 (47.5%) of them believed that insulin improved their health and 33 (42.3%) said that insulin helped to control blood glucose. The distributions of negative thoughts of the patients were as

follows: 34 (43.5%) reported that injection was painful, 31 (39.8%) reported that it was difficult to fulfill their responsibilities and 27 (34.6%) reported that the treatment causes weight gain of the negative thoughts.

Table 3. According to the patients characteristics their perceptions about insulin therapy

Characteristics	Perceptions	K.W	df	p
Daily Insulin injection number	*Taking insulin helps to prevent complications of diabetes	10,690	4	0,03
	* Taking insulin means other people see me as a sicker person	15,566	4	0,04
	*Managing insulin injections takes a lot of time and energy	9,391	4	0,05
	*Taking insulin helps to maintain good control of blood glucose	10,525	4	0,03
	*Taking insulin helps to improve my energy level	9,913	4	0,04
Years of insulin use	*Injecting insulin is painful	9,263	4	0,05
Educational level	*It is difficult to inject the right amount of insulin correctly at the right time every day	9,785	4	0,04
HbA1C level	*Taking insulin makes it more difficult to fulfil my responsibilities (at work, at home)	9,957	4	0,04
	*Being on insulin causes family and friends to be more concerned about me	10,940	4	0,02
	*Taking insulin makes me more dependent on my doctor	27,932	4	0,00
Insulin applier person	*Taking insulin helps to improve my energy level	9,706	4	0,04
Development of diabetes complication	*Taking insulin means my diabetes has become much worse	11,656	4	0,02
	*Taking insulin makes me more dependent on my doctor	9,175	4	0,05

As seen in table 3, there were statistical differences between daily insulin injections and the following statements:

1. “Taking insulin helps to prevent complications of diabetes.”
2. “Taking insulin means other people see me as a sick person.”
3. “Managing insulin injections takes a lot of time and energy.”
4. “Taking insulin helps me to maintain a good control of blood glucose levels.”
5. “Taking insulin helps to improve my energy level."

There were statistical differences between duration of insulin application (year) and the statement "injection insulin in painful"; between education levels and the statement "it is difficult to inject the right amount of insulin correctly, at the right time, every day"; between HbA1C levels and the statements: "taking insulin makes it more

difficult to fulfill my responsibilities", "being on insulin causes family and friends to be more concerned about me", and "taking insulin makes me more dependent on my doctor"; "between insulin applier person and "taking insulin helps to improve my energy level"; between insulin applier person and the statement "taking insulin helps me to improve my energy levels"; between the development of diabetic complications and the statements, "taking insulin has made my condition much worse" and "taking insulin makes me more dependent on my doctor" respectively ($p \leq 0,05$).

No significant differences were found between other parameters and statements ($p>0.05$).

It was found that uncomplicated group is less dependent on doctor ($U=454.000, p=0,02$), the upper than to 10 year insulin users were feeling more pain ($U=12.000, p=0,03$), high level HbA1C patients had more difficulties to fulfill responsibilities ($U=231.000, p=0,03$) and 3 times/day insulin users were feeling more energetic ($U=10.000, p=0,05$).

DISCUSSION

The reality that insulin is the most potential drug for available to achieve glycemic targets (Meece, 2006). In this study there were found that patients whose poor controlled diabetes had more negative beliefs regarding to insulin treatment.

As seen table 1and 3 the patients had high HbA1C levels and they had negative beliefs about insulin therapy. These patients had difficulties to fulfil the responsibility that's why they were poor glycemic control. In the DAWN study, a surprising number of patients indicated that they did not believe insulin was effective for treating diabetes (Peyrot *et al.,* 2005). In a survey almost half of the patients believed that insulin therapy would restrict their lives and that they were not capable of managing the demands of the regimen (Polonosky *et al.,* 2005). In this study patients were thought that being on insulin causes their family and friends to be more concerned about them. Patients generally need support from someone. Especially family support plays an important role in the psychosocial adaptation of individuals with diabetes (Wen *et al.,* 2004). Göz and colleagues found that type 2 diabetic patients' perceived social support and QOL increased together (Göz *et al.,* 2007). Another study showed improvements in QOL for patients who initiated insulin therapy and sustained improvements in HbA1C levels (Pibernik *et al.,* 1998). In our study there were found that patients with complications thought that taking insulin means his/her diabetes will become much worse and more dependent on doctor. Patients may believe that insulin is being initiated because the disease has worsened (Polonosky *et al.,* 2005). It results in poorer glycemic control, increased rates of acute and chronic complications, hospital admissions for ketoacidosis, increased risk for mortality, and shortened life span (Goebel *et al.,* 2008). We thought that these patients were more dependent on doctor and need support and education about insulin treatment. The literature indicates that people generally want information regarding both treatments benefits and risks (Astrom *et al.,* 2000; Berry *et al.,* 2001; Ziegler, 2001).

In this study we found upper than to 10 year insulin users were feeling more pain. One study noted that up to 45% patients avoided injecting their prescribed insulin due to perceived fear and anxiety related to pain associated with insulin administration (Zambonini *et al.,* 1999). In Ahmet et al. (2010) study they were found that the majority

of the patients thought that insulin administration would be painful (Ahmad *et al.*, 2010). Although pain of injections is often cited as an initial concern, it is rarely the only the biggest reason of avoiding insulin and is the most easily addressed issue (Rubin & Peyrot, 2001).

There were statistical differences between patients' educational level and their difficulties to inject. Ahmet et al. (2010) indicated that one third of the patients thought it would be difficult to learn the use of insulin. In this study 51.3 % of the patients were illiterate, it means the educational level of the patients were very low.

There were statistical differences between insulin applier people and taking insulin helps to improve my energy level statement however most of the patients were administrated the insulin by them. In literature the authors explained that patients had some difficulties with self-injecting (Mollema *et al.*, 2000). Improving the usability of insulin may be important in initiation therapy and adherence, resulting in clinical benefits to the patient (Arendth *et al.*, 2005).

CONCLUSIONS

In this study we found that the poor controlled diabetes patients had more negative beliefs regarding to insulin treatment and they needed information about how to use insulin. Findings of this study suggest that interventions aimed at increasing insulin therapy use should focus on injection-related concerns, perceived lifestyle adaptations and correction of misconceptions.

REFERENCES

Ahmed, U.S.; Junaidi, B.; Ali, A.W.; Akhter, O.; Salahuddin, M.; Akhter, J. (2010). Barriers in Initiating Insulin Therapy in a South Asian Muslim Community. Diabet Med. 27:(2),169-174.

Arendt, N.L.; Egekvist, H.; Bjerring, P. (2005). Pain Perception of Following Evaluation. The Impact of Needle Gauge. Diabetes 2005; 54, l1:103–420.

Astrom, K.; Carlsson, J.; Bates, I.;, Webb, D.G.; Duggan, C.; Sanghani, P. (2000). Desire for Information about Drugs. A Multi-method Study in General. Medical Inpatients. Pharmacy World & Science 22:(4),159-164.

Berry, D.C.; Knapp, P.; Raynor, D.K. (2002). Provision of Information about Drug.Side-Effects to Patients Lancet 359: (9309),853-854.

CDC Diabetes Cost-Effectiveness Group. (2002). Cost-Effectiveness of Intensive Glycemic Control, Intensified Hypertension Control, and Serum l Cholesterol Level Reduction for Type 2 Diabetes. JAMA 287, 2542-2551.

Funnell, M.M.; Anderson, R.M. (2000). The Problem with Compliance in Diabetes. JAMA 284,1709.

Goebel-Fabbri, A.E.; Fikkan, J.; Franko, D.L.; Pearson, K.; Anderson, B.J.;

Göz, ; Karaoz, S.; Goz, M.; Ekiz, S.; Cetin, I. (2007). Effects of the Diabetic Patients' Perceived Social Support on their Quality-of-Life. J Clin Nurs. 16:(7),1353-1360.

Kaufman FR. (2002). Type 2 Diabetes Mellitus in Children and Youth: A NewEpidemic. J Pediatr Endocrinol Metab 15:(2),737–744.

Mellitus: Progressive Requirement for Multiple Therapies (UKPDS49). JAMA 281, 2005-2012.

Meece J. (2006). Dispelling Myths and Removing Barriers about Insulin in type 2 Diabetes. The Diabetes.32,9–18.

Mollema, E.D.; Snoek, F.J.; Pouwer, F.; Heine, R.J.; Vander, P. H.M. (2000). Diabetes Fear of Injecting and Self-Testing Questionnaire: a Psychometric Evaluation.Diabetes Care 23:(6),765-769.

Mudaliar, S.; Edelman, S.V. (2001). Insulin Therapy in type 2 Diabetes. EndocrinolMetab Clin North Am. 30, 935–982.

Olgun, N.; Özcan, S.; Pek, H.; Yılmaz, T.; Erdoğan, S.; Oktay, S. (2005). Preliminary report of the Southeastern Anatolia Diabetes Project: Activities of the Diabetes Nursing Assosiation. European Diabetes Nursing 2,71-78.

Peyrot, M.; Rubin, R.R.; Lauritzen, T.; Skovlund, S.E.;, Snoek, F.J.; Matthews.D.R (2005). The International DAWN Advisory Panel: Resistance the Insulin There Among Patients and Provides: Results of the Cross-National, Diabetes Attitudes, Wishes and Needs Study. Diabetes Care. 28, 2673–2679.

Pibernik, M.S.; Metelko, Z. (1998). Quality of life Following a Change in Therapy for Diabetes Mellitus. Pharmacoeconomics 14, 201-207.

Polonosky, W.H.; Fisher, L.; Guzman, S. (2005). Psychological Insulin Resistance in Patients with type 2 Diabetes. The Scope of the Problem, Diabetes Care 282543–2545.

Rubin, R.R.; Peyrot, M. (2001). Psychological Issues and Treatments for Peoplewith Diabetes. J Clin 57,457-478.

Satman, İ; Yılmaz, T.; Şengül, A.; Salman, S.; Salman, F.; Uygur, S. (2002). Population-Based Study of Diabetes and Risk Characteristics in Turkey: Results of the TURDEP. Diabetes Care 25,1551-1556,

Turner, R.C.; Cull, C.A.; Frighi, V.; Holman, R.R. (1999). UK Prospective Diabetes Study (UKPDS) Group. Glycemic Control with Diet, Sulphonylurea, Metformin, or Insulin in Patients with type 2 Diabetes

Weinger, K. (2008). Insulin Restriction and Associated Morbidity and Mortality inWomen with type 1Diabetes. Diabetes Care 31,415– 419.

Wen, L.K.; Shepherd, Parchman, M.L. (2004). Family Support, Diet, and Exerciseamong OlderMexican Americans with type 2 Diabetes. The Diabetes Educator 30980–993.

Wild, S.; Roglic, G.; Green, A.; Sicree, R.; King, H. (2004). Global Prevalence of Diabetes: Estimates for the Year 2000 and Projections for 2030. Diabetes Care 27:(5), 1047-1053.

Zambanini, A.; Newson, R.B.; Maisey, M.; Feher, M.D. (1999). Injection Related Anxiety in Insulin-Treated Diabetes. Diabetes Res Clin Pract 46:(3), 239-46

Ziegler, D.K.; Mosier, M.C.; Buenaver, M.; Okuyemi, K. (2001). How Much Information about Adverse Effects of Medication do Patients Want from Physicians? Arch Intern Med 161: (5),706-713.

Chapter 4

Cancer Psychology

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INTRODUCTION

At present, cancer is the most frightening disease that brings about multiple therapies and threatens the daily lives of individuals. An individual is a biological and psychological being and fulfilling his/her psychological requirements during and after his/her treatment is very important.

Negative feelings and thoughts develop in patients and relatives after receiving cancer diagnosis. The reactions to the treatment process that are given by each patient are different. The order of the periods of denial, anger, bargaining, depression and acceptance shows individual differences according to the status of resilience of patients. In addition to surgical intervention, chemotherapy and radiotherapy, patients' and their relatives' ability to be strong and their efforts in engaging with the problem is very significant to cope with the disease. The sub-discipline of cancer psychology examines the effects of psychological and behavioural factors, and help patients in feeling good with the aid of individual psychotherapy and psychological education.

Despite the general belief that cancer would cause destructive and negative effects on every individual, it is being suggested at present that it is possible to overcome this disease and even get through and end this process becoming stronger. The psychological resilience that is achieved by successful adaptation to diseases such as cancer is an important factor that initiates the process of positive thinking against traumatic experiences and provides a developmental adaptation to changing living conditions. Psychological health can provide compliance during the individual's cancer experience as it provides the power for successfully maintaining mental health when encountering with risk factors. Positive experiences such as happiness, hope and optimism are closely related to the psychological health. It is emphasized that having the ability to cope with cancer is the basis for individual growth and psychological well-being. Studies on being psychologically good have increased positive experiences in patients and reduced their psychosocial problems by positively influencing their compliance levels. Individuals with high levels of post-traumatic growth attain an improved psychosocial well-being with the aid of positive thinking. After being diagnosed with cancer, people often have the opportunity to give a meaning to the cancer, look through their lives critically and think and think about what they have done where and what they want to give up. For this reason, they often start to think more

* Case Study 1 and 2: Orlando I.J. (1961). The Dynamıc nurse-patient relationship. Translation. A, Özcan; N,Platin. Vehbi Koç Vakfı. İstanbul.

positively after living through a cancer experience. The psychological support is of capital importance for cancer patients to embrace and fight the situation they are in.

Cancer and Its Stages

Cancer is a disease with uncertainties and it runs through minds painful death and creates guilt and panic. Lung cancer, colonic cancer, head and neck cancers, skin, breast, cervix, bone and soft tissue cancers, lymphomas, and prostate cancer are the most common cancer types.

The individuals, who are diagnosed with cancer, usually respond with shock initially. The patient becomes alienated to himself/herself and tries to protect his/her personal integrity by denying the disease. While the individual has difficulty in accepting this situation, he/she continues to deny the disease at the same time. The bases of anxiety of the individual who accepts the disease, are the sense of extinction, thoughts of separation and death, feelings of misfortune and anger towards his/her body that results from not being able to answer the question of "Why me?" This anger is reflected upon doctors, healthcare professionals and relatives. The person feels guilty by questioning what mistake he/she has made to deserve this disease. Since his/her notions of body are distorted, he/she may think that he/she would never be physically intact again. It is difficult for the individual who is worried about the disease and experiencing crisis to develop ways of accepting and coping with the truth. Later on, in the negotiation stage he/she experiences, he/she gives up questioning "Why me?" and starts to use expressions such as "I will beat the cancer!" With the aid of this belief, an increase in the process of compliance with the treatment is observed. The patient begins to believe in himself step by step, and feels stronger. In the depression state, they realize that it is not easy to get rid of the disease completely with the self-confidence they felt in the previous phase. After this awareness, they may experience a sudden decline that differs from individual to individual. In the latest stage of acceptance, which is the latest stage, the thoughts of getting together and standing upright are formed. With these thoughts, the individual begins to think more positive and feels hopeful. The duration of these stages varies from person to person.

The individual who has the power of optimism leaves his complaints about him/herself and his/her social environment that he/she has accused for causing the disease, directs his/her energy and spiritual power to his/her life, learns to live with his/her illness; accepts the treatment program; believing that he/she will recover the disease, he/she goes into search for trust and balance. Cancer patients may exhibit complications such as panic and anxiety disorders, personality change, adaptability difficulties, tendencies of alcohol and drug abuse, and temporary brain syndrome in case of advanced phases of cancer treatment. According to Özkan (2003) factors that should be taken into account when assessing psychological status of cancer patients can be summarized as the features of the disease, personal traits of the patients and their psychosocial environment.

Cancer and Depression

Depression is observed frequently in cancer patients. During cancer diagnosis and treatment process, the patient develops severe anxiety and feelings of helplessness. Depression develops in patients who experience difficulties in adapting to cancer. The patient first denies it; later on he/she starts to experience anger, anxiety, attention deficit and restlessness. The cancer patients, who are in depression, have negative body image,

thoughts of hopelessness, worthlessness, and guilt, distraction, reluctance, irritability, and thoughts of death-suicide. The most commonly mentioned psychopathology is the major depression (MD). Berard (2001) in his study, states that the MD is an important psychiatric disorder that should be taken into account in cancer patients and it influences the patient's quality of life, his/her self-care, his/her compliance with the treatment the cancer's response to treatment over time.

Mete & Önen (2001) reported that the most common risk factors for depression in cancer patients are the history of psychiatric disorder, low self-esteem, excessive emotional stress and lack of emotional support during diagnosis. Other risk factors include alcohol abuse, inadequate pain control, other concomitant medical conditions and the use of chemotherapeutic agents which may cause depression (Sertöz and Mete, 2004). Symptoms of depression observed in cancer patients can be summarised as loss of interest and pleasure, excessive nervousness, distress, nausea, fatigue, somatic complaints, crying, pessimism, forgetfulness, attention deficiency, sleep disturbances, tension, restlessness, becoming introverted alcohol use, fear of death, and suicidal thoughts. Factors that increase the risk of depression in cancer patients are the history of depressive disorder or alcoholism, cancer being in the advanced stage, lack of social support, inability to control pain, certain medicines used in treatment and other concomitant diseases. Since the depression that is being experienced accelerates the decline of the immune system, the involvement of the person in the treatment becomes impaired.

Cancer and Anxiety Disorders

Anxiety attacks are seen frequently in cancer patients during the periods of diagnosis and crisis. The anxiety becomes more intense in the diagnosis phase, when waiting for the results of the examination, before a new treatment, when changing the treatment, when a new symptom occurs, when the disease recurs, and when the changes evoking the disease are experienced. Psychological, behavioural and cognitive symptoms in this regard should be paid greater importance than the physiological findings.

According to Özkan, (1993) in cancer patients suffering from anxiety disorder, helplessness, reluctance to live, fears associated with the disease process and its end, lack of self-esteem, and concerns about body image are seen. The main symptoms of anxiety disorders are insomnia, hypersensitivity, attention problems, intolerance, panic attacks, shortness of breath, heart palpitations, sweating, dry mouth, and dizziness. The thoughts such as that the functions and look of patient's body would change, that he/she would become depended in his/her social environment and that the people in his/her social environment would abandon him/her increase the anxiety in the cancer patients. According to Özkan (1993) the important elements that create anxiety are thoughts about the meaning and nature of the disease, fear of death, desperation, thoughts of deprivation of help, the worries of losing one's mind, and thought of becoming depended in one's social environment.

Anuk, (1997) in his study where he examined the anxiety and depression scores of male and female cancer patients; while he noted that the depression scores of female patients were higher than male patients, he did not find any difference between the anxiety levels of the two groups. Again, in the same study, the anxiety and depression scores of the patients who stated that they did not have spouse support and that they

could not share their feelings and thoughts about their illnesses with their spouses were found higher. When a patient is diagnosed with cancer, he/she experiences psychological collapse and his/her immune system falls back. The patient's attendance in the treatment becomes difficult as a result of the negative impact on his/her psychology. Emotional and psychological collapse causes cancer to accelerate while at the same time reducing the effect of treatment. For this reason, it is aimed to keep the mood and psychology of the patient high during the treatment process.

Psychosocial Oncology

When the history of cancer treatment was examined, it can be seen that the importance of early diagnosis of cancer was understood in the 1930's, and the effects of chemotherapy on the disease were started to be investigated in the 1950's. In the 1980s, considering cancer as a treatable disease, the studies, which emphasise the importance of feeling good for cancer patients became prominent. Psycho-oncology, which examines cancer from psychiatric and psychosocial perspectives, emerged. The sub-discipline of cancer psychology examines the effects of psychological and behavioural factors.

It is aimed to facilitate patients' compliance by reducing their anxiety, increase their quality of life, to enable them to express their feelings and thoughts comfortably and to cope with the negative thoughts created by the disease by providing psychological support.

Tedeschi & Calhoun (2004) states that although there is a general consensus that cancer would cause destructive and negative effects on every individual, today it is possible to overcome this disease and even get through and end this process becoming stronger. Luthar et al. (2014) report that resilience, which provides successful adaptation to the disease such as cancer, is a major factor initiating the positive thought process related to traumatic experiences and enabling developmental adaptation to changing life circumstances. Hijemdal (2007) states that the psychological health concept gives the individual the power to protect his/her mental health and thus facilitate the personal growth and adaptation during the cancer experience. Cohrs et al. (2013) states that positive experiences bringing happiness, hope, optimism, are closely related to psychological health.

In their study, Benish-Weisman et al. (2013) emphasise that, having the ability to cope with cancer provides a solid ground for personal growth and psychological health.

The studies of Loscalzo et al. (2011), Mitchell et al. (2011); Stanton (2012) on resilience have increased positive experiences in patients and reduced their psychosocial problems by positively influencing their compliance levels. Individuals with high levels of post-traumatic growth attain an improved psychosocial well-being with the aid of positive thinking.

Psycho-oncology, which deals with the psychosocial aspects of cancer patients by increasing their quality of life, has been developed in recent years. As stated by Turan (1992) the rate of the distribution of psychiatric disorders in oncology patients varies between 50% and 70%. The due importance has started to be given to these psychiatric disorders in Turkey. Developments related to psycho-oncology such as changes in the approach of oncologists towards cancer patients and the increase in the number of psycho-oncology units currently happening in Turkey. It is reported in the literature that 47% of cancer patients are also diagnosed with psychiatric disorders. Özkan, (1993;

2003) emphasises that depression and organic brain syndrome are the most frequently seen psychiatric disorders. Based on his observations, he states that psychological disorders may vary according to the type of cancer and that the most common disorder is compliance disorder. He elaborates this idea with the examples that depressive disorder is seen frequently in pancreatic cancer and delirium in patients with brain involvement. There is no definite answer for whether the patient should be informed about the diagnosis of cancer in the literature. Özkan, (1993; 2003) states that in the United States, 97% of doctors find appropriate to inform the patient about the diagnosis. In Europe and eastern countries, it is appropriate not to inform the patient about the diagnosis.

According to Özkan (2003) the diagnosis should be told patient gently by a specialist and the patient should be informed about treatment options and social support he/she can get. On the other hand, Turan (1992) states that the patient should be informed by an oncologist and in the presence of his relatives, and that this group should be accompanied by a psychiatrist, psychologist or a social service specialist. When informing the patient about the diagnosis, the type and the severity of the disease, the personal traits of the individual and the culture in which it lives should be taken into consideration. There are problems related to the way the information about cancer is given and not given. According to Turan (1992), the lack of communication between the patient and the oncologist is the main problem that causes the oncologist to give incomplete information and therefore cause the patient to try to acquire knowledge from different sources. These problems can be solved by making the information available at the appropriate time and using the appropriate method. This is possible with spending time with the patient, psychotherapy and pharmacotherapy. Individuals who have been diagnosed with cancer develop an adaptation effort using their own specific coping mechanisms. They usually pass through the stages of shock, denial, anger, grief and acceptance. These processes are also affected by the social support. Psychological assistance should be provided when the patient's own coping mechanisms become inadequate. Psychological disorders seen in cancer patients differ according to sex. According to Turan (1992) anxiety disorder has been noted by a high degree in women. In Europe and the United States, patients are often given the right to decide about their care. It is thought that this affects the psychosocial dimension of the disease and it is suggested to give due importance to this issue. Because of the risk of recurrence of the disease, psychological support should be maintained after the treatment. In Turkey, because the studies in psycho-oncology are new and inadequate, group therapies have been practiced very recently. Post-treatment social support should be given between 1 and 5 years according to the patient. Although there are different opinions about whether psychological disorders cause cancer, the research of Anuk, (1997) and Ateşçi et al., (2003) has shown that psychological disorders may lead to cancer.

Özkan (1999) in his study, states that encouraging the expression of the negative emotions and reactions that are brought with cancer, increasing the quality of life by providing psycho-social harmony, strengthening the relationship between patient, family and social interaction areas are psychological support activities, and for this reason psycho-social treatment towards the family of the patient are also important.

The losses in hair, eyebrows and eyelashes as a result of chemotherapy can cause major psychological problems, especially in female patients. When the support

provided by relatives and friends of the cancer patient is not enough, psychologists may be applied. In situations where patients feel alone and desperate, psychologists can come in and provide the psychological support needed for the patient to continue the treatment. In addition to this, psychologists who provide support to the relatives of the cancer patients are definitely the ones who need to be consulted when dealing with this disease.

Cancer causes family of the patient to experience a crisis likewise it causes troubles to the person who lives with cancer. Difficulties arise in the relationship between the patient and the family. In families, in which the relationships are well-balanced, emotions are allowed to be expressed freely, conflicts are fewer, and the degree of co-operation is high, the patient's adjustment is the best. In addition to cancer patients, families often need psychological support and treatment. In summary, psychological treatment and support during and after the entire illness process would support all of these challenging processes and increase the quality of life of individuals and effectiveness of the treatment. The body, the brain and the soul constitute a whole. The problems in the body affect the brain, this is reflected on the soul and the stress experienced influences the body in turn. Psychological status plays a role in the emergence of cancer. On the other hand, negative thoughts also affect the course of the illness. Serious challenges, emotional conflicts, chronic stress, traumas, losses, desperateness and mourning situations, by reducing the resistance of the individual, cause failure in stress management and acceleration in the current cancer process.

Common psychiatric disorders that cancer patients may experience include adjustment disorders, anxiety disorders, depressive syndromes, organic brain syndromes and personality disorders. One of the two cancer patients needs psychological support. After being diagnosed with cancer, the patient experiences a crisis; his/her ego, homeostatic balance and perspective of life are affected. The most appropriate medical service for cancer patients is possible by providing physical therapies and care together with psychiatric treatment and psychosocial care as a synchronous and coordinated team. People who are being treated for cancer may feel exhausted and unable to continue to fight after severe chemotherapy sessions.

The fact that cancer is an important disease that threatens life affects both the patient and his/her relatives psychologically. Patient’s concern for the future, his/her life ideals being threatened, the fact that power and control are not enough for everything, changes in social roles, changes in body image such as organ loss or hair loss, and feelings of dependence and needy cause anxiety in the patient and his/her relatives. According to the organ affected by the disease; it is known that psychological problems of disease perception and examination processes and psychological problems due to side effects of treatments can be experienced as well. The improvement in the psychological status of the patients and the positive view that they gain also increase their quality of life and the chances of success in their treatments. Being able to adapt to the illness process that suddenly occurs in a healthy life, feeling good in physical and mental terms, increasing the power of challenge is possible with these supportive treatments. In addition to that; the power to cope with and challenge the physical and mental complaints such as anxiety, unrest, depression, insomnia, fatigue, nausea and pain, need to increase. For this, it is very important to provide psychiatric support for family members living in a similar crisis in order for their participation in the patient

support system in a healthy manner, for sharing responsibilities and for reinstating the order in business and economic life. In addition to medical treatments for psychiatric disorders, cancer training, individual and family therapies and therapies conducted with people who share similar concerns are helpful in relieving stress during this challenging process. It should not be forgotten that the most important condition of having a healthy body is that the person feels good and has psychological stability.

Post-Traumatic Recovery and Psychological Resilience

Because recovering from a hard process like cancer increases psychological resilience, a complementary relationship emerges between post-traumatic recovery and psychological resilience. In their studies, Connerty & Knott (2013); Yi & Kim (2014); Gunst et al. (2016) state that this can significantly affect the well-being of individuals, and the cancer process can be evaluated even more positively.

Tedeschi and Calhoun, in their study that they made in (2004) and (2014) define recovery, which can occur after trauma, as a positive development in the perspective of living with personal change after life crises. Moreno & Stanton (2013) emphasize that this phenomenon is very important for individuals to survive through the experience of cancer, which may have the traumatic effects, with the least damage and empowerment. Tedeschi & Calhoun (1996); Luszczynska et al. (2012); Morris et al. (2012); Benish-Weisman et al. (2013); Moreno & Stanton (2013) point out that having the ability to overcome cancer diagnosis, constitutes an opportunity for personal recovery and psychological health. Having the experience of recovery; reduces the symptoms of depression and anxiety, provides high levels of emotional well-being, makes positive effects on life philosophy, and as a result, increase in psychological resilience and empowerment becomes possible. Certain scholars, who hypothesise and research that psychological resilience and post-traumatic recovery support each other identified that there is a significant positive relationship between post-traumatic growth and psychological resilience (Li et al. 2015). Büyükaşık-Çolak et al. (2012) stated that individuals having psychological resilience have more tendency to use problem-focused strategies to cope with stress and that this makes the ground for the realization of post-traumatic growth.

Psychological resilience; is composed of a set of personal traits such as optimism, personal development, positive feelings, consistency, and effective coping skills. According to Tedeschi & Calhoun (2004); Agaibi &Wilson (2005); Souri & Hassanirad (2011) individuals with a higher level of psychological resilience have the ability to alleviate the effects of trauma. This situation allows the individual to see traumatic situations less threatening to the self and the worldview, and enables them to gain new experiences after challenging events by providing emotional balance (Oginska-Bulik 2015).

On the other hand, Bonanno (2004) indicated that being psychologically well allows the individual to recover after trauma because it allows them to protect their strength despite all the difficulties they face. The studies indicate that even after the negativities associated with cancer, recurrences and / diffusion, resilience and post-traumatic growth plays an important role in individual's ability to restore him/herself, and development of his/her faculties of seeing the positive sides and benefitting from it despite these drawbacks (Tedeschi & Calhoun, 1996; 2004); (Gunstein et al. 2016).

Tedeschi & Calhoun (2004); Oginska-Bulik (2015) explain that during the post-

traumatic recovery process the meaning attached to the event is made more functional and cognitive schemas are reconstructed by re-processing the traumatic event. Westphal & Bonanno (2007) revealed out that many individuals who have high level of psychological resilience, do not experience coping problems when faced with traumatic events and demonstrated that this case improves the realization of recovery.

In order to increase the psychological resilience and pave the way for post-traumatic growth in cancer, the primary concern that needs to be taken into consideration is recognition of the unique characteristics and returns of the cancer experience by the individual, their acceptance; and supporting the individual by health personnel in identifying and meeting existing biological, psychological and social needs of the individual at this time. Van der Spek et al. (2013) emphasized that the teaching of skills to increase the psychological resilience of individuals during the anxiety experience can also contribute to the increase of post-traumatic growth and to the emergence of individuals with least harm and strength from their traumatic experiences, in parallel with the increase of the strength.

As a result of the study that they have conducted with individuals with cancer, they have determined that the initiatives towards the empowerment of the individuals increase the psychological resilience, optimism and well-being of the participants. Stewart and Yuen (2011) in their research, discovered that the individuals, who have increase their psychological resilience and recovered after trauma, have increased their self-efficacy and self-esteem.

In their studies, Howell et al. (2012), Hudson et al. (2012), Schmidt et al. (2012), Kwak et al. (2013) stated that, despite its adverse and undesirable effects, life-threatening conditions such as cancer pave the way for the improvement of psychological resilience and realization of psychological growth and make positive contributions to individual's life without leaving traumatic influences, only when adequate support is provided.

Psychological resilience and post-traumatic growth; are of capital importance for individuals to recuperate from cancer, which may have traumatic effects, with least damage. The existence of psychological resilience, which is an important factor in coping adequately and effectively with psychosocial problems that can be experienced by the individuals, who are diagnosed with cancer, and the emergence of growth after trauma, increase their adaptability to the process by providing support to individuals to see the positive aspects of the process as well as its negative effects.

CONCLUSIONS

Cancer treatment requires a multidisciplinary approach involving oncologist, psychiatrist, psychologist, social worker, nurse and dietician. Oncology staff should deal with the individual, who struggles with many biological, psychological and social problems, with sympathy, tolerance and be approachable. The health services personnel who provide psychosocial support should ensure that the patient clearly expresses his/her problems, inform the patient about the difficulty that the illness and treatment may cause, and determine the psychosocial needs of the patient and ensure the fulfilment of these needs. Individuals, who have received cancer treatment, should see the disease as a chronic disease and make appropriate changes in their life. Briefly, these changes include bodily requirements such as going to the controls in time, using

the necessary medicines, eating properly, living in appropriate physical conditions and doing the necessary exercises as well as psychosocial changes.

Taking into account the known adverse effects of stress on our health, it is advised that the individual, who have received cancer treatment, should choose a stress-free lifestyle or a life where the stress factors can be reduced to minimum. It is suggested that the individual should keep away from persons, environments and relations who are not good to him / herself as well as participate in activities that will be enjoyable in life and spend quality time with his/her loved ones.

Each patient experiences cancer in her own way. For this reason, relatives of the patient should often show their love, interest, worth and compassion by asking questions such as "How are you?", "What do you need?" and it is like a psychological medicine against cancer.

In Cancer Patients;

Patients should be allowed to express their feelings; they should be listened to; empathic communication must be established, suitable environments for this should be prepared.

The patient's needs should be given importance, his / her speech about his / her illness should not be avoided but instead supported by unencumbered open-ended questions.

Instead of morale boosting talking, cliché words, recommendations, behaviours of persuasion and persistence, conversations encouraging the patient, and raising his/her will to live and optimism should be made.

The relatives of patients should be informed about the importance of psychological resilience and in this regard necessary support should be provided.

Taking into consideration the fact that everyone's point of view is different in terms of disease due to individual differences, avoiding comparisons and associations should be avoided and supporting personal growth and psychological resilience should be emphasized.

A better understanding of the relationships between the concepts of post-traumatic growth and psychological resilience and the planning of approaches to improve psychological resilience and post-traumatic growth in individuals, who experience cancer, are crucial in overcoming the cancer process better. In this way, it would be possible to increase the compliance by reducing the possibility of experiencing psychosocial problems during the cancer experience. The strong relationship between psychological resilience and post-traumatic growth should be taken into account for better quality cancer treatment.

To conclude, more emphasis should be placed on new studies on cancer psychology and on the studies which would enhance positive experiences in patients and their relatives and make life meaningful.

REFERENCES

Agaibi, CE. & Wilson, JP. (2005). Trauma, PTSD, and Resilience: A Review of the Literature. Trauma Violence Abuse 6:195-216.

Anuk, D. (1997). Kanser Hasta ve Eşlerinin Anksiyete Depresyon Düzeyleri ile Evlilik Niteliğinin Sosyal Çalışma Açısından Araştırılması. İstanbul Üniv. Yayınlanmamış Yüksek Lisans Tezi, İstanbul.

Ateşçi, F.Ç.; Oğuzhanoğlu, N. K.; Baltalarlı, B.; Karadağ, F.; Özdel, O. ve Karagöz, N. (2003). Kanser Hastalarında Psikiyatrik Bozukluklar ve İlişkili Etmenler. Türk Psikiyatri Dergisi 14(2), 145-152.

Benish-Weisman, M.; Wu, L.M.; Weinberger-Litman, S.L.; Redd, W.H.; Duhamel, K.N.; Rini, C. et al. (2013). Healing Stories: Narrative Characteristics in Cancer Survivorship Narratives and Psychological Health Among Hematopoietic Stem Cell Transplant Survivors. Palliat Support Care 12:261-267.

Berard, R.M. (2001). Depression and Anxiety in Oncology: The Psychiatrist's Perspective. J Clin Psychiatry 62:58-61.

Bonanno, G.A. (2004). Loss, Trauma, and Human Resilience: Have We Underestimated the Human Capacity to Thrive after Extremely Aversive Events? Am Psychol 59:120-128.

Büyükaşık-Çolak, C.; Gündoğdu-Aktürk, E.; Bozo, O. (2012). Mediating Role of Coping in the Dispositional Optimism–Posttraumatic Growth Relation in Breast Cancer Patients. J Psychology 146:471-483.

Cohrs, J.C.; Christie, D.T.; White, M.P.; Das, C. (2013). Contributions of Positive Psychology to Peace toward Global Well-Being and Resilience. Am Psychology 68:590-600.

Connerty, T.J. & Knott, V. (2013). Promoting Positive Change in the Face of Adversity: Experiences of Cancerand Post-Traumatic Growth. Eur J Cancer Care 22:334-344.

Gunst, D.C.M.; Kaatsch, P.; Goldbeck, L. (2016). Seeing the Good in the Bad: Which Factors Are Associated with Posttraumatic Growth in Long-Term Survivors of Adolescent Cancer? Support Care Cancer 24:4607-4615.

Hjemdal, O. (2007). Measuring Protective Factors: The Development of Two Resilience Scales in Norway. Child Adolesc. Psychiatr. Clin. N Am 16:303-321.

Howell, D.; Hack, T.F.; Oliver, T.K.; Chulak, T.; Mayo, S.; Aubin, M. et al. (2012). Models of Carefor Post-Treatment Follow-Up of Adult Cancer Survivors: A Systematic Review and Quality Appraisal of the Evidence. J Cancer Surviv 6:359-371.

Hudson, S.V.; Miller, S.M.; Hemler, J.; Ferrante, J.M.; Lyle, J.; Oeffinger, K.C. et al. (2012). Adult Cancer Survivors Discuss Follow-Up in Primarycare: 'Not What I Want, But Maybe What I Need'. Ann Fam Med 10:418-427.

Kwak, M.; Zebrack, B.; Meeske, K.A.; Embry, L.; Aguilar, C.; Block, R. et al. (2013). Prevalence and Predictors of Post-Traumatic Stres Symptoms in Adolescent and Young Adult Cancer Survivors: A 1-Year Follow-Up study. Psychooncology 22:1798-1806.

Li, Y.; Cao, F.; Liu, J. (2015). Nursing Students' Post-Traumatic Growth, Emotional İntelligence and Psychological Resilience. J Psychiatr Ment Health Nurs 22:326-332.

Loscalzo, M.; Clark, K.L.; Holland, J. (2011). Successful Strategies for İmplementing Bio Psychosocial Screening. Psychooncology 20:455- 462.

Luszczynska, A.; Durawa, A.B.; Dudzinska, M.; Kwiatkowska, M.; Knysz, B.; Knoll, N. (2012). The Effects of Mortality Reminders on Posttraumatic Growth and Finding Benefits Among Patients with Life-Threatening İllness and their Caregivers. Psychol. Health 27:1227-1243.

Luthar, S.S.; Lyman, E.L.; Crossman, E.J. (2014). Hand Book of Developmental

Psychopathology. M. Lewis & K.D. Rudolph (Eds.)125-126.
Mete, H.E.; Önen, Ö. (2001). Kanserli Hastalarda Depresyon. Duygu durum Dizisi 4:184-191.
Mitchell, A.J.; Vahabzadeh, A.; Magruder, K. (2011). Screening for Distress and Depression in Cancer Settings: 10 Lessons from 40 Years of Primary-Care Research. Psycho-oncology 20:572-584.
Morris, B.A.; Shakespeare-Finch, J.; Scott, J.L. (2012). Posttraumatic Growth after Cancer: The Importance of Health Related Benefits and new Found Compassion for Others. Support Care Cancer 20:749-756.
Oginska-Bulik, N. (2015). The Relationship Between Resiliency and Posttraumatic Growth Following the Death of Someone Close. Omega (Westport) 71:233-244.
Özkan, S. (1999). Psikiyatrik ve Psikososyal Açıdan Kanser. Konsültasyon-Liyezon Psikiyatrisi Kongre Kitabı, Özkan S (Ed.) s.140-153, İstanbul.
Özkan, S. (1993). Psikiyatrik Tıp: Konsültasyon-Liyezon Psikiyatrisi. s.2-3. Roche. İstanbul.
Özkan, S. (2003). Meme Kanserli Hastaya Psikolojik Yaklaşım, Yaşam Kalitesi. Meme Kanseri. I. Baskı. s.681-690. Nobel. İstanbul.
Schmidt, S.D.; Blank, T.O.; Bellizzi, K.M.; Park, C.L. (2012). The Relationship of Coping Strategies, Social Support, and Attachment Style with Posttraumatic Growth in Cancer Survivors. J Health Psychol 17:1033-1040.
Sertöz, Ö.Ö. & Mete, H.E. (2004). Bedensel Hastalıklarda Depresyon. Klinik Psikiyatri Ek 2:63-69.
Souri, H. & Hassanirad, T. (2011). Relationship between Resilience, Optimismand Psychological Well-Being in Students of Medicine. Procedia Soc Behav Sci 30:1541-1544.
Stanton, A.L. (2012). What Happens Now? Psychosocial Care for Cancer Survivors after Medical Treatment Completion. J Clin Oncol 30:1215-1220.
Stewart, D.E. & Yuen, T. (2011). A Systematic Review of Resilience in the Physically Ill. Psychosomatics 52:199-209.
Tedeschi, R. & Calhoun, L. (1996). The Posttraumatic Growth Inventory: Ensuring the Positive Legacy of Trauma. J Trauma Stress 9:455-472.
Tedeschi, R.G. & Calhoun, L.G. (2004). Posttraumatic Growth: Conceptual Foundations and Empirical Evidence. Psychol Inq 15:1-18.
Tedeschi, R.G. & Calhoun, L.G. (2014). Handbook on Posttraumatic Growth Research and Practice. Psychology. New York.
Turan, A.H. (1992). Kanser Hastalarında Anksiyete, Depresyon, Uyum Güçlüğü Prevelansı ve Bunların Psiko-Sosyal Durumla İlişkisinin İncelenmesi. İstanbul Üniv. Onkoloji Enstitüsü Yüksek Lisans Tezi, İstanbul.
Westphal, M. & Bonanno, G.A. (2007). Posttraumatic Growth and Resilience to trauma: Different sides of the Same Coin or Different Coins? Appl. Psychol. 56:417-427.
Yi, J. & Kim, M.A. (2014). Post Cancer Experiences of Childhood Cancer Survivors: How is Posttraumatic Stress Related to Posttraumatic Growth? J Trauma Stress 27:461-467.

Chapter 5

The Professional Benefits to Nurses and Midwives of Providing Care to Foreign Patients and the Difficulties Encountered*

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INTRODUCTION

For many reasons, such as globalization, political, economic and social factors, wars, ethnic conflicts, environmental crises, economic collapse, oppressive regimes, natural disasters, unemployment and the search for a better life, as well as tourism, there is a rapid geographical movement of the populations of countries. One result of this is that many people, willingly or unwillingly, migrate within a country or from one country to another. This geographical movement brings together people of different cultures and results in a multi-cultural structure of society (Temel, 2008). This increasing cultural variety affects the quality of health care (Terkeş & Bektaş, 2013; Surbone & Baile, 2010).

Culture is defined as all of the material and spiritual values created in the course of social development and the totality of the means used to create these and transmit them to future generations, and which show the domination of human beings over the natural and social environment (Kırışoğlu, 2002).

It is necessary that health services should accord with cultures to an extent which is in agreement with a modern understanding of medicine (Cirhinlioğlu, 2001). Culture affects people's perception of the importance of early diagnosis, their expectations, their health knowledge, their health beliefs and practices, their perception of health, their health behavior, their acceptance of illness, their use of health services, the way they communicate with health staff, their views of the roles of health professionals, the way they perceive their own roles and responsibilities, and their conformance with health care recommendations and their acceptance of treatment (Karabudak *et al.*, 2013; Clark, 2003).

*This study was presented at the Adnan Menderes University, I. Health Science Congress held on June 29 and July 1, 2017.

Passing on and preserving as a culture the knowledge and skills which have been amassed and developed by health workers in order to provide care is a dynamic process and in this process the care initiatives taken by health workers are formed consciously or unconsciously as an effect of their accumulation of culture (Karbudak *et al.,* 2013).

In providing cultural care, it is important to recognize cultural characteristics and to possess culture-specific knowledge (Sevil *et al.,* 2012). Cultural interactions between health workers and foreign patients to whom they are providing care may be very different form one another (Temel, 2008). Lack of knowledge of the culture of those to whom they are providing care on the part of health workers, differences from their own culture, the use of complex technology, fear of care areas, resistance, disappointment experienced by health staff or an increase in awareness of their social rights have a negative effect on care quality and make cultural competence necessary in care (Douglas *et al.,* 2011; Taylor & Lurie, 2004). This necessity increases the need for health workers who can provide care with competence in world culture (Öztürk, 2003).

Recognition and assessment by health workers and especially nurses and midwives of the cultural make-up of the individuals to whom they provide care plays an important role in raising care quality. Despite cultural differences and health beliefs having been long accepted in practice and having been adequately incorporated into theoretical knowledge, health care with a cultural content is unfortunately neither nor widespread (Duffy, 2001). Today, although nurses and midwives who take on important roles in care giving largely understand the need for cultural care, they do not have knowledge either of what cultural care entails or how it should be applied (Bekar, 2001). Examining the literature, it is seen that there are few studies of transcultural care (Aktaş *et al.,* 2016; Kılıç et al., 2014; Ayaz *et al.,* 2010; Tanrıverdi *et al.,* 2010; Tortumluoğlu *et al.,* 2006) and especially the relationship between care and the cultural characteristics of foreign patients (Polat & Akcan, 2016; Tuzcu, 2014; Yurt *et al.,* 2013; Ruppen *et al.,* 2010; Jirve *et al.,* 2010; Cioffi 2003).

This research was conducted with the aim of determining the contribution made to the professional lives of nurses and midwives by caring for foreign patients, the factors affecting their care skills, and the difficulties encountered in this regard.

METHODS

Design and Sample

The present study was designed according to the descriptive cross-sectional research model with a written questionnaire.

The study population consisted of 340 nurses and midwives in two district hospitals of the Turkish Ministry of Health located in Aydın province in western Turkey where the number of foreign patients is high.

There was no sample selection process in the study, and it was conducted with 150 nurses and midwives (117 nurses and 33 midwives) who had cared for a foreign patient at least once and who agreed to participate in the study. Participation rate was 44%, and the sample size 90% reliability.

Data Collection Instruments

The nurses and midwives who agreed to participate completed self-administered questionnaires between April and July 2015.

The data of the study were collected using a form developed by the researchers in

line with the literature (İçöz, 2009; Şahin *et al.,* 2009; Özer & Sonğur, 2009; Tortumluoğlu *et al.,* 2004).

The sociodemographic questionnaire form consisted of 10 questions about nurses and midwives' sociodemographic and professional characteristics such as gender, age, marital status, educational level, professional status, work experience, and working time at previous clinics.

The questionnaire on the professional benefits of providing care to foreign patients and the difficulties which may be encountered consists of the three sections of professional benefits of providing care, benefits to care provision skills, and difficulties encountered during the course of care provision. The first section deals with four propositions on the professional benefits provided by caring for foreign patients. Responses to the propositions are categorized as yes/no. The second section contains nine statements on the benefits of providing care for foreign patients to care-giving skills. The response to each statement is a Likert-type "negative effects", "no effect", and "positive effects". The third section is divided into two parts, culturally specific approaches to foreign patients, and the effect on care-giving skills of these approaches. In the first part, 19 statements on cultural approaches are categorized with yes/no responses, while in the second part the effect on care of each approach requires a Likert-type response of "negative effects", "no effect", and "positive effects". The Cronbach alpha reliability coefficient of the propositions and statements was found to be 0.89.

Ethical Considerations

Approval was obtained from the Adnan Menderes University Faculty of Medicine Ethics Committee (2015/582) in Aydın before data collection was started. Hospital administrators provided written approval to conduct the study, and no invasive procedures were planned for human beings during the study period. Written consent was obtained from all of the nurses and midwives who agreed to participate after they were informed about the study content.

Data Analysis

Data analysis was performed with SPSS version 22.0 software (SPSS Inc., Chicago, IL). Descriptive analysis was used to analyze general subject characteristics, frequencies, percentages, and chi-square test. A value of $p \leq 0.05$ was considered statistically significant.

RESULTS

The mean age of the nurses and midwives participating in the study was 39.93±6.68 years, the mean number of years working in the profession was 18.93±3.33, and 83.3% of them had more than ten years of professional experience. It was found that 44% of the participants were high school graduates and 44.7% worked in the internal medical clinic, 90.7% had encountered foreign patients in the clinics where they worked and 82.7% had not had training in intercultural nursing (Table 1).

With regard to the professional benefits which caring for foreign patients provided, 84.7% of the participants stated that it had made them aware of the necessity of learning a foreign language. However, the nurses and midwives stated in proportions of 44.7%, 42.7% and 42% respectively that providing care for foreign had benefited them with regard to learning different care techniques, developing their own cultural approach and

their desire to find out about foreign cultures (Table 2).

With regard to care giving skills, the nurses and midwives stated that awareness of cultural diversity and getting to know different cultures gained them new and different ideas relating especially to approaches to treatment (68.7%), and to health protection behavior (64%), and sexual practices (61.3%), and that these gains made a positive contribution to their care giving skills (Table 3). At the same time, according to their statements, differences in religious belief, patient behaviour, gender differences, and the cultural characteristics of the nurses and midwives themselves did not affect their care giving skills ($p>0.05$).

Table 1. Demographic and Professional Characteristics of Nurses and Midwives (n=150)

Variables	**n**	**%**
Sex		
Female	148	98.7
Male	2	1.3
Marital Status		
Married	123	82.0
Single	27	18.0
Education		
High school	13	8.7
Associate degree	63	42.0
Bachelor's degree	66	44.0
Master of Science/ PhD	8	5.3
Professional status		
Nurse	117	78.0
Midwife	33	22.0
Clinic		
Medical Clinic	67	44.7
Surgical Clinic	46	30.7
Intensive Care	24	16.0
Emergency	13	8.6
Do foreign patients come to this clinic?		
Yes	136	90.7
No	14	7.3
Receipt of transcultural care training		
Yes	26	17.3
No	124	82.7

According to their statement, difficulties were experienced by 91.3% of the nurses and midwives when establishing communications, by 90% when collecting data, by 76% when performing physical examinations and by 62% when giving treatment. They stated that these difficulties had a negative effect on their care giving skills ($p=0.000$) (Table 4). Also, when the age groups of foreign patients were considered, 70% of the nurses and midwives stated that they experienced difficulties in providing care to adults and 67.8% in providing care to patients aged over 65 in comparison with caring for

infants, children and adolescents. This finding was statistically significant (p=0.005).

Table 2. Professional Benefits of Providing Care to Foreign Patients (n=150)

Propositions	**n**	**%**
It added to my awareness of the necessity of learning a foreign language		
Yes	127	84.7
No	23	15.3
It helped me to learn different culture-specific care techniques		
Yes	67	44.7
No	83	55.3
It helped me to develop my own professional cultural approach		
Yes	64	42.7
No	86	57.3
It benefited me by increasing my desire to research into different cultures		
Yes	63	42.0
No	87	58.0

Table 3. Benefits of Culture Specific Awareness of Foreign Patients to the Care Giving Skills of Nurses and Midwives (n=150)

Variables	**Negative effect**		**No effect**		**Positive effect**	
	n	**%**	**n**	**%**	**n**	**%**
Patients' approaches to treatment	2	1.3	45	30.0	103	68.7
Health protection behavior	3	2.0	51	34.0	96	64.0
Cleanliness and hygiene habits	7	4.7	57	38.0	86	57.3
Nutrition habits	6	4.0	63	42.0	81	54.0
Family and social roles	3	2.0	71	47.3	76	50.7
Ethnic characteristics	2	1.3	73	48.7	75	50.0
Religious characteristics	2	1.3	84	56.0	64	42.7
Male and female sexual norms	5	3.3	87	58.0	58	38.7
Sexual practices	7	4.7	92	61.3	51	34.0

Table 4. The areas in Which Nurses and Midwives Experienced Difficulties in Providing Care for Foreign Patients and the Effect of These Difficulties on Care (n=150)

Variables			Effect of variables on care			
	n	**%**		**n**	**%**	**p value**
Difficulty in establishing communication						X^2=22.725 p=0.000
Yes	137	91.3	Negative effect	93	62.0	
No	13	8.7	No effect	20	13.3	
			Positive effect	37	24.7	
Difficulty in collecting data						
Yes	135	90.0	Negative effect	95	63.3	X^2=31.871
No	15	10.0	No effect	29	19.3	p=0.000
			Positive effect	26	17.3	
Difficulty in physical examination						
Yes	114	76.0	Negative effect	87	58.0	X^2=30.189
No	36	24.0	No effect	34	22.7	p=0.000
			Positive effect	29	19.3	
Difficulty in carrying out treatment						
Yes	93	62.0	Negative effect	63	42.0	X^2=48.106
No	57	38.0	No effect	55	36.7	p=0.000
			Positive effect	32	21.3	

DISCUSSION

For those providing care, patients' needs which are most difficult to meet are those which arise from cultural differences. People with different cultures can also show differences in health needs. For this reason, approaches to health care will be deficient in care unless they are based on cultural data, and the quality of care given will decline (Mattson, 2000). Thus Kılıç *et al.* (2014), in a study encountering cultural problems encountered by nurses, reported that most of the nurses participating in the study had provided care to a patient whose culture was different from their own. Most (90.7%) of the nurses and midwives participating in our study stated that they had met and provided care for foreign patients in the units where they worked.

Culture, or lifestyle, can indirectly affect health in a positive or negative way. Cultural factors relating to health such as family structure, roles, education, type of communication, punctuality, socioeconomic level, gender-dependent roles, marriage patterns, bringing up children, death, population policies, body image, nutrition, clothing, profession, religion, language, ideologies, getting help, and sexual behavior vary from society to society within the cultural whole (Dayer-Berenson, 2011; Taşçı,

2009; Bolsoy & Sevil, 2006). Patients come to health institutions with the beliefs and practices of their own cultures (Taylor & Lurie, 2004). Getting to know different cultural characteristics, especially those of the cultures of other countries, will undoubtedly make a contribution to health and care services, as it will in every area. In a study in Japan, Hisama (2000) found that when nurses got to know the culture of those to whom they were providing care, there was a positive reflection in their nursing care. In our study, the nurses and midwives stated that awareness of cultural variety and acquaintance with different cultures was of positive benefit to their care giving skills particularly in approaches to treatment, and also in health protection behavior and sexual practices. Biçer *et al.* (2014) suggested that nursing department students participating in the Erasmus Student Exchange Program develop their care skills by getting to know different cultures and have the opportunity to examine and compare health systems and nursing practices, that students' points of view and vision change, that they make academic gains in theoretical and practical areas, and advance their English by learning a different language.

Intercultural care has a negative effect on language and communication difficulties (Narayanasamy & White, 2005). The importance of communication is great in order to get to know the patient, to take the history, to decide on and apply treatment, to direct care and to increase its effectiveness. The interaction between health professional and patient is dependent on communication between them and because each reflects their own culture, this process affects the process of making decisions on health care, treatment and recovery (Türk *et al.*, 2015). Therefore, it is important to speak the same language when communicating with the patient in the process of diagnosis, treatment and care (Taşçı, 2012). In our study, most of the nurses and midwives (91.3%) stated that they had had difficulties in establishing communication when providing care for foreign patients, but also reported that caring for a foreign patient made them aware (84.7%) of their deficiencies in knowledge of a foreign language. Yurt *et al.* (2013) reported that 87.9% of nurses working with foreign patients had difficulties in care giving because of not knowing a language. Similarly, in studies by Aktaş *et al.* (2016), Tuzcu, (2014), Tortumluoğlu *et al.*, (2006) and Lundberg *et al.* (2005), it was reported that most nursing students experienced language and communication problems when caring for patients with cultural differences. In a study by Ayaz and Bilgili (2009) also, it was shown that the greatest problem relating to cultural difference experienced by nurses at a proportion of 76.9% was language differences. In a study by Gerrish (2001) with nurses working with different ethnic groups, it was found that patients and carers did not understand the content of instruction on conformity to treatment because of language barriers, that the psychological support given was very limited, and that it was very difficult to assess patients' needs. It was reported in the same study that lack of knowledge of English by nurses was a barrier to appropriate and effective nursing care. In similar studies conducted with nursing and midwifery students, 85.5% (Ayaz *et al.*, 2010), 69.4% (Tanrıverdi *et al.*, 2010) and 68.8% (Tortumluoğlu *et al.*, 2006) of the students were found to have provided care for patients of different cultures and to have had difficulties in care giving. In similar studies, it was seen that when nurses and nursing students were providing health care services to immigrants, the greatest obstacle was communication difficulty, and that their work was focused on the problem of communication (Ruppen *et al.*, 2010; Jirwe *et al.*, 2010; Cioffi, 2003). In our study

also, most of the nurses and midwives stated that they had had difficulties in establishing communications, and many reported difficulties in interventions such as taking histories, physical examination and administering treatment (p=0.000). In a study by Polat and Akcan (2016) assessing the areas of difficulty of students in providing care to foreign patients, it was found that difficulty was experienced by 78.8% in establishing communications, by 75.8% in collecting data, by 63.6% in care giving, by 48.5% in administering treatment, and by 33.3% in carrying out physical examinations. In a study by Yurt *et al.* (2013), difficulty was experienced and care was adversely affected by 49.62% of nurses in data collection, by 10.6% in physical examination, and by 25.5% during treatment.

In our study, a majority of the nurses and midwives (70%) stated that they experienced greater difficulty in providing care to foreign patients aged 65 and over than to infants, children and adolescents (p=0.005). Similarly, in a study by Yurt *et al.* (2013), 32.6% of nurses reported that the age group with which they had he most difficulty in providing care to was adults, while 30.5% stated that they had the greatest difficulty with children.

Limitation of the study

The limited number of studies conducted on this topic, the small number of participants and the dependence of the findings on observational data were limitations of the study.

CONCLUSIONS

This study has established the necessity of knowing a foreign language to an adequate level, the positive benefit of caring for foreign patients with different cultures to the care process, and the difficulties experienced by nurses and midwives in establishing communication, collecting data, carrying out physical examinations and treatment and caring for adults and those patients aged over 65 when working with foreign patients.

In light of the study findings, it is recommended that steps be taken to raise cultural sensitivity and empathy in all health staff and especially nurses, to widen the cultural outlook of workers by in-service training, to increase their awareness, to review clinic services from the aspect of cultural adequacy, to determine cultural barriers and necessary changes, to develop relevant standards and to set up committees for culturally adequate care for this purpose in institutions, to prepare and use health education materials, brochures, consent forms and pre-procedural rules in different languages and at a suitable educational level to meet the needs of patients who speak other languages, to continuously assess levels of satisfaction with care in service areas, to add lessons on transcultural care to the undergraduate education programs of health staff, and to provide opportunities for students and workers to participate in foreign exchange programs with the aim of increasing familiarity with foreign cultures.

Implications for Practice

- Even though theoretical knowledge of care with cultural content is adequate, it is not yet applied in an adequate fashion, and there are few studies in this topic.
- It is expected that findings obtained from the study will attract attention to problems relating to foreign patients and their care, which are very rarely included under the heading of transcultural care.

- It is thought that determining the problems experienced with foreign patients by many nurses and midwives when providing care will make a contribution to improving the quality of care.
- It is thought that the findings of the study will elucidate future studies on the topic of professional benefits provided by care giving to different cultures.

Declaration of Conflicting Interests: The authors declare that they have no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding: The authors received no financial support for the research, authorship, and/or publication of this article.

REFERENCES

Aktaş, Y. Y., Uğur, H. G., & Orak, O. S. (2016). Hemşirelerin kültürlerarası hemşirelik bakımına ilişkin görüşlerinin incelenmesi [Investigation of the opinions of nurses concerning the transcultural nursing care]. Uluslararası Hakemli Hemşirelik Araştırmaları Dergisi, 8, 120-135.

Ayaz, S., & Bilgili, N., (2009, Nisan). Kültüre duyarlı bakım: Hemşirelerin yaşadıkları güçlükler. Hemşirelik ve Ebelikte Kültürlerarası Yaklaşım. Çanakkale, Türkiye: Sempozyum Kitabı, s.88.

Ayaz, S., Bilgili, N., & Akın, B., (2010). The transcultural nursing concept: a study of nursing students in Turkey. International Nursing Review, 57(4), 449- 453.

Bekar, M. (2001). Kültürlerarası (Transkültürel) hemşirelik [Intercultural (transcultural) nursing]. Toplum ve Hekim 16(2), 136-141.

Biçer, S., Ünsal, A., Demir, G., & Şahin, F. (2014). Erasmus öğrenci değişim programının hemşirelik öğrencilerinin akademik yaşantılarına katkıları: nitel bir çalışma [Erasmus student exchange program contribution to the academic experience of the nursing students: A qualitative study]. Erciyes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi, 2(2), 43-52.

Bolsoy, N., Sevil, Ü. (2006). Sağlık hastalık ve kültür etkleşimi [Interaction of health-disease and care encounters. Scand J Caring Sci, 24:436–44.

Cioffi, R. J. (2003). Communicating with culturally and linguistically diverse patients in an acute care setting: nurses' experiences. International Journal of Nursing studies, 40(3), 299-306.

Cirhinlioğlu, Z. (2001). Sağlık Sosyolojisi. Ankara, Türkiye: Nobel Kitapevi.

Clark MJ (2003). Community Health Nursing Caring for Populations. New Jersey, Fourth ed.USA: Prentice Hall.

Dayer-Berenson, L., Cultural. (2011). Competencies for Nurses Impact on Health and Illness. Jones and Bartlett Publishers, USA.

Douglas, M. K., Pierce, J. U., Rosenkoetter, M., Pacquiao, D., Callister, L. C., Hattar-Pollara, M., Lauderdale, J., Milstead J., Nardi, D., Purnell, L. (2011). Standards of practice for culturally competent nursing care: 2011 update. Journal of Transcultural Nursing, 22(4), 317.

Duffy, M.E. (2001) A critique of cultural education in nursing. Journal of Advanced Nursing, 36, 487-495.

Gerrish, K. (2001). The nature and effect of communication difficulties arising from interactions between district nurses and South Asian patients and their carers. Journal of Advanced Nursing, 33(5), 566-574.

Hisama, K. K. (2000). Cultural infleunce on nursing scholarship and education. Nurse Outlook, 48, 128-131.

İçöz, O. (2009). Sağlık turizmi kapsamında medikal (tıbbi) turizm ve Türkiye'nin olanakları [Within the scope of health tourism, medical tourism and Turkey's possibilities]. Journal of Yasar University, 4(14), 2257-2279.

Jirwe, M., Gerrish, K., & Emami, A. (2010). Student nurses' experiences of communication in cross-cultural care encounters. Scandinavian Journal of Caring Sciences, 24(3), 436-444.

Karabudak , S. S., Aslan, F. T., Başbakkal, Z. (2013). Gigar and Davidhizar's transcultural assessment model: A case study in Turkey. Health Scince, 33(5), 566-74.

Kılıç S.P., Besen, D.B., Tokem, Y., Fadıloğlu, Ç., & Karadağ, G. (2014). An analysis of the cultural problems encountered during caregiving by the nurses working in two different regions of Turkey. International Journal of Nursing Practice, 20(3), 310-319.

Kırışoğlu, O. (2002). The cultural Effect on Afghani Children's Art. The 31st InSEA World Cogress., New York.

Lundberg PC., Bäckström J., Widén S. (2005). Caregiving to patients who are culturally diverse by Swedish last-year nursing students. Journal of Transcultural Nursing, 16, 255–262.

Mattson S. (2000) . Providing culturally competent care. Lifelines October/November, 37–39.

Narayanasamy, A., & Whıte, E. (2005). A review of transcultural nursing. Nurse Education Today, 25(2), 102–111.

Öztürk, C. (2003, Temmuz). Kültür ve Hemşirelik Uygulamaları. Kültür ve Hemşirelik Sempozyumu, Sempozyum Kitabı, Kapadokya, Türkiye. 47-53.

Polat, D. C., & Akcan, E. (2016). Hemşirelik öğrencilerinin yabancı uyruklu hastalara bakım vermede yaşadığı güçlükler. [Difficulties Experienced of Nursing Students who Give Care Foreign Patients] Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 19, Özel Sayı, 9-13.

Ruppen, W., Bandschapp O., Urwyler A. (2010). Language difficulties in outpatients and their impact setting: nurses' experiences. International Journal of Nursing Studies, 40, 299–306.

Surbone, A., & Baile, W. F. (2010). Pocket guide of culturally competent communication. CA Cancer J Clin, 60, 12-39.

Şahin, N.H., Bayram, G.O., Avcı, D. (2009). Kültürlere duyarlı yaklaşım: transkültürel hemşirelik. [Culture-sensitive approach: transcultural nursing].Hemşirelikte Eğitim ve Araştırma Dergisi, 6(1), 2-7.

Tanrıverdi, G., Okanlı, A., Şıpkın, S., Özyağcılar, N., & Akyıl, R. (2010). The evaluation of the cultural differences experienced by nursing and midwifery students in nursing. Dokuz Eylül Üniversitesi Hemşirelik Yüksekokulu Elektronik Dergisi, 3(3), 117-122.

Taşcı, S. (2012). Sağlık ve hastalığı etkileyen kültürel faktörler. İçinde: Kültürlerarası

Hemşirelik, 1. Baskı, İstanbul, Türkiye: İstanbul Tıp Kitabevleri, 19-44.
Taşçı, S. (2009, Nisan). Kültür ve Sağlık. Hemşirelik ve Ebelikte Kültürlerarası Yaklaşımlar Sempozyumu, 22-31.
Taylor, S. L., & Lurie, N. (2004). The role of culturally competent communication in reducing ethnic and racial healthcare disparities. The American Journal of Managed Care, 10, SP1-4.
Temel, A. B. (2008). Kültürlerarası (Çok Kültürlü) Hemşirelik Eğitimi. [Transcultural Nursing Education]. Journal of Anatolia Nursing and Health Sciences, 11(2), 92-101.
Terkeş, N., Bektaş, H. (2013). Hemşirelik eğitiminde ve uygulamalarında kültür. [Culture in nursing education and practices]. Ege Üniversitesi Hemşirelik Fakültesi Dergisi, 29(1), 60-67.
Tortumluoğlu, G., Okanlı, A., & Özer, N., (2004). Hemşirelik bakımında kültürel yaklaşım ve önemi. [Cultural approach and importance in nursing care].International Journal of Human Sciences, 1, 1-12.
Tortumluoğlu, G., Okanlı, A., Özyazıcıoğlu, N., & Akyıl, R., (2006). Defining cultural diversities experienced in patient care by nursing students in eastern Turkey. Nurse Education Today, 26(2), 169-175.
Tuzcu, A. (2014). Göç alan Antalya ilinde hemşirelik öğrencilerinin kişisel olarak ve uygulama alanında göçle gelen bireylere bakım verirken yaşadığı sorunlar. [Personal problems experienced by the students of nursing in a migrant-receiving province of Antalya and their problems during providing care to migrants in the application area]. Journal of Human Sciences, 11(1), 535-550.
Türk, Z., Yılmaz, K., Çekinmez, ST., Şahin, M., Koç, S. (2015). Kültürlerarası İletişimde Hemşirenin Rolü. Uluslararası Katılımlı III. Kültürlerarası Hemşirelik Kongresi Bildiri Kitabı, 21-23 Mayıs Çanakkale, Türkiye, s.171 Bildiri ID :7594.
Yurt, S., Donyağı, D., Şen, S., Oğuz, P. (2013). Yabancı Uyruklu Hasta Bakımında Yaşanan Güçlükler. II. Ulusal Kültürlerarası Hemşirelik Kongresi. 3-5 Haziran, Antalya, Türkiye. Retrieved from www.medicana.com.tr/ hemsirelik/kulturlerarasi-hemsirelik-kongresi.pdf.

Chapter 6

Multicultural Counseling

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CULTURE AND MULTICULTURALISM

According to Christensen (1989), culture is the values, norms, family lifestyles, social roles developed by people and "the body of behaviours and common points" for historical, political, economic and social realities. However, Fukuyama (1990) states that culture also includes the variables such as "gender, age, sexual orientation, religious beliefs, ethnical status, ethnical origin and socio-economic status and each factor was important one by one and together in shaping the cultural reality of individuals. With reference to these definitions, culture can be qualified as the whole material and non-material patterns belonging human beings except for the nature.

Multiculturalism is a sociological concept. It means that several different cultures live together in the same region (Özer & İlhan, 2015). Taylor (1996) stated that multiculturalism did not only mean to allow different cultures to live, but also it meant to adopt them and know their values. American Psychological Association (APA) (2003) defines multiculturalism as a multi-dimensional concept including race, ethnical structure, language, sexual orientation, gender, age, disability, social class, religious orientation and other cultural dimensions.

THEORY

As a result of an increase in social diversity in the United States in 1960s and the rise of equal rights, opportunities and demands of women, racial and ethnic minorities, the human rights movements became a current issue. With the awareness of racism, sexism and pressure to these groups the concept of multiculturalism occurred (Bektaş, 2006). In the 1980s and 1990s, multiculturalism became a concept which began to be studied professionally. The concepts such as multiculturalism, cultural differences, ethnical origin, personal liberty and cultural identity emerging with the effect of postmodernist thought began to shape also the modern approaches in the field of psychological counseling and psychotherapy. Multicultural counseling emerged as a meta-theory as a result of these developments (Karaırmak, 2008). Putting the culture in a center in counseling began with Kelly (1955)'s *Personal Structıre Theory* (Trnsf. Pedersen & Ivey, 1993). According to Personal Structure Theory, people build their own structures based on their experiences. These structures enable individuals to interpret, make predictions and react in subsequent experiences. Understanding the personal realities, cultural truths and beliefs that individuals construct subjectively and exhibit diversity according to social environment and culture and developing empathy become easier with the theoretical framework by this approach.

MULTICULTURAL COUNSELING

Sue and Torino (2005) described the multicultural counseling and therapy as determining targets consisting of the values and life experiences of clients in their evaluation, diagnosis and therapy, playing assistance roles according to these experiences, knowing the individual, group and universal dimensions of the clients' personalities and using the universal and cultural specific strategies. Multicultural counseling is defined as a professional relationship which is established during the psychological counseling process between counselors and clients who are culturally (gender, age, disability, social class, religion, language, race, sexual orientation, ethnical identity, immigration, body sizes, sexual identity, multiethnical identity, privileged groups) different from each other and in which the counsellors have sufficient information, skills and awareness on the importance of cultural difference in psychological counseling process (Sue, 2006).

Multicultural counseling is a psychological assistance process which emphasizes the cultural impressions of counselors and clients and counseling theory and practice equally. At the same time, multicultural counseling should be appreciated as a holistic power which allows the adaptations in the field of counseling (Ivey, 1993). As counsellors encounter with different client groups during the practices, acquiring knowledge about different cultures has become a professional obligation. Because culture forms both one of the remarkable variables in counseling process and one of the significant sources that can lead to a misunderstanding of the client by the counselor (Koç, 2003). If the client has a problem related with the group and expresses the problem in cultural dimension, it can be said that counseling process is in cultural dimension. Cultural themes or needs which are shared in the group that the individual belongs to may occur in the counseling process and they may play a role in determining the intervention methods by the counselor. The counselling thories and methods providing the cultural needs have to present the dynamics in the related culture clearly and support the significant effect of cultural identity on mental health (Lee & Oh, 1992).

THE PURPOSE AND CHARACTERISTICS OF MULTICULTURAL COUNSELING

The purpose of multicultural counseling is to create the counseling approach which grounds on the concepts of difference and pluralism which have become prominent in society in 21th century. The characteristics of multicultural conseling are:

- A counselor has to have the ability to adapt the counseling models sensitive to cultural differences in order to be effective in personal development of clients from different cultural backgrounds. When the counseling process is shaped in accordance with this main philosophy, the clients from different cultural environments could have the chance to develop their skills in their fields of interests and cope with the impositions of dominant culture (Lee, 2014).
- A counsellor has to manage to bring the clients from different cultural structure in a certain atmosphere together and to interact with each other and as a result, to get a new synthesis which does not exist in dominant cultures and sub-cultures; therefore, to enable them to change and acculturalize together, instead of imposing the current cultural values to the clients (Koç, 2003).

- The fundamental of assistance relationship in multicultural counseling is to ensure the reliability of the clients, to benefit clients from the counseling process and to relax them (Sue & Zane, 1987). Psychological counselor sensitive to culture does not have such an intention or worry as directing the clients.
- Within the framework of fundamental components of clients' culture, the problem of clients has to be recognized, entitled and diagnosed, effective supportive services has to be provided for clients and their problems have to solved according to their self-perception and perception of the world (Green, 1982). It is not possible for counselors to find permanent solutions for the problems of clients by isolating them from their daily life conditions.
- An another important point in multicultural counseling is to understand the world-view of clients in counse9ling process. (İbrahim & Kahn, 1987). Because, the self-perception and perception of other people by clients form the most important dynamics in finding solutions to current problems.
- In terms of presenting psychological assistance services with an equalitarian approach, the fact that different group of identities could have different needs and how the clients define themselves are other points to take into consideration.

PRIVATE COUNSELING INTERVENTIONS

Multicultural counselors consider family effects, socialization process including gender role, religious and moral beliefs and whether clients have immigration experiences as the basic variables which may cause cultural differences between clients and continue to be effective on their personality development and their current lives in order to perform efficient interventions (Koç, 2003).

1. Family Effects: Support by the family is very important for the education of individuals, finding solutions to professional and personal problems and development and status problems. When the support dynamics of these family bonds work in a healthy way, this prevents the individual from having to seek help outside the family. Multicultural counseling has a positive understanding on the effects of family bonds in counseling services and it does not ignore this effect in its practices.

2. Socialization Process Including Gender Role: Counselors should be aware of the gender-oriented differences in developmental expectations of the clients and their effects on deciding between women and men with certain cultures and solving problems. Gays, lesbians, disabled counselors with different talents, women, elderly people and poor clients are included in this group. These individuals do not adapt to the power structure of dominant culture and may experience with prejudiced and negligent behaviours of other people in their lives in different forms.

3. Religious and Morale Effects: Counselors and clients bring the significant differences in their religious beliefs and values to the counseling process whether they are the members of sub-culture or dominant culture. Not including the religious beliefs of clients into the counselling process by counsellors means ignoring an important part of clients' identity.

4. Immigration Experience: Ataca (2002) determined that women with different culture were more psychologically vulnerable than men and in this sense, the group with the highest risk was Turkish immigrant women with lower socio-economic level. Gün (2002) found school conditions, working durations, acculturalization levels and

mother language, the self-esteem and daily language of adolescents migrated from homeland to other regions related with both their acculturalization levels, their self-esteem and their life satisfaction. According to the study results, it is observed that whether experiencing immigration or not remarkably affects the lives of clients.

MULTICULTURAL COUNSELING TECHNIQUES

When we define counseling as clustering two or more than two people with different cultural background in a psychological assistance relationship (Torres-Rivera et al., 2001), traditional techniques and processes should also be readapted in order to develop the cultural competence of counselors (Richardson & Molinaro, 1996). In this concept, as emphasized by Sue et al. (1992), counselors should have the ability to present a productive atmosphere to clients and accept them as they are. The way that counselors present an effective psychological assistance to their clients is to identify cultural dynamics and develop the awareness about these dynamics which are effective in shaping their behaviours today rather than the technique or techniques they use in counseling process.

Lee (2014) emphasizes that counselors have to develop and use strategies and techniques which are consistent with cultural values and experiences of clients. In order to apply the determined techniques and strategies, counselors should have the knowledge and awareness about cultural differences. A counselor should be able to regard each client as a unique individual and consider their common experiences as human beings and private experiences from their own cultural pattern. Counselors should always be in relationship with their own personal and cultural experiences as a human being.

BENEFITS OF MULTICULTURAL COUNSELING

Benefits of multicultural counselling: (Fukuyama, 1990; Lee & Richardson, 1991; Kaya, 2002; Sönmez, 2002; Yalçın, 2002)

- Traditional counseling theories have enriched with the consepts derived from culture-sensitive counseling approach. The awareness developing in this new field of thought now includes the fact that counseling as a profession does not concern clients who come only from a particular cultural group.
- Concepts emerging with cultural-sensitive counseling have also made it necessary to be active in the profession and to have a new sense of social responsibility. When seeking solutions to the clients' problems, counselors do not ignore that one of the basic variables causing the problem is also the limited cultural environments. The theories and practices related with multicultural counseling interventions present an international counselling approach as a potential power in personal development of an individual.
- When multiculturalism is percepted as a part of overall social and political structure of individual freedoms, positive consequences can be obtained through a successful application.

COMPETENCES FOR MULTICULTURAL COUNSELING

Professional organizations such as the American Counselors Association (ACA) and the American Psychological Association (APA) state that mental health

professionals must have cultural competences while working with different cultural members. Multicultural couseling competences are grouped into 3:

a) Being aware of their own values, assumptions and prejudices,
b) Understanding the world-views of clients with different cultures and
c) Applying different intervention methods and techniques.

These three competences are handled with different dimensions as beliefs and attitudes, knowledge and skills in itself (Arredondo, 1996). In this context, a counselor has to have *cultural awareness, cultural knowledge and cultural skills* in order to maintain an effective counseling relationship with a client with cultural differences. Sue et al. (1992) explain these competences as the following:

1) Being Aware of Their Own Values, Assumptions and Prejudices: It is the counselors' awareness of their own values, assumptions and prejudices. The counselors with awareness know that their world-views were the results of their own cultural conditions and their reflections to the psychological counseling process.

Beliefs and Attitudes: Being aware of own culture, being sensitive to cultural background, valuing and respecting for differences, being aware of the effect of own cultural background, experiences, attitudes and values on counselling process, being aware of own competences and limits and feeling comfortable about the differences with clients.

Knowledge: Knowing own cultural background and the effects of cultural background on personal and professional normality/anormality definitions and psychological counselling process and knowing how racism, prejudice, discrimination and suppression affect themselves and counseling process and knowing communication styles and the effect of communication styles on psychological process.

Skills: Being effective in different cultural environments and investigating educational and consultation opportunities for self-development, taking education and consultation assistance in case of limited competence or directing clients to other competent counselors and regarding oneself as a cultural asset.

2) Recognizing World-views of Clients with Different Culture: It is to recognize the world-views of the clients with different cultures by counsellors and to share these views with respect and appreciation. This does not mean that counsellors see the different perspectives as their own perspectives, but it means to accept different perspectives.

Beliefs and Attitudes*:* Being aware of the negative feelings against different cultures that may affect the counseling process, being eager to compare the beliefs and attitudes with the clients with different cultures in an unprejudiced way and being aware of stereotyped views against the people with different ethnical origins.

Knowledge*:* Having the specific knowledge about the study group or culture, being aware of the life experiences, cultural heritage and backgrounds of the clients with different cultures and recognizing how the race, culture, ethical origin affect the personality development, occupational preferences, psychological disorders, behaviour of seeking assistance and psychological counseling approaches affect the appropriateness to clients.

Skills*:* Monitoring the researches about the mental health and mental disorders of different ethnical groups, developing the awareness, knowledge and intercultural experiences with several educational experiences, including in different cultural

environments out of counseling process actively.

3) Applying Different Intervention Methods and Techniques: It is to apply the intervention methods and techniques which are sensitive to and suitable for the cultures of clients with different cultures.

Beliefs and Attitudes: Respecting for the religious or moral values and beliefs and local assistance practices and intrinsic assistance networks of clients and not thinking the different languages as an inhibitory factor for psychological counseling process.

Knowledge: Knowing that overall characteristics of counseling and therapy may interfere with the values of different cultures, being aware of the troubles that the clients with different cultures may experience while utilizing the health services, knowing that assessment criteria and rubrics may be non-objective and interpreting the results by regarding the culture and language of clients and knowing the family structure, hierarchy, values and beliefs of the clients with different cultures, characteristics of the society, family support resources in the society.

Skills: Being able to use various verbal and non-verbal assistance reactions, receiving and delivering the verbal and non-verbal messages appropriately, receiving consultative assistance from the traditional theurapists or religious and spiritual leaders and the practioners working with the clients with different cultures if necessary, getting help from external resources in case of language problem, taking education on test techniques and assessment, being aware of cultural restrictions and working for preventing prejudiced, discriminative and non-objective practices. Taking the responsibility of informing the clients in issues such as setting goals, legal rights and the counselor's orientation.

Sensitivity and awareness by the professionals presenting the assistance service while working with client groups with cultural difference will increase the quality of assistance service as the concept of *multiculturalism* has become a current issue. Even if not in the near future, as a result of the experienced social changes, it can be considered that the structure of most of the societies in the world will become more and more individualistic. In this case, multicultural psychological counseling understanding is thought to be necessary for meeting the needs of changing societies. When all these reasons are considered, it should be emphasized to educate culturally sensitive counsellors with flexible thinking who are willing to learn the characteristics of the culture and group to which the client belongs, avoid traditional practices, are aware of the multi- media where the individual can find identity.

REFERENCES

American Psychological Association. (2003). Guidelines on Multicultural Education, Training, Research, Practice, and Organizational Change for Psychologists. *The American Psychologist, 58*(5), 377.

Arredondo, P., Toporek, R., Brown, S. P., Jones, J., Locke, D. C., Sanchez, J., & Stadler, H. (1996). Operationalization of the multicultural counseling competencies. *Journal of Multicultural Counseling and Development, 24*(1), 42-78.

Ataca, B. (2002). "Kanada'da Yaşayan Evli Türk Göçmenlerin Psikolojik, Sosyo Kültürel ve Evlilik Uyumları", XII. Ulusal Psikoloji Kongresi, Türk Psikologlar Derneği, O.D.T.Ü., Ankara.

Bektaş, Y. (2006). Kültüre Duyarlı Psikolojik Danışma Yeterlikleri Ve Psikolojik Danışman Eğitimindeki Yeri. *Ege Eğitim Dergisi, 7*(1).

Christensen, C.P. (1989). Cross-Cultural Awareness Development: A Conceptual Model. *Counselor Education and Supervision, 28*(4), 270-289.

Fukuyama, M.A. (1990). Taking a universal approach to multicultural counseling. *Counselor Education and Supervision, 30*(1), 6-17.

Gün, Z. (2002). "Ergen Ruh Sağlığı ve Göç Deneyimi", XII. Ulusal Psikoloji Kongresi, Türk Psikologlar Derneği, O.D.T.Ü., Ankara.

Green, J.W. (1982). *Cultural awareness in the human services*. Prentice Hall.

Ibrahim, F.A ve Kahn, H. (1987). Assessment of world views. *Psychological reports, 60*(1), 163-176.

Ivey, A.E. (1993). On the need for reconstruction of our present practice of counseling and psychotherapy.The Counseling Psychologist 21, 225-228.

Karaırmak, Ö. (2008). Çok kültürlülük, kültürel duyarlılık ve psikolojik danışma. *Türk Psikolojik Danışma ve Rehberlik Dergisi, 3*(29), 115-129.

Kaya, A. (2002), Çok Kültürlülük İdeolojisi ve Etnisite: Berlin Türkleri, http://www.clubs.bilgi.edu.tr/siyasetkulturu/akckiebt.html.

Koç, Z. (2003). Kültüre duyarlı psikolojik danışma yaklaşımı: Kuramsal bir açıklama. *Gazi Üniversitesi Endüstriyel Sanatlar Eğitim Fakültesi Dergisi, 11,* 1-17.

Lee, C.C ve Oh, M.Y. (1992). Indigenous models of helping in nonwestern countries: Implications for multicultural counseling. Journal of Multicultural Counseling and Development 1, 3-10.

Lee, C.C., Richardson, B.L. (1991), Multicultural Issues in Counseling New Approaches to Diversity, Amerikan Counseling Association.

Lee, C.C. (Ed.). (2014). *Multicultural issues in counseling: New approaches to diversity*. John Wiley & Sons.

Özer, Ö ve İlhan, T. (2015). Çokkültürlü Psikolojik Danışma Yeterlikleri Ölçeğinin Geliştirilmesi. *International Periodical for The Languages, Literature and History of Turkish or Turkic, 10*(7), 781-802.

Pedersen, P.B ve Ivey, A. (1993). Culture-centered counseling and interviewing skills. A practice guide. Praeger Publishers, London.

Richardson, T.Q ve Molinaro, K.L. (1996). White counselor self-awareness: A prerequisite for developing multicultural competence. *Journal of Counseling & Development, 74*(3), 238-242.

Sue, D.W., Arredondo, P ve McDavis, R.J. (1992). Multicultural counseling competencies and standards: A call to the profession. *Journal of Counseling & Development, 70*(4), 477-486.

Sue, S. (2006). Cultural competency: From philosophy to research and practice. *Journal of Community Psychology, 34*(2), 237-245.

Sue, D.W ve Torino, G.C. (2005). Racial-cultural competence: Awareness, knowledge, and skills. *Handbook of racial-cultural psychology and counseling: Training and practice, 2*, 3-18.

Sue, S ve Zane, N. (1987). The role of culture and cultural techniques in psychotherapy: A critique and reformulation. *American psychologist, 42*(1), 37.

Sönmez, V. (2002). Küreselleşmenin Felsefi Temelleri. *Eğitim Araştırmaları Dergisi. Sayı, 6*, 2-11.

Taylor, C. (1996). Çokkültürlülük (çev. L. Köker). Istanbul: Yapı Kredi Yayınları.
Torres-Rivera, E., Phan, L.T., Maddux, C., Wilbur, M.P ve Garrett, M.T. (2001). Process veus content: Integrating personal awareness and counseling skills to meet the multicultural challenge of the twenty-first century. *Counselor Education and Supervision, 41*(1), 28-40.
Yalçın, C. (2002). Küreselleşme, çokkültürcülük ve eğitim. *Eğitim Araştırmaları, 6*(65-77).

Chapter 7

Care Needs of Older Cancer Patients

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INTRODUCTION

Cancer has significant physical, emotional and economic impacts on individuals, community and healthcare systems. Its economic burden and social effects are growing increasingly. In WHO Fact Sheets Report, annual economic cost of cancers in 2010 is estimated to be approximately 1.16 trillion U.S. dollars (WHO, 2018). As the life expectancy is improving worldwide, the statistics reveal that the cancer prevalence and mortality associated with cancer among elderly is rising rapidly, with the exceptions to the bone, germ cell and soft tissue tumours (American Cancer Society, 2018; Kelly & Stephens, 2015; Moloney, 2014; WHO, 2017).

Age is one of the most significant factors in cancer development (Colloca *et al.,* 2015). Cancer risk increases with reduction of DNA repair capacity and the rise of mutation number that causes genetic instability. A study of the number of mitotic divisions indicates that risk for cancer development in cells increases with growing age (Smetana *et al.,* 2016). It is remarkable that more than half of recently cancer diagnosed people are over the age of 65 (Wildiers *et al.,* 2014). The data show that more than fifty percent (60%) of new cancer cases and 70 percent of mortality occur in elderly patients (Hurria & Jay Cohen, 2017).

According to GLOBOCAN 2012 Cancer Incidence, Mortality and Prevalence Worldwide projections, cancer incidence all around the world was reported 14.067.894 in 2012 (65 years and older: 6.684.512) and the number of mortality 8.201.575 (65 years and older: 4.765.922). According to the same report, cancer incidence in 2035 is estimated to be 23.980.858 (65 years or older: 13.689.934) and mortality 14.634.144 (65 years or older: 9.779.305) (GLOBOCAN, 2012). According to "Cancer Facts & Figures 2018" it is estimated that the number of new cancer incidences in the United States of America will be 1.735.530 and number of cancer-related deaths 609.640. The same report reveals that 87% of all cancer cases in the U.S.A. occur over the age of 50 (WHO, 2018).

According to TÜİK (Turkish Statistics Institute) death statistics, 47.936 of 81. 527 cancer-related deaths in 2017 were people over the age of 65 (TÜİK, 2017). According to 2017 bulletin of TÜİK, 25% of deaths over the age of 65 in EU are cancer-related. Italy and France (27%) and Belgium and Sweden (25%) are at the top of the list of cancer-related deaths at and over the age of 65. Cancer-related death rate over the age of 65 was reported to be 16% for Turkey in 2016 (TÜİK, 2017).

The number of cancer patients has increased due to advances in surgery,

radiotherapy or medical treatment. Changes in demographics, illness patterns, and treatment strategies made it necessary to develop effective healthcare services for older patients (Guldhav *et al.*, 2017). Care needs of older patients vary according to their diagnosis, treatment, the stage of life, age, and co-morbidity. Cognitive or functional status impairment, psychological or social problems, and co-morbidity are common in older cancer patients (Le Saux *et al.*, 2018). Implementation of standard cancer treatments in older patients is not as easy as in younger patients. In implementation process of standard treatments, older patients face a high-risk risk of toxicity, high morbidity or mortality rates, lack of access to treatment and differences in clinicians or patient preferences (Hurria & Jay Cohen, 2017).

COMPREHENSIVE ASSESSMENT OF GERIATRIC CANCER PATIENTS

Older cancer patients are a heterogeneous group in terms of health and functional status. Older cancer patients have unique and complicated needs due to age-related physiological changes, co-morbid medical conditions and age-related psycho-social factors (Bond *et al.*, 2016; Bridges *et al.*, 2016). Comprehensive geriatric assessment and diagnosis of problems of older cancer patients play an important role in their follow-up, care, and coordination (Bridges *et al.*, 2016; Overcash & Momeyer, 2017). International Society of Geriatric Oncology underlines the importance of comprehensive geriatric assessment and supportive care in geriatric oncological patients. Assessment of health status and treatment preferences will help tailor the appropriate cancer management strategies. Geriatric cancer patients should be assessed before and during, and following treatments (Stepney, 2016). The success of cancer treatment and prevention of toxicities require a close monitoring and continuous assessment (Cleave *et al.*, 2016). Comprehensive geriatric assessment may help clinicians to deal with, prevent and manage cancer-related problems such as pain, fatigue, malnutrition, shortness of breath, anemia and osteoporosis and treatment-induced toxicities (Colloca *et al.*, 2015).

Comprehensive geriatric assessment requires health professionals to develop a systematic and multidimensional approach. These domains are the functional status, comorbid conditions, medication list, cognitive functions, social support, psychological and nutritional status (Hurria & Jay Cohen, 2017; Overcash & Momeyer, 2017).

Social functioning and presence of family caregivers play a crucial role in determining the needs of geriatric cancer patients during the cancer treatments. Comorbidities, functioning, nutritional, cognitive and mental health status may influence the survival and cancer treatment toxicities. Clinicians will benefit from ascertaining the stage of cancer, the risk of toxicity associated with the type of cancer treatment. Patients should undergo a comprehensive assessment and data should be shared with a multidisciplinary team in order for geriatric patients to benefit from treatment modalities and effective interventions (Stepney, 2016). Comprehensive geriatric assessment has been shown to improve the tolerance to chemotherapy in older people (Kalsi *et al.*, 2015). Age-related changes and treatment may contribute to cancer treatment-related toxicities and cancer-related disabilities. Therefore, assessments need to be repeated to support frail patients and help them tolerate cancer treatment.

Assessment of performance status is considered safer and s more valid predictor than the age itself. Cancer patients who are considered to receive chemotherapy are

assessed using Eastern Cooperative Oncology Group performance status or Karnofsky performance status (Kelly & Stephens, 2015). Although assessment of performance status provides valuable information, a comprehensive geriatric assessment might provide more detailed information about cancer patients' social, psychological, spiritual and functional needs. A comprehensive geriatric assessment may assist the physicians with treatment decisions (Kelly & Stephens, 2015). Elderly patients need to be screened more closely and preventive measures need to be taken with regard to bone marrow toxicity, nausea, and vomiting, anemia, and neurotoxicity.

CANCER TREATMENT IN ELDERLY PATIENTS

Although the prevalence of cancer among elderly is increasing, it is well-evident that the cancer research on elderly is considerably still low. The other concern that researchers should pay attention to is the characteristics of elderly included in the cancer research. Cancer research has been predominantly conducted in Caucasian people. It is vital to take into the consideration that cancer characteristics, pharmacokinetics, and polymorphisms may vary among different races. The cancer research can be implemented in a way that provides information about elderly people from different races who are diagnosed type malignancies (Stepney, 2016).

Chronological age is not the only determinant or predictor of tolerance to cancer treatment in elderly people. Older people may encounter different physiological changes and various comorbid conditions. Thus, elderly patients diagnosed with cancer may experience severe and multiple physiological problems than the younger cancer patients (Hurria & Jay Cohen, 2017). Cancer patients diagnosed at an early age had more emotional problems, while those diagnosed at an older age tend to experience more problems in physical functioning (American Cancer Society, 2016).

Increase in the number of older cancer patients and their treatment and care will cause serious problems for healthcare systems (Collaca *et al.*, 2015). In this case, older cancer patients with multiple side-effects must be assessed very well in addition to other older cancer patients who go through standard treatments (Hurria & Jay Cohen, 2017). In addition to similarities between treatment principles of older and younger cancer patients, it must be kept in mind that age-related organ function impairments, medication interactions increase co-morbidity risk. Polypharmacy increases a risk of adverse outcomes (Colloca *et al.*, 2015).

It is crucial for clinicians to get into consideration the effectiveness of surgical options for geriatric cancer patients and peri-operative risk factors. The peri-operative risk in elderly is high due to low hepatic and glomerular filtration rates, high risk of aspiration pneumonia and delirium (Kelly & Stephens, 2015). The need for surgery and type of surgery is critical for the effectiveness and outcomes of surgical treatment.

Radiotherapy can be an alternative to the other treatment modalities because of age-related comorbidities (Kelly & Stephens, 2015). The dose and fractions need to be considered when planning the radiotherapy. Elderly patients may have difficulty to travel to the treatment setting in case they need to undergo multiple radiotherapy fractions. Elderly cancer patients need to be assessed with regard to functional status, functions of organs or systems and the burden due to frequent visits to the hospital for radiotherapy (Kelly & Stephens, 2015).

Research about side-effects of systemic anti-cancer treatment was conducted on

younger cancer population. The systemic anti-cancer treatment in elderly is planned based on evidence from younger cancer patients. Because of this, the efficacy and side effects of systemic cytotoxic therapy in elderly people cannot be predicted as it is in younger cancer patients (Kelly & Stephens, 2015). Some cancer treatments increase the risk of cancer treatment toxicities. Long-term geriatric patients may face various chemotherapy-induced toxicities. Chemotherapy-related toxicity is more common among older cancer patients. Aging influences negatively the drug pharmacokinetics and pharmacodynamics. Older cancer patients are clearly under higher risk of facing more problems related to their treatment such as haematologic toxicities, infections, mucositis, cardiac toxicity, skin problems, risk for falling related to neurotoxicity and nephrotoxicity (Colloca *et al.*, 2015; Hurria & Jay Cohen, 2017). Reduced functional capacity, physiological changes, polypharmacy and increased co-morbid conditions play a significant role in toxicity increase in older people (Colloca *et al.*, 2015). Elderly cancer patients tend to experience more often peripheral neuropathy associated with cisplatin and vinca alkaloids. Some cytotoxic agents might cause toxicity due to changes in renal and hepatic functions (Kelly & Stephens, 2015; Stepney, 2016).

Problems such as nausea, vomiting, speech, swallowing, fatigue and cancer treatments may impair nutrition of elderly people. Comorbidities, poor food intake, inflammatory processes and tumor dynamics may result in muscle loss. Muscle loss and decreased nutrient absorption may accompany the side effects of chemotherapy and radiotherapy (Hurria & Jay Cohen, 2017; Stepney, 2016).

In order to avoid cancer treatment-associated side effects, dose reductions, less toxic agents and chemotherapy formulations will decrease the toxicities and increase the survival of elderly patients undergoing chemotherapy. Polypharmacy-related toxicities can be managed by the selection of chemotherapy agents and education of patients about co-medication. Renal and liver functions, pharmacokinetics and pharmacodynamics need to be taken into consideration. Maintaining better quality of life of elderly cancer patients can be achieved using better technologies for radiotherapy or chemotherapy, and developing the close monitoring, paying attention to dose calculations, avoiding target organs at risk and reducing the number of radiotherapy fractions or *combined* modality *treatments* (Stepney, 2016).

NEEDS OF ELDERLY CANCER PATIENTS

Needs of elderly cancer patients during treatment can vary with respect to personal characteristics, the cancer treatment-related characteristics and the type of cancer. Older cancer patients have a wide range of needs according to their diagnosis, treatment and health conditions. Regular assessment will uncover the need for supportive care interventions.

Physical and Functional Needs

A systematic review study on care needs of older patients reported that older cancer patients needed more supportive care than younger patients. The older patients tend to ask less information than their younger counterparts and elderly patients needed the most information about nutrition, coping with physical symptoms, dealing with the side effect of treatment and performing usual physical tasks and activities (Le Saux *et al.*, 2018). Another systematic review reported that 15 to 93% of newly-diagnosed patients who undergo cancer treatment had unmet needs. Psychological needs,

information needs and support in fulfilling the physical needs were reported to be unmet ones (Puts *et al.*, 2012).

Nutrition: Elderly people requires special considerations because of changes due to the aging process. Psychological and physiological changes, financial and age-related functional difficulties, lack of support, changes in nutritional requirements and sense of taste and smell influence the good intake and may result in malnutrition in elderly people (Gosney, 2009). Nutrition in elderly cancer patients is influenced by the aging process, cancer diagnosis, and cancer treatments. Commonly reported complaints by elderly cancer people were reported to be weight loss, lack of appetite and constipation. One systematic review revealed that elderly cancer patients needed nutritional support (Le Saux *et al.*, 2018). Elderly who undergo chemotherapy that includes agents alkylating agents [cisplatin, cyclophosphamide, oxaliplatin], antimetabolites [5-Fluorouracil, capecitabine, methotrexate], anthracyclines [doxorubicin], immunomodulating agents [thalidomide], mitotic inhibitors [cabazitaxel, docetaxel, paclitaxel etc.] and topoisomerase inhibitors [irinotecan] experience nausea or vomiting (McQuade *et al.*, 2016). Elderly people found to need support at home in dealing with cancer treatment side effects (Le Saux *et al.*, 2018).

Functional status: Due to age and cancer treatment side effects, elderly cancer people reported feel fatigue, impaired mobility, and difficulty in performing daily living activities (Le Saux *et al.*, 2018). The concept of functional status means bathing, dressing, feeding, transfer, toilet, continence, telephone, cooking, transportation, money management skills and ability to use prescribed medications (Overcash, 2015). Functional capacity of older people goes through many changes. Older people's ability to perform certain actions such as moving, dressing and bathing as well as the functional capacity is often limited (Nursing and Midwifery Board of Ireland, 2015).

Functional problems are observed more frequently particularly among older cancer patients (Hurria & Jay Cohen, 2017). The functional disorders are related to co-morbidity increase and shorter survival. It might cause addiction in patients, the rise in the number of hospitalization and reduction of life quality (Guldhav *et al.*, 2017). Functional disorders may cause older cancer patients to encounter problems in daily life activities, accessing to transport vehicles as well as lack of social support and financial resources, access to latest technologies and treatment modalities as a result of higher costs (Swaminathan & Audisio, 2012). Functional disorders may cause older cancer patients to encounter problems in daily life activities, accessing to transport vehicles as well as lack of social support and financial resources, access to latest technology modern management plans and treatment as a result of higher costs (Swaminathan & Audisio, 2012). A study reported that functional capacity reduction was very high in older cancer patients. In the same study, approximately half of older patients reported functional capacity reduction (Van-Abbema *et al.*, 2017). Fatigue and pain, as well as physical disorders and disability of older cancer patients, often prevent the cancer patients from performing daily actions (Institute of Medicine, 2008).

Anemia is one of the common problems among elderly. Aging bone marrow and cancer treatments may result in the decrease in red blood cells, thus elderly cancer patients may feel fatigue, and their functional status may worsen. Optimal tissue oxygenation improves the efficacy and action of the cancer treatment on tumor (such as radiotherapy). Several factors (underlying conditions, disease, radiotherapy, and

chemotherapy) may cause bone marrow depression. Bone marrow depression may increase the morbidity and mortality associated with secondary infections (Kelly & Stephens, 2015). Assessment of geriatric patients with respect to problems such as depression, anxiety and careful planning of multiple cancer treatments will help the health professionals in dealing with functional problems more effectively.

The risk for falling: Geriatric patients are prone to high risk of falls due to sarcopenia, functional deficits impaired mobility, elderly age, comorbidities, polypharmacy and cancer-related pain (Hurria & Jay Cohen, 2017; Stepney, 2016). Falling etiology in older people have multiple factors due to changes caused by physiological age, pathological factors, and behavioral or environmental factors. Falling history of older cancer patients before cancer treatment is defined as a major determinant of falling incidences that might occur after cancer treatment (Burhenn *et al.,* 2016). Bathrooms are likely to be dangerous zones of houses for older people. Bathtubs might have wet and slippery surfaces that might increase the risk of falling for inactive older people who have poor balance or neuropathy (Overcash, 2015).

Medication: Polypharmacy is an important problem for older cancer patients. In a study on older cancer patients by Nightingale et al. (2015), the prevalence of polypharmacy, inappropriate medication consumption, and excessive multiple medication uses were reported 41%, 43% and 51%, respectively (Nightingale *et al.,* 2015). Cancer medication treatment increases the polypharmacy and complicates the medication regime of older cancer patients. Polypharmacy contributes to adverse reactions, medication interactions, and noncompliance with medications in older cancer patients (Burhenn *et al.,* 2016). Elderly cancer patients and family members face difficulties in pursuing the prescribed medications. Most of the errors in self-administration of medications occur in aged 80 and older people with multiple diagnoses (Overcash, 2015).

Fecal incontinence: Elderly may experience continence problems associated with aging, immobility, neuropathy and eating habits. Elderly patients may face bowel motility problems due to surgical treatments or chemotherapy-induced peripheral neuropathy (autonomic side effects such as constipation or diarrhea) or medications such as loperamide and codeine (Gosney, 2009). Elderly who undergo chemotherapy with agents such alkylating agents [cisplatin, cyclophosphamide, oxaliplatin], antimetabolites [5-Fluorouracil, capecitabine, methotrexate], anthracyclines [doxorubicin], immunomodulating agents [thalidomide], mitotic inhibitors [vincristine, paclitaxel etc.] and topoisomerase inhibitors (irinotecan] may commonly experience diarrhea or constipation (McQuade *et al.,* 2016).

Supportive Care for Physical and Functional Needs

Supportive care is a palliative care approach that aims to improve the quality of life in patients, to reduce the number of hospitalizations and increase patient satisfaction. Supportive care guides the clinical approach plays a role in preventing treatment-induced toxicity and provides management strategies to help to recover. Supportive care approach involves various interventions such as the routine use of growth factors, diagnosis, and management of co-morbidities and geriatric syndromes in older people who receive myelosuppressive chemotherapy (Colloca *et al.,* 2015). Physical supportive care strategies are important for older patients regardless of timing and purpose of anti-cancer treatment. In supportive care; risks of older cancer patients

are taken under control including deterioration of health condition, increase in the number of falls, high-level disability and reduction of functional capacity (Koll *et al.,* 2016).

Supportive care is crucial from diagnosis to the end of life for reducing the mortality rate and increase welfare-level. A multidisciplinary team of oncologists, geriatrics, nurses, social service specialists and physical therapists are expected to work together to achieve this goal (Koll *et al.,* 2016). Impaired functional status and significant co-morbidity might delay and prevent implementation of systematic chemotherapy in older cancer patients. Functional status assessment is a basic and useful part of physical treatment and history of cancer diagnosed older people (Overcash, 2015). Functional status directly influences activities such as money management, cooking, and transportation which are required for independence and executive activities. People over eighty are likely to display poor functional status. Detecting functional disorders in old patients is more useful than focusing on chronological age when estimating mortality and treatment outcomes (Overcash, 2015).

Functional status assessment and management is very critical in care services of older people. Understanding their limitations and physical capabilities might help to develop cancer treatment strategies, patient/family educational needs and organize domestic services. The inclusion of older cancer patients in ambulatory treatment centers might be useful for medical management strategies, coping with disability and patient/family interaction. Maintaining independence is a critical component of older people care and functional status assessment is a part of this effort. Eliminating factors that influence functional status of older cancer patients negatively and planning physical treatment or regular exercise might be effective for functional status assessment (Overcash, 2015). Supportive interventions in patients with hematological toxicity may help to deal with outcomes or poorer prognosis (blood transfusions, dose reductions, prophylactic use of recombinant human granulocyte colony-stimulating factors) (Kelly & Stephens, 2015).

Participation of older cancer patients in daily life activities and instrumental daily life activities are vital for survival and improvement of life quality. This must involve several practices such as self-care training, environmental adaptation, cognitive rehabilitation, medication management, upper extremity activity, exercise, lymphoedema care, peripherical neuropathy and cancer-related fatigue management (Koll *et al.,* 2016). Exercise might improve general life quality in older cancer patients. Individualized exercise programs may be given to older patients who have various co-morbid conditions, physical limitations or walking or balance disorders. Increased exercise and physical activity might affect pain management positively and enhance their balance, which plays a key role in reducing the risk of falling (Koll *et al.,* 2016).

Psychological and Social Needs

Cognitive impairment, inadequate functional status, psychological status, changing social functions and co-morbidities of older cancer patients require a unique preventive approach and monitor (Le Seux *et al.,* 2018). The aging process causes reduction of physiological reserves in multiple systems. Several treatments might influence functional status of older people even without any co-morbidity. Co-morbid conditions and age-related physiological changes in older patients might significantly restrict the ability to tolerate cancer treatment.

Cognitive disorders in older patients also influence functional status and quality of life negatively (Burhenn *at.al.,* 2016). In cancer diagnosis and treatment stage, older cancer patients need some cognitive skills such as managing money, using medications and using the telephone and motor skills such as walking and transfer (Overcash, 2015). Older cancer patients have specific needs including medication support, access to treatment locations and daily life activities (Lloyd *et al.*, 2015). Transportation and economic problems might hinder access to healthcare services particularly when patients need regular medical interventions (Overcash, 2015). Patients also need another family member/caregiver to be carried to the treatment center. Most of older cancer patients who live alone and have no support often fail to complete cancer treatment (Alan *et al.,* 2013).

Supportive Care for Psychological and Social Needs

The emotional stress due to cancer diagnosis and treatment, fear of recurrence and physical problems might cause psychological distress for older cancer patients and families/caregivers. Prevalence of psychological distress varies with respect to cancer diagnosis, time after diagnosis, the extent of functional and social problems, the presence of pain and other personal variables (Institute of Medicine, 2008).

Older patients who previously have had cognitive disorders are under the risk of complications such as delirium during cancer treatment. Delirium often occurs among older patients due to poly-pharmacy, anemia, dehydration and electrolyte imbalances. It is crucial to diagnose the syndrome of dementia and cognitive impairments in supportive care management (Koll *et al.,* 2016). Families of older cancer patients need psycho-social support during cancer treatment and later periods. Physical and psychological disorders may cause social problems such as failure to perform social roles. Low income, healthcare cost or lack of health insurance, work loss, and financial burden may cause great stress. Social support systems (family members or friends) may provide tangible and emotional support (Institute of Medicine, 2008).

Older cancer patients might experience specific concerns including body image concerns, interpersonal problems, existential anxiety, depression, or anxiety. Coping with physical or psycho-social effects and cancer treatment may be observed in the form of depression, anxiety, and isolation. A comprehensive assessment is necessary for understanding psycho-social needs of older patients. Patients with cognitive disorder must be evaluated in terms of controllable risk factors, capacity, daily life activities, instrumental daily life activities and neurotoxicity. Acute changes in the mental status of older patients must be closely monitored with regard to the risk of delirium (Koll *et al.,* 2016). Older patients who try to cope with both social isolation, economic difficulty and illness, and treatment must be supported psycho-socially. Facilitating the transportation and daily activities, using a prosthesis or a wig may help patients coping with certain toxicities and may help to reduce psychological problems of cancer patients (Koll *et al.,* 2016).

GERIATRIC ONCOLOGY CARE

The age is not the only determinant of care needs of elderly cancer people. The type of cancer diagnosis, access to the health services, physical condition and preferences of the elderly, social and economic status and gender are more influential in shaping the needs and outcomes. Supporting patients in maintaining the better health

and providing support will help elderly cancer patients manage effectively with frailty, cancer and treatment outcomes (Expert Reference Group for the Older Person with Cancer, 2016). Dealing with older cancer patients that the older cancer patients may vary with regard to the health condition, psychological and social status, functional performance, cultural and economic status (Puts *et al.*, 2012). Multidimensional approaches may help to meet effectively the care needs of elderly cancer people.

Because of advancing age and less access to health care services, some cancer symptoms in elderly may not be obvious at early stages. Besides these factors, elderly people may get a late diagnosis and the onset of the cancer treatment might delay. Because of advancing age, changes in tumor biology and physiological changes, elderly patients may become more sensitive to side effects of cancer treatments. Short or long-term adverse may delay treatments and may cause patients to decline the cancer treatment or may influence the survival. It is vital to take into consideration that elderly people addition to cancer diagnosis and outcomes of cancer treatment have to deal with comorbidities, social and health care-related problems. Needs of elderly people vary from improving general well-being and health to cancer and its treatment (Expert Reference Group for the Older Person with Cancer, 2016).

Health professionals can come across elderly cancer patients in all care settings. The elderly patients with cancer can apply to primary care settings for prevention, screening, and follow-up. Elderly cancer patients can be seen at the acute care settings for the treatment of acute side effects or complications or for the management of cancer progression. Tertiary treatment facilities provide support for the rehabilitation and screening for secondary cancers or for the management of long-term adverse effects following cancer treatments (Morgan & Tarbi, 2016).

As the number of older population with cancer is increasing rapidly worldwide, the experiences show that healthcare professionals lack knowledge and training. The management with the care of elderly cancer patients and age-related complexities requires the collaboration of well-trained health professionals and families for meeting the needs of the older people. Health professionals are the oncologists, nurses, geriatricians and palliative care specialist and allied health professionals. To provide high-quality evidence-based care for elderly people, these health professionals also need well-trainings about elderly care. The *field* of *geriatric care* includes the courses about an assessment of older people, decision making in cancer treatments, communication with family and the elderly person, polypharmacy, nutrition, falls, co-morbidities, dementia, and delirium (Expert Reference Group for the Older Person with Cancer, 2016).

Health professionals improve the treatment tolerance, management of symptoms, maintain functional status, and life quality (Bond *et al.*, 2016). Nurses come across with healthy or ill people at every stage of life in different settings. Nurses are expected to meet the needs of people and manage the care of elderly cancer patients across the continuum of cancer care (Figure 1) (Institute of Medicine, 2013; Morgan & Tarbi, 2015). Palliative care in older patients is the other topic that needs to be planned throughout the cancer trajectory. Older people have unmet needs for pain management, information, communication, and preference for place of the care (WHO Regional Office for Europe's Health Evidence Network, 2004).

Prevention and **Risk Reduction**	**Screening**	**Diagnosis**	**Treatment**	**Survivorship**	**End-of-Life Care**
- Tobacco control - Diet - Physical activity - Sun and environmental exposures - Alcohol use - Chemoprevention - Immunizations	- Age and gender-specific screening - Genetic testing	- Biopsy - Pathology reporting - Histological assessment - Staging - Biomarker assessment - Molecular profiling	- Systemic therapy - Surgery - Radiation	- Surveillance for recurrences - Screening for related cancers - Hereditary cancer predisposition & genetics	- Implementation of advanced care planning - Hospice care - Bereavement care

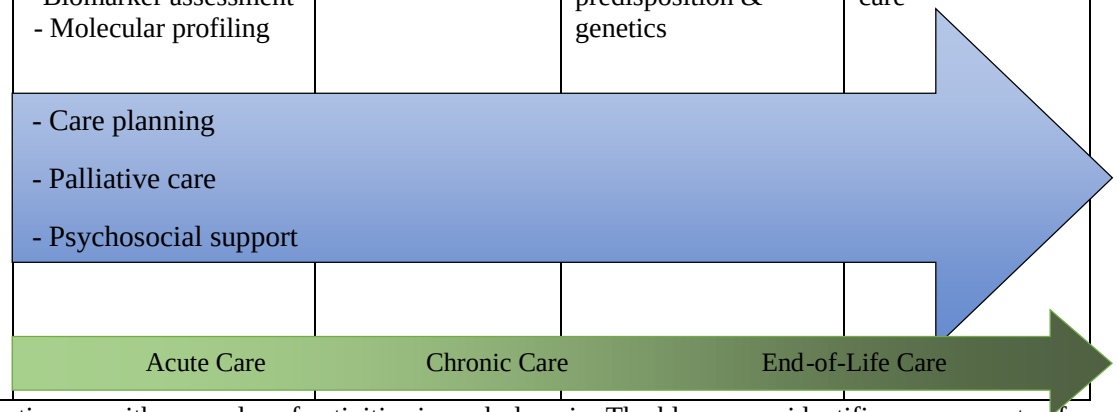

Figure 1: Domains of the cancer care continuum with examples of activities in each domain. The blue arrow identifies components of high-quality cancer care that should span the cancer care continuum from diagnosis through end-of-life care. The green arrow identifies three overlapping phases of cancer care, which is a way of conceptualizing the period of the cancer care continuum that is the focus of this report.

Source: Institute of Medicine. Delivering high-quality cancer care: charting a new course for a system in crisis. Washington DC: National Academies Press; 2013, page 4.

Oncology nurses play a critical role in the comprehensive assessment of elderly cancer patients. The nurses are expected to facilitate the access to cancer diagnosis services and cancer treatment, independently of age group (Morgan & Tarbi, 2015). Patient-family education programs, motivational interviewing and developing trusting, caring relationship and evidence-based geriatric oncology care will improve the outcomes of treatment and quality of life of patients. Oncology nurses are required to have skills for conducting the comprehensive geriatric assessment, identifying risk factors, geriatric syndromes and frailty. Initiation of early palliative care programs based on personal needs and ensuring continuity of the care will help address the needs of older cancer patients and the families. The oncology nurses are to improve the communication between care teams and conduct research to explore the specific needs of elderly cancer population (Morgan & Tarbi, 2015).

REFERENCES

Alan, Ö.; Gürsel, Ö.; Ünsal, M.; Altın, S.; Kılçıksız, S. (2013). Geriatrik Hastalarda Onkolojik Yaklaşım. Okmeydanı Tıp Dergisi 29(Ek sayı 2), 94-98.

American Cancer Society, 2016. Cancer Treatment & Survivorship Facts & Figures 2016-2017. Atlanta: American Cancer Society.

American Cancer Society, (2018). Cancer Facts & Figures 2018. Atlanta: American Cancer Society.

Bond, S.M.; Bryant, A.L.; Puts, M. (2016). The Evolutıon of Gerooncology Nursing. Seminars in Oncology Nursing 32(1), 3-15.

Bridges, J.; Wengström, Y.; Bailey, D.E. Jr. (2016). Educational Preparation of Nurses Caring for Older People with Cancer: an International Perspective. Semin Oncol Nurs 32(1), 16-23.

Burhenn, P.S.; McCarthy, A.L.; Begue, A.; Nightingale, G.; Cheng, K.; Kenis, C. Geriatric Assessment in Daily Oncology Practice for Nurses and Allied Health Care Professionals: Opinion Paper of the Nursing Allied Health Interest Group of the International Society of Geriatric Oncology (SIOG). J Geriatr Oncol JGO-00334; No. of pages: 10; 4C. Available at: http://dx.doi.org/10.1016/j.jgo.2016.02.006 (accessed: 16 June 2018).

Cleave, J.H.V.; Kenıs, C.; Sattar, S.; Jabloo, V.G.; Ayala, A.P.; Puts, M. (2016). A Research Agenda for Gero-Oncology Nursing. Seminars in Oncology Nursing 32(1), 55-64.

Colloca, G.; Navas, L.M.G.; Ortolani, E.; Sisto, A.; Ferrandina, C.; Landi, F. (2015). Supportive Care and Geriatric Assessment in Older Cancer Patients. J Palliat Care Med 5, 235.

Expert Reference Group for the Older Person with Cancer, (2016). Older People Living with Cancer: Designing the Future Healthcare Workforce. International Society of Geriatric Oncology, Macmillan Cancer Support. Available at: http://www.macmillan.org.uk/assets/workforce-report.pdf (accessed: 16 June 2018).

Gosney, M. (2009). General Care of the Older Cancer Patient. Clin Oncol (R Coll Radiol) 21(2), 86-91.

GLOBOCAN, (2012): Estimated Cancer Incidence, Mortality and Prevalence Worldwide in 2012. WHO (2012). International Agency for Research on Cancer. Available at: http://globocan.iarc.fr/Pages/burden_sel.aspx (accessed: 07 June 2018).

Guldhav, K.V.; Jepsen, R.; Ytrehus, S.; Grov, E.K. (2017). Access to Information and Counselling–Older Cancer Patients' Self-Report: a Cross-sectional Survey. BMC Nursing 16, 18.

Hurria, A. & Jay Cohen, H. (2017). Comprehensive Geriatric Assessment for Patients with Cancer. 1-27. Available at: https://pdfs.semanticscholar.org /3510/d8d7d67174bddbb1b9f78d51d00edba70bbc.pdf (accessed: 16 June 2018).

Institute of Medicine (IOM), (2008). Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs. Nancy E. Adler andAnn E. K. Page, eds. Washington, DC: The National Academies Press; 2008, 456 pages.

Institute of Medicine. Delivering High-Quality Cancer Care: Charting a New Course for A System in Crisis. Washington DC: National Academies Press; 2013, page 4.

Kalsi, T.; Babic-Illman, G.; Ross, P.J.; Maisey, N.R.; Hughes, S.; Fields, P.; Martin, F.C.; Wang, Y. & Harari, D. (2015). The Impact of Comprehensive Geriatric Assessment Interventions on Tolerance to Chemotherapy in Older People. Br J Cancer 112(9), 1435-44.

Kelly, E. & Stephens, P. (2015). Cancer in the older person. Reviews in Clinical Gerontology 25(3), 172-180.

Koll, T.; Pergolotti, M.; Holmes, H.M.; Pieters, H.C.; van Londen G.J.; Marcum, Z.A.; MacKenzie, A.R. & Steer, C.B. (2016). Supportive Care in Older Adults with Cancer: Across the Continuum. Curr Oncol Rep 18(8), 51.

Le Saux, O.; Lapotre-Aurelle, S.; Watelet, S.; Castel-Kremer, E.; Lecardonnel, C.; Murard-Reeman, F.; Ravot, C. & Falandry, C. (2018). Systematic Review of Care Needs for Older Patients Treated with Anticancer Drugs. J Geriatr Oncol Mar 21. pii: S1879-4068(18)30085-7.

Lloyd, A.; Kendall, M.; Carduff, E.; Cavers, D.; Kimbell, B. & Murray, S.A. (2015). Why Do Older People get Less Palliative Care than Younger People? European Journal of Palliatıve Care 23(3), 132-137.

McQuade, R.M.; Stojanovska, V.; Abalo, R.; Bornstein, J.C. & Nurgali, K. (2016). Chemotherapy-induced Constipation and Diarrhea: Pathophysiology, Current and Emerging Treatments. Front Pharmacol 7, 414. eCollection 2016.

Moloney, E. (2014). Ageing and Cancer: A Complex Relationship. Cancer Forum 38(3), 235-238.

Morgan, B. & Tarbi, E. (2016). The Role of the Advanced Practice Nurse in Geriatric Oncology Care. Semin Oncol Nurs 32(1), 33-43.

Nightingale, G.; Hajjar, E.; Swartz, K.; Andrel-Sendecki, J.; Chapman, A. (2015). Evaluation of a Pharmacist-Led Medication Assessment Used to Identify Prevalence of and Associations with Polypharmacy and Potentially Inappropriate Medication Use Among Ambulatory Senior Adults with Cancer. J Clin Oncol 33(13), 1453-1459.

Nursing and Midwifery Board of Ireland (NMBI). Working with Older People Professional Guidance. A statutory organization which regulates the nursing and midwifery professions in Ireland. 2015.

Available at: www.NMBI.ie/What-We-Do (accessed: 06 June 2018).

Overcash, J. (2015). Assessing the Functional Status of Older Cancer Patients in an Ambulatory Care Visit. Health Care 3, 846-859.

Overcash J. &. Momeyer, M. A. (2017). Comprehensive Geriatric Assessment and

Caring for the Older Person wıth Cancer. Seminar in Oncology Nursing 33(4), 440-448.
Puts, M.T.; Papoutsis, A.; Springall, E. & Tourangeau, A.E. (2012). A Systematic Review of Unmet Needs of Newly Diagnosed Older Cancer Patients Undergoing Active Cancer Treatment. Support Care Cancer 20(7), 1377-94.
Smetana, K. Jr.; Lacına, L.,; Szabo, P.; Dvořánková, B.; Brož, P.; Šedo, A. (2016). Ageing as an Important Risk Factor for Cancer. Anticancer Research 36, 5009-5018.
Stepney, R. (2016). Advances in Caring for the Older Cancer Patient: a Report from the 2015, Conference of the International Society of Geriatric Oncology. Cancer Biol Med 13(1), 150–155.
Swaminathan, V. & Audisio, R.A. (2012). Cancer in Older Patients: an Analysis of Elderly Oncology. Ecancer 6, 243.
Türkiye İstatistik Kurumu. (2017). Ölüm Nedeni İstatistikleri (2009 ve sonrası). Yaş Grubu ve Cinsiyete Göre Seçilmiş Ölüm Nedenlerinin Dağılımı. Available at: http://www.tuik.gov.tr/PreTablo.do?alt_id=1083 (accessed: 16 June 2018).
Van-Abbema, D.; Van-Vuuren, A.; Van-Den-Berkmortel, F.; Van-Den-Akker, M.; Deckx, L.; Buntinx, F.; Van- Kampen, R.; Lambooij, E.; De-Boer, M.; De-Vos-Geelen J.; Tjan-Heijnen V.C. (2017). Functional Status Decline in Older Patients with Breast and Colorectal Cancer after Cancer Treatment: A Prospective Cohort Study. J Geriatr Oncol 8(3), 176-184.
WHO Regional Office for Europe's Health Evidence Network (HEN). (2004). What are the palliative care needs of older people and how might they be met? Available at: http://www.euro.who.int/__data/assets/pdf_file/0006/74688/E83747.pdf (accessed: 16 June 2018).
WHO. (2017). Guide to cancer early diagnosis. Geneva: World Health Organization; 2017. Available at: http://apps.who.int/iris (accessed: 07 June 2018).
WHO. (2018). Fact Sheets. Cancer Key Fact. Available at: http://www.who.int/news-room/fact-sheets/detail/cancer (accessed: 07 June 2018).
Wildiers, H.; Heeren, P.; Puts, M.; Topinkova, E.; Janssen-Heijnen, M.L.; Extermann, M.; Falandry, C.; Artz, A.; Brain, E.; Colloca, G.; Flamaing, J.; Karnakis, T.; Kenis, C.; Audisio, R.A.; Mohile, S.; Repetto, L.; Van- Leeuwen, B.; Milisen, K.; Hurria, A. (2014). International Society of Geriatric Oncology Consensus on Geriatric Assessment in Older Patients with Cancer. J Clin Oncol 32(24), 2595-603.

Chapter 8

Prevalence and Factors Affecting Premenstrual Syndrome in University Students

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INTRODUCTION

Many women of reproductive age may experience a number of complaints characterized by recurrent cognitive, behavioral, psychological and physical changes in the premenstrual phase of the menstrual cycle. Such complaints, known as the "premenstrual syndrome" (PMS), most frequently appear in the late luteal phase of the menstrual cycle (Doruk et al. 2009; Duen˜as et al., 2011) and tend to subside with the onset of menstruation (Mishell, 2005; Yücel et al., 2009).

Mentioned in the ancient works of Hippocrates and first described by Frank (1931), the premenstrual syndrome is known to adversely affect the quality of life of women (Choi et al., 2010). The exact etiology of PMS remains unknown (Freeman, 2010; Kırcan et al. 2012; Öztürk and Tanrıverdi, 2010). However, it is commonly believed that there are certain changes affecting the balance between sex hormones and neurotransmitters that may contribute to its development. (Kısa, Zeyneloğlu and Güler, 2012). These changes include hormone imbalance (high or low progesterone and estrogen, hyperprolactinemia, increased endorphins), thyroid dysfunction, hypoglycemia, fluid retention, genetic factors (family history), stress, individual factors (culture, educational background, knowledge about menstruation, smoking) and dysmenorrhea (Bertone-Johnson, Hankinson, Johnson and Manson, 2008; Rosenfeld et al., 2008). Studies show that PMS occurs at a significantly higher rate in unmarried working women; in particular in those who experience dysmenorrhea and whose family members have had similar complaints (Bertone-Johnson et al., 2008; Öztürk and Tanrıverdi, 2010).

More than 75% of experience mild or moderate symptoms of PMS. However, severe PMS only occurs in 2-10% of women (Doğan, Doğan, Can and Alaşehirlioğlu, 2012; Schulman, 2010). Severe PMS enough to affect quality of life and require medical treatment occurs in 2-10% of women (Miyaoka, Akimoto and Ueda, 2011; Türkçapar and Türkçapar, 2011), and is classified as Premenstrual Dysphoric Disorder (PMDD) according to the DSM V criteria (American Pyschological Association [APA], 2013). PMS may appear at any age post-menarche, However, it is reported in the literature that PMS most frequently develops in adolescent female and young women, and has a more severe course in other female age groups, while the symptoms diminish

as women approach menopause (Arıöz and Ege, 2013; Doğan et al., 2012; Takeda, Koga and Yaegashi, 2010; Yücel et al., 2009).

PMS is known to have more than 150 symptoms and the degree to which it adversely affects a woman's quality of life is related to the severity of the symptoms (Adıgüzel, Taşkın and Danacı, 2007; Delara et al., 2012; Öztürk and Tanrıverdi, 2010). Such symptoms include depression, anxiety, irritability, crying, insomnia, poor concentration, social withdrawal, decreased libido, breast tenderness, edema, increase in appetite, weight gain, vomiting, nausea, headache, joint pain and bloating, and loss of sexual activity (Adıgüzel et al., 2007; Kısa et al., 2012; Lete et al., 2012). As such complaints may be particularly severe in adolescent female and women, their quality of life would be adversely affected by a number of problems such as those experienced in interpersonal relationships, emotional well-being, family relations, social activities, work productivity and sexual function (Arıöz and Ege, 2013; Chandraratne and Gunawardena, 2011; Doruk et al., 2009; Weisz and Knaapen, 2009). Studies revealed that work attendance and productivity are reduced, and that the risk of economic loss and accident is increased (Demir, Algül and Güvendağ Güven, 2006; Heinemann, Minh, Heinemann, Lindemann and Filonenko, 2012; Öztürk et al., 2011; Taşcı, 2006). However, according to other previous studies, adolescent female in particular had longer non-attendance in school due to PMS complaints, which resulted in diminished school achievement and poor self-esteem, as well as adverse effects on daily life activities and social well-being (Adewuya, Loto and Adewumi, 2008; Anandha Lakshmi, Saraswathi, Saravanan and Ramamchandran, 2011; Thu, Giron Diaz and Sawhsarkapaw, 2006)

There are no efficient treatment methods for PMS that has individual and social adverse effects on the lives of adolescent female and women. For treatment, health professionals mainly recommend pharmacotherapy, changes in lifestyles, awareness of PMS symptoms, and education about PMS, so that adolescent female and women can effectively overcome PMS (Arıöz and Ege, 2013; Frackiewicz and Shiovitz, 2001; Heinemann et al., 2012). Thus, it is thought to be useful for adolescent female and women to be informed of the physiology of menstruation and the menstrual cycle, and to correct any incorrect beliefs and information they may have received about menstruation. The following interventions are also recommended: diet modifications (restriction of coffee, tea, chocolate and sodium in the luteal phase), ensure a regular sleep and exercise program, provide vitamin-mineral support (intake of calcium, magnesium, vitamins E and B6), and apply efficient stress management and drug treatments (e.g. oral contraceptives, diuretics, antidepressants) (Daley, 2009; Kathleen, Lustyk and Shaver, 2009; Singh, Singh, Arora and Sen, 2006).

The purpose of this study was to determine the prevalence and the affecting factors of premenstrual syndrome in university students.

METHODS

Type of the Research and Location of the Research

This cross-sectional study was carried out at the School of Nursing and the School of Physical Therapy and Rehabilitation of a university between November 2012 and May 2013.

Sample of the Research

This study has not been made the method of sample selection. The population of the female students studying in that university was 193. A total of 163 female students agreed to participate in the research. Eight were disregarded from analysis because of incomplete data. Seven students who did not agreed to participate in the study. This study was conducted with 155 female students. A sample of the students aged between 17 and 29 years were included in the study.

Data collection tools

The data were collected using two different questionnaires (Sample characteristics questionnaires and Premenstrual Sendrom Scale). Sample characteristics questionnaires; this questionnaire was structured by the researchers and determined the menstrual characteristics (10 items) and socio-demographic characteristics (6 items) of the female students. The questionnaire consisted of the questions related to socio-demeoraphic characteristics (age, mother's education status, family income status, smoking, exercise status) and the menstrual characteristics (age at menarche, length of menstrual cycle, menstruation duration, Familial history of PMS, dysmenorrhea). Premenstrual Sendrom Scale (PMSS); In determination of the students the existence of PMS, the Premenstrual Sendrom Scale (PMSS) was used. The reliability and validity of the Turkish adaptation of the scale was carried out by Gençdoğan (2006) (cronbach alpha, r= .75). The PMSS consist of 44 items that elicit PMSS information on nine subscales: depresssive feelings (items 1 to 7); anxiety (items 8 - 11, 13, 15, 16); fatigue (items 12, 14, 17, 18, 25, 37); irritability (items 19 to 23); depressive thinking (items 24, 26 to 30, 44); pain (items 31 to 33); changed appetite (items 34 to 36); changed sleep (items 38 to 40) and swelling (items 41 to 43) ones. All items are scored on a 5 - point Likert scale. After each item on the PMSS was read, it was marked by taking notice of "having this condition the week before menstruation". The PMSS items are scored as 1 for a response of "not any/never", 2 for "very little", 3 for "sometimes", 4 for "frequently" and 5 for "continually". The existence of PMS was determined according to subscale scores and the total PMSS score. The PMSS score is the sum of the subscale scores. The lowest possible PMSS total score is 44 points and the highest is 220. It is hypothesized that adolescent female who receive a total PMSS score of 111 or higher have premenstrual syndrome. When analyzing the PMSS results, PMS is considered to be present when more than 50% of the subscales and total have a high value (Gençdoğan, 2006). The data were collected using the face-to-face interview method. The questionnaire and PMSS lasted approximately 30 minutes. In current study, Cronbach's alpha coefficient PMSS was found to be .95.

Data analyses

The Statistical Package for Social Sciences (SPSS) version 15.0 used for the data management, and frequencies, means, standard deviations, independent t-tests, chi-square test and logistic regression analysis were used for the analysis.

Ethical considerations

The data were collected after the approval of the Clinical Research Ethical Committee. Prior to the data collection, informed consent of all female students were obtained. The female students were informed about the purpose of the research study, what would be done to them if they were to participate and that they had the right to quit the study whenever they wanted throughout the process and they were also

informed about whether they refused to participate in the research study or quit after accepting to participate, the healthcare they were already getting would not be affected in any way.

RESULTS

The research was conducted with 155 female students. They had a mean age of 20.65 ± 2.31, and the mean age at menarche was 13.93 ± 1.66. 75% of the participants were enrolled in a university nursing program. 3.8% of the participant's mothers were elementary school graduates and 90.9% reported the adequate income level. 0.3% of students reported that they did not smoke and 32.2% exercised 3 or more days per week. 61.3% of study participants had a menstruation period of ≥ 6 days and 54.2% had a menstrual cycle length of ≤ 28 days. Their mothers had premenstrual complaints at a rate of 48.7%, while 75.6% experienced dysmenorrhea (Table 1).

The individual and menstrual characteristics, as well as the PMSS score comparisons of the female students, are summarized in Table 1. When the total PMSS scores were compared with mother's educational status, family income level, existence of premenstrual complaints in the mothers, and experience of dysmenorrhea, a statistically significant difference was determined between the PMSS score and that of mother's educational status ($X^2 = 2.458$; $p = .050$), family income status ($X^2 = -2.029$; $p = .044$), existence of premenstrual complaints in the mothers ($X^2 = 1.216$; $p = .002$), and experience of dysmenorrhea ($X^2 = 1.891$; $p = .001$).

Table 1. Individual and Menstrual Characteristics of Female Students and PMSS Score Comparisons of Female Students (n: 155)

Some characteristics of female students	n	%	P-value
Mother's educational status			
Non-literate	3	1.7	
Primary+Secondary school	83	53.8	$X^2 = 2.458$; $p = .050$
Higher education	69	45.5	
Family income level			
Adequate	140	90.9	$X^2 = -2.029$; $p = .044$
Indequate	15	9.1	
Menstruation duration/days			
≤ 5	60	38.7	$X^2 = 1.210$; $p = .794$
≥ 6	95	61.3	
Menstruation cycle length /days			
≤ 28	84	54.2	$X^2 = 1.120$; $p = .994$
≥ 29	71	45.8	
Smoking status			
Yes	15	9.7	$X^2 = .132$; $p = .083$
No	140	99.3	
Exercises status /a week			
≥ 3	50	32.2	$X^2 = -1.463$; $p = .089$
≤ 3	105	67.8	

Familial history of PMS mother)			
Yes	76	48.7	$X^2 = 1.216$; p = .002
No	79	51.3	
Dysmenorrhea			
Yes	117	75.6	$X^2 = 1.891$; p = .001
No	38	24.4	

Upon evaluation of participants PMS score, their total PMSS score was found to be high (mean 112.89, SD 33.45). Based on the PMSS cut-off point, PMS was present in 54.2% of female students (Table 2).

Table 2. PMSS Outcomes of Female Students (n: 155)

Outcomes of PMSS	**n**	**%**	**Mean**	**SD** *
≤ 110	72	46.5	84.23	17.93
≥ 111	83	53.5	137.78	20.93
Total	155	100	112.89	33.45

" * " SD; Standard deviation

When the sub-dimensions of the scale were evaluated on the basis of the cut-off point, the following symptoms were observed: changes in appetite (70.9% of students), irritability (67.0%), pain (60.0%), depressive feelings (57.4%), bloating (56.8%), changes in sleeping habits (40.7%), fatigue (34.2%), depressive thoughts (27.8%), and anxiety (20%) (Table 3).

Table 3. Descriptive Data of the Quantitative Findings Derived From the PMSS Instrument (n: 155)

PMSS subscales	**Mean**	**SD**	**Scales min-max points**	**Marked min-max points**	**PMS symptoms**	
					n	**%**
Depressive feeling	18.82	7.31	7-35	7-35	89	57.4
Anxiety	13.48	5.73	7-35	7-31	31	20.0
Fatigue	17.76	5.92	6-30	6-30	53	34.2
İrritability	15.07	5.68	5-25	5-25	104	67.0
Depressive thoughts	14.42	5.98	7-35	7-29	43	27.8
Pain	8.39	3.29	3-15	3-15	93	60.0
Changes in appetite	9.50	3.48	3-15	3-15	110	70.9
Changes in sleeping habits	7.12	3.19	3-15	3-15	63	40.7
Bloating	8.71	3.93	3-15	3-15	88	56.8
Total	112.89	33.45	44-220	44-210	83	53.5

We used univariate and multivariate logistic regression analysis to evaluate the

effect of the variables that could influence the premenstrual syndrome status of the participants. Univariate logistic regression analysis showed that the educational status of the mother, family income status, family history of premenstrual syndrome and experience of dysmenorrhea affected premenstrual syndrome status ((p = .050; p = .037; p = .002; p = .001; Table 4). The multivariate logistic regression analysis revealed that those whose mother experienced PMS were 1.17 times more likely to experiences PMS themselves than those whose mother did not have PMS, and this finding was statistically significant (OR 1.27; 95% Cl, .98 - 1.68; Table 4). The risk of PMS in female students whose mothers had a higher level of education was 0.2 times lower than in those with mothers who had a lower level of education (OR .65; 95% Cl, .31 - 1.01). The risk of PMS in female students who had adequate income status was approximately 0.5 times lower than in those with inadequate income status (OR 1.53; 95% Cl, 1.032 - 2.237). The multivariate logistic regression analysis showed that students who experienced dysmenorrhea were 1.80 times more likely to experience PMS than those who did not have dysmenorrhea (OR 3.143; 95% Cl, 2.047 - 3.580, and this finding was statistically significant (p < .001; Table 4).

Table 4. Significant Independent Variables for PMS According to Logistic Regression Analysis

Characteristics	**B** ***	**SE****	**p**	**OR****	**95% Cl**
Mother's educational Status					
Non-literate	Reference				
Primary+Secondary school	-.76	.27	.050	.65	.31 - 1.01
Higher education	.23	.16	.047	1.12	.70 - 1.30
Income level					
Adequate	.735	.258	.037	1.530	1.032 - 2.227
Indequate	Reference				
Familial history of PMS (mother)					
Yes	.432	.190	.002	1.27	.98 - 1.68
No	Reference				
Dysmenorrhea					
Yes	.543	.324	.001	3.143	2.047 - 3.580
No	Reference				

" ** " OR: Odds Ratio, " *** " β: Beta, " **** " SE: Standard error

DISCUSSION

PMS is observed in adolescent female more frequently than in fertile women of other age groups. In this study, PMS was observed in 54.2% of the study participants based on the PMSS cut-off point. Various studies show the PMS prevalence rate to be in the range of 24 -75% (Bakhshani, Mousavi and Khodabandeh, 2009; Erbil, Karaca

and Kırış 2010; Kısa et al., 2012; Sitwat, Abit, Arif, Basit and Anvar, 2013)

In the present study, the most common symptoms experienced by students in the premenstrual period were changes in appetite, irritability, pain and depressive feelings. The results of studies including female university students carried out by Erbil et al. (2010) and Tanrıverdi, Selçuk and Okanlı (2010) are similar to the results of our study. Results of the studies carried out by Kısa et al. (2012) and Yücel et al. (2009) found that the most common observed premenstrual period symptoms were depressive feelings, depressive thoughts, fatigue and irritability. A study carried out in the United States by Braverman (2007) which included adolescent females revealed that anxiety, emotional changes, and activity intolerance are the most common symptoms experienced in the premenstrual period. In a study by Sitwat et al. (2013) which was carried out with adolescent females in Iran, pain was revealed to be a common premenstrual period symptom.

According to univariate and multivariate logistic regression analysis, female students who had mothers with a lower level of education had a higher risk of PMS. These results demonstrate that educational status of the mother is an important risk factor for PMS. In the literature, there is a strong association between educational status of an individual's mother and PMS predisposition. Moreover, the education status of an inidividual's mother has been reported to increase the rate of PMS (Gehlert, Song, Chang and Hartlage, 2008; Wong, 2011). The reason for this may be that many women are embarrassed to discuss anything related to the pre-menstrual period and deny their PMS complaints. They may consider pain a normal part the pre-menstrual period and of the menstrual cycle and prefer not to seek medical advice even when symptoms are severe and incapacitating. Consequently, PMS not only causes psychosocial health problems but also negatively influences quality of life and the ability to take part in daily life activities (Choi et al., 2010; Delara et al., 2012). Schulman (2010) reported that mothers with higher levels of education had consulted a doctor's advice for management of PMS. In several studies, it was found that the development of PMS was affected by the educational status of an individual's mother (Öztürk et al. 2011; Sezgin, Taş, Oskay and Can, 2008). Results of the present study thus support the literature. In another study conducted by Chandraratne and Gunawardena (2011), it was found that lower education status of an individual's mother was responsıble for the development of PMS complaints. Also, of particular importance, is the fact that more than 50% of adolescent female prior to onset of menarche get their information about menstruation from their mother or family, and have received negative thoughts about menarche (Singh, Singh, Arora and Sen, 2006; Taşcı, 2006). It is reported that these adverse thoughts about menstruation, particularly in adolescent girls, results in a tendency towards PMS (Braverman, 2007; Erbil et al., 2010).

In the present study, we determined that factors such as family income status, family history of premenstrual syndrome and dysmenorrhea influence the risk of PMS. When we investigated the variables that affect the status of participants experiencing PMS, the participants with an inadequate income level were found to have higher PMS rates. Sezgin et al. (2008) reported that inadequate income level was responsible for the increase of PMS complaints. Some researchers have suggested that the inadequate income level experienced premenstrual discomfort, and the reason for this could be related to behaviour learned through the relationship with their cultures (such as

receiving inadequate health care services, having an unhealthy life style (Gehlert et al., 2008; Lete et al., 2011; Wong, 2011)

According to the results of the current study, female students whose mothers had PMS complaints were found to have higher PMS rates, and there was a significant difference in family history between these groups. In the literature, it has been shown that a family history of premenstrual-related complaints (for example, in a mother or sister) makes it more likely that an individual will experience premenstrual complaints. It has been shown that this phenomenon is related to visual learning behavior. In addition, genetic factors and a family history of PMS were reported to increase the likelihood of experiencing PMS (Duen˜as et al., 2011; Frackiewicz and Shiovitz, 2001; Takeda et al., 2010; Weisz and Knaapen, 2009). Some studies showed that adolescent female whose mothers had also suffered PMS, have a significantly higher rate of PMS (Daley, 2009; Drosdzol, Nowosielski, Skrzypulec and Plinta, 2011; Erbil et al., 2010). Similarly, Anandha and et al., (2011) and Mishell (2005) also reported that adolescent female whose mothers had PMS complaints have a higher rate of PMS.

By both univariate and multivariate logistic regression analysis, dysmenorrhea was found to be a risk factor for PMS. When women cannot effectively cope with symptoms of dysmenorrhea (such as menstrual pain, nausea, vomiting, headaches, joint pain, irritability, and anxiety), this condition increases risk of developing premenstrual syndrome in women. (Heinemann et al., 2012; Wong and Khoo, 2010). Our study thus supports the literature. In many studies, it was found that university students who had dysmenorrhea also had a significantly high level of PMS (Adewuya et al., 2008; Bertone-Johnson et al., 2008; Delara et al., 2012; Kırcan et al., 2012). Demir et al. (2006) reported that women who experienced dysmenorrhoea had a PMS incidence higher than those who did not have the same experience. In another study carried out by Taşçı (2006) a statistically significant difference between dysmenorrhoea and PMS was revealed.

CONCLUSION

We determined that the prevalence of PMS was 54.2% in the university students surveyed. In the present study, the most common symptoms of PMS among adolescent female were changes in appetite, irritability, pain and depressive feelings. It was observed that mother's educational status, family income status, family history and dysmenorrhea are contributing factors to PMS. These results imply that health professionals may have an active role in reducing the prevalence of PMS in adolescent females, and in managing efficient interventions (health training about, and efficient management of PMS, menstruation and PMS symptoms, as well as consultancy on changes in lifestyle, diet, exercise, sleep, and, if necessary, pharmacological treatments, etc.). Hence, it was advised that health professionals should provide education and play a consulting role.

Use of results in practice

Premenstrual syndrome is present in a substantial proportion of university students. PMS have a adverse effect on their daily life activities and social well-being. Health professionals can improve the recognition and management of these common conditions by providing patient education on premenstrual symptoms and counseling adolescent female on lifestyle interventions to relieve their discomfort.

Acknowledgements

The authors would like to thank the students who willingly participated in this study.

Declaration of Conflicting Interest*:* None of the authors have any conflicts of interests with regards to this study.

Contributions

All the authors contributed to the design of the study, collection of data, analysis, interpretation of data, and writing and approval of the study.

Funding: This study was not supported by grants from the institutionally funded.

REFERENCES

Adewuya, A. O.; Loto, O. M.; Adewumi, T. A. (2008). Premenstrual dysphoric disorder amongst Nigerian university students: prevalence, comorbid conditions, and correlates. Archives Womens Mental Health 1: (1), 13-18.

Adıgüzel, H.; Taşkın, O. E.; Danacı, A. E. (2007). Manisa ilinde premenstrüel sendrom belirti örüntüsü ve belirti yaygınlığının araştırılması. Türk Psikiyatri Dergisi 18: (1), 215-222.

American Psychological Association. (2013). The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (*DSM*-5).

Arlington, VA Anandha Lakshmi, S. P. M.; Saraswathi, I.; Saravanan, A.; Ramamchandran, C. (2011).

Prevalence of premenstrual syndrome and dysmenorrhoea among female medical students and its association with college absenteeism. International Journal of Biological and Medical Research 2: (1), 1011 -1016.

Arıöz, A. & Ege, E. (2013). Premenstrüel sendrom sorunu olan üniversite öğrencilerinde, semptomların kontrolü ve yaşam kalitesinin artırılmasında eğitimin etkinliği. Genel Tıp Dergisi 23: (1), 63-69.

Bakhshani, N. M.; Mousavi, M. N.; Khodabandeh. G. (2009). Prevalence and severity of premenstrual symptoms among Iranian female university students. Journal of the Pakistan Medical Association, 59: (1), 205-208.

Bertone-Johnson, E. R.; Hankinson, S. E.; Johnson, S. R.; Manson J. E. (2008). Cigarette smoking and the development of premenstrual syndrome. The American Journal of Epidemiology 168: (1), 938–945.

Braverman, P. K. (2007). Premenstrual syndrome and premenstrual dysphoric disorders. Journal of Pediatric and Adolescent Gynecology 20: (1), 3-12.

Chandraratne, N. K. & Gunawardena, N. S. (2011). Premenstrual syndrome: the experience from a sample of Sri Lankan adolescents. Journal of Pediatric and Adolescent Gynecology 24: (1), 304-310.

Choi, D.; Lee, D. Y.; Lehert, P.; Lee, I. S.; Kim, S. H.; Dennerstein, L. (2010). The impact of premenstrual symptoms on activities of daily life in Korean women. Journal of Psychosomatic Obstetrics & Gynecology 31: (1), 10-15.

Daley, A. (2009). Exercise and premenstrual symptomatology: a comprehensive review. Journal of Women's Health 18: (1), 895-899.

Delara, M.; Ghofranipour, F.; Azadfallah, P.; Tavafian, S. S.; Kazemnejad, A.; Montazeri, A. (2012). Health related quality of life among adolescents with

premenstrual disorders: a cross sectional study. Health Quality Life Outcomes 10: (1), 1.
Demir, B.; Algül, L. Y.; Güvendağ, G.E. S. (2006). Sağlık çalışanlarında premenstruel sendrom insidansı ve etkileyen faktörlerin araştırılması. Türk Jinekoloji ve Obstetrik Derneği Dergisi 3(1), 262-270.
Doğan, S.; Doğan, N.; Can, H.; Alaşehirlioğlu H. V. (2012). Birinci basamakta premenstrüel sendroma yaklaşım. Smyrna Tıp Dergisi 1: (1), 90-93.
Doruk, A.; Erdem, M.; Gülsün, M.; Uzun, Ö.; Perdeci, Z. (2009). Temperament and character traits in premenstrual dysphoric. Pamukkale Tıp Dergisi 2: (1), 68-75.
Drosdzol, A.; Nowosielski, K.; Skrzypulec, V.; Plinta, R. (2011). Premenstrual disorders in Polish adolescent girls: Prevalence and risk factors. Journal of Obstetrics and Gynaecology Research 37: (1), 1216-1221.
Duen˜as, J.L.; Lete, I.; Bermejo, R.; Arbat, A.; Pérez-Campos, E.; Martínez-Salmeán, J., et al. (2011). Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in a representative cohort of Spanish women of fertile age. European Journal of Obstetrics & Gynecology and Reproductive Biology 156: (1), 72-77.
Erbil, N.; Karaca, A.; Kırış, T. (2010). Investigation of premenstrual syndrome and contributing factors among university students. Turkish Journal of Medical Sciences 40: (1), 565-573.
Frackiewicz, E. J. & Shiovitz, T. M. (2001). Evaluation and management of
Premenstrual syndrome and premenstrual dysphoric disorder. Journal of the American Pharmacists Association 41: (1), 437‑447.
Frank, R. T. (1931). The hormonal basis of premenstrual tension. Archives of Neurology & Psychiatry 26: (1), 1053- 1057.
Freeman, E. W. (2010). Therapeutic management of premenstrual syndrome. Expert Opinion on Pharmacotherapy 11: (1), 2879-2889.
Gehlert, S.; Song, I. H.; Chang, C. H.; Hartlage, S. A. (2008). The prevalence of premenstrual dysphoric disorder in a randomly selected group of urban and rural women. Psychological Medicine 39: (1), 1-8.
Gençdoğan, B. (2006). Premenstrual sendrom için yeni bir ölçek. Türkiye'de Psikiyatri 8: (1), 81-87.
Heinemann, L. A.; Minh, T. D.; Heinemann, K.; Lindemann, M.; Filonenko, A. (2012). Intercountry assessment of the impact of severe premenstrual disorders on work and daily activities. Health Care for Women International 33: (1), 109-124.
Kathleen, B.; Lustyk, B.; Shaver, G. S. (2009). Cognitive-behavioral therapy for premenstrual syndrome and premenstrual dysphoric disorder: asystematic review. Archives Womens Mental Health 12: (1), 85–96.
Kırcan, N.; Ergin, F.; Adana, F.; Arslantaş, H. (2012). Hemşirelik öğrencilerinde sendrom prevalansı ve yaşam kalitesi ile ilişkisi. Adnan Menderes Üniversitesi Tıp Fakültesi Dergisi 13: (1), 19-25.
Kısa, S.; Zeyneloğlu, S.; Güler N. (2012). Üniversite öğrencilerinde premenstrual sendrom görülme sıklığı ve etkileyen faktörler. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi 1: (1), 284-297.
Lete, I.; Duenas, J. L.; Serrano, I.; Doval, J. L.; Martinez-Salmean, J.; Coll, C., et al. (2011). Attitudes of Spanish women toward premenstrual symptoms, premenstrual syndrome and premenstrula dysphoric disorder: results of a nationwide survey.

European Journal of Obstetrics & Gynecology and Reproductive Biology 159: (1), 115-118.
Mishell, D. R. (2005). Premenstrual disorders: epidemiology and disease burden. American Journal of Managed Care 11: (1), 473-479.
Miyaoka, Y.; Akimoto, Y.; Ueda, K. (2011). Fulfillment of the premenstrual dysphoric disorder criteria confirmed using self-rating questionnaire among Japanese women with depressive disorders. Biopsychosocial Medicine 2: (1), 5.
Öztürk, S. & Tanrıverdi, D. (2010). Premenstrual sendrom ve başetme. Journal of Anatolia Nursing and Health Sciences 13: (1), 58-61.
Öztürk, S.; Tanrıverdi, D.; Erci, B. (2011). Premenstrual syndrome and management behaviours in Turkey. Australian Journal of Advanced Nursing 28: (1), 4-60.
Rosenfeld, R.; Livne, D.; Nevo, O.; Dayan, L.; Milloul, V.; Lavi, S., et al. (2008). Hormonal and volume dysregulation in women with premenstrual syndrome. Hypertension 51: (1), 1225-1230.
Schulman, L. P. (2010). Gynecological management of premenstrual symptoms. Current Pain and Headache Reports 14: (1), 367-375.
Sezgin, Ö.; Taş, D.; Oskay, Ü.; Can, G. (2008). İstanbul Üniversitesi Florance Nightingale Hemşirelik Yüksekokulundaki öğrencilerin perimenstruel sorunları. İst. Univ. Florence Nightingale Hemşirelik Yüksekokulu Dergisi 63: (1), 157-164.
Singh, S. P.; Singh, M.; Arora, M.; Sen, P. (2006). Knowledge assessment regarding puberty and menstruation among school adolescent girls of district Varanasi, U.P. Indian Journal of Preventive & Social Medicine 37: (1), 9-14.
Sitwat, Z.; Abit, A.; Arif, A.; Basit, A.; Anvar, Q. M. (2013). Premenstrual syndrome symptoms and prevalence among university students in Karachi. International Research Journal of Pharmacy 4: (1), 113-116.
Takeda, T.; Koga, S.; Yaegashi, N. (2010). Prevalance of premenstrual syndrome and premenstrual dysphoric disorder in Japanese high school students. Archives Womens Mental Health 13: (1), 535-377.
Tanrıverdi, G.; Selçuk, E.; Okanlı A. (2010). Universite öğrencilerinde premenstrual sendrom prevelansı. Journal of Anatolia Nursing and Health Sciences 13: (1), 52-57.
Taşcı, K. (2006). Hemşirelik öğrencilerinin premenstrual semptomlarının değerlendirilmesi. TAF Preventive Medicine Bulletin 5: (1), 434-443.
Thu, M.; Giron, D.E. O.; Sawhsarkapaw, T. (2006). Premenstrual sendrome among female university student in Thailand. Au Journal of Technology 9: (1), 158-162.
Türkçapar, F. A. & Türkçapar, H. M. (2011). Premenstruel sendrom ve premenstruel disforik bozuklukta tanı ve tedavi. Klinik Psikiyatri 14: (1), 241-253.
Weisz, G. & Knaapen, L. (2009). Diagnosing and treating premenstrual syndrome in five western nations. Social Sciences Medicine 68: (1), 1498-1505.
Wong, L. P. & Khoo, E. M. (2010). Dysmenorrhea in a multiethnic population of adolescent Asian girls. International J. of Gynecology & Obstetrics 108: (1), 139-42.
Wong, L. P. (2011). Premenstrual syndrome and dysmenorrhea: urban-rural and
multiethnic differences in perception, impacts, and treatment seeking. Journal of Pediatric and Adolescent Gynecology 24: (1), 272-277.
Yücel, U.; Bilge, A.; Oran, N.; Ersoy, M. A.; Gençdoğan B.; Özgen Özveren, Ö.
(2009). Adolesanlarda premenstruel sendrom yaygınlığı ve depresyon riski arasındaki ilişki. Anatolian Journal of Psychiatry 10: (1), 55-61.

Chapter 9

The Role of Nurses in Health Education

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INTRODUCTION

Nurses taking health protection, improvement and treatment in a disease situation as their goals are important members of the health sector with their knowledge and skills. Health education which has a significant contribution in increasing the quality of life and improving health, is among the contemporary roles of nurses. Nurses who are able to reach every part of the society can play an active role in reaching the right information and attaining correct behavior of the society. It is important that they should believe the importance and necessity of education, required facilities for effective education should be provided to them.

HEALTH EDUCATION

The health education is to adopt individuals to take the necessary precautions for healthy living and to convince them to practice these precautions, to get them to use the health services offered to them properly and enable to make decisions individually or collectively by them to improve their health conditions and environments (Ertem 2007). According to the WHO, health education is a combination of learning experiences designed to help individuals and communities improve their health by improving the knowledge of individuals and their societies or affecting their attitudes (URL1). The main purpose is to explain the value of health to the individuals and the society, to adapt them to solve their health problems by themselves, to adapt them to benefit from institutions and to live healthy, to protect and to improve health for healthy life and to create a positive environment (Hacıalioğlu 2016, Bahar Özvarış 2016). The important thing in health education is that the voluntarily and willingly participation of an individual in the determination of their own health applications.

The health services are classified as preventive, curative, rehabilitative and health promoting health services (Aytaç 2017). Health education is a fundamental task that must be fulfilled within the scope of preventive services. Health protection is all efforts made to prevent individuals from getting sick. Health protection is dealt with at four levels as primordial protection, primary protection, secondary protection and tertiary protection in terms of health education. Primordial protection includes the strengthening of individuals and the community; primary protection includes the prevention of a disease; secondary protection includes the prevention of the development of a disease and the reduction of the severity and prevalence of a disease; tertiary protection includes the trainings organized to prevent repetition and complications (Tabak 2013).

Nowadays, it is important not to protect health but also to improve health. Health improvement is a catalyst service to improve the general health level and includes public health education (Yakıncı 2013). Several programs and projects of the WHO such as healthy cities, active living, and healthy hospitals have been developed for the implementation of health promotion strategies and programs (Bahar Özvarış 2016).

Health education is an effective attempt in the protection and improvement of health, the detection and prevention of health problems and risks and the solution of problems. The health academy service (URL2) is given by the WHO to improve the knowledge of the protection and maintenance of health, shows the importance given to health by the WHO. The health academy conveys the information towards the prevention of diseases and the promotion and improvement of health to the individuals, via e-Learning that enables to learn by using any electronical technology and media (URL2). It is seen that health education takes place as a task in the laws and regulations in Turkey (URL 3 - 10).

NURSING

According to the WHO, nursing encompasses autonomous and collaborative care of individuals of all ages, families, groups and communities, sick or well and in all settings. It includes the promotion of health, the prevention of illness, and the care of ill, disabled and dying people' (URL11).

In Turkey, the title of nurse can be got with only an undergraduate-level degree according to the Amending Statute for Law on Nursing legislated in 2007. The job description was defined with the addition of "the determination of health needs that can be met by the nursing initiatives of individuals, families and communities in every setting, planning, applying, supervising and evaluating the nursing care within the scope of the needs identified within the scope of the nursing diagnosis process"(URL3). In this case, the nurses have the right to plan training for the individuals if it is necessary and to evaluate the results. It is seen that nurses have a duty to educate about health according to laws and regulations. Nurses are educated in this subject in their education life. In the Regulation on the Determination of the Minimum Education Conditions of the Educational Programs for Nursing, Midwifery, Dentistry, Veterinary Medicine, Pharmacy and Architecture determined by the High Education Board, The Health Education and Teaching Principles are included in the subjects which are necessary to be graduated as a nurse (URL12).

One of the Nursing Roles: Education

Helping to healthy and sick individuals which is the basic function of the nursing profession, is the all of the applications for helping, maintaining, sustaining and regaining health and sick individuals (Ay 2007). There are contemporary roles in nursing education, including the educator, caregiver, researcher, manager, decision maker and supporter roles of nursing. The educator role has been one of the most adopted roles (Taylan et al. 2012) The educator role includes providing planned education to improve and protect the health of the individuals, families and community and to get the individuals adopt the right health behaviors (Ay 2007). The scope of nursing service is defined in the Nursing Regulation; education is included in the regulation as one of the roles of nursing. In addition, the attending nurse has been

defined; the planning, implementation and evaluation of health education services have been among the responsibilities of an attending nurse (URL3). In the Amending Regulation for the Nursing Regulation published in 2011, the planning of trainings for patients and their families, informing patients and their families about the care and treatments and their possible side effects and providing an access to current and reliable health knowledge for patients have been added in the planning of education task of specialist nurses. In addition, Diabetes Education Nurse has been defined as a separate title; education and counseling have been within the duties and responsibilities of the Mental Health, Public Health and Child Health nurses (URL4). The related targets, objectives, principles and the way of education are included in the Public Health Education Regulation (URL6). The regulation of training for the staff, providing support for family physicians in education issues; implementing the training programs planned as services according to the target group and the goals (such as collective public education, the education of trades) or providing them through health institutions in the region are included in the Community Health Centers and Affiliated Units Regulation (URL7). The education of patients and in-service trainings are included in the Inpatient Treatment Institutions Regulation (URL10).

The Importance of Nursing in Health Education

The improvement of health is achieved by the gaining of healthy lifestyle behaviors; education is necessary to improve healthy lifestyle behaviors. Education is defined as the gaining of the knowledge, skills, attitudes and behaviors that meet the needs of the individual and provide solutions to the problems (Kaya 2009). Nurses have always been interested in the problems of the society and have always undertaken the task of protecting and developing health. The WHO Regional Office for Europe emphasized that nurses are health educators via drawing attention to the importance of health education in reaching the Health Goals for all (Kaya 2009).

There are family, school, peer education, health-supporting learning environments and social interaction in primordial protection while the health education in schools, group and community educations, informing, introducing health services and social stimuli approach in primary protection (Tabak 2013). The health trainings in the family practice centers, primary health care centers and affiliated units (the center for maternal and infant health and family planning, tuberculosis dispensary, the screening and training center for early diagnosis, screening and training of cancer) (URL8, URL7, URL9) where primary health care is provided, are part of the services provided; nurses can easily carry out these trainings.

Nurses are also an active member of the profession in the education of patients and their relatives which comes into prominence in the seconder and tertiary protection. Nurses spend the longest time with patients and their relatives in comparison with other members of the healthcare team. For this reason, they are able to win the trust of the patient by getting to know the patient well and communicating effectively. Nurses can take an active role in presenting the desired and needed knowledge and skills to individuals, without any trust and time problems. They also work in educational units in hospitals and take part in in-service trainings.

The importance and necessity of providing education role of nurses has found in the studies. In a study conducted in Istanbul, it was found that almost all of the patients

wanted to have a special educated nurse in a hospital, wanted to have experienced and gentle and informative nurses. 74.3% of them stated that informing would speed up the healing process and prevent side effects while 60.1% of them stated that informing would provide a benefit to decrease anxiety and fear (Aygül & Ulupınar 2012).

The ratio of the nurses giving education was 44.7% in Erzurum, 55% in the internal medicine department of a university hospital, 54% in the surgery clinic, 67.6% in Istanbul and 43.2% in Trabzon (Yıldırım et al. 2017, Öztürk et al 2011, Aygül & Ulupınar 2012, Babacan & Ulupınar Buyer 2008). In Erzurum, 67.2% of nurses believed that patient education is not necessary. In Kermanshah 65.3% of physicians and nurses stated that patient education is important or very important. In Istanbul, 96.6% of the patients stated that informing of patient relatives is very necessary (Yıldırım et al. 2017, Abdi et al. 2014, Aygül & Ulupınar 2012). The education of patients was ranked seventh and fifth in the daily working order of the nurses in Erzurum and Trabzon, respectively (Yıldırım et al. 2017, Babacan & Ulupınar Alıcı 2008). The uppermost obstacle to education was stated as high workload in Erzurum and Kermanshah (Yıldırım et al. 2017, Abdi et al. 2014). In another study in Iran, the limited knowledge and awareness of the nurses was the uppermost obstacle to education (Ramezanli & Jahromi 2015). The education is among the tasks of the nurses, but for some reason it is not regularly provided. There are even nurses who think that education is not effective.

REFERENCES

Abdi, A.; Izadi, A.; Vafaell, K. & Lorenstani, E. (2014). Assesment of Patient Education Barriers in Viwepoint of Nurse and General Physicians, International Research Journal of Applied and Basic Sciences, Vol., 8 (12), 2252-2256.

Ay, F.A. (2007). Mesleki Temel Kavramlar, Ay, F.A. (Ed.), Temel Hemşirelik Kavramlar, İlkeler, Uygulamalar, İstanbul medikal Yayıncılık, 1. Baskı, İstanbul, 33-58.

Aygül, S. & Ulupınar, S. (2012). Hemşirenin Hasta Eğitimindeki Rolüne Yönelik Hastaların Görüşleri, Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 15:1,1-9.

Aytaç, N. (2017). Temel Halk Sağlığı, Akbaba, M.; Demirhindi, H. (Ed.), Temel Halk Sağlığı, Akademisyen Kitabevi, Ankara, 1-19.

Babacan, E. & Ulupınar Alıcı, S. (2008).Hemşirelikte Eğitim ve Araştırma Dergisi, 5 (2): 29-36.

Bahar Özvarış, Ş. (2016). Sağlığı Geliştirme ve Sağlık Eğitimi, Hacettepe Üniversitesi Yayınları, 2. Baskı, Ankara, 198s.

Ertem, Ü.T. (2007). Eğitim ve Öğrenme, Ay, F.A. (Ed.), Temel Hemşirelik Kavramlar, İlkeler, Uygulamalar, İstanbul medikal Yayıncılık, 1. Baskı, İstanbul, 99-108.

Hacıalioğlu, N. (2016). Sağlık Eğitimi, Erci, B. (Ed.), Halk Sağlığı Hemşireliği, Genişletilmiş 2. Baskı, Anadolu Nobel Tıp Kitabevi, Elazığ, 204-218.

Kaya, H. (2009).Sağlık Hizmetlerinde Hasta Eğitimi ve Hemşirenin Sorumlulukları, Türkiye Klinikleri J Nurs Sci,1(1), 19-23.

Öztürk, H.; Çilingir, S. & Hindistan, S. (2011). Hastaların Dahiliye ve Cerrahi Kliniklerinde Hemşirelerin Yaptığı Hasta Eğitimlerini Değerlendirmesi, DEUHYO ED, 4 (4), 153-158.

Ramazanli, S. & Johromi, Z.B. (2015). Iranian Nurses' Views on Barriers and

Facilitators in Patient Education: A Cross-Sectional Study, Global Journal of Health Science; Vol. 7, No. 5, 288-293.
Tabak, R.S. (2013). Sağlığı Korumak İçin Sağlık Eğitimi, Yakıncı, C; Yeşilada, E. (Ed.), Koruyucu Sağlık Rehberi, Genişletilmiş 2. Baskı, Türk Eczacılar irliği Eczacılık Akademisi, Ankara, 31-35.
Taylan, S.; Alan, S. & Kadıoğlu, S. (2012). Hemşirelik Rolleri ve Özerklik, HEMAR-G, Sayı: 12, 66- 74.
Yakıncı, C. (2013). Baş Tacımız Sağlık, Yakıncı, C; Yeşilada, E. (Ed.), Koruyucu Sağlık Rehberi, Genişletilmiş 2. Baskı, Türk Eczacılar irliği Eczacılık Akademisi, Ankara, 19-22.
Yıldırım, N.; Çiftçi, B.; Kaşıkçı, M. & Demiroğlu, N. (2017). Hemşirelerin Hasta Eğitimi Verme Durumu ve Etkileyen Faktörlerin Belirlenmesi, Atatürk İletişim Dergisi Sayı: 14, 217-230.
URL 1: Health Education, http://www.who.int/topics/health_education/en/
URL 2: Health Academy, http://www.who.int/healthacademy/en/
URL 3: Hemşirelik Yönetmeliği, http://www.resmigazete.gov.tr
URL 4: Hemşirelik Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik, http://www.resmigazete.gov.tr
URL 5: Hemşirelik Kanununda Değişiklik Yapılmasına Dair Kanun, http://www.resmigazete.gov.tr
URL 6: Halkın Sağlık Eğitimi Yönetmeliği, http://www.mevzuat.gov.tr
URL 7: Toplum Sağlığı Merkezi ve Bağlı Birimler Yönetmeliği, 2015, http://www.mevzuat.gov.tr
URL 8: Aile Hekimliği Kanunu, http://www.mevzuat.gov.tr
URL 9: Aile Hekimliği Uygulama Yönetmeliği, http://www.mevzuat.gov.tr
URL 10: Yataklı Tedavi Kurumları İşletme Yönetmeliği, http://www.mevzuat.gov.tr
URL 11: Nursing, http://www.who.int/topics/nursing/en/
URL12: Doktorluk, Hemşirelik, Ebelik, Diş Hekimliği, Veterinerlik, Eczacılık Ve Mimarlık Eğitim Programlarının Asgari Eğitim Koşullarının Belirlenmesine Dair Yönetmelik, http://www.yok.gov.tr

Chapter 10

Polypharmacy in Elderly and Nursing

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INTRODUCTION

There are different definitions of polypharmacy. The use of multiple medicines, commonly referred to as polypharmacy is common in the older population with multi morbidity, as one or more medicines may be used to treat each condition (Fillit *et al.*, 1999; Bushardt *et al.,* 2008; Linjakumpu *et al.,* 2002).

Today, life expectancy is increasing steadily due to the simplicity of living conditions, the progress of medicine, the prevention of many diseases and the treatment of them.

It is predicted that the elderly population worldwide will reach about 232 million in 2020 and 1.4 billion in 2030. In the United States (USA), it is stated that in 2030, one out of every five people will be over 65 years old (Clark, 2005).

Elderly individuals should be provided with a quality and active life during this period of their lives (Arslan *et al.,* 2000).

With the prolongation of life and the increase in aging, the proliferation of diseases and the multiple diseases can make it more necessary to use more medicines. Hypertension, osteoarthritis, heart failure, diabetes mellitus, coronary artery disease, osteoporosis and cerebrovascular events are more prevalent in the elderly population. Due to the combination of several of these diseases, elderly people are forced to use more than one drug

Polypharmacy is frequently used for the purpose of increasing treatment efficacy, reducing side and toxic effects of drugs (Milton *et al.,* 2008). In addition, systemic diseases and other pathological conditions require the use of multiple drugs. In a study conducted in Germany, the prevalence of polypharmacy was reported to be 26.7% in patients aged 70 years and over (Juniuss *et al.,* 2007). In a study involving 300,000 patients in Scotland, the average number of medications per patient increased from 3.3 in 1995 to 4.4 in 2010; and the number of drug users who use more than five drugs has increased from 12% to 22%. In particular, the rate of multiple drug use was higher in the population aged 65 years and over; 16.4% reported using 10 or more drugs. In the United Kingdom, 45% of prescriptions are given to adults over 65. Another study found that elderly patients use an average of eight drugs. There is a significant increase in the number of medicines prescribed in the UK. In another European country, the prevalence of two or more drug use was found to account for one third of the population (Barnett *et al.,* 2012).

Unfortunately, the use of multiple medicines may have harmful effects due to drug- drug and drug diseases interaction.

Elderly and polypharmacy

Increasing levels of chronic comorbidities, such as cardiovascular disease, pharmacokinetic and pharmacodynamic changes with age make elderly people more susceptible to side effects of drugs (Gurwitz *et al.*, 2003; Mallett *et al.,* 2007).

Along with aging, kidney and liver functions decrease. The fat and water ratio of the body is become reduce and the elongation of the discharge is seen. These changes adversely affect the absorption, distribution, metabolism and excretion processes of a drug in the body. With the effect of this changing biophysiology, the elderly individual may be exposed to side effects related to the medicines recommended to him, and combinations of medicines taken together may further increase these side effects. In addition, polypharmacy can seriously affect quality of life and well-being (Fried *et al.*, 2014).

Elderly individuals can sometimes use drugs in unnecessary situations. The use of multiple medicines may arise due to repetitive use of a prescription, unreserved computer records about prescriptions, communication problems between health service providers, lack of information about the elderly process. In addition taking too much of the drug from the recommended dose of the individual, frequent physician replacement, non-prescription medication can lead to multiple drug use.

Health workers may also be a risk factor for polypharmacy. It causes repeated or unnecessary prescribing of medication by physicians who do not have access to existing or previous drug lists due to insufficient knowledge of the patient's drug. In addition, the physician may think of a new symptom as an unwanted drug reaction or side effect and give another medication to treat this problem (Riker *et al.,* 2013).

Negative effects of polypharmacy

The elderly individual is more vulnerable to polypharmacy than other age groups. In one study, it was determined that over 65 years of age individuals were twice as likely to suffer from drug side-effects than the others, and seven times more hospitalized.19

The three main problems with polypharmacy in the older adult are: adverse drug reactions, falls, and medication noncompliance (Sergi *et al.*, 2011).

Common manifestations associated with polypharmacy in the elderly are sedation, nephrotoxicity, hepatoxicity, cardiotoxicity, confusion, dizziness, hypotension, and hypoglycemia (Maher *et al.*, 2014). Combined use of more than one drug may increase the risk of adverse drug reaction. Polypharmacy is associated with adverse outcomes including mortality, falls, adverse drug reactions, increased length of stay in hospital and readmission to hospital soon after discharge (Milton *et al.*, 2008). It is reported that adverse drug reactions constitute 6.5% of admission to the hospital and 70% of this can be prevented. More than 500,000 adverse drug reactions have occurred in UK hospitals between 1999 and 2008. There is an increase in side effects as the number of drugs used by patient’s increases. The risk of adverse drug reactions increases by 15% with two drugs, 58% with five drugs, and 82% with seven or more drugs (Chan *et al.*, 2001). Some medicines may affect the metabolism of another drug and levels in circulation.

Polypharmacy also adversely affects adherence to drug treatment. Approximately half of elderly patients are disproportionately treatment for various reasons, and this rate is increasing with the increase in the number of prescription drugs. These include age-

related visual or hearing impairment, cognitive or functional disorders, and social isolation. A great majority of the elderly are able to take their medication. They can use the wrong drugs with the cause of visual disorders (Kim *et al.,* 2014).

Inadequate compliance with the drug regimen can lead to disease progression, more hospitalization, and even death.

Elderly individuals are more vulnerable to disease than younger individuals due to biological and physiological changes in the body. Polypharmacy can cause this resistance to increase even more. This may include delirium, cognitive impairments, falls, and reduced functional ability Opiates, benzodiazepines and anticholinergics can cause delirium. The types of drugs that cause falls are antihypertensives, diuretics, laxatives, anticholinergics, hypnotics and benzodiazepines (Lisa *et al*., 2001).

These problems also prevent the elderly from making daily life activities and socializing.

Nursing Strategies to Address Polypharmacy

Nurses working with patients have a responsibility to prevent the side effects of polypharmacy.

To ensure this, nurses should pay attention to the following points;

*Inform the patient about how to use the drugs

*Inform the elderly relatives about drug use

*Identify conditions that prevent the individual from agreeing to treatment;

*Informing about unexpected interactions and side effects of medications;

*Produce appropriate solutions for patients with visual problems.

*Partial boxes can be made to mix drugs and prevent wrong dosing

*Suggest lifestyle changes that can reduce medication need and side effects

*Do reminders for those who forget to take medication? Alarm clocks, voicemail, and notes can be used to remember the time of the drug in the elderly group with memory problems.

* Labeling should be done to prevent mixing of drugs to be used

*A list of medicinal explanations can be prepared and this list should include;.

Generic and brand names of each medication, the dosage and frequency, who prescribed the medication (their contact information is also helpful), the reason for taking the prescribed drug (Akıcı, 2006; Good 2002; Fillitt *et al.,* 1999).

RESULT

Increasing levels of chronic comorbidities, pharmacokinetic and pharmacodynamic changes with age make elderly people more susceptible to side effects of drugs (Boyd *et al.,* 2005; Van Spall *et al.,* 2007).

These changes adversely affect the absorption, distribution, metabolism and excretion processes of a drug in the body. With the effect of this changing bio physiology, the elderly individual may be exposed to side effects related to the medicines recommended to him, and combinations of medicines taken together may further increase these side effects. In addition, polypharmacy can seriously affect quality of life and well-being.

Elderly individuals can sometimes use drugs in unnecessary situations. The use of multiple medicines may arise due to repetitive use of a prescription, unreserved computer records about prescriptions, communication problems between health service

providers, lack of information about the elderly process. In addition taking too much of the drug from the recommended dose of the individual, frequent physician replacement, non-prescription medication can lead to multiple drug use.

In elderly care, nurses should develop appropriate strategies to prevent unnecessary polypharmacy and minimize the side effects.

REFERENCES

Akıcı, A. (2006). Akılcı İlaç Kullanımı İlkeleri Doğrultusunda Yaşlılarda Reçete Yazma ve Türkiye'de Yaşlılarda İlaç Kullanımının Boyutları Turk J Geriatr Özel sayı: 19-27.

Arslan, Ş.; Atalay, A.; Gökçe, K.Y. (2000). Yaşlılarda İlaç Tüketimi. Geriatri Dergisi 3: 56-60.

Barnett, K.; Mercer, S.W.; Norbury, M.; Watt, G.; Wyke, S.; Guthrie, B. (2012). Epidemiology of Multimorbidity and İmplications for Health Care, Research, and Medical Education: A Crosssectional Study'. The Lancet, vol 380, 37–43.

Boyd, C.M.; Darer, J.; Boult, C.; Fried, L. P.; Boult, L.; Wu, A. W. (2005). Clinical Practice Guidelines and Quality of Care for Older Patients with Multiple Comorbid Diseases: Implications for Pay for Performance. JAMA 294, 716-2

Bushardt, R.L.; Massey, E.B.; Simpson, T.W.; Ariail, J.C.; Simpson, K.N. (2008). Polypharmacy: Misleading, but Manageable. Clin Interv Aging. 3:383–9.

Chan, M.; Nicklason, F.; Vial, J. (2001) Adverse Drug Events as a Cause of Hospital Admission in The Elderly. Intern Med J 31: 199-205.

Clark, G.S.& Siebens, H.C. (2005). Geriatric Rehabilitation. In: De Lisa J (ed). Physical Medicine and Rehabilitation. 2nd ed.: 1531-60.pp. Lippincott Williams Wilkins,: Philadelphia

Fillit, H.M.; Futterman, R.; Orland, B.I.; Chim, T.; Susnow. L.; Picariello, G.P, et al., (1999). Polypharmacy Management in Medicare Managed Care: Changes in Prescribing by Primary Care Physicians Resulting From a Program Promoting Medication Reviews. Am J Manag Care5:587–94.

Fried, T.R.; O'Leary, J.; Towle, V.; Goldstein, M.K.; Trentalange, M.; Martin, D.K. (2014). Health Outcomes Associated With Polypharmacy in Community-Dwelling Older Adults: A Systematic Review. J Am Geriatr Soc 62:(12), 2261–2272.

Good, C.B. (2002). Polypharmacy in Elderly Patients with Diabetes. Diabetes. Spectrum 15: 240-8.

Gurwitz, J.H:; Field, T.S.; Harrold, L.R.;, et al., (2009. Incidence and Preventability of Adverse Drug Events among Older Persons in the Ambulatory Setting. JAMA 289:1107–16.

Junius-Walker, U.; Theile, G.; Hummers-Pradier, E. (2007). Prevalence and Predictors of Polypharmacy among Older Primary Care Patients in Germany. Fam Pract 24:(1),14-9.

Kim, Notenboom.; Erna, Beers.; Diana, A. R.; Toine, C.G.E.; Hubert, ,G.M.L.; Paul, A. F.J.; Marcel, L.B. (2014). Practical Problems with Medication use that Older People Experience: A Qualitative Study J Am Geriatr Soc 62:(12), 2339–2344. Linjakumpu, T.; Hartikainen, S.; Klaukka, T.; Veijola, J.; Kivelä, S.L.; Isoaho,

R. (2002). Use of Medication and Polypharmacy are Increasing among the Elderly. J Clin Epidemiol 55:809–81.

Lisa, L. M.; David, J.; Greenblatt, M. K.; Romach, E. M. (2001). Cognitive Toxicity of Drugs Used in the Elderly. Clin Neurosci 3:(3), 181–190

Mallet, L.; Spinewine, A.; Huang, A. (2007). The Challenge of Managing Drug Interactions in Elderly People. Lancet. 370:185–91.

Milton, J.C.; Hill-Smith, I.; Jackson, S.H.D. (2008). Prescribing for Older People. BMJ 336:(7644),606–609.

Riker, G.I.; Setter, S.M. (2013). Polypharmacy in Older Adults at Home: What it is and what to do abouti it? Home Healthc Nurs. 31:(2), 65–77.

Sergi, G.;, De Rui, M.; Sarti, S.; Manzato, E. (2011). Polypharmacy in the Elderly: Can Comprehensive Geriatric Assessment Reduce Inappropriate Medication Use? Drugs Aging. 28:(7),509-18.

Van Spall, H. G.; Toren, A.; Kiss, A.; Fowler, R. A. (2007). Eligibility Criteria of Randomized Controlled Trials Published in High-Impact General Medical Journals: A Systematic Sampling Review. JAMA 297, 1233-40.

Chapter 11

Pressure Injury and Nursing Care

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INTRODUCTION

Pressure injury (PI) is accepted as one of the most important problems of institutions that provide health care services all over the world and Turkey. It is a preventable health problem with a high prevalence (Bours et al., 2001). Pressure injury causes prolongation of hospital stay and declining independence in meeting daily life activities of sick individuals. It also significantly affects the mortality and morbidity rate. It increases the burdens of caregivers and cost of care (Gül et al., 2017; Kıraner et al., 2016; Sving et al., 2014; Claudia et al., 2010). It causes some psychological problems that are the result of losing the adequacy of self-care by threatening the physical health of the patient and deterioration in communication with close relations (Karadağ, 2003).

The patient who develops PI ~~is~~ faces pain problem and spends more time in hospital with applications such as wound care, debridement and graft. As a result, the risk of developing complications is increasing. Thus, the quality of life of the patient is deteriorated and the institutions are faced with a heavy financial burden (Gencer & Özkan, 2015; Miyazaki et al., 2010).

PI is considered as an important indicator in the health care system. There is a consensus on the need of a holistic team approach for prevention and treatment (Manzano et al., 2014; Karadağ, 2003).

Pressure Injury

The main etiological cause is alone pressure or shear-friction. It is usually localized damage that occurs in the skin or subcutaneous tissue areas where bony protrusions are present. The common ground of definitions is that; there is a deep tissue loss starting from superficial discoloration along with pressure to muscle and bones (Thomas, 2012; Karadağ, 2003).

Especially in patients with limited movement, it develops as a result of long-term or repetitive pressures on the bony protruding body regions. Because pressure causes the capillaries to close in the skin and subcutaneous region and to stop circulation. The resulting ulceration or necrosis is also referred to as "Pressure Wound/Bruised Wound/Decubitus Ulcer" (Gencer & Özkan, 2015; Kıraner et al., 2016).

Many concepts related to deterioration in tissue integrity caused by the press have been used. Bedsore, decubitus ulcer, decubitus, pressure sore and pressure ulcers are some of the concepts that are used (Karadağ, 2003). In recent years, there is an opinion reached about the definition and staging of the concept of pressure ulcers should be rewritten as a result of interdisciplinary collaboration, research and clinical trials.

Therefore, in 2016, The Pressure Ulcer was called "pressure injury" (PI) by the National Pressure Ulcer Advisory Panel (NPUAP) (Edsberg et al., 2016).

As one of the applications necessary for the healthy community in the United States in 2010, the reduction of PI has been demonstrated. Because the annual cost in the US is estimated to be between $ 5000- $ 40,000. In Turkey, there are no large samples of PI and multicenter prevalence studies. However, there are single-centered study results. In one study, the prevalence of PI was 5.4% - 17.5% (Aslan et al., 2016), and another study of 404 patients in internal and surgical and intensive care units identified 10.4% (İnan & Öztunç, 2012).

Hospital-originated PI is a common and serious health problem, especially in intensive care units (Manzano et al., 2014; Bours et al., 2001; Feuchtinger et al., 2007). In addition, the PI occuring during surgery increases the nursing care costs by 50% (Shoemake & Stoessel, 2007).

Pressure Injury Etiology and Risk Factors

The main cause of PI is pressure. Pressure intensity, duration, and tissue tolerance are the main factors in etiology (Claudia et al., 2010).

Risk factors for PI are under two topics, external and internal. External factors are tissue tolerance, pressure, friction, tear and humidity. Internal factors are; advanced age, poor nutrition, accompanying diseases, inactivity, inadequacy at sensory perception, dehydration, deterioration in tissue perfusion and anemia (Webster et al., 2015; Claudia et al., 2010).

External Factors

- **Pressure:** It is the main factor that causes pressure injury. As the density of the pressure increases, the risk increases. There is an inverse relationship between duration and pressure intensity. Low pressure may cause damage to the tissue and necrosis in long-term, but high pressure may cause in short-term (Gencer & Özkan, 2015; Karadağ, 2003).
- **Friction and Shear:** The friction is an object rubbing up against the surface of another object, dissipating heat. Friction alone affects the epidermis and upper dermis layer. The connection between gravity and friction results in shear. The shearing, which occurs as a result of the steadiness of the skin and the displacement of the underlying textures, is the shift of two or more surfaces in opposite directions (Gencer & Özkan, 2015; Karadağ, 2003).
- **Humidity:** Humidity affects the resistance of the epidermis negatively. The effects of friction and tearing are more visible in humid environments. For this reason, there is a greater risk of pressure injury in patients with urinary and fecal incontinence or patients with excessive sweating (Gencer & Özkan, 2015; Karadağ, 2003).

Internal Factors:

- **Age:** There is a relationship between the risk of pressure injury and the age, which is included in unchangeable risk factors. Increasing age, tissue turgor and perfusion deterioration, decrease in fat tissue, weak connection between epidermis and dermis and deterioration of the mental condition are effective in the development of pressure injury (Gencer & Özkan, 2015; Karadağ, 2003).
- **Nutrition:** Bad nutrition as a sign of pressure injury is a risk factor, especially due to inadequate protein intake. In the literature, it is stated that this risk increases in

patients with low albumin (3,5 g /dl) (Kıraner et al., 2016). In addition, malnutrition also delays wound healing. It also increases the risk of infection because it weakens the immune system.

- **Diseases:** Chronic diseases causing immobilization and affecting the oxygenation of tissues negatively are effective in the development of pressure injury (Webster et al., 2015; Karadağ, 2011).
- **Psychological Factors:** Cortisone release increases in the body due to the stress and collagen synthesis decreases. This is a facilitating factor for pressure injury (Webster et al., 2015; Karadağ, 2011; Claudia et al., 2010).
- **Other Factors:** Conditions that block/disturb the oxygenation of the tissues are: smoking, increase in body temperature and blood viscosity, dehydration, decrease in blood pressure, anemia, dry skin, increase in blood glucose level (Webster et al., 2015; Karadağ, 2011; Claudia et al., 2010).

Risk Assessment

Risk assessment is extremely important in terms of patient safety (Gökhan et al., 2016). The most objective, reliable and cost effective method in preventing pressure injury is the use of assessment tools (Papanikolaou et al., 2007).

The use of risk assessment tools is proposed by EPUAP (1998) and NPUAP (2001), which conduct studies on this issue. Norton and Braden Scale have been used in many studies. In addition to these scales, there are also Gosnell, Knoll and Waterlow Scales. The Braden scale, widely used in the United States, is considered as a reliable and valid scale for its applicability to a wide range of age (Kring, 2007; Leblebici et al., 2007; Connor et al., 2010).

Braden scale consists of six sub-dimensions, which are sensory perception, humidity, activity, mobility, nutrition, friction and tear. A total score between 6-23 is obtained with the sum of sub-dimension scores. 12 points and below are at high risk, 13-14 points are at risk, 15-16 points are at low risk. In people over 75 years old, 15-18 points are accepted as at low risk (Kılıç & Sucudağ, 2017; Mollaoğlu et al., 2008; Karadağ, 2003). The Norton scale consists of five risk factors, which are physical condition, mental status, activity, mobility and incontinence. It is important to know how to use scoring, regardless of which evaluation scale is used (Karadağ, 2011).

There are different proposals on the application frequency of the identified risk assessment tools. However, as stated in the guidelines, evaluation should be redone when the patient is first encountered, at specified intervals and when any change in the patient's condition occurs (Ratliff, 2005). Risk assessment can be tailored to the patient's condition. In acute care units, pressure injury develops within two weeks following the hospitalization. For this reason, the risk should be minimized in high-risk patients (Karadağ, 2011).

Pressure Injury Stages

The first thing to do, without any classification, is risk assessment. When diagnosing a pressure injury, it is necessary to determine the causal factor involved in the etiology such as pressure, shear, and friction (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).

The NPUAP staging system is based on rating of the damage to the tissue. However, it should not be forgotten that the wound bed should be cleaned for a correct

visual evaluation. Staging is extremely important at the end of the evaluation of the pressure injury. But this is often mistaken. For this reason, staging is one of the points that should be emphasized especially in education (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).

National Pressure Ulcer Advisory Panel (NPUAP) have revised the existing staging to be more accurate and easy to understand besides clarifying the etiology of pressure injuries that reflect scientific and clinical practice (Edsberg et al., 2016).

- **Stage 1 Pressure Injury:** It is a condition seen in individuals at risk. The integrity of the skin is intact. There is usually redness in the area with bone protrusion, which does not show any change when pressure applied. There is intact skin which look different in dark pigmented skin and which has a localized and inseparable area of erythema. Color changes do not include purple or maroon discoloration. Before the visual change, changes in temperature and stiffness may occur depending on the surrounding tissue (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).
- **Stage 2 Pressure Injury:** There is a partial loss of dermis. The wound bed is viable, with a deep pit appearance, pink and red. There are no dents or bruises. There may be bullae filled with serum or serous. In the granulation tissue, there is no slough and eschar. There are bright, dry, superficial tissue losses without yellow necrotic tissue or deep tissue damage (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).
- **Stage 3 Pressure Injury:** There is a full-thickness tissue loss that subcutaneous fat tissue is seen in the wound bed in the form of a deep pit. There can be slough and/or eschar. Bones, muscles and tendons are unaffected. There can be a necrotic tissue as well as underminings and tunnels in the wound. It may be deeper in areas where fatty tissue is. Subcutaneous tissue appears in the wound, but the bone and tendon are not palpated directly in the wound bed. The depth of tissue damage depends on the anatomic location (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).
- **Stage 4 Pressure Injury:** With skin and tissue loss in full thickness, in the exposed or directly palpable wound, there is fascia, muscle, tendon, ligament and bone. Yellow necrotic tissue or slough and eschar may be found in some parts. Mostly there are underminings and tunnels. Depth varies by anatomical position (Edsberg et al., 2016; Webster et al., 2015; NPUAP, 2009).
- **Unclassifiable Phase:** There is skin and tissue loss in full thickness. The reason why the size of the tissue damage can not be verified; it is hidden by slough or eschar. Ulcer floot is covered with yellow, bronze, gray, or brown or eschar tissue. Until the necrotic area is cleared, the existing stage can not be detected (Edsberg et al., 2016; Webster et al., 2015; EPUAP, NPUAP, 2009).
- **Suspected deep tissue injury:** The skin is not completely damaged. But there is a change of dark color. The skin can be seen to be achy, hard, lethargic and different in temperature compared to the surrounding tissue (Edsberg et al., 2016; Webster et al., 2015; EPUAP, NPUAP, 2009).

Risk Areas Specific to the Position

- **Supine position**: Occiput, scapula, spinous, process, elbow, sacrum, ıschium, heel (Karadağ, 2011; Diana, 2010; Beckett, 2010; Shoemake & Stoessel, 2007).
- **Prone position:** Nose, forehead, chin, iliac, crest, trochanter, knee, pretibial, crest, malleous (Karadağ, 2011; Diana, 2010; Beckett, 2010; Shoemake & Stoessel,

2007).

- **Lateral position**: Ear, shoulder, anterior iliac prolapse, trochanter, thigh, front and middle part of knee, side of knee, back of knee, lower leg, medial malleol, lateral maleol, side of foot (Karadağ, 2011; Diana , 2010 ; Beckett, 2010).
- **Sitting position:** Scapula, sacrum, ischium, back of knee, footwell (Karadağ, 2011).

Evidence Based Practices in Pressure Injury and Nursing Care

Preventive interventions are crucial in preventing pressure injuries. Because, it has been revealed that 70% is detected after the stage 1 phase has passed (Gencer & Özkan, 2015). Training healthcare professionals on the preventive interventions is crucial for controlling the situation early.

In the care plan of a patient who develops a pressure injury, removing the causative factor is the first necessary step. The local care of the wound should be made according to moist wound healing rules. Humid environment facilitates the development of new tissues. In the presence of necrotic tissue, it is a necessity to detract this tissue from the wound. In a patient with pressure injury, regulation of nutrition, control of diabetes, cardiovascular and pulmonary diseases accelerate the recovery of the wound (Karadağ, 2011).

It is recommended to use guidelines in prevention of pressure injury, risk assessment, staging and care/treatment (Edsberg et al., 2016; Karadağ, 2011).

The evidence-based recommendations for the prevention and treatment of pressure ulcers by the European Pressure Ulcer Advisory Panel (EPUAP) and the National Pressure Ulcer Advisory Panel (NPUAP) are given below:

Risk Assessment Principles

- All health care professionals should be trained on how to do effective and objective PI risk assessment (Evidence Strength = B).
- Information on PI risk assessment should be recorded (Evidence Strength = C).
- PI risk assessment scale should be used. In addition to the main risk factors, the criteria for evaluation of physical activity, status of skin and mobility should be considered (Evidence Strength = C).
- When the patient is admitted to the hospital for the first time, the risk of PI development should be assessed extensively. Evaluation should be repeated at regular intervals according to the individual characteristics of the patient and the change in the condition of the patient (Evidence Strength = C) (Edsberg et al., 2016; EPUAP, NPUAP, 2009).

Monitoring Criteria for Risk Factors for Pressure Injection Development

- Body mass index, amount of nutrient intake and content, anemia, hemoglobin and serum albumin levels should be monitored for nutrition.
- Factors affecting perfusion and oxygenation such as diabetes, cardiovascular status, hypotension, low ankle brachial index and oxygen use should be monitored (Edsberg et al., 2016; EPUAP, NPUAP, 2009).

Skin Assesment

- The patient should be examined at least once a day from head to toe. Temporal region, scapula, shoulders, sacrum, ischial zone, torocanter, heels and wrists should be evaluated. While the areas under pressure vary according to the position of the patient,

the areas indicated are at a priority risk.

- In the prevention of PI development, skin should be assessed and monitored as a part of the corporate policy (Evidence Strength = C).
- Patients with a PI risk should first be observed for redness (Evidence Strength = B).
- In skin monitoring, patients with dark skin color, local temperature, edema and stiffness should be assessed (Evidence Strength = C).
- Patients should be asked whether there is any area in pain or in discomfort in any part of their body (Evidence Strength = C) (Edsberg et al., 2016; EPUAP, NPUAP, 2009).
- Whenever possible, do not turn the individual onto a body surface that is still reddened from a previous episode of pressure loading.

Skin Care

- The patient should not be turned onto the side of the body area that is under pressure and is still reddened (Evidence Strength = C).
- The area under the risk of PI should not be rubbed strongly and massage should not be applied.
- Appropriate products should be used to hydrate the skin (Evidence Strength = B).
- With an effective barrier product, the skin should be protected from exposure to excessive moisture (Evidence Strength = C).
- If the redness lasts for more than 30 minutes, the area should be kept away from pressure until normal color is formed.
- Over temp water should not be used for skin cleaning (43-46 ° C)..
- No excessive pressure should be applied to the skin during cleaning.
- The bed sheets used should be smooth, dry, clean and wrinkle free.
- Cotton, air-permeable, absorbent garments should be preferred.
- Perineal area cleaning should be done immediately in patients with fecal or urinary incontinence and the skin should not be moist.
- The skin contacted with external devices (such as drains, oxygen masks and catheters, cannulas, intravenous sets) should be routinely checked (Edsberg et al., 2016; EPUAP, NPUAP, 2009).

Position Change

- All patients whose PI development is considered to be at risk should undergo a position change (Evidence Strength = A).
- Especially in sensitive areas under pressure, the position change required to alleviate the pressure duration and intensity must be made (Evidence Strength = A).
- The patient's condition and the nature of the support surface should be taken into account for the position change frequency (Evidence Strength = A).
- The patient should not be positioned over the area where the redness is not loss once a pressure is applied (Evidence Strength = C).
- The patient should be positioned at 30^0 side-lying position. If appropriate for the patient and medical condition, prone position may be applied. 90^0 lateral or semi-fawler position should not be used because they increase pressure (Evidence Strength =

C) (Edsberg et al., 2016; EPUAP, NPUAP, 2009).

Supporting Surfaces

- The choice of support surface should be decided according to the level of risk and the existing PI phase (Evidence Strength = C).
- The appropriate support surface should be selected for the patient and the physical location (Evidence Strength = C).
- A high-quality foam mattress should be used for patients with a risk of developing PI (Evidence Strength = A)
- No mattresses or covers with small-air divisions should be preferred (Evidence Strength = C).
- The use of bagel-shaped mattresses and synthetic sheepskin should be avoided (Evidence Strength = C).
- Prevention of PI can be achieved using natural sheep post (Evidence Strength = B) (Edsberg et al., 2016; EPUAP, NPUAP, 2009).

CONCLUSION

Pressure injury is a very difficult health problem in terms of the patient, family and caregiver professionals within the health care system. For healthcare organizations, it is an important indicator of teamwork, qualified care and patient monitoring. For preventing the problem; it is vital to benefit from evidence-based practices and guidelines. The cooperation of health care professionals is necessary because of having a multi-factor etiology. This approach should also be supported by the institutional policy.

REFERENCES

Aslan, A.; Yavuz, van Giersbergen M. (2016). Nurses' attitudes towards pressure ulcer prevention in Turkey. J Tissue Viability 25: (1), 66-73.

Beckett, AE. (2010). Are We Doing Enough To Prevent Patient İnjury Caused By Positioning For Surgery? The Journal of Perioperative Practice 20 :(1), 26-29.

Bours, G.J.J.W.; Latt, E.; Halfens, R.J.G.; Lubbers, M. (2001). Prevalance, Risk Factors And Prevention of Pressure Ulcers in Ducth intensive Care Units. Intensive Care Medicine 27: 1599-1605. DOI:10.1007//s001340101061.

Claudia, G.; DIane, M.; Daphney, St.G. Danièle, D. (2010). Prevention and Treatment of Pressure Ulcers in a University Hospital Centre: A Correlational Study Examining Nurses' Knowledge. International Journal of Nursing Practice (16): 183–187.

Connor, T.; Sledge, J.A., Bryant-Wiersema, L.; Stamm, L.; Potter, P. (2010). Identification of Pre-Operative and Intra-Operative Variables Predictive Of Pressure Ulcer Development in Patients Undergoing Urologic Surgical Procedures. Urologıc Nursing 30: (5), 289-305.

Diana, L. (2010). Maintaining Skin Integrity in the OR. OR Nurse 4: (2), 26-32 www.ORNurseJournal.com.

Edsberg, L.E.; Black J.M.; Goldberg, M.; McNichol, L.; Moore, L.; Sieggreen, M. (2016). Revised National Pressure Ulcer Advisory Panel Pressure Injury Staging

System Revised Pressure Injury Staging System. J Wound Ostomy Continence Nurs. 43:(6),585-597.
European Pressure Ulcer Advisory Panel and National Pressure Ulcer Advisory Panel. Prevention and Treatment of Pressure Ulcer: Quick Reference Guide. Washington DC: National Pressure Ulcer Advisory Panel; 2009. (Çev. Yara Ostomi İnkontinans Hemşireliği Derneği). Basınç Ülserlerini Önleme: Hızlı Başvuru Kılavuzu. Aralık 2010, Ankara.
Feuchtinger, J.; Halfens, R.; Dassen, T. (2007). Pressure ulcer risk assessment immediately after cardiac surgery – does it make a difference? A Comparison of Three Pressure Ulcer Risk Assessment Instruments within A Cardiac Surgery Population. British Association of Critical Care Nurses, Nursing in Critical Care. 12: (1) ,42-48.
Gencer, Z.E.; Özkan, Ö. (2015). Basınç Ülserleri Sürveyans Raporları. Türk Yoğun Bakım Derneği Dergisi 13:26-30.
Gökhan, G.; Köprülü, A. Ş.; Haspolat, A.; Uzman, S.; Toptaş, M.; Kurtuluş, İ. (2016). Is Braden Scale Reliable and Sufficient to Evaluate the Risk of Pressure Ulcer Occurrence in Level 3 Intensive Care Unit Patients? JAREM 6: 98-104.
Gül, A.; Andsoy, Işık,I.; Özkaya,B.; Zeydan, A. (2017) .nA Descriptive, Cross – sectional survey of Turkısh Nurses Knowledge of Pressure Ulcer Risk, Prevention and Staging. Ostomy Wound Management 63: (6), 40-46.
Inan, D.G.; Öztunç, G. (2012). Pressure Ulcer Prevalence in Turkey. J Wound Ostomy Continence Nurs.39: (4), 409-413.
Karadağ, A. (2003). Basınç Ülserleri: Değerlendirme, Önleme ve Tedavi. C.Ü. Hemşirelik Yüksek Okulu 7 (2), 41-48.
Karadağ, A. (2011). Basınç Ülserlerinde Hemşirelik Bakımı. Türkinaz Atabek Aştı, Ayişe Karadağ (ed). Klinik Uygulama Becerileri ve Yöntemleri. Kitabı içinde (bölüm15, sayfa 432-461). Nobel Kitabevi: İstanbul.
Kılıç, F,H.; Sucudağ,G. (2017). Basınç Yarası Değerlendirilmesinde Sık Kullanılan Ölçekler.Jaren 3(1), 49-54.
Kıraner, E.; Terzi, B.; Ekinci Uzun, A.; Tunal, B. (2016). Yoğun Bakım Ünitemizdeki Basınç Yarası İnsidansı ve Risk Faktörlerinin Belirlenmesi. Yoğun Bakım Hemşireliği Dergisi 20 (2), 78-83.
Kring, DL. (2007). Reliability and Validity of the Braden Scale for Predicting Pressure Ulcer Risk. J Wound Ostomy Continence Nurs 34:(4),399-406.
Leblebici, B.; Turhan, N.; Adam, M.; Akman, MN. (2007). Clinical and Epidemiologic Evaluation of Pressure Ulcers in Patients at A University Hospital in Turkey. J Wound Ostomy Continence Nurs 34:(4), 407-411.
Manzano, F.; Pérez-Pérez, AM.; Martínez-Ruiz, S.; Garrido-Colmenero, C.; Roldan, D.; del Mar Jiménez-Quintana, M.; Sánchez-Cantalejo, E.; Colmenero, M. (2014). Hospital-Acquired Pressure Ulcers and Risk of Hospital Mortality İn İntensive Care Patients On Mechanical Ventilation. Journal of Evaluation in Clinical Practice (20), 362-368.
Miyazaki, M.Y. Caliri, M.H.L. dos Santos,C.B. (2010). Knowledge on Pressure Ulcer Prevention Among Nursing Professionals Rev. Latino-Am. Enfermagem Original Article 18:(6), 1203-11.
Mollaoğlu, M.; Tuncay, Özkan, F.; Fertelli, Kars, T. (2008). Braden Risk

Değerlendirme Ölçeği ile Serebrovasküler Hastalığı Olan Hastalarda Bası Yarası Riskinin İncelenmesi. İ.Ü.F.N. Hem. Dergisi 16 (63), 150-156.
Papanikolaou, P.; Lyne, P.; Anthony, D. (2007). Risk Assesment Scales For Pressure Ulcers: A Methodological Review. Int. J. Nurse Stud (44), 285-96.
Ratliff, CR. (2005). Clınıcal Management Extra. WOCN's Evidence-Based Pressure Ulcer Guideline. Advances in Skin & Wound Care (18):4, 204-208.
Shoemake, S.; Stoessel, K. (2007). Pressure Ulcers on the Surgical Patient an Independent Study Guide. Kimberly Clark Health Care Education. 1: 1-37.
Sving, E.; Idwall, E.; Högberg, H.; Gunnigberg, L. (2014). Factors Contributing To Evidence-Based Pessure Ulcer Prevention. A Cross-Sectional Study. International Journal of Nursing Studies. 51: 717-725.
Thomas, A. (2012). Assessment of Nursing Knowledge and Wound Documentation Following a Pressure Ulcer Educational Program in a Long-Term Care Facility: A Capstone Project. Wound Practice and Research 20:(3),142-158.
Webster, J.; Lister, C.; Corry, J.; Holland, M.; Coleman, K.; Marquart, L. (2015). Incidence and Risk Factors for Surgically Acquired Pressure Ulcers A Prospective Cohort Study Investigators. J Wound Ostomy Continence Nurs. 42:(2),138-144.

Chapter 12

Errors Made in Scientific Research in the Health Sciences

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INTRODUCTION

The scientific research process usually begins with identifying the problem, collecting data using various methods, continuing with the analysis of the data, and resulting in the reporting of the results obtained.

It is very important that the information obtained as a result of scientific research is correct and valid. For this, all steps from the beginning to the end of a research should be carried out meticulously. The error made at any stage of the research prevents the information obtained in the research from being accurate and valid. In addition, it is important that the researcher who conducts the research has sufficient preliminary knowledge about the subject (Özsoy, et al., 2013).

When the research topic is determined, findings and conclusions should be reached in order to ensure that the research is based on a problem and that the research results in supporting the solution of the problem. There are many researches that do not work for the results of anybody (Cemaloğlu, 2018).

The common aim of research in the field of health is to find the truth. The findings obtained from a part of the society are tried to be guessed about that group or society. If the investigator is aware of what may be the possible errors to be revealed consciously or unconsciously, these mistakes may be the most negligent (Çakır, 2005).

Scientific studies are always open to mistakes.

The planning and design of a study constitutes the basis of research in the field of health (Altman, 2000). Errors and omissions that occur during planning can adversely affect the validity and reliability of research results.

When research is planned, it is of utmost importance to determine the purpose of the study (Strasak et al., 2007). The reasons why the research can be done, which problems can be solved, and how it will benefit are determined at the planning stage (Sönmez, 1999).

BIAS

Bias in scientific research; which can cause the results to differ systematically from the real one (Akan, 2008). Bias can be divided into two as conscious and unconscious bias. To achieve the desired outcome, ignoring scientific rules is deliberately on the side. Unconsciously bias is often unintentionally added to the search for reasons such as not being able to consider, ignore, or be unaware of the factors that might affect the outcome of the study of inexperience. As a result both conscious and unconscious side effects of the research result (Sümbüloğlu & Sümbüloğlu, 2013).

It is possible to keep sides at any stage of a research.

Bias when collecting or measuring data

In the research, the interviewer or observer who collects data may be unaware of some prejudices regarding the results of the research. Blinding should be done to prevent such mistakes (Strasak et al., 2007).

Bias in Literature Scanning Stage

Literature scanning is done, knowingly or unwittingly leaving some articles out of the literature. The most common bias is to exclude foreign publications (Akan, 2008). Because the researcher is easier to read publications in their own language, they often take publications in their own language into their literature. In addition, the lack of appropriate key words in the literature search will prevent access to some articles related to the subject (Çakır, 2005).

Bias in Planned Phase of Research

The planning phase is very important in order to obtain valid results in a scientific research. At this stage, what needs to be done for the purpose of the research is determined, how the measurements are to be done and what the evaluations can be. Possible sources of error are identified and these errors are tried to be avoided. Also; all the necessary measures should be taken in order to reduce the bias in the selection of the subjects to be studied, the determination of the sample and the sample size, and the determination of the groups to be compared.

Bias in Identification of Participant

At this stage, researchers has made as errors

-the failure of certain individuals belonging to the target ministry to be included in the scope of the study,

-Don't choose a good sampling method,

-Trying to represent the population without randomness in the choice of the sample.

Bias While Measuring Data

People who make measurements or experiments (researchers) can make mistakes when measuring data. If they know which group of persons, they may be able bias to measure. For this reason, they are not told which group they are in to persons who make the measurements. These people write the measurement they want at the desired location. It is better for people who do research to make measurements for others. The best way to reduce the error in the measurement process is to blind. In an experiment conducted by applying the binary blinding method (in the investigation); If the experimenter does not know in which group of person are in the experiment, the least additive can be deducted from the search (experiment). Bias is not possible to completely eliminate (Sümbüloğlu & Sümbüloğlu, 2013).

A number of effects may arise if the subjects included in the study know the treatments / procedures applied to them. Placebo is a non-active substance (drug). Patients given plesabo may be able to improve in their outcome criteron because they think they will benefit.

It is called the Hawthorm effect that changes in the behavior of subjects who know that they are under observation.

Errors resulting from the inability of the participants to know the purpose of the research. The fact that the purpose of the research is known to those involved in the

research also adds to the research.

ERROR IN SAMPLE SELECTION

In one study, the sample should best represent the population. Because, based on the information obtained from the sample, estimates and generalizations about the population are made. The consequences of a sample that does not represent the population lead to erroneous predictions, generalizations, and interpretations. The success of a study depends largely on the nature of the selected sample. Sampling selection; requires knowledge, experience and skill (Sümbüloğlu et al., 2007). Randomness in sample selection is important (White, 1979; MacArthur & Jackson, 1984).

FAILURE TO SELECT THE PROPER SAMPLING METHOD

When choosing a sample from a sample, it is important how sampling is chosen and by which method it is selected (Hayran, 2012). Unsuccessful sampling methods should not be used unless sampling is required. If non-probabilistic sampling methods are used, care should be taken in the generalization of the results. A method which is suitable for the research made from the probabilistic sampling methods should be used. Probabilistic sampling methods are the methods by which individuals can be selected from known and equal probability.

Stratified random sampling should be applied in the case that the examined characteristic differs according to some characteristics of the individuals (age, education level) in the stage. In stratified random sampling method should be homogeneity within the layers, and heterogeneity between the layers. When within layers are heterogeneous, the probability of error increases.

If the individuals to be sampled are scattered in a very large region, reaching these individuals will be difficult. In this case it may be appropriate to use the cluster sampling method. In the cluster sampling method, there should be heterogeneity within the clusters and homogeneity between the clusters. If the inside of the clusters is homogeneous, the probability of error may increase.

INADEQUATE SAMPLE SIZE

The number of subjects (sample size) must be large enough so that the result obtained in a research can reflect the truth. If the sample size is not large enough, the results may be incorrect. Although there is a relationship "in reality", this significance may not be detected because the sample size is small. When the sample size is very large, it may be possible to detect even statistically very few significant differences (Çakır, 2005).

MEASURING ERRORS

Although an error-free measurement in a scientific investigation is one of the most important goals, it may not always be possible to make an accurate measurement. There are various sources of measurement errors. These faults can be caused by the measuring process, the person making the measurement, the interviewer or the subjects. (Tavşancıl, 2014).

The measurement error is the difference between the value obtained from independent measurement results in the same conditions and the true value of the characteristic of the measured value (Tavşancıl, 2014).

Measurement errors cause two types of faults: systematic (unchanging) and random faults.

Systematic errors are sources of error that are self-repetitive, because of the design of the questionnaire and the question scale, and because of a missed point in the research design (Altunışık et al., 2012).

Systematic error in each measurement has the same effect in the same direction and the amount does not change (Tavşancıl. 2014). Generally, it comes from out of order or errors of the measurement tool (Sümbüloğlu & Sümbüloğlu, 2013). If a bascule is incorrectly weighing 1 kg less, the measurement error will be made at every measurement.

Random errors are inaccuracies that are unknown to causes random interference to the measurement results (Tavşancıl, 2014). These errors are occurence depends on temporary factors. These errors, which affect the measurement, usually occur in the measuring environment, in the measuring process, in the errors of the responder and the investigator. The interviewer's self-questioning, making unnecessary explanations, missing or incorrectly marking the answers, carelessness of the observer; not giving the right answer, questioning, misrepresentation, patient being tired; is an example of this kind of error (Altunışık, et al., 2012; Sümbüloğlu & Sümbüloğlu, 2013; Tavşancıl, 2014)

The greater the number of such errors, the lower the reliability of the measuring instrument. That is, the less the number of random errors, the more reliable the measurements are (Tavşancıl, 2014).

ERRORS MADE IN DETERMINATION OF VARIABLES

In a research it is important to define variables. Relations between variables are of great importance as well as they can investigate the cause-and-effect relationship, also in terms of direction of research in research that aims to test an assumption (Aziz, 2008). To be able to statistically determine the relationships between the variables, the dependent and independent variables must be determined correctly. Otherwise, the results may be incorrect. It is also important to correctly determine whether the relationship between two or more variables is actually a cause-and-effect relationship. The relationship that has been established may have been the result of another variable being the effect of these two variables. So if it is determined that there is a relationship between two or more variables, it should be examined whether this relationship is actually a cause-and-effect relationship.

In most studies, when a high correlation is obtained between two variables, it is not investigated whether it is a cause-effect relationship (Sümbüloğlu et al., 1998).

Dependent and independent variables determined in the study should be defined correctly, variables that may be possible effects should be measured and correlation and effect should be controlled. Otherwise, there is a risk that the findings and consequences are erroneous (Cemaloğlu, 2018).

Furthermore, the correlation between the independent variables is not taken into account (Sümbüloğlu et al., 1998).

One of the mistakes made in researches is to exclude some variables that will affect dependent variables (Sümbüloğlu & Sümbüloğlu, 2013).

From the publications examined in the medical literature; most of the researchers

were not aware of the right variables and were not aware of working with the correct variables in terms of influencing the outcome of the research (Sümbüloğlu et al., 2007).

The surrogate subject places another subject in the study instead of the unviewed (unexplained) trial. Generally, after a sufficient number of subjects have been identified, a certain number of spare subjects are selected. If the selected noble subjects can not be reached, substitute subjects are used instead to ensure that the sample size is at the specified number. The substitute subject should be similar to your noble subject or should be used if it does not affect the outcome of the research (Sümbüloğlu & Sümbüloğlu, 2013).

Unconsciously placing spare subjects may cause mistakes in some cases (Sümbüloğlu, et al., 1998).

ERRORS MADE IN DETERMINATION OF EXPERIMENT AND CONTROL GROUP

Especially in experimental studies; experimental and control groups are used to determine the effect of the agent to be investigated. The experimental group was the group in which the agent was applied; the control group is the group to which the agent is not applied. A comparison is made between the results of the two groups. The control group should be used to determine if the agent is really effective. When the control group is not used, it can not be determined whether or not the agent is really effective.

Experiment and control groups should have the same characteristics. Failure to create similar groups will result in erroneous results (Sümbüloğlu et al., 1998). When control groups are used, groups must be comparable (White, 1979; McCance, 1995).

ERRORS CAUSING NOT USING STATISTICAL METHODS SUITABLE FOR RESEARCH

In order to successfully present the results of scientific research, appropriate statistical methods must be used (Kaya, 2018). The main objective of biostatistics is to be able to provide professional knowledge development by obtaining reliable and accurate results in researches and to present the obtained results in a proper manner (Öğüş, 2017)

One of the most common mistakes in scientific studies is trying to explain the data obtained from researches with inappropriate models.

Inappropriate, unconscious use of statistical methods is an important problem. It causes erroneous results and misinterpretations. Using unsuitable statistical methods in the health field will cause wrong results, threatening human health and causing wasted resources. Statistical errors; planning of the research, evaluation, presentation and interpretation.

Errors are made in planning stage which the hypothesis and the purpose of the research is not explicitly stated , and the size of the sample at the beginning, effect size and power calculations are not made .

The use of incorrect statistical tests is one of the mistakes made in the evaluation phase that the test used is not compatible with the data of interest, parametric tests are used when the test assumptions are not appropriate, and univariate methods are used instead of multivariate statistical methods (URL 1).

Statistical errors are often found in hypothesis tests. If the investigator's knowledge of the hypothesis tests is limited, he uses these tests he knows in his research and causes

his test results to be incorrect if not correct for that condition (Kanter et al., 1994; Strasak et al., 2012).

Failure to display data with appropriate tables and graphs, using mean and standard deviation for data that do not have normal distribution, is a mistake made in the presentation of data.

Inaccurate and inadequate interpretation of results, in case of no significant findings II. type error is one of the errors in the interpretation phase (URL 1).

OBTAINING AND CODING DATA, ERRORS MADE WHEN ENTERING A COMPUTER

The collection of data during the investigation is a mistake that occurs as a consequence of carelessness during coding and entering the computer (Hayran, 2012).

Failure to collect accurate and complete data will result in incorrect results.

ERRORS MADE IN INTERPRETATION OF RESULTS

In the process of interpreting the results of the research, the collected data are given meaning, the connections between the findings are explained, the cause-effect relationships are established, some results are obtained from the data, and explanations about the importance of the results are made. At this stage, it is very important that the interpretation of findings and conclusions are carried out as accurately as possible and in accordance with the logic. The expression of the results must also be logical, clear and understandable. If the analysis of the data is not done correctly, the results will be misinterpreted.

Even if all the steps of a research are done correctly, the correct interpretation of the results obtained will cause the research to lose significance. This means that the time spent on the research, your labor, the cost are waste.

If a result that does not match the expectations is obtained, the design of the first thought of the work, the methods are wrong, and the results are different.

The existence of some well-known mechanisms and the reasoning behind them may cause problems in interpreting the present data. (Akan, 2008)

Factors such as lack of information, inadequate education, and missedness may lead to errors, and over-generalization, selective observation, early termination of observation, or general judgments from a single finding may be among the factors that motivate the researcher to misinterpret (URL 2).

Even if the selected sample group does not represent the society, the population generalization of the results is a frequently encountered mistake in evaluating a statistically meaningful relationship from a biological or clinical point of view (Çakır, 2005).

CONCLUSION

Errors can be made at each stage of the research. The important thing is to make sure that these mistakes are downloaded the most. The way to prevent mistakes that may be encountered in research is to know what these mistakes might be and to take precautions accordingly. When determining the sample, care should be taken to best represent the universe. The size of the sample must be large enough so that the resulting result can reflect the truth. By establishing a standard and appropriate data collection system, it is possible to reduce errors in the data collection stage. Randomness and

blindness are important to prevent bias. When control groups are used, the groups should be comparable. In the analysis of the data, appropriate statistical tests and estimation methods should be applied. When interpreting the results, care must be taken to ensure that they are clear and understandable.

REFERENCES

Akan, H. (2008). Bilimsel Yayınlarda Taraf Tutma. Sağlık Bilimlerinde Süreli Yayıncılık, 89-95. Available at: https://www.kanitlar.com/single-post/2012/06/02/Bilimsel-Yayınlarda-Taraf-Tutma (accessed: 06.03.2018).

Altman D.G. (2000). Statistics in medical journals: some recent trends. Stat Med. 19, 3275–89.

Altunışık, R.; Coşkun, R.; Bayraktaroğlu, S.; Yıldırım, E. (2012). Sosyal Bilimlerde Araştırma Yöntemleri SPSS Uygulamalı. Sakarya Yayıncılık. 7. Baskı. Sakarya.

Aziz, A. (2017). Sosyal bilimlerde araştırma yöntemleri ve teknikleri. NOBEL Akademik Yayıncılık. 11. Baskı., Ankara.

Cemaloğlu, N. (2018). Araştırma Hataları. Available at: http://www.kamudanhaber.net/guncel/arastirma-hatalari-h364761.html/(accessed: 04.04.2018).

Çakır, B. (2005). Sağlık Araştırmalarında "Bias" (Yanlılık, Taraf Tutma): Tipleri, Sınıflandırılması, Nedenleri, Önleme Yöntemleri-I. Turkiye Klinikleri J Med Sci. 25(1), 100-110.

Çakır, B., (2005). Sağlık Araştırmalarında "Bias" (Yanlılık, Taraf Tutma): Tipleri, Sınıflandırılması, Nedenleri, Önleme Yöntemleri-II. Turkiye Klinikleri J Med Sci. 25, 280-288.

Hayran, O. (2012). Sağlık Bilimlrinde Araştırma ve İstatistik Yöntemler. Nobel Tıp Kitabevleri. İstanbul.

Kanter, M.H., Taylor JR., (1994). Accuracy of statistical methods in Transfusion: a review of articles from July/ August 1992 through June 1993. Transfusion. 34, 697-701.

Kaya, A., (2018). Akademik Sosyal Araştırmalar Dergisi. 6(65), 12-25.

MacArthur RD, Jackson GG. (1984). An evaluation of the use of statistical methodology in the Journal of Infectious Diseases. J Infect Dis.149, 349–54.

McCance I. (1995). Assessment of statistical procedures used in papers in the Australian Veterinary Journal. Aust Vet J. 72, 322–8.

Öğüş, E. (2017). To be together medicine and biostatistics in history: review. Turkiye Klinikleri J Biostat, 9(1), 74-83.

Özsoy, S.; Özsoy, G. (2013). Eğitim araştırmalarında Etki Büyüklüğü Raporlanması. Elementary Education Online, 12 (2), 334-346.

Sönmez, V. (1999). Bilimsel Araştırmalarda Yapılan Hatalar. Hemşirelik Araştırma Dergisi. 1, 13-28.

Strasak, M.A.: Qamruz, Z.: Pfeiffer K. P. (2007). Statistical errors in medical research-a review of common pitfalls. Swiss Med. Wkly, 137, 44-49.

Sümbüloğlu, V., Karabulut, E., Sümbüloğlu, K. (1998). Araştırmalarda sık yapılan hatalar. İç hast dergis.Available at: ichastaliklaridergisi.org/managete /fu_ folder /1998-03/html/1998-5-3-201-204.html/ (accessed: 06.03.2018).

Sümbüloğlu, K., Sümbüloğlu, V., Güney, Z. (2007). Klinik Araştırmalar: Bilimsel Planlama ve Analiz Yöntemleri ve Örneklem Büyüklüğü. Hatiboğlu Yayınevi, Ankara.

Sümbüloğlu, V; Sümbüloğlu, K. (2013). Sağlık Bilimlerinde Araştırma Yöntemleri. 6. Baskı. Hatiboğlu Yayınevi, Ankara.

Tavşancıl, E. (2014). Tutumların Ölçülmesi ve SPSS ile Veri Analizi. Nobel Akademik Yayıncılık. 5. Baskı. Ankara.

URL 1: Araştırmalarda hata Kaynakları ve Önleme yöntemleri Araştırmalarda hata Kaynakları ve Önleme yöntemleri. Available at: www.biyoistatistik.hacettepe.edu.tr /lisans/SBE/arastirmalarda_hata_kaynaklari.pdf/ (accessed: 20.04.2018).

URL 2**:** Araştırma Sonuçları Nasıl Yanlış Yorumlanabiliyor?
https://www.enago.com.tr/blog/arastirma-sonuclari/ (accessed: 22.03.2018).

White SJ. (1979). Statistical Errors in Papers in the British Journal of Psychiatry. Br J Psych. 135, 336–42.

Chapter 13

Use of Music in the Treatment and Care of Chronic Diseases

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INTRODUCTION

Chronic diseases are long-term diseases that can occur at any stage of life and disrupt the physiological, psychological and sociological aspects of the individual's health; they require treatment and care for years (Chang & Johnson, 2008; Durna, 2012; Guillett, 2004). These diseases, which can become a vital threat to the individual, cause physical and structural changes in organs and require long-term and proper care, are also an important source of stress that adversely affects the mental health of an individual (Guillett, 2004; Lubkin & Larsen, 2013). Regardless of the physical, mental and social profiles of individuals, being diagnosed with a disease is a challenging life event for individuals and an experience that may be a threat and an obstacle and may cause an emotional frustration for individuals life balance (Durna, 2012; Lubkin & Larsen, 2013). During the disease course, individuals may experience different reactions such as basic (natural) distress, loss-grief reaction and the affection of a threat to narcissistic integrity (Kocaman, 2008a). Although the adaptation to the disease and the acceptance of the disease, psychological reactions to the disease and their severity are determined by the psychological and social profile of the individual, being diagnoses with a serious disease increases the existential anxiety (Kocaman, 2008a; Kocaman, 2008b; Özkan, 1999). One of the methods is use of art to support individuals in order to cope with these feelings and to help them to express their feelings. In this review article, it was aimed to call attention to the positive effect of the music which is one of the artistic activities used in the treatment and care of chronic diseases.

The Difficulty in Adaptation to Disease Course

Having a chronic disease is a crisis that needs to be tackled for both the individual and the family (Durna, 2012; Guillett, 2004; Öz, 2009). It has been stated that being diagnosed with a disease has doneviolence tothe individuals in the studies, the individuals have had problems in different areas in the adaptation to chronic diseases. Psychosocial adaptation to a disease consists of adaptation to health care, occupational environment, home-family relationships, sexual relations, family relationship, social environment and psychosocial pressure. The risk of the development of chronic or acute complications and the combination of many factors such as diet, exercise, drug use in the control of the disease lead to psychosocial adaptation problems in the individual (Chang & Johnson, 2008; Durna, 2012; Guillett, 2004; Noyan, 2004; Molaoğlu, 2012;

Ovayolu & Ovayolu, 2016; Öz & Demiralp, 2014).

Each individual has a certain amount of ability to adapt to the stressors they encounter. However, different factors affect the individual's adaptation process, such as the characteristics of the event and the situation, the status of encountering with a similar situation, personal meaning attribution to the situation which is experienced. For the adaptation of the individual to a situation, understanding that situation, deciding how to cope with that situation and attributing a meaning to this situation by that individual are important (Noyan, 2004; Molaoğlu, 2012; Öz & Demiralp, 2014; Yeloğlu et al., 2014; Türkmen, 2012).

Feelings during the Course of the Disease

The disease course is a complicated process in which many feelings coexist. The reactions of individuals such as separation anxiety, future anxiety, fear of death, anxiety about damaging of their body, organs and parts, influence their emotional state, mental functions, balance, physical-emotional autonomy, body image and social area (Guillett, 2004; Kocaman, 2008a; Kocaman, 2008b; Öz, 2004). Old conflicts and unresolved focal points become apparent. In this period, feelings are complicated; the problem-solving skills used in the past become ineffective and can not produce needed solutions to overcome the problems. The studies have indicated that traumatized individuals in the disease course are often unable to verbally express their feelings; they are unable to use the necessary vocabulary and concepts; the words for those particular feelings are remarkably limited (Lubkin & Larsen, 2013; Özdemir & Taşcı, 2013; Kocaman, 2008a; Noyan, 2004).

Use of Art in Treatment and Care

Through the human history, art has functioned as a medium of communication from primitive communities to modern communities, has provided benefit in both the creation of an artwork and the evaluation of the individual through the artwork. Art sometimes provides alternative and non-threatening ways to express feelings while words are sometimes inadequate to explain experienced difficulties. Art materials are important facilitators for patients to resolve emotional conflicts, to increase personal development and to express the anxiety about diseases that can not be verbally explain. In the literature, it has stated that different branches of art such as painting, sculpture, drama, dance, music and literature are used as a therapeutical tool for coping with diseases, traumas and various life crises or for personal development (Utaş Akkan, 2012; Appleton, 2011; Piccirillo 1999). It has emphasized that art is used as a catalyst to recognize and express feelings (Meijer-Degen & Lansen, 2006). Patients develop their problem-solving skills and creativity through some materials such as music notes, musical instruments, dyes, ribbons, color papers, etc. They feel that they have the right of control and preference (Malchiodi, 2003; Deane et al., 2001). They have not only a good time, but they also have the opportunity to look at their situation from different perspectives. Art materials help individuals to cope with the trauma feelings that occur during the diagnosis and treatment period.

It has stated that patients examine themselves without feeling being threatened, face with physical changes and loss of feeling after treatment by artistic expression. Thus, it has been determined that artistic activities help to understanding and acceptance of their situation in all patient groups who have difficulty in expressing feelings and

communication, such as patients with chronic diseases (e.g. cancer, diabetes, heart diseases), disabled individuals, psychiatric patients and pediatric patients (Oster et al., 2006; Reynolds & Prior 2006; Truetsky & Hays, 2011). The supportive interventions are applied by healthcare team members, especially nurses because of their role in caregiving, are important to cope with the sudden emotional changes and difficulties that may arise in the course of the disease and treatment process. These interventions may be applied directly to the individual, or may be in the form of group interventions that may involve the family and other similarly diagnosed patients. When the literature is searched, it has seen that the use of music has been widespread in the adaptation to chronic diseases and facilitating the adaptation to treatment and care in recent years.

Use of Music in Treatment and Care

By adjusting the physiological and psychological effects of musical sounds and melodies according to various mental disorders, the treatment performed with a regular treatment regime is called as "Music Therapy". Music therapy is a communication method to determine the psychiatric status of children and adults with mental and physical problems. On the other hand, music therapy is important in terms of improving social relations in a society, giving confidence to individuals and doing physical exercises easily by individuals with physical problems. The history of the therapy with music that has a great importance in both the lives of individuals and their treatment process, goes back to the African, American, Asian, European and many Turkish civilizations (Sarı, 2016).

Music is generally perceived as an entertainment medium by the society. However, music is an art that expresses feelings and thoughts with sounds or expresses sounds in an order and with a sense of aesthetics. It has stated that patients examine themselves by artistic expression without feeling being threatened, face with physical changes and the feeling of loss after treatment. It is known that music therapy is associated with many areas in medicine; it is used in these areas. Humans are more influenced by music than other art branches. Music is an art that expresses the various reactions of the mind at the highest level. Because of this characteristic, there is a natural connection between music and psychology which investigate the mental behaviors of humans. The use of music as a complementary therapy in the treatment of the diseases within the scope of the branches of medicine, such as oncology, cardiology, neurology, psychiatry and pediatrics, affects the treatment course of diseases positively (Gençel, 2006).

Actual Methods Used in Music Therapy

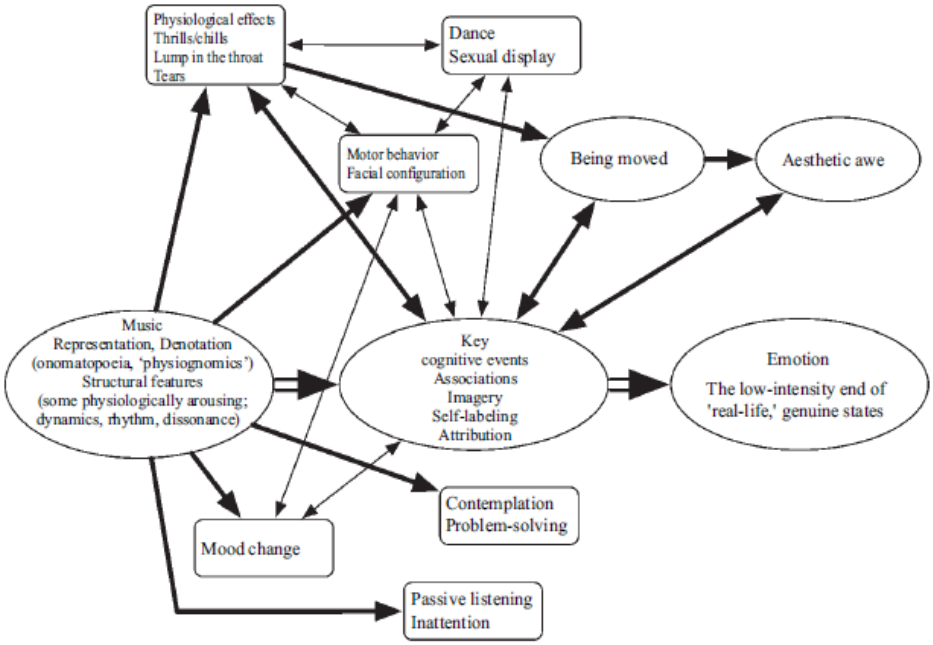
Today, music therapy is applied with various methods. These methods are generally divided into four groups:

-The therapy administered by making patients listen to concerts (passive treatment)
-The therapy administered by making patients perform concerts (active treatment)
-The therapy administered by making patients compose music (active treatment)
-The therapy administered with dancing (active treatment)

Patients are under the influence of the music in the therapy applied with a concert. In this therapy method, a concert is organized. An orchestra or a soloist gives a concert. The patient is only a listener. Concert therapy is similar to the treatment with medication. The only thing which is done by the patient to take what is given to them. The patient is active in the therapy applied by making the patient perform a concert.

The patient actively participates in the concert, taking part in an orchestra or a choir of patients. It is expected that the patient does not only participate in the performance but also perform a creative work in the treatment method applied by performing music. In dance therapy, the dance performed according to the rhythm of the music is a physical outpouring of feelings. Dancing helps the patient relax mentally (cited in Gençel, 2006)

Physiological and psychological effects of music shape the feelings of the patient. The relationship between music and feelings is shown in Figure 1.



Note: Major processes and end-states are shown in ellipses. The main route from music to basic emotions is designated by the thickest arrows. Arrows of medium thickness indicate other possible effects of music and the ways by which the states of Being Moved and Aesthetic Awe may arise. Thin arrows indicate other bidirectional and unidirectional effects and relations.

FIGURE 1 *The authors' theoretical position regarding the major relationships in the 'music and emotion' area.*

Cited in; Konecni, V. Brown,A. Wanic, R. Comparative effects of music and recalled life-events on emotional statePsychology of Music 36(3).

Usage Areas of Music

Music therapy has been widely used as a therapeutic intervention since the middle of the 20th century. Since it has positive effects on the treatment and care of chronic diseases, its use as a remarkable approach is increasing day by day (Evans, 2002). Music is not a therapy method that is used as a certain form. It can be applied for personal conditions and special settings with applying necessary changes. Music can be used for patients of all age groups, such as babies, children, adults, and old people (Lim

& Locsin, 2001; Lou, 2001). The use of music in diseases is an easy applicable, natural, and inexpensive intervention, without any side effects. In hospitals, music is used as an additional therapy in coroner care, palliative care, intensive care, surgical operations, psychiatry, oncology and pediatric units, radiotherapy and chemotherapy, the situations in which medical procedures are applied, treatment of symptoms such as pain and anxiety, the activation of immune functions, increasing of body resistance and life quality and spiritual healing (Uyar & Korhan, 2011).

Effect of Music on Physiological Symptoms

When the physiological effects of music were examined, it was determined that it affects the release of endorphin by the brain and cause a morphine effect on the body. Music reduces adrenaline levels and neuromuscular activity, resulting in slower pulse rate, reduced and steady respiratory rate and reduced blood pressure (Almerud & Peterson, 2003). The effect of music on anxiety begins with the entrance of sound into the body from the ear, nerve fibers transmit the sound signal to the brain stem. Music is first assessed and analyzed in the brain stem. The thalamus decides the state of music in the brain. The thalamus is important for the evaluation of music information. The thalamus takes these information, sends it to the relevant fields in the brain, and the music is spread over an area. Thus, the right hemisphere provides the progression of music while the left hemisphere make analyses (Esch et al., 2004). The studies conducted on the localization of brain lesions by techniques such as Positron Emission Tomography (PET) and Functional Magnetic Resonance Imaging (FMRI) shown that music is localized in the brain and has spread over a wide area. The changes in blood circulation or in the inspiration are physiological changes. Musical rhythm stimulates muscular activities and bodily movements. Certain primitive dances, for example, war dances increase physical energy (Jenkins, 2001).

The physiological effects of music therapy are to create an alteration in behaviors and to change the mood of the patient via decreasing psychophysiological stress, pain, anxiety, and isolation. Many studies have shown that music has positive effects on pain and anxiety; it is known that music improves the quality of life of patients and healthy individuals. Music is an important tool for reducing heart rate, blood pressure, body temperature and respiratory rate; for providing relaxation; for changing the patient's pain perception; for distracting; for reducing chemotherapy-induced bulimia; for improving the quality of life of patients, especially the patients in terminal period.

Music has the ability to provide a deep relaxation. It is known that it has mitigating effects on insomnia. Music can also reduce psychophysiological symptoms of the patients who need mechanical ventilation. It has shown that this situation improves patient satisfaction and can support general healing of the patients. The use of music provides a reduction in disturbing symptoms and a useful relaxation response (Covington, 2001; White, 2000; Nilsson 2008).

In a study evaluating the physiological effects of music, pediatric oncology patients were made to listen to music and then the changes in their heart rates were measured, as a result music was found to cause changes in parasympathetic parameters (Kemper, 2008). Music has not only positive effects on the physiological symptoms but it also has positive effects on the psychological symptoms.

Effects of Music on Psychological Symptoms

Music has an important role in enhancing the individuals' physical, emotional and social status, developing their social relationships in society, gaining them trust, reducing their stress, making the individual happier and more harmonious, teaching them how to relief and helping their coping strategies. There are the studies showing that the use of music has effects such as improving cognitive functions and behavioral symptoms, reducing anxiety, agitation, nervousness level and aggressiveness (Suzuki et al., 2004; Raglio et al., 2008).

In a study on newly arrived immigrant students in Australia, a 20-week music listening program was applied to reveal the impact of music on the class behavior of the students. The hyperactivity and aggressiveness related behaviors were significantly reduced in the children. In a study conducted in a prison in Portugal, the effectiveness of music was assessed, young people listened to hip hop music and as a result young adult participants gained a different perspective; positive effects such as controlling their own behavior, giving appropriate reactions to warnings, being respectful, being a member of a group were observed (Felicity, 2006).

Music improves the abilities of people to deal with feelings. In Palestine, a five-week program was applied to determine the potential of music to improve the abilities of people to manage feelings and to determine how families and communities meet children's emotional needs. As a result of the study, it was found that music had a therapeutical effect; the participants supported the existence of music in their lives (Berhrens, 2008).

Figure 2 shows music is good for which physiological and psychological symptoms.

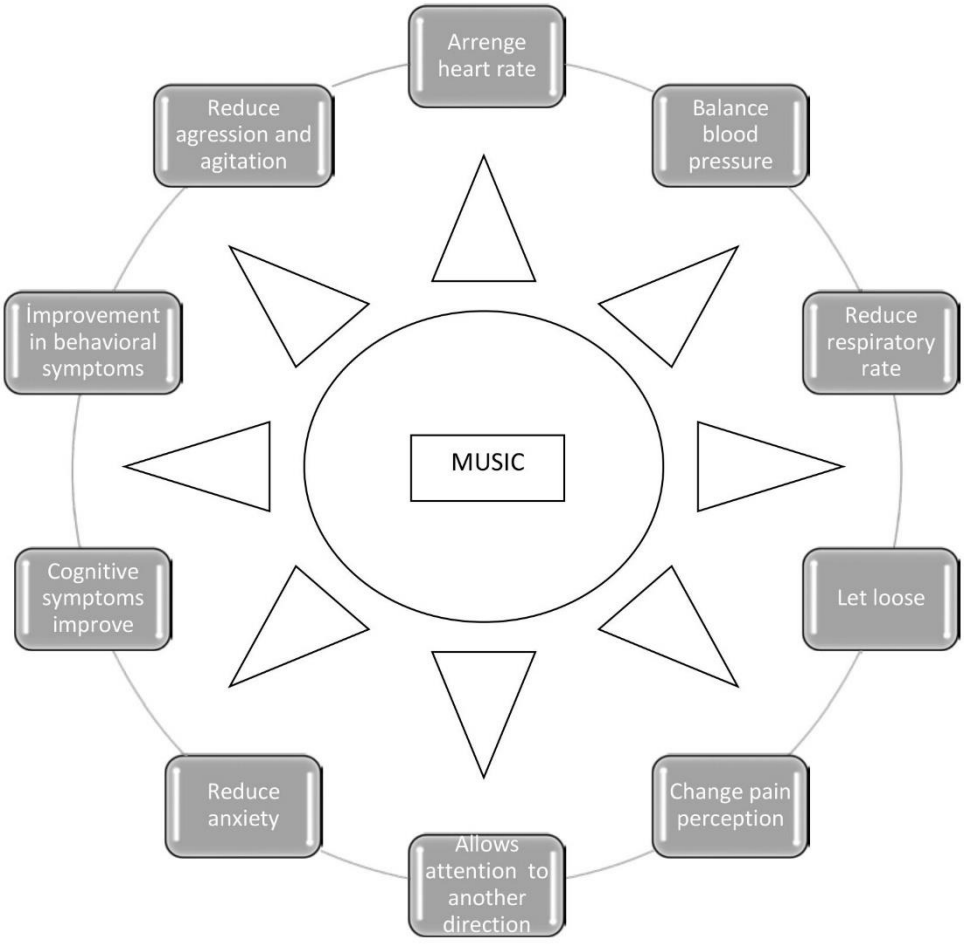


Figure 2. Physiological and psychological effects of music

Use of Music in Nursing Applications

The effect and importance of music in the cure of the patients was remarked by Florence Nightingale in the early 1800's. Nightingale used music therapy as a therapeutic application to maintain and improve comfort; she acknowledged the power of proper music use in the healing of patients and defined the use of music as a part of the recovery period. During the Crimean War, Nightingale supported the use of music in hospitals to help the recovery of the soldiers. Nightingale who examined the influence of environment on humans, stated that wind instruments had a positive effect on the patients. In her book "Notes on Nursing", she also stated that music had positive effects, especially music made with wind instruments and strings used especially with human voice had a positive effect. Nightingale used environmental factors such as pictures, flowers, music and basic needs such as light, fresh air and nutrition to improve body and mind connection (as cited in Bilgiç, 2015).

Cognitive therapy, reflexology, nutrition, exercise and movement, humor and play, active and passive relaxation, meditation, yoga, music therapy, aromatherapy and writing are the most frequently used complementary and alternative therapies within holistic nursing practices (Bekiroğlu, 2011). In addition, the use of music in the scope of the Nursing Interventions Classification (NIC) has been acknowledged as a nursing practice; it has been stated that music helps to obtain positive changes in feelings, behaviors and human physiology (as cited in Bilgiç, 2015).

In parallel with scientific and technological developments, the roles and responsibilities of nurses gradually increase. Nurses should be able to reduce stress, pain, anxiety symptoms and environmental stimuli, use music in individualized developmental care practices by maintaining a balance between medical practices and good primary care to reduce stress symptoms in patients. It is important that nurses take an active role in creating appropriate environments where music can be used to reduce the negative effects of chronic diseases, raising awareness, using music in nursing care, planning and implementing its usage (Derebent & Yiğit, 2008).

Conclusion

Music which is believed to have a relaxing power in every period of human life, has an important place in mental health of humans. For this reason, music has been used as a therapeutic tool in the treatment of diseases in every period from past to present. For centuries, philosophers, physicians and musicians have emphasized that music influences feelings, physiology and psychology; they have tried to explain these mechanisms of action. It has been shown that the use of music in the treatment and care of chronic diseases helps individuals to adapt to the course of a chronic disease and to cope with the disease; it affects the recovery process positively. For this reason, it is considered that the frequency of use of music in the treatment and care of chronic diseases should be increased; artistic activities should be used in addition to medical treatment. It should not be forgotten that music is an important method of treatment but it is not a therapeutic tool without medical therapies, it is only beneficial when it is applied with medical treatments.

REFERENCES

Almerud, S. Peterson, K. (2003). Music Therapy A Complementary Treatment For Mechanically Ventilated Intensive Care Patients, Intensive and Critical Care Nursing, 19(1): 21-30.

Appleton, V. (2011) Avenues of hope: Art Therapy and the Resolution of Trauma. Art therapy. 18, 6- 13

Bekiroğlu,T. (2011). Klasik Türk Müziğinin hipertansiyon hastalarının kan basınçlarına ve anksiyete düzeylerine etkisi. T.C. Gaziantep Üniversitesi Sağlık Bilimleri Enstitüsü, İç Hastalıkları Hemşireliği Anabilim Dalı, Yüksek Lisans Tezi, Gaziantep.

Berhrens, G. (2008).Understanding The Emotional Coping Needs of Palestinian Children through Music Therapy, XII Congreso Mundial de Musicoterapia.

Bilgiç, Ş. (2015). Kemoterapi Uygulanan Hastalarda Müzik Terapinin Kemoterapi Semptomları ve Konfor Düzeyine Etkisi. İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü. Doktora Tezi. İstanbu.

Chang E, Johnson A. (Ed) (2008).Chronic Illness and Disability. Churchill Livingstone Elsevier, Australia
Covington, H. (2001). Therapeutic music for patients with psychiatric disorders. Holist Nursing Pract.15:59-69.
Gençel, Ö. (2006). Müzikle Tedavi, Kastamonu Eğitim Dergisi, 14(2): 697-706.
Derebent, E., Yiğit, R. (2008). Non-Pharmacological pain management in newborn. Fırat Üniversitesi Sağlık Bilimleri Tıp Dergisi, 22(2): 113-118
Durna Z (Ed.) (2012) Kronik Hastalıklar ve Bakım. Nobel Tıp Kitapevleri, İstanbul
Deane K, Fitch M, Carman M. (2000). An innovative art therapy program for cancer patients. Can Oncol Nurs J. 10:147-157.
Esch, T. Guarna, M. Bianch, E. et al. (2004). Commonalities in the Central Nervous System's Involvement with Complementary Medical Therapies: Limbic Morphinergic Processes, Med Sci Monit, 10(6): 6-17.
Evans, D. (2002). The Effectiveness of Music as an Intervention for Hospital Patients:: A Systematic Review. 37(1): 8-18.
Felıcıty,B. Carolyn,J. (2006). "The Effect of Music Therapy Services on Classroom Behaviours of Newly Arrived Refugee Students in Australia--A Pilot Study", Emotional & Behavioural Difficulties. 11(4):249-260.
Guillett S. (2004) Understanding Chronic Illness and Disability. Leslie Jean Neal, Sharron E. Guillett (Ed) cited in Care of the Adults with Chronic Illness or Disability. (pp:1-10)Elsevier Mosby, St. Louis, Missouri
Jenkins, J.J. (2001). The Mozart Effect, Journal of the Royal Society of Medicine, 94:170-172.
Kocaman N. (2008a) Tıbbi Hastalığa Psikososyal Tepkiler. İstanbul Tıp Fakültesi dergisi, 71(2):52-58 25.
Kocaman N. (2008b) Hastanın Psikososyal Tepkilerini Etkileyen Faktörler. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi, 11(1):101-112 24.
Lubkin IM, Larsen PD. (2013) Chronic Illness Impact and Intervention. Jones & Bartlett Learning, USA
Oster I, Svensk A, (2006). Magnusson E, Thyme K, Sjodin M, Aström S et al. Art therapy improves coping resources: a randomized, controlled study among women with breast cancer. Palliat Support Care. 4:57-64.
Özkan S. (1999). Hastalıklara psikolojik tepkiler. Konsültasyon Liyezon Psikiyatrisi 1998-1999 (Ed S Özkan):27-30. İstanbul, İstanbul Üniversitesi Basımevi.
Öz F. (2004). Sağlık Alanında Temel Kavramlar. Hacettepe Üniversitesi Hemşirelik Yüksekokulu, Ankara Özdemir Ü, Taşcı S. (2013) Kronik Hastalıklarda Psikososyal Sorunlar Ve Bakım. ERÜ Sağlık Bilimleri Fakültesi Dergisi, 1(1), 57-72.
Lim, P.H., Locsin, R. (2006). Music as Nursing Intervention for Pain in Five Asian Countries, International Council of Nurses. 53: 189-196.
Meijer-Degen F, Lansen J. (2006). Alexithymia- a challenge to art therapy: the story of Rita. The Arts in Psychotherapy 33:167-179.
Molaoğlu M. (2012). Kronik Hastalıklarda Uyum Süreci. Zehra Durna(Ed) Kronik Hastalıklar ve Bakım içinde (ss: 51-64) Nobel Tıp Kitapevleri, İstanbul Mosby, Philadelphia 29.
Noyan A. (2004). Evde Bakımda Yaşanan Psikolojik Sorunlar ve Başetme Yöntemleri. Çiçek Fadıllıoğlu, Gül Ertem(Ed).1. Uluslar arası Katılımlı Evde Bakım Kurs Kitabı

içinden (ss:127-130) Ege Üniversitesi Basımevi, İzmir
Nilsson U. (2008). "The anxiety-and pain-reducing effects of music interventions: a systematic review." AORN journal 87(4):780-807.
Ovayolu N, Ovayolu Ö. (2016). Temel İç Hastalıkları Hemşireliği ve Farklı Boyutları ile Kronik Hastalıklar. Çukurova Nobel Tıp Kitapevi, Adana
Öz F, Demiralp M. (2014). Psikososyal Hemşirelik Genel Hasta Bakımı İçin. Akademisyen Kitapevi, Ankara
Piccirillo E. Hide and seek: The art of living with HIV/AIDS. In Medical Art Therapy with Children (Ed CA Malchiodi) 1999; 113-132. Philadelphia
Raglio A, Bellelli G, Traficante D, Gianotti M, Ubezio MC, Villani D et al. (2008). Efficacy of music therapy in the treatment of behavioral and psychiatric symptoms of dementia. Alzheimer Dis Assoc Disord. 22:158-162.
Reynolds F, Prior S. (2006). The role of art-making in identity maintenance: case studies of people living with cancer. Eur J Cancer Care (Engl). 15:333-341.
Sarı, E. (2016). Müzik Ruhun Gıdasıdır. Medya Yayıncılık. Antalya.
Suzuki M, Kanamori, M, Watanabe M, Nagasawa S, Kojima E, Ooshiro H et al. (2004). Behavioral and endocrinological evaluation of music therapy for elderly patients with dementia. Nurs Health Sci, 6:11-18
Truetsky, C.J. & Hays, R.E. (2011). Development of an Art Psychotherapy Model for the Prevention and Treatment of Unresolved Grief during Midlife. Art Therapy. 20: 3, 148-156.
Türkmen E. (2012). Kronik hastalıklar ve Önemi. Zehra Durna(Ed) Kronik Hastalıklar ve Bakım içinde (ss: 37-50) Nobel Tıp Kitapevleri, İstanbul
Utaş Akhan, L. (2012). Psikopatolojik Sanat ve Psikiyatrik Tedavide Sanatın Kullanılışı Yükseköğretim ve Bilim Dergisi 2 (2), 132-135 Malchiodi CA. Using art therapy with medical support groups. In Handbook of Art Therapy, 1st ed. (Ed CA Malchiodi) 2003; 351-361. New York, Guilford Press
White, JM. (2000). State of the science of music interventions. Critical care and perioperative practice. Crit Care Nursing Clinic North. 12:219-25.
Yeloğlu ÇH, Güveli H, Hocaoğlu Ç. (2014) Son Dönem Hastalarında Psikiyatrik Yaklaşım. Literatür Sempozyum. ss:.43-50

Chapter 14

Maternal-Fetal Attachment during Pregnancy and Nursing

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INTRODUCTION

Maternal-fetal relationship has a significant effect on the baby and its future development (Lang, 2018). Attachment is related to the ability to set up and sustain healthy relations (Duyan et al., 2013). Prenatal attachment is the term used to define the emotional bond which is established between the mother and her fetus during pregnancy and which takes place in emotional, cognitive and behavioural aspects (Bekmezci & Özkan 2016).

In 1960s and 1970s, scientists started to study maternal-fetal attachment after observing the women mourning after neonatal fetal deaths (Armstrong, 2004; Canella, 2005; Brandon et al., 2009). Prenatal attachment starts when the mother responds to pregnancy positively and it gets stronger as the pregnant woman's body changes, the uterus grows and fetal movements are felt. Attachment during pregnancy is affected by the physiological and psychological changes (Bekmezci & Özkan 2016; Akarsu et al., 2017). With this respect, it is significant for nurses working in woman health department to evaluate attachment during pregnancy and develop it by applying required interventions (Akarsu et al., 2017).

THE TERM OF ATTACHMENT

The term of "attachment" whose basis dates back to the thirteenth century etymologically means "to commit to a duty or to fulfill it". The behaviour of attachment is defined as "to search for and sustain intimacy towards another individual (Thompson, 2002). Ainsworth (1978) defined attachment as a tie of affection developed by someone for another.

The requirement and tendency to establish emotional contact define the attachment system necessary for the infants' survival and effective for their development. Attachment is not limited just with childhood and continues lifelong. Its nature and type of definement change by time. The features of attachment are determined by early maternal-infant interaction. The experiences that the infant obtains in the early years set a model for its behaviours and all relations thereafter (Lang, 2018; Çopur et al., 2006).

According to the theory of attachment, it comprises all emotional and behavioural patterns such as positive respond to mother or the person who takes her place, the will to spend most of the time with that person, the need to find him/her in cases of frightment and the relief felt by percepting the presence of the attached person (Sosyal

et al., 2005).

THE THEORY OF ATTACHMENT

The attachment theory was developed as a result of the common studies of John Bowlby and Mary Ainsworth (Ossa et al., 2012). The theoric basis of attachment defined as a strong bond between two individuals was formed by etology (animal behavior sciences), cybernetics (the science determining the rules and conditions of control and communication in machines and living beings), informatics, developmental psycology and the synthesis of psychoanalysis (Yılmaz & Beji 2013).

Having carried out the first empirical and theoretical studies on infant's relations as an English pschoanalyst and psychiatris, John Bowlby started his researches upon The World Health Organization's demand for a study on the mental health of homeless children in 1950. He provided the formation of the concept "attachment" by defining it for the first time as a strong bond between two individuals in 1958 (Weber, 2003; Bekmezci & Özkan 2016).

Attachment has three functions for human life. These are;

- ✓ To have a reliable port to return while discovering the world,
- ✓ To meet the physical needs,
- ✓ To be able to develop a feeling of security about life.

Bowlby asserts that the child may develop a kind of patalogy related to his/her sef-perception unless these needs aren't met in adequate level (Ünal, 2004).

The attachment theory developed by John Bowlby is based on Freud's psychoanalytic theory (Sosyal et al., 2005; Yılmaz, 2010). While studying the lives of the children and adolescent thieves, Bowlby realised that these individuals stayed away from their family for a long time during their infancy and early childhood (Thompson, 2002). Moreover, in the study he carried out in London's orphanages, Bowlby stated that the children who suffered most are those having stayed away from their family and the children showing emotional and behavioural problems are the ones who have parents with ambivalent and openly repudiative attitudes. From this point of view, he claimed that the caregiver's emotional approach to the baby is directly related to his/her mental health in the future (Bowlby, 1958). He developed the theory of attachment with an objection against the argument stating that the children love their mothers just because they meet their hunger need (Bowlby, 1979).

Considering the study results about animals, two figures of mother were suggested to the goslings and they chose the one which gave the best respond to their calls. The donkeys hugged the puppet covered with fur tightly when they left their mother. However, they went to the puppet made of wire with a feeding bottle on it when they got hungry too much and returned back to the puppet with fur quickly. Therefore, it was shown that the feeling of security associated with body touch is more important than nourishment (Lang, 2018).

Ainsworth had to chance to observe the infants and their mothers more closely by making home visits with her students in 1960s and examined the mother's respond to her child's needs in some basic situations (nourishment, crying, eye touch, smiling etc.) (Ainsworth et al., 1978). It was stated that security bonds should be established with their mothers for the neonates and young children to sustain their interactions and relations with the outer world in a healthy way (Lang, 2018).

MATERNAL-FETAL ATTACHMENT DURING PREGNANCY

During pregnancy, maternal-fetal attachment is the first important relationship established with the infant and this bonding becomes the determining factor of the relations between mother and child and it plays a significant role in child's physical,emotional,cognitive development in the future (Duyan et al., 2013; Özorhan et al., 2015).

It has been reported that the bond between newborn and mother in postnatal period develops as a result of prenatal process and women have four special duties for both themselves and their children as "to seek a secure transition to labor from maternity, to help the baby be accepted as special by other individuals, to attach and commit herself to the baby" before birth (Özorhan et al., 2015). As for maternal-fetus attachment, Cranley remarked six factors as "mother's perception of fetus as different from her, interaction with the fetus, interpreting its features, committing (devoting) herself to it, adopting her role and intertwinement". Cranley defined maternal-fetal attachment as close relationship and interaction of the pregnant woman with her unborn baby by attaching it through her behaviours (Cranley, 1981; Bekmezi & Özkan 2016). Muller,on the other hand, defined it as the sole relationship developed between mother and her unborn child. (Muller, 1993; Özorhan et al., 2015)

The adoption of prenatal changes in her body by the mother and her ability to transfer positive emotions to the unborn baby form the basis of attachment (Yılmaz, 2010; Kavlak & Şirin 2007; Cannella, 2005; Sosyal et al., 2005). Fetus can respond to maternal affectivities (Kaplan et al., 1994; Sosyal et al., 2005). In the literature it is reported that the fetus's growth, development and perception in the 16th-20th week and labor promote maternal-fetus attachment. Moreover it is stated that the fetus has the abilities to perceieve, respond and get the information heard. Therefore, it's being somatically sensed and accepted by the mother through touching her abdomen is very important for the development of attachment (Cannella, 2005; Kaplan et al., 1994; Sosyal et al., 2005).

Prenatal attachment is affected by the mother's own type of attachment in her infancy. The mother's warm-hearted, intimate and secure ties of dependence with her parents during her mother's pregnancy and puerperium reflect on her marriage and relations with the child (Çıkılı-Uytun et al., 2013, Kavlak & Şirin, 2007; Lang, 2018).

Some neuroendocrine changes during pregnancy ease the realisation of attachment (Satzman & Maestripieri 2011). It is suggested that oestrogen and progesterone hormones at high levels during pregnancy increase mother's sensitiveness to fetal stimulus and start maternity by promoting oxytocin and prolactin receptors in the brain which are important for maternal behaviours (De Bono, 2003; Saltzman & Maestripieri 2011).

It was stated that high level of cortizol in circulation increases sensitiveness to fetal stimulus especially for young and unexperienced female primates and that serotonin affects maternal behaviour and attachment by decreasing anxiety (Satzman & Maestripieri 2011).

It was reported that the cases such as pregnancy planning, approval and adoption, perception of fetal movements, fetus's being accepted as an individual, labor, seeing, touching and caring the infant promote maternal-fetal attachment (Peppers & Knapp

1980; Özorhan et al., 2015).

It is expressed that mother's feeling of security, family's socio-economic and cultural status, spouse relations and support and mother's ties with her family and social environment are effective factors in the formation of maternal-fetal attachment, as well (Kavlak & Şirin 2007). Unfavorable maternal behaviours, unwillingness to birth, anxiety, stress and depression, inadequate social support affect attachment negatively (Bezmezci & Özkan 2016; Özorhan et al., 2015). In other studies on the factors effective in maternal-fetal attachment, it was stated that monitoring the fetus by ultrasound, perception of fetal movements, individual's sense of adequacy about parenthood, infant's first smile,positive emotional environment (Kavlak & Şirin, 2007; Lang, 2018),experience of pregnancy, attitude towards labor,age,education and ethnic group (Özorhan et al., 2015) have effects on attachment.

In the studies on this subject, it was found that the pregnant women who are at and over the age of 35 and uneducated, unemployed and who don't have planned pregnancy have low levels of attachment. The situation is the same for multipars. Moreover it was determined that attachment level rises in consequence increases of fetal interaction as the pregnancy progresses (Yılmaz & Beji 2010; Özorhan et al., 2015).

It is thought that the women who became pregnant for the first time are more excited and willing about having a baby and therefore attach her infant more and that young women bond to their babies more since they are readier for maternity and are eager to get pregnant (Yılmaz & Beji 2010). In the study carried out by Ard (2000), it was found that prenatal attachment level decreases in the adolescent mothers as the maternal age falls. In another study, it was determined that maternal socia-economic and employment status, family types and age of previous child affect maternal attachment (Kavlak & Şirin 2004). However, in a study having analysed several variables effective on maternal-fetal attachment, it was revealed that psycho-social, demographic and variables related to pregnancy do not have significant effects on maternal-fetal attachment (Cannela, 2005).

In a randomized study carried out among 213 pregnant women having no problems during their pregnancy, it was found that counting fetal movements has increasing effect in the level of attachment (Mikhail et al., 1991). In another study, it was determined that the women with higher levels of prenatal attachment perceive fetal movements more (Zeanah et al., 1990). During pregnancy women develop an "ideal and imaginary" infant image. It is seen that clear similarity of the dreamed baby with the real one is another factor affecting the maternal attachment positively (Kavlak & Şirin 2007). Hjelmstedt et al. (2006) found that there is no difference in attachment level between the women who became pregnant naturally and those who used assisted reporductive techniques. But it was reported that egg donors have lower level of attachment than those who will give birth to their own baby (Fischer & Gillman 1991).

It was seen that the women who had perinatal losses have more anxieties during their next pregnancy, are intensely afraid of losing their babies and this situation results in a difficullty for the woman to attach to a new fetus (Wallerstedt et al., 2003). In the study of Yılmaz and Beji (2013), it was reported that there is no difference in prenatal attachment level between those who had perinatal losses and those who didn't have. It was stated that depression during pregnancy affects maternal-fetal attachment in a negative way (Lindgren, 2001; Atkinson et al., 2000; Bezmezci & Özkan 2016).

Similarly, in another study, it was found that depression during pregnancy is the precursor of the child's insecure attachment in the14th week and his/her problematic behaviours in the 30th week (Carter et al., 2001).

A pregnant woman attached to the baby forms a mental picture of the baby in the first trimester of gestation, becomes happy by thinking what a valuable being she has and interacts with the fetus as an individual by giving it a personality by time during pregnancy. Most pregnant women speak with their fetuses. It was determined that a strong maternal-fetal attachment is closely related to exhibiting positive health behaviors during pregnancy, avoiding from cigarette, alcohol and illegal drugs, taking and participating into prenatal care, healthy nutrition and regular sleep habit, exercising, wearing seatbelt, trying to get more information about gestation, labor and baby care (Lindgren, 2001), showing love and interest to her baby, adopting to the role of motherhood (Bilgin & Alpar 2018; Akarsu et al., 2017; Bekmezci & Özkan 2016) and protecting herself from depression (Bilgin & Alpar 2018; Akarsu et al., 2017; Bekmezci & Özkan 2016).

The studies carried out on attachment disorders reveal the importance of early diagnosis and treatment (Armstrong, 2004; Canella, 2005; Brandon et al., 2009). Prenatal attachment level of pregnant women must be determined because those with low attachment levels may be treated through appropriate interventions. Moreover, the education and motivation provided for the women having no information on the issue and showing reckless behaviours may be useful (Shieh et al., 2001).

THE ROLE OF NURSE IN ATTACHMENT DURING PREGNANCY

A nurse is the team member in the best position to pave the way to the woman for expressing her feelings and anxieties during pregnancy, using positive coping strategies, organizing family relations and benefiting from social support systems in the neighbourhood efficiently (Metin & Pasinlioğlu 2014; Bekmezci & Özkan 2016).

Although the American College of Obtretricians and Gynecologists (ACOG) advises the pregnant women to undergo a psychosocial screening at least once in every trimester, health care professionals generally focus on the biological and physiological changes of pregnancy and neglect its psychical aspect unless an important problem is observed. However, it is significant to make both physical and psychosocial evaluations in terms of an integrative approach (Bekmezci & Özkan 2016). Nursing care will help the couples have a positive pregnancy and labor experience and establish good, strong family relations by time (Metin & Pasinlioğlu 2014). Also, it is important for nurses to know the normal maternal-fetal interaction process in order to be able to evaluate the mothers' attitude towards their babies properly (Şolt & Savaşer 2017).

Nurses help the expectant mothers overcome their prejudices about the fetus and perceive themselves and the fetus positively by listening to their anxieties, responding to the questions about themselves and their babies and supporting maternal behaviors (Yılmaz, 2013). It is important to make appropriate nursing interventions in order to determine the pregnant women (especially those at risk) that have the possibility to have inadequate attachment during pregnancy and to prepare the woman ready for motherhood. Therefore, it will be possible to prevent any probable child neglect and abuse in the future (Şolt & Savaşer, 2017; Yılmaz, 2013; Özorhan et al., 2015; Akarsu et al., 2017). Auditory, visual and practical education porgrammes had better be

planned in order to develop a physical and emotional tie between the mother and fetus (Bilgin & Alpar 2018). With this respect, the women may be advised to touch the fetus, speak with it, and count fetal movements during pregnancy (Yılmaz, 2013). Since music promotes prenatal attachment, it may be useful to make pregnant women listen to/sing nannies (Carolan et al., 2012; Arabin & Jahn 2013).

As intended pregnancy is very important for maternal-fetal attachment, it's significant to educate the mothers about this issue and provide them with efficient family planning counselling in order to prevent unintended pregnancy (Yılmaz, 2013; Bekmezci & Özkan 2016). Nurses should tell the families the importance of intended pregnancy and inform them about how it is significant for the women to adopt maternity, to sense fetal movements and accept the fetus as an individual (Şolt & Savaşer 2017).

Considering that psychiatric problems such as depression and anxiety affect attachment, the women planning to get pregnant should be examined in terms of depressive symptoms and other psychiatric problems. It is necessary for them to be cured before pregnancy (Yılmaz, 2013).

Social support from family, friends and neighborhood has a great importance for parents in establishing secure attachment. Nurses, by evaluating pregnant women's social support systems, should help them overcome difficulties during pregnancy (Yılmaz, 2013; Metin, 2014; Bilgin & Alpar 2018).

Nurses, with their concious prenatal nursing approach, are the key people in starting the formation of love and keeping it during attachment process (Şolt & Savaşer 2017). Considering attachment as a multifactorial process, they should support and encourage the family to develop family-infant interaction and increase its quality (Kavlak & Şirin 2007).

CONCLUSION

Postpartum attachment behaviour towards the caregiver is based on maternal-fetal attachment during pregnancy. It may be risky for the individual to sustain a healthy life both physically and mentally unless secure attachment is provided in these periods.

During antenatal caring, it is suggested that nurses should carefully evaluate the attachment levels of pregnant women especially with psychiatric problems, low education level, unwanted and unplanned pregnancy and inadequate social support systems and that they should determine the factors affecting attachment and plan interventions for the problem.

REFERENCES

Ainsworth, M.D.S; Blehar M.C.; Waters, E,; Walls, S. (1978). Patterns of Attachment: A Psychological Study of the Strange Situation. 17, 81-94 pp. Lawrence Erlbaum Associates. Hillsdale.

Akarsu, R.H.; Tuncay, B.; Alsaç, S.Y. (2017). Anne-Bebek Bağlanmasında Kanıta Dayalı Uygulamalar. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi 6: (4), 275-279.

Arabin, B. & Jahn, M. (2013). Need for İnterventional Studies on the İmpact of Music in the Perinatal Period: Results of a Pilot Study on Women's Preferences and Review of the Literature. The Journal of Maternal-Fetal and Neonatal Medicine 26:

(4), 357–362.
Ard, N.C (2000). Prenatal and Postnatal Attachment in Adolescent Mothers. J Child and Family Nurs 3: (5), 313-325.
Armstrong, D. (2004). Emotional Distress and Prenatal Attachment in Pregnancy after Perinatal Loss. J Nurs Scholarship 34: (4), 339-45.
Atkinson, L.; Paglia, A.; Coolbear, J.; Niccols, A.; Parker K.C.; Guger, S. (2000). Attachment Security: A Meta-Analysis of Maternal Mental Health Correlates. Clin Psychol Rev 20: (8), 1019-1040.
Bekmezci, H. & Özkan, H. (2016). Gebelikte Psikososyal Sağlık Bakım, Prenatal Bağlanma ve Ebe-Hemşirenin Sorumlulukları. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi 8, 50-60.
Bilgin, Z. & Alpar, Ş.E. (2018). Kadınların Maternal Bağlanma Algısı ve Anneliğe İlişkin Görüşleri. HSP 5: (1), 6-15.
Bowlby, J. (1958). The Nature of the Child's Tie to His Mother. Int J Psychoanal 39, 350-373.
Bowlby, J. (1979). The Making and Breaking of Affectional Bonds.. Tavistock Publications Limited, 150 pp., London and Newyork.
Brandon, A.R; Pitts, S.; Denton, W.H.; Stringer, C.A.; Evans, H.M. (2009). A History of the Theory of Prenatal Attachment. J Prenat Perinat Psychol Health 23: (4), 201–22.
Canella, B.L. (2005). Maternal-Fetal Attachment: An İntegrative Review. Journal of Advanced Nursing 50: (1), 60-8.
Carolan, M.; Barry, M.; Gamble, M.; Turner, K.; Mascare˜nas, O. **(**2012). The Limerick Lullaby Project: An Intervention to Relieve Prenatal Stress**.** Midwifery 28, 173–180.
Carter, A.S.; Garrity-Rokous, F.E.; Chazan-Cohen, R.; Little, C.; Briggs-Gowan, M.J. (2001). Maternal Depression and Comorbidity: Predicting Early Parenting, Attachment Security and Toddler Social-Emotional Problems and Competencies. J Am Acad Child Adolesc Psychiatry 40: (1), 18-26.
Cranley, M.S. (1981). Development of a Tool for the Measurement of Maternal Attachment during Pregnancy. Nurs Res 30: (5), 281-284.
Çıkılı-Uytun, M.; Öztop, D.B.; Eşel, E. (2013). Ergenlik ve Erişkinlikte Bağlanma Davranışının Değerlendirilmesi. Düşünen Adam. The Journal of Psychiatry and Neurological Sciences 26: (2), 177-189.
Çopur, Z.; Erkal, S.; Şafak, S. (2006). Annelerin 12 Yaş Üzeri Çocuklarıyla İlişkilerinde Yaşadıkları Çatışmaların İncelenmesi. Hacettepe Sosyolojik Araştırmalar Dergisi 1, 1-11.
De Bono, M. (2003). Molecular Approach Estoaggreaction Behavıor and Social Attachment. Journal of Neurobıology 54: (1), 78-92.
Duyan, V.; Kapısız, S.G.; Yakut, H.İ. (2013). Doğum Öncesi Bağlanma Envanteri'nin Bir Grup Gebe Üzerinde Türkçeye Uyarlama Çalışması. The Journal of Gynecology - Obstetrics and Neonatology 10: (39), 1609-1614.
Fischer, S. & Gillman, I. (1991). Surrogate Motherhood: Attachment, Attitudes and Social Support. Psychiatry 54: (1), 13-20.
Hjelmstedt, A.; Widström, A.M.; Collins, A. (2006). Attachment in Women who Conceived After in Vitro Fertilization and Women Who Conceived Naturally. Birth 33: (4), 303-310.

Kavlak, O. & Şirin, A. (2007). Anne ve Babaya Ait Bağlanma ve Hemşirenin Rolü. Ege Üniversitesi Hemşirelik Yüksek Okulu Dergisi 23: (2), 183-194.
Lang, C. (2018). Bağlanma-Doğum Öncesi ve Sonrası Dönemde Bağlanmanın Güçlendirilmesi. N Üzel, S Özbalcı (Çev). Modern Tıp Kitabevi. Birinci Baskı. 1-2, 57-58 s., Ankara.
Lindgren, K. (2001). Relationships among Maternal-Fetal Attachment, Prenatal Depression and Health Practices in Pregnancy. Res Nurs Health 24: (3), 203-217.
Metin, A. &Pasinlioğlu, T. (2016). Gebelerin Algıladıkları Sosyal Destek ile Prenatal Bağlanma Arasındaki İlişki. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi 5, 49-66.
Mikhail, M.S., Freda, M.C.; Merkatz, R.B.; Polizzotto, R; Mazloom, E; Merkatz IR. (1991). The Effect of Fetal Movement Counting on Maternal Attachment to Fetus. Am J Obstet Gynecol 165 (4 Pt 1), 988-991.
Muller, M.E. (1993). Development of the Prenatal Attachment Inventory. Western J Nurs Res 15: (2), 199-211.
Ossa, X.; Bustos, L.; Fernandez, L. (2012). Prenatal Attachment and Associated Factors during the Third Trimester of Pregnancy in Temuco, Chile. Midwifery 28, e689–e696.
Özorhan, E.Y.; Apay, S.E.; Düzyurt, M. (2015). Riskli Olan ve Olmayan Gebelerin Prenatal Bağlanma Düzeylerinin Karşılaştırılması. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi 3: (1), 1-15.
Siddiqui, A. & Hagglof, B. (2000). Does Maternal Prenatal Attachment Predict Postnatal Mother-Infant Interaction? Early Hum Dev 59: (1), 13-25.
Shieh, C.; Kravitz, M.; Wang, H.H. (2001). What Do We Know About Maternal-Fetal Attachment? Kaohsiung Med Sci 17, 448-54.
Sosyal, A.Ş.; Bodur, Ş.; İşleri, E.; Şenol, S. (2005). Bebeklik Dönemindeki Bağlanma Sürecine Genel Bir Bakış. Klinik Psikiyatri 8: 88-89.
Şolt, K.A. & Savaşer, S. (2017). Doğum Sayısının Anne Bebek Bağlanmasına Etkisi. Sağlık Bilimleri ve Meslekleri Dergisi 4: (3), 236-243.
Thompson, R.A. (2002). Attachment Theory and Research. In: Lewis M. (Ed) Child and Adolescent Psychiatry. Third edition. 164-172 pp. Lippincott Williams Wilkins. Philadelphia.
Saltzman, W. & Maestripieri, D (2011). The Neuroendocrinology of Primate Maternal Behavior. Progress in Neuro-Psychopharmacology & Biological Psychiatry 35, 1192–1204.
Ünal, G. (2004). Bir Grup Üniversiteli Gençte Çekingenlik, Aleksitimi ve Benlik Saygısının Değerlendirilmesi. Klinik Psikiyatri 7, 215-222.
Wallerstedt, C.; Lilley, M.; Baldwin, K. (2003). Interconceptional Counseling after Perinatal and Infant Loss. J Obstet Gynecol Neonatal Nurs 32: (4), 533-542.
Weber, D.A. (2003). A Comparison of Individual Psychology and Attachment Theory. Journal of Individual Psychology 59: (3), 246-262.
Yılmaz, S.D. (2013). Prenatal Anne-Bebek Bağlanması. Hemşirelikte Eğitim ve Araştırma Dergisi 10: (3), 28-33.
Yılmaz, S.D. & Beji, N.K. (2013). The Effects of Perinatal Loss on the Current Pregnancy in Turkey. Midwifery 29, 1272–1277.

Yılmaz, S.D. & Beji, N.K. (2013). Prenatal Bağlanma Envanterinin Türkçe'ye Uyarlanması: Güvenilirlik ve Geçerlilik Çalışması. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 16: (2), 103-109.

Yılmaz, S.D. & Beji, K.N. (2010). Gebelerin Stresle Başa Çıkma, Depresyon ve Prenatal Bağlanma Düzeyleri ve Bunları Etkileyen Faktörler. Genel Tıp Dergisi 20 :(3), 99-108.

Zeanah, C.H.; Carr, S.; Wolk, S. (1990). Fetal Movements and The imagined Baby of Pregnancy: Are they Related? J Reprod Infant Psychol 8: (1), 23-36.

Chapter 15

Bandura's Social Learning and Role Model Theory in Nursing Education

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Introduction

In nursing, while models are used to facilitate the understanding about concepts and the relationships among them or plan the research process in detail; theories enable a systematic view to these relationships by means of detecting the special relations between concepts (Pektekin, 2013). The conceptual framework of these theories and models form the basis for the nursing education, implementation, and research (İnan, Üstün, & Bademli, 2013). The professionalization of nursing and establishment of scientific backgrounds is only possible with the testing and dissemination of the models (İnan et al., 2013; Ocakçı & Alpay, 2013). The use of the nursing approach which is based on systematic information and theory in nursing practices will accelerate this professionalization process (Akça Ay, 2013; Şahin & Özerdoğan, 2014). Theories find solutions to the questions waiting to be answered by presenting a different approach and restructuring the knowledge. They provide a systematic point of view by organizing the knowledge in cases whose results are obvious (Akça Ay, 2013).

When the studies based on a model in nursing in the literature are investigated it was found out that in experimental studies Orem's Self-Care Deficit Nursing Theory, in quasi-experimental studies Watson's Human Caring Theory, and Peplau's Interpersonal Theory; in cross-sectional studies, Health Belief Model were used. In review articles on the other hand: Doroty E. Johnson's Behavioral System Model, Roy's Adaptation Model, Lack of Self-Care Deficit Nursing Theory, Pender's Health Promotion Model and Bandura's Social Cognitive Learning Theory whose contribution to the field is undeniable are widely used (Figen & Mete, 2009; İnan et al., 2013; Perry, 2009).

The aim of this review article is to clarify the how Bandura's social cognitive learning theory can be used in nursing education. It is considered that this study will be a guide for future studies in the field of nursing education.

Learning-Teaching Approaches in Nursing Education

When the learning-teaching psychology background of the educational activities is investigated, it can be figured out that three approaches as behavioral, cognitive, and constructivist approaches are effective on the educational designs. When these approaches are investigated it can be observed that behavioral approach gives importance to the analysis of the learner's products, showing the behavior is important and a meticulously tested understanding is important. This approach explains learning as establishing connections between directly observable stimulus and behavior. Therefore, they are mostly interested in behaviors, the changes that occur in these

behaviors, and the stimuli that cause this change.

In cognitive approach the quality of the learning products, the processes affected by those products, memory promoters, and information processing critic are focused. Cognitive theoreticians claim that learning is an internal process which cannot be observed directly, and they are mostly interested in the internal processes of learning such as perception, memory, affectivity, creativity, and remembering (Bruner, 1961; Erden & Akman, 2001; Erginer, 2015; McKeough, Ashman, & Conway, 1995).

On the other hand in constructive approach, teaching how to learn, the learners' formation of their own knowledge, being in the experience, contribution to the development and learning freedom are investigated. The methodology that will be used while organizing teaching by adopting an approach from concrete to abstract ranges from teaching strategies to teaching methods, from teaching methods to teaching techniques, and to the authentic techniques used by the teacher (Erginer, 2015)

Bandura's Social Learning Theory

Social Learning Theory was developed by Albert Bandura who is one of the behaviorist learning theoreticians. This theory is mainly based on cognitive learning and called Social Learning Theory or Social Cognitive Theory (A Bandura, 1977). Bandura focused on learning through observation (A Bandura, 1989; Albert Bandura, 1999). In social learning theory, it is argued that an indirect learning occurs which stems from the observation of other people's behaviors. By means of this learning method, individuals are able to learn the generalized and settled learning structures without the need for trial and error (Albert Bandura, 2001). As a result of individuals' observation of the model, the observers can weaken the negative knowledge acquired previously, acquire new belief and values, can learn how to use the environment and things from the model (Alkaya & Metin, 2015).

In Bandura's theory, learning through modeling involves four basic processes as attention, retention, motivation, and production (A Bandura, 1989).

The process of attention: The main purpose in the process of paying attention which is a step of learning through modeling is to pay attention to the behaviors and activities which will be modeled and perceive them correctly. The factors that affect this process can be an individual's interest, preparedness, needs and purposes, affective capacity, previous experiences, and the functionality of the modeled behavior (Gözüm & Bağ, 1998; Şahin & Özerdoğan, 2014).

The process of retention: Bandura states that in order to reach an effective modeling process the model needs to be remembered. An individual conducts remembering by means of converting the information acquired through observation and storing in memory (Albert Bandura, 1989).

The process of motivation: Individuals who make observations according to the social cognitive theory learn the model's behavior and shows similar behaviors and reinforces their behaviors. In this way, learning is converted into performance and individuals are motivated (Şahin & Özerdoğan, 2014).

The process of production: At this stage the behaviors which were paid attention and remembered are practiced. Self-efficacy/effectivity has an important role in turning the individuals' behaviors into performance. Individuals with a high self-efficacy/effectivity will be more successful in performing the model behavior (Albert Bandura, 1989; Şahin & Özerdoğan, 2014).

The stages of learning through modeling

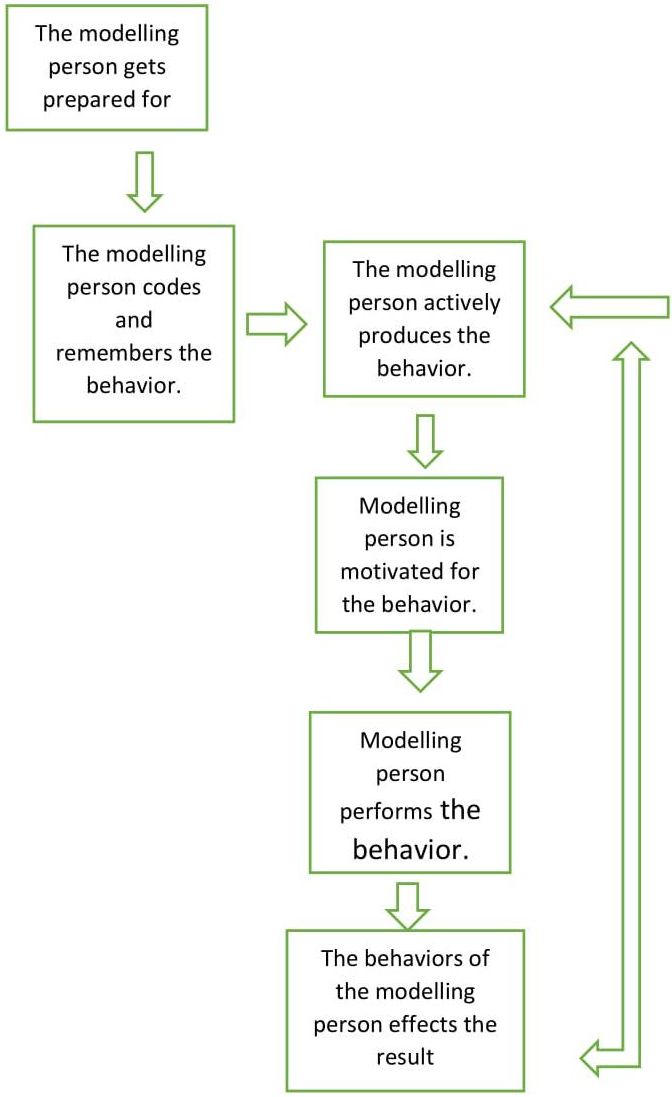

Figure 1: The Stages of Learning by Modeling

The self-efficacy concept: Then concept of self-efficacy was first defined by Bandura Self-efficacy is defined as an individual's beliefs toward his/her control on the events that affect his/her life (Bayrakçı, 2007). These beliefs about self-efficacy are realized by means of four different processes. These include *cognitive* (thinking about purposes), *motivational* (determining aims and working to realize them), *behavioral* (the perceived dealing efficiencies) and *selective* (preference and creating environments and activities) (Albert Bandura, 1994; Malone, 2002) purposes. Self-efficacy/effectivity determines the thinking styles, feelings, motivational conditions of individuals by

comparing his/her required performance and capacity (Bayrakçı, 2007; Şahin & Özerdoğan, 2014). Individuals with higher self-efficacy/efficiency are more persistent to reach their goals, and they perceive the difficulties as situations to be managed and overcome rather than situations to be refrained from On the other hand, for individuals who do not have enough belief regarding self-efficacy dealing with the failure is quite difficult. They can easily experience stress and depression (Albert Bandura, 1994; Bayrakçı, 2007). There exist various situations that it affects individuals' self-efficacy beliefs. These sources are the individual previous experiences regarding the behavior, witnessing other individuals experiences regarding this behavior, the support from the environment regarding the behavior, and the psychological state of the individuals regarding the behavior (Albert Bandura, 1998, 2004).

When the related literature reviewed, the factors that affect the students' self-efficacy/effectivity beliefs in nursing education were determined as the courses' inclusion of intensive information, lack of teaching role model by the professors and the health staff who are working in a clinic, the lack of role model in developing clinic skills, the unfair evaluation by the course professors (Bagcivan, Cinar, Tosun, & Korkmaz, 2015; Elcigil & Sarı, 2007). The nursing students need to use their self-efficacy/effectivity sources to be able to cope with these negative factors more effectively.

Table 1: The Sources of Self-Efficacy/Effectivity

Source	Work to be Done
Experience and its result	➢ Dividing the work to be done (Starting from easier to the more difficult), ➢ Gradually decreasing the fear of failure, ➢ Facing the feared object or situations, ➢ The chance of self-learning.
Indirect experience/Witnessing	➢ Modeling academicians and experienced clinic nurses, ➢ Verbal persuasion.
Symbolic model/Support from the environment	➢ Considering the supportive suggestions, ➢ Convincing the individuals that they can overcome, ➢ Self-convincing, ➢ The positive feedback from the academicians, ➢ Being fair and systematic in grading, ➢ Supportive clinic environment.
Psychological condition	➢ Decreasing anxiety and fears, ➢ Relaxing, ➢ Enabling an effective overcome.

The Use of Self-Efficacy/Effectivity Sources in Nursing Education

(Bagcivan et al., 2015; Karadağ, Parlar Kılıç, Ovayolu, Ovayolu, & Kayaaslan, 2013; Korkmaz, 2006; Lofmark, Thorkildsen, Raholm, & Natvig, 2012)

The Implementation of Social Learning Theory in Nursing Education

In 21st century which is known as the age of technology and science globalization

and the change in the structure of the society affected health services and the presentation of health services, as a result of this, it led to getting a more comprehensive information and therefore enriching the care experiences of nursing students (Sabancıoğulları, Doğan, Kelleci, & Avcı, 2012). In this situation of change which makes the renewal compulsory being a positive role model to the students plays an important role in making the vocational information more accessible to the students (Perry, 2009).

The basic factor in Social Learning Theory is learning through observing and modeling others. Since the professional information is detailed and comprehensive in nursing education it is sometimes difficult to directly transfer the knowledge to the student. According to Bandura, while learning the information by means of modeling, the mutual interaction between the trainer and the learner will contribute to the learner, in terms of observing better and being mentally more active. The effectivity of learning is based on the learner's ability to perform the behavior that s/he observed (Korkmaz, 2006). In a study by Chow et al. being a positive role model to the students gives them to establish therapeutic communication, professional thinking, and giving them a chance to improve their behavioral and attitudinal skills. (Chow & Suen, 2001). Positive role model improves the learner's belief and practices toward improving the quality of life of the patients. It contributes to his/her future professional development by supporting the learner's combining the theoretical knowledge with practical application (Belinsky & Tataronis, 2007; Perry, 2009).

The student and the environment are in a mutual relationship, they are affected by each other, and a person learns a behavior by observing other visually by means of modeling (Oermann, 2015). When the literature is reviewed, cooperation inside the clinic, attitude, the friendly attitude of hospital staff toward the student, the positive attitude of the staff in patients' care, and the presence of a positive role model affects clinic education quite positively (Bagcivan et al., 2015; Lewin, 2007; Lofmark & Wikblad, 2001; Papp, Markkanen, & von Bonsdorff, 2003).

During the observational learning, the clinic nurses that the nursing students are mostly communicating and interacting play an important role in the process of their education. According to the study conducted by Karadağ et al. the clinic nurses' lack of role model behavior is one of the important problems that the students' experiences in their clinical training (Karadağ et al., 2013).

The importance of the feedbacks that academicians use to evaluate students being fair has been stated in the literature as well (Bagcivan et al., 2015; Cilingir, Gursoy, Hintistan, & Ozturk, 2011; Elcigil & Sarı, 2007). When the feedback is not fair it has a negative affect the students use self-efficacy sources and may lead to a decrease in their occupational motivations.

The Findings of the Recent Studies

Experimental and quasi-experimental studies conducted in 2017 and 2018 were investigated:

Author, The Publication Year of the Study	**The Type of the Study**	**Conclusions**
Palsson et al. , 2017	Quasi-Experimental	Compared to the traditional methods, peer learning (one of the most important dynamics of social learning) is an important method which much more increases self-efficacy in nursing students.
Lockeman et al. , 2017	Quasi-Experimental	Training the nursing candidates forming symbolic environments by means of simulators provide an algorithm for to deal with the situations that they can encounter in their real lives. This contributes to the improvement of their self-efficacy.
Verkuyl et al., 2017	Experimental	The nursing education in virtual environment created with a virtual game application improved their self-efficacy.
George et al., 2017	Experimental	In the study which investigated the effect of structured education model on nurse self-efficacy, it is stated that the nursing students who were nurses in the measurements after 4 years had improved self-efficacy compared to other groups.

Conclusions

In order for the nurses to provide effective care for the individuals and society; they need to have an educational philosophy which is continuous, integrated with the subjects, and using active learning methods. Conducting a nursing education which involves these features is important in terms of the individuals' forming their professional philosophy, and forming a theoretical framework. In this study, the social-cognitive learning theory was found to be effective in the professionalization of the nursing students and also on the improvement of their intellectual levels. In this respect, the related instructors are suggested to construct an integrated teaching model based on social cognitive learning and other teaching methods, and in this respect conduct planning, make attempts and evaluations. By doing so, a comprehensive and science-based education will be available for the nurses and nursing students.

REFERENCES

Akça Ay, F. (2013). *Sağlık Uygulamalarında Temel Kavramlar ve Beceriler* (F. Akça Ay Ed. 5. ed.). İstanbul: nobel Tıp Kitabevleri.

Alkaya, Y., & Metin, B. (2015). *Öğrenme Psikolojiisi*. İzmir: Lider yayınları.

Bagcivan, G., Cinar, F. I., Tosun, N., & Korkmaz, R. (2015). Determination of nursing students' expectations for faculty members and the perceived stressors during their education. *Contemporary Nurse* (ahead-of-print), 1-14.

Bandura, A. (1977). Social learning theory. Englewood Cliffs, NJ. Prantice Hall. *O'' Connel, P., Pepler, D., and Craig, W. (1999). Peer involvement in bullying: insight and challenges for intervention. Journal of Adolescence, 22*, 0238.

Bandura, A. (1989). Regulation of cognitive processes through perceived self-efficacy. *Developmental psychology, 25*(5), 729.

Bandura, A. (1989). Social Cognitive Theory. IN: Annals of Child Development. *R Vasta (ed.), 6*, 1-60.

Bandura, A. (1994). *Self-efficacy*: Wiley Online Library.

Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology and health, 13*(4), 623-649.

Bandura, A. (1999). Social cognitive theory: An agentic perspective. *Asian journal of social Psychology, 2*(1), 21-41.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual review of psychology, 52*(1), 1-26.

Bandura, A. (2004). Health promotion by social cognitive means. *Health education & behavior, 31*(2), 143-164.

Bayrakçı, M. (2007). Sosyal Öğrenme Kuramı ve Eğitimde Uygulanması. *SAÜ Eğitim Fakültesi Dergisi, 14*.

Belinsky, S. B., & Tataronis, G. R. (2007). Past experiences of the clinical instructor and current attitudes toward evaluation of students. *Journal of allied health, 36*(1), 11-16.

Bruner, J. S. (1961). *The Process of Education*. Cambridge: Harvard Universty Press.

Chow, F. L., & Suen, L. K. (2001). Clinical staff as mentors in pre-registration undergraduate nursing education: students' perceptions of the mentors' roles and responsibilities. *Nurse Education Today, 21*(5), 350-358.

Cilingir, D., Gursoy, A. A., Hintistan, S., & Ozturk, H. (2011). Nursing and midwifery college students' expectations of their educators and perceived stressors during their education: A pilot study in Turkey. *International journal of nursing practice, 17*(5), 486-494.

Elcigil, A., & Sarı, H. Y. (2007). Determining problems experienced by student nurses in their work with clinical educators in Turkey. *Nurse Education Today, 27*(5), 491-498.

Erden, M., & Akman, Y. (2001). *Gelişim ve Öğrenme* (11. ed.). Ankara: Arkadaş Yayınları.

Erginer, E. (2015). *Öğretim İlke ve Teknikleri* (6. ed.). AnkaraPegem Akademi.

Figen, P. S., & Mete, S. (2009). Uyum modeli ve sosyal bilişsel öğrenme kuramının doğum öncesi eğitimde kullanımı. *Dokuz Eylül Üniversitesi Hemşirelik Yüksekokulu Elektronik Dergisi, 1*(1), 57-68.

Gözüm, S., & Bağ, B. (1998). Etkin Sağlik Eğitiminde Sosyal Bilişsel ÖĞRENME

Kuramlnin Kullanimi. *Journal of Anatolia Nursing and Health Sciences, 1*(2).
İnan, F., Üstün, B., & Bademli, K. (2013). Türkiye'de kuram/modele dayalı hemşirelik araştırmalarının incelenmesi. *Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 16*(2), 132-139.
Karadağ, G., Parlar Kılıç, S., Ovayolu, N., Ovayolu, Ö., & Kayaaslan, H. (2013). Difficulties encountered by nursing students in practices and their views about nurses. *TAF Prev Med Bull, 12*(6), 665-672.
Korkmaz, İ. (2006). *Sosyal Öğrenme Kuramı* (B. Yeşilyaprak Ed. 2. ed.). Ankara: Pegem yayıncılık.
Lewin, D. (2007). Clinical learning environments for student nurses: key indices from two studies compared over a 25 year period. *Nurse Educ Pract, 7*(4), 238-246. doi:10.1016/j.nepr.2006.08.002
Lofmark, A., Thorkildsen, K., Raholm, M. B., & Natvig, G. K. (2012). Nursing students' satisfaction with supervision from preceptors and teachers during clinical practice. *Nurse Educ Pract, 12*(3), 164-169. doi:10.1016/j.nepr.2011.12.005
Lofmark, A., & Wikblad, K. (2001). Facilitating and obstructing factors for development of learning in clinical practice: a student perspective. *J Adv Nurs, 34*(1), 43-50. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11430605
Malone, Y. (2002). Social Cognitive Theory and Choice Theory: A Compatibility Analysis. *International Journal of Reality Therapy, 22*(1).
McKeough, A., Ashman, A., & Conway, R. (1995). Using cognitive methods in the classroom: JSTOR.
Ocakçı, A. F., & Alpay, Ş. E. (2013). *Hemşirelikte Kavram, Kuram ve Model Örnekleri* (Ş. E. A. Ayşe Ferda Ocakçı Ed.). İstanbul: İstanbul Tıp Kitabevi.
Oermann, M. H. (2015). *Hemşirelikte Öğretim ve Eğiticinin Rolü*. Ankara: Anı Yayıncılık.
Papp, I., Markkanen, M., & von Bonsdorff, M. (2003). Clinical environment as a learning environment: student nurses' perceptions concerning clinical learning experiences. *Nurse Educ Today, 23*(4), 262-268. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/12727093
Pektekin, Ç. (2013). Hemşirelik felsefesi. Kuramlar-bakım modelleri ve politik yaklaşımlar.
Perry, R. B. (2009). Role modeling excellence in clinical nursing practice. *Nurse education in practice, 9*(1), 36-44.
Sabancıoğulları, S., Doğan, S., Kelleci, M., & Avcı, D. (2012). The determination of final year nursing students' perceptions on internship program. *DEUHYO ED, 5*(1), 16-22.
Şahin, B. M., & Özerdoğan, N. (2014). Başarılı Emzirme İçin Sosyal Bilişsel ve Emzirme Öz-Yeterlilik Kuramlarına Dayalı Hemşirelik Bakımı. *Hemsirelikte Egitim ve Arastirma Dergisi, 11*(3).
Pålsson, Y., Mårtensson, G., Swenne, C. L., Ädel, E., & Engström, M. (2017). A peer learning intervention for nursing students in clinical practice education: A quasi-experimental study. Nurse education today, 51, 81-87.
Lockeman, K. S., Appelbaum, N. P., Dow, A. W., Orr, S., Huff, T. A., Hogan, C. J., & Queen, B. A. (2017). The effect of an interprofessional simulation-based education program on perceptions and stereotypes of nursing and medical students: A quasi-

experimental study. Nurse education today, 58, 32-37.
Verkuyl, M., Romaniuk, D., Atack, L., & Mastrilli, P. (2017). Virtual gaming simulation for nursing education: An experiment. Clinical Simulation in Nursing, 13(5), 238-244.
George, L. E., Locasto, L. W., Pyo, K. A., & Cline, T. W. (2017). Effect of the dedicated education unit on nursing student self-efficacy: A quasi-experimental research study. Nurse education in practice, 23, 48-53.

Chapter 16

Effects of the Use of the Internet on the Development Process of Children and Adolescents

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INTRODUCTION

Internet and Development Process of Children and Adolescents

Development is the product of the interaction between genetic inheritance and environment. According to Erikson's theory of psychosocial development, the period between the ages of 12 and 18 is a critical period when the individual experiences confusion in his/her role in gaining identity. According to the theory of developmental periods, adolescent lives confusion of his/her role against identity acquisition and a period of isolation against intimacy. If the identity is not acquired successfully, then the individual lives isolation and loneliness. Because the processes of cognitive, emotional and social development have not finished, children and adolescents who feel themselves alone in the family and school are exposed to the risk for internet addiction. Adolescents, who experiences challenges in the process of gaining identity, can see the internet as an opportunity for helping them in escaping from their true identity. Children who do not gain confidence in their early childhood cannot fulfil their developmental tasks during adolescence.

Loneliness is experienced more intense and widespread in adolescence compared to the other developmental stages (Kılınç & Sevim, 2005). In this developmental period, inevitable and important events such as development of identity and personality are experienced, and individuals feel different emotions especially as a result of rapid physical changes. While adolescents exhibit tendency to be left alone, peer groups become important to them. It is emphasized that the adolescents who are excluded by their friends during this period experience intense loneliness and exhibit the symptoms of this situation (Cheng & Furnham, 2002; Kılıççı, 2000). The reasons for loneliness are; shyness, low self-esteem, weak social skills, the impact of developmental changes on needs and relationships, and the social position of the individual during his/her age. A number of complex developmental changes experienced during adolescence may increase the person’s tendency towards introversion and may lead to a sense of obscurity in his/her orientations for future. Developmental changes during adolescence, especially the physiological changes, together with the emotional and cognitive changes, cause the disappearance of the child's role and the confusion of the concept of self.

Widyanto & McMurran (2004) emphasize that adolescents have not gained psychological maturity, because of their close relationship with technology and they use the internet excessively compared to the other age groups. The internet is a communication network where millions of computers worldwide are interconnected and therefore it allows almost every field of information to be accessible easily, quickly and cheaply (Cömert & Kayıran, 2010). Because of these features of the internet, children and adolescents prefer to use it and the duration of internet can change in proportion with the individual differences.

Öztürk et al. (2007) stated that internet addiction can be seen at all ages, but it is an important type of addiction especially for adolescents. The use of the internet allows people to conduct research in areas they are interested in and to develop social relationships, but the increase in the duration of use has led to the problem of internet addiction. It is suggested that, in this period, the individuals become addicted by increasing the use of the internet in order to solve their loneliness. While addiction is at individual level at the beginning, it affects the society which is involved with the rise in the problems.

The Internet Addiction

In recent years, the use of the internet has become widespread especially in terms of gathering information and socialization. In addition to accessing to information, the internet has become a part of everyday life because it provides availability of easy access to many areas such as communication, social networks, banking transactions, shopping, etc. along with the rapidly developing technology, the areas of access to the internet has also increased. As a result of the rapid growth of mobile phones in particular, access to the internet has become much easier. According to statistics for 2018, today, 53% of the world's population (4.02 billion) is internet users. Among all internet users, children and adolescents (between 20 and 24 years old) constitute a total of 61%. Of this, 15.9% (640 million) of internet users are children between 5 to 9 years of age, 15.3% (618 million) are between 10 and 14 years of age, 15% (603 million) are between 15 and 19 years of age, another 15% (603 million) are between 20 and 24 years of age (URL).

The internet is rapidly evolving as a means of socializing tool. On the internet, the mediums, where individuals can express themselves, communicate with people from different cultures, and share their emotions and thoughts virtually are called “social networks”. Social networking sites provide the communication, interaction, cooperation, work, and even learning possibilities to individuals. The most popular social networking sites used by individuals are Facebook, Twitter, Instagram and WhatsApp. These sites have different features such as enabling users to communicate with each other via voice and video through sending messages, pictures, video (Karademir, 2017). According to 2018 statistics, 36.4% of children and adolescents in the 13-24 age group are Facebook users while 38.2% are Instagram users (URL).

Healthy internet use is the use of the internet for a certain purpose within a particular time interval (Davis, 2001). The internet allows the use of a variety of cognitive and social skills such as collecting information, selecting, reading, writing, communicating, sharing and classifying (Caplan, 2002; Odacı & Çıkrıkçı, 2017). Adolescents can easily gain recognition and acceptance of others with aid of the communication they establish on the internet (Tisai & Lin, 2003). This situation leads

adolescents to make friends through the internet. Those conversations and messaging and sharing activities between adolescents via internet chat rooms increase the time that they spend on the internet (Çetinkaya, 2013). The internet addiction is a condition that is diagnosed with the symptoms such as not being able to limit of internet use, continuing to use it despite the knowledge of the social or academic harms, and feeling anxiety when internet access is restricted. Internet addiction is defined as "not to be able to suppress the desire of excessive use, the loss of importance of time spent without being connected to the internet, to be extremely irritable and aggressive when the internet is unavailable, and the gradual deterioration of one's business, social, family life" by Günay et al., (2018) and Young (2007).

In the literature, the terms of “Computer Addiction”, "Pathological Internet Use" and "Problematic Internet Use" are also used in reference to the "internet addiction" (Chou et al., 2005; Thatcher & Goolam, 2005).

According to Caplan (2005), the internet addiction is a multidimensional syndrome with emotional, cognitive, and behavioural anomalies that can lead to social and academic negative consequences. It is argued that the excessive and insensible use of the internet brings about much harm than benefits and causes problems (Anderson, 2001). According to the researches made, the excessive and negative usage of the internet has been observed to increase especially in adolescents (Cao & Su, 2007).

The internet has become an indispensable part of the children’s and adolescents’ social lives (Ulusoy, 2008). Youngsters use the internet for enjoyment, relaxation, social interaction, troubleshooting and relieving distress, avoiding facing with their problems and escaping from real life. The excessive use of the internet causes children and adolescents to become addicted to it in time and negatively affects children and adolescents in terms of academic and personal development (Cengizhan, 2005; Lin& Tsai, 2002). It has been established that the satisfaction with communication via the Internet increases the susceptibility to internet addiction (Chou & Hsiao, 2000). In their survey study within the adolescents between 10 to 17 years old, Wolak et al. (2002), has determined that 25% of internet user adolescents make social network friendship through the internet, while the 14% establish close friendships or romantic relationships. Yang & Tung (2007) pointed out that adolescents who had difficulties in their identity acquisition process see the internet as an instrument helping them in escaping from their responsibilities in real life and their identities.

Esen (2010), stated that the availability to ready-made information through the internet has some adverse effects on the cognitive capabilities of children and young people; and being continuously occupied with the internet causes them to hinder their daily chores and task and responsibilities related to their education life.

In a survey research conducted by Chisholm & Cyberspace (2006), it was indicated that, of 10,800 young people between the ages of 12 to 18 years, 92% have the internet access in their homes and these young people spent most of their time having conversation and playing games with the people they meet in the virtual chat media, and only 1% of this group uses the internet to study their lessons. Subrahmanyam & Smahel (2006) emphasized that violent programs can result in aggressive behaviour, fear and anxiety in children. Sezer et al. (2013) in their study point to the fact that the average aggression score of the students who spend their free time in playing computer games were higher compared to the other groups. It has been

shown in similar studies related to the subject conducted in the country that computer games are effective in the formation of aggressive behaviours (Bilgili, 2006; Kelleci, 2008). A lot of research shows that children become more aggressive when they observe aggressive and violent elements. The influence of role models is of capital importance in the development of individual's moral values.

Although using the internet can support academic activities of children and adolescents by developing their cognitive skills, excessive use of the internet can reduce the academic achievement of children and adolescents and cause them to experience problems with their families (Ceyhan & Ceyhan, 2011; Günlü, et al. 2017). In a research conducted to determine the relationship between the internet addiction and academic achievement, it has been found that the academic achievement decreased as the internet usage increased (Altuğ & Gencer, 2011). Young (1996) and Young (1997) explained that the easy access to the internet and therefore obtaining desired information easily is one of the main reasons paving the way for the internet addiction. The internet is quite accessible nowadays for adolescents. The use of internet and computer in many homes since it is thought that it may help in homework and lessons, the internet classes established in schools, increasing number of internet cafes and wireless networks have led the internet become an easily accessible source. When the researches that investigated the relation between adolescent's behavioural patterns of the internet usage and their addiction to the internet were examined, it was found that there was a significant relationship between the intentions of the internet usage and tendency to the internet addiction; that the use of internet especially for entertainment and communication was an important factor in the development of adolescents' addiction to the internet. Chou et al. (2005) point out that there are aspects of the internet use that create opportunities for children and adolescents, in addition to its negative influences. For example, reaching the desired information via the internet quickly is important in terms of providing time savings. In addition, the internet allows the spread of information and ideas to large masses (Çalık & Çınar, 2009; Kaplan, 2016). In cases when the internet is not used excessively, it aids students in their courses and does not affect their school success adversely (Makas, 2008). Computer games are important for children to gain computer literacy. In addition, computer games have other beneficial aspects such as providing children's hand-eye coordination and developing their abilities of explaining shapes and visualizing objects (Cesarone, 1994).

It has been found that mathematics and reading skills of children who use the internet have improved considerably. It is emphasized that the abilities such as faster thinking, concentration, imagination and intelligence of children who use the internet and play computer games have greatly improved (Wang et al., 2005). In addition to that, children can gain confidence and expertise in doing homework by using the internet (Livingstore & Bober, 2004).

Today, children and adolescents use computers and the internet increasingly. This type of long-term use without any control affects their physical, psychological and cognitive health and life in a negative way.

Physical Effects of the Use of the Internet Children and Adolescents

There is a linear relationship between long-term computer use and eating habits, low energy and an increase in obesity. The studies which investigate the relationship between watching television excessively and obesity, which may be considered similar

to computer use, indicate that watching television may lead to obesity through reducing physical activities and as a result of food advertisements or through increase in the consumption of foods with high calories while watching television. Bozkurt et al. (2016) found that internet addiction in obese adolescents was higher than that of non-obese adolescents in the study he conducted with adolescents.

Shields & Behrman (2000) found that long-term computer use in children leads to eye diseases, posture and skeletal structure deformations. In the case of desktop computers, deformations and permanent aches may occur especially in the waist and neck region due to the fact that they are always in the same position. The result of keeping muscle groups under constant repetitive movements leads to problems such as the carpal tunnel syndrome, which is caused by compression of the median nerve in the wrist, and loss of feeling in the wrist.

Internet addiction, overuse of tablets and phones can lead to health problems on the hand, wrist, waist and fingers and especially eyes. Constantly looking at the source of light can cause pain and loss of vision in the eyes. Besides these, the computer screen can also cause the exposure of the users to radiation and the diseases reaching from the eye cataract to the brain tumour (Demirci & Nazik, 2001; Ögel, 2012).

Especially children and adolescents who are addicted to Internet in the era of development are more affected from the physical aspect than adults. Their long periods of time at the computer can lead to serious health problems and problems can arise in children and adolescents such as problems caused by sleeping disorders, taking the easy way out lying, difficulties in face-to-face communication (Çetinkaya, 2013; Ögel, 2012). Using the Internet for a long period of time causes loneliness, insomnia, fatigue, and allocation of the vast majority of the time, which needs to be allocated for lessons, to the internet and computer has a negative impact on academic success (Kubey et al., 2001).

Psychosocial Effects of Internet Usage in Children and Adolescents

Thanks to the Internet, children and adolescents are making new friendships, sharing social experiences, chatting about everyday events, maintaining existing friendships and social relationships. However, when computer and internet are used excessively, the psychosocial development of the child is negatively affected. The school, family and friends interaction necessary for the healthy development of the child is left to the internet and communication skills are affected negatively.

There are many studies in the literature that show the effects of mother and father attitudes on child behaviour. According to these studies; it has been determined that children who are raised in democratic families are open to interactive relation, self-ordained, has the ability to express himself/herself, qualified in cognitive and social aspects and academically successful. Child who is surfing the internet in an uncontrolled manner may encounter sites about violence and bad habits that can lead to negative conditions for young people in search of identity. Particularly in the adolescence period, the person has the desire to participate in the peer groups and recognize his/her identity, role, and value. The adolescent who is looking for a place in society is establishing a unique world like this on the internet.

Caplan (2002) found that there was a linear relationship between problematic internet use and depression, social isolation, loneliness, and decreased home/school/work performance. Günlü et al. (2017) found that problematic internet usage levels

increased as the internet usage period of adolescents increased, internet is used through mobile phones mostly and the problematic internet usage levels are high in mobile phone users. Take Tahiroğlu et al. (2008) found that 7.6% of adolescents use more than 12 hours of internet per week which is a symptom of problematic internet use.

Park et al. (2014) the communication with adolescents' mothers and especially peers was found to be determinant in problematic internet use in their study conducted with adolescents. Lawrence et al. (2015) found that there was a significant relationship between adolescents' interactions with their parents and problematic internet use and that adolescents' stress levels were the determining factor in internet use. Studies have shown that excessive use of the internet in adolescents is associated with a decrease in social and psychological well-being (Kraut, et al., 1998). Findings also show that adolescents with internet addiction have a higher level of depression and suicidal tendency (Kim et al., 2006).

In the researches, it was determined that internet users have higher levels of problematic internet usage among adolescents with the aim of "having fun-spending time". Staying online on the internet aimlessly can cause psychiatric and psychological problems (Dinç, 2010).

Shields & Behrman (2000) emphasize there is an increase in the loneliness and depression levels in youngsters that who spend more time online. In the study of Lawrence (2015), it was determined that families had a relationship between mental, especially depression, and internet addiction of children. The family's depression status is influenced by whether the child is seriously or moderately internet addicted.

Adolescents supported by family and friends have many positive aspects and less depression and anxiety. Along with puberty, important changes begin to emerge in the social life of the individual and in his/her relationships. In this transition period, support from the family and interaction with the family diminished while romantic relationships emerged (Laursen & Williams, 1997). Adolescents who feel themselves unsuccessful in this communication counterbalance their loneliness in the virtual world of the internet.

It was determined that the most important reason for internet addiction among children was to chat in the study conducted by Malakeh et al. (2017). In addition, the relation between age, school level, family income, academic performance, hours spent on the internet daily, days attended to school and holidays, anxiety and depression status and internet addiction were determined. A relationship between online experience and self-harm was determined in the study conducted by Liu et al. (2017) with adolescents. Kahraman & Demirci (2018) found that children with attention deficit and hyperactivity disorder had higher internet addiction and depression scores and lower self-esteem than healthy children.

In addition to the positive effects of computer games such as the opportunity to learn new ones, there are also some negative effects in terms of biological and psychological aspects (Cesarone, 1994). Children and adolescents are prevented from socializing by spending too much time on the internet through staying away from different social resources like clubs, profession groups outside the internet. The individual does not adopt the expectations of the society by the expectations of the internet society. Behavioural patterns of the Internet develop in the individual instead of their own behaviour (Çetinkaya, 2013; Ögel, 2012). Cao & Su (2007) found that 2% of the students were internet addicted and the non-addicted group uses internet for 3.1

hours a week while addicted group uses 11.1 hours a week in the study they conducted with 2620 students between 12–18 years old in order to determine the psychological features of the adolescents about internet addiction during puberty period. Compared according to the psychological characteristics of the two groups, psychological, emotional and social problems were found to be more frequent in the addicted group.

Social support, which is emphasized to be closely related to mental health of individuals, is more important in the adolescence period when very rapid changes and emotions are experienced. Social support is an indispensable basic necessity for the young, in the continuation of the desired level of social relations, in solving loneliness, in harmony with the environment, and in maintaining psychological well-being (Kozaklı, 2006).

Cognitive Implications of Internet Usage in Children and Adolescents

Because of the characteristics of the cognitive processes, children cannot perceive what they see as adults and are affected differently from the occurring situations than adults. For this reason, children cannot distinguish between the real world and computer games and the world on the internet. This can lead to behavioural characteristics that children may suffer (Subrahmanyam et al., 2006). Cognitive skills, establishing cause-and-effect relationship are skills necessary for learning and remembering words and numbers. Computer games and the internet focus on visual information rather than verbal information. Along with the rapid progress of computer technology, computer and internet have also taken place in the field of education. If the use of computers is adjusted according to the level of development of the children, the computer can cognitively improve the children, increase their communication skills and reveal their creative thinking ability by means of the visual abilities they have. However, excessive use of computer games, virtual conversations and internet addiction may result in decrease in academic success and unhealthy communication through preventing study behaviours.

Kubey et al. (2001) found that students with low academic success were twice as likely to use internet compared to others in their studies conducted with university students. Another cognitive problem caused by using computers for a long time is that it causes attention deficit-hyperactivity symptoms.

The possibility for the individuals to hide their identities and appear with an identity as they desire makes the internet more attractive compared to the real world for adolescents who are in an effort to present an ideal or desired identity. Adolescents who use the Internet extensively or start showing Internet addiction can also present their "ideal" identities on the internet. As a result, individual identity evaluations of the adolescent can change in the negative. On the other hand, the adolescents experience more satisfying experiences in the virtual world on the internet before the real world, and the sense of identity that comes through these virtual experiences gives them the opportunity to recognize their characteristics. However, the fact that these experiences are not always available in the real world makes the adolescents psychologically vulnerable (Ceyhan, 2008).

According to Kraut et al. (1998) and Davis (2001), positive experiences with new technologies reinforce the behaviour of individuals to continue to use such technology. Positive experiences serve to develop an effort to re-use the new technology to achieve the positive reinforcements that the individual has learned previously. The positive

results obtained by adolescents who use the internet to do homework and research in the context of school life may reinforce the use of internet by adolescents.

In recent years, it has been observed that different findings about the positive and negative effects of internet have been reached in various researches examining the factors related to internet addiction in adolescents (Jang et al., 2008; Kim et al., 2006; Kurtaran 2008). The use of healthy internet helps children and adolescents develop skills such as creativity, critical thinking, and the use of various skills such as reading, writing, selecting, and classifying information. Uncontrolled internet use negatively affects children and the physical, psychological, social and cognitive development of the youngster (Caplan, 2002).

In various studies, it has been stated that excessive, out-of-control and out-of-purpose use of the internet can negatively affect personal skills and development (Colwell & Kato, 2003; Kerber, 2005).

The General Effects of Internet Using

When studies on the use of the internet in children and adolescents are examined, the results indicate that adolescents use the internet for the aim of communication, entertainment and afterwards searching for information (Tsai & Lin 2003; Bayraktar & Gün 2007; Yang & Tung 2007). It is indicated that girls use the internet especially for communication with their friends, participate in various groups, making new friends and receiving personal help. It is indicated that boys prefer to use the internet mostly for surfing, playing games containing violence (Çetinkaya, 2013; Gross, 2004; Kraut et al., 1998; Özcan, 2004). Take Tahiroğlu et al. (2008) indicate that boys use the internet to play the games most commonly.

Kahraman & Demirci (2018) found that children with attention deficit and hyperactivity impairment had higher internet addiction and depression scores and lower self-esteem than other healthy adolescents in their study with adolescents.

It was determined that gender had a predictive effect on internet addiction and that male students were directed to internet in a different cognitive status from the girls in the study conducted by Ançel et al., (2015). No significant relationship between internet addiction and gender variable was found in adolescents in the studies conducted by Kim et al. (2006), Jang et al., (2008), Bayraktar & Gün (2007), Cao & Su (2007); Siomos et al. (2008) found that males boys more Internet addicted than girls. There is research which determines there is no relationship between academic success and internet addiction (Pawlak, 2002). While studies on internet addiction and academic achievement are mostly conducted on university students, recent studies by Bayraktar & Gün (2007) on adolescents found that internet addiction negatively affected academic achievement.

In studies conducted by Ayan (2007) and Ülken (2011) it was determined that children who were raised in authoritarian families are unhappy, have low self-esteem, are timid and shy, have weaker friendships and more prone to aggressive behaviour. Chou et al. (2015) determined dissatisfaction from family relations is determinant in serious internet addiction and in the following messaging and watching movies are determinant in internet usage in the study conducted with adolescents. Moreover, in the same study, it was determined that playing online games caused serious internet addiction.

Sinkkonen et al. (2014) found that adolescents use the internet mostly for the aim

of entertainment and adolescents consider the negative side of the internet usage is time wasting and its harmful effects on mental, physical and social health. It has also been determined that the use of the internet has a negative effect on school attendance.

Excessive and uncontrolled use of the internet brings with it certain problems, especially in children. Since the communication skill developed with the internet is virtual, social relations in childhood are damaged from this situation and various communication disorders may occur. Conversations with negative effects, uncontrolled browsing of sites can cause children to be affected psychologically in a negative way. In addition, different researches on the subject show that due to internet addiction, the success of children and adolescents decreases significantly. Spending too much time on the internet can cause children to move away from the real-world day by day and break up close relationships they have established. The health of children may be affected negatively, the socialization and identity achievements may be prevented, behavioural disorders may arise, and cognitive development may be affected negatively as a result of the negative physical effects of internet addiction in children and adolescents.

CONCLUSIONS

Considering the adverse effects of Internet addiction on cognitive mental and physical health of the individual, it is very important to recognize this problem in the early period and to plan prevention studies. Therefore, it is considered that the examination of internet addiction in children and adolescents will make an important contribution to the preventive role of school psychological counselling and guidance services in relation to students' problems with regard to this addiction. Children and adolescents use the internet widely nowadays, and the duration and purpose of internet usage varies. Some researches evaluate the use of internet as an opportunity if it is in proper time periods, while some studies regard it as a negative situation. Considering the adverse effects of internet addiction on the mental and physical health of the individual, it is very important to recognize this problem in the early period and to plan prevention studies. For this reason, the preventive role of school psychological counselling and guidance services should be considered in relation to students' problems with this addiction. Lonely children and adolescents should be identified, and they should be able to feel good about themselves and be happy in social relations.

While ensuring that children and young people benefit from computer and internet facilities in an accurate, effective and efficient manner; children's safety must always be prioritized. For this reason, parents should consider the developmental characteristics of their children in using the internet according to their developmental periods. In addition to considering children and adolescents' use of the Internet as a facilitating factor, it is important to consider the adverse effects of using the internet. Children and adolescents should use controlled, conscious internet.

It is necessary for the relevant government institutions and organizations to give more importance to internet addiction, educators, parents should have information about the subject and children and young people should be monitored about healthy computer and internet usage. Within the scope of school mental health protection and development studies, children with negative personality traits should be determined early, necessary intervention studies should be organized, and importance should be given to the children to organize their social relations within the family and school.

Quantitative and qualitative research should be conducted in order to reach a general judgment on the factors affecting internet addiction, which can reveal the opinions of children, families and teachers in different developmental periods.

REFERENCES

Altuğ, M.; Gencer, C.; Ersöz F. (2011). Ortaöğretim Öğrencilerinin Hayatında Bilgisayarın Yeri. Bilişim Teknolojileri Dergisi, 4(1), 19–28.

Ançel, G.,; Açıkgöz, İ.; Yavaş-Ayhan, A. G. (2015). The Relationship between Problematic Internet Using Emotional İntelligence and Some Sociodemographic Variables. Anatolian Journal of Psychiatry, 16(4), 255-263.

Anderson, K. J. (2001). Internet Use among College Students: An Exploratory Study. Journal of American College Health, 50(1), 21-26.

Ayan S. (2007). Aile İçinde Şiddete Uğrayan Çocukların Saldırganlık Eğilimleri. Anatolian Journal of Psychiatry. 8: 206-214.

Bayraktar, F. & Gün, Z. (2007). Incidence and Correlates of Internet Usage among Adolescents in North Cyprus. CyberPsychology & Behavior, 10(2), 191-197.

Bilgili, A. (2006). Bilgisayar Oyunu Oynayan ve Oynamayan İlköğretim Öğrencilerinin Saldırganlık, Depresyon ve Yalnızlık Düzeylerinin İncelenmesi. Yüksek Lisans Tezi, İstanbul, Marmara Üniversitesi Eğitim Bilimleri Enstitüsü.

Bozkurt, H.; Özer S.; Şahin S.; Sönmezgöz, E. (2016). Internet Use Patterns and Internet Addiction in Children and Adolescents with Obesity, Pediatric Obesity, doi:10.1111/ijpo.12216.

ChouCao, F. & Su, L. (2007). Internet Addiction among Chinese Adolescents: Prevalence and Psychological Features. Child Care, Health and Development, 33 (3), 275–281.

Caplan, S.E. (2002). Problematic İnternet Use and Psychosocial Well-Being: Development of a Theory-Based Cognitive–Behavioral Measurement İnstrument. Computers in Human Behavior. 18: 553–575.

Caplan, S. E. (2005). A Social Skill Account of Problematic Internet Use. The Journal of Communication, 55(4),736.

Cengizhan, C. (2005). Öğrencilerin Bilgisayar ve İnternet Kullanımında Yeni Bir Boyut: Bağımlılık. VIII. Ulusal PDR Kongresi, Marmara Üniversitesi, İstanbul.

Cesarone, B. (1994). Video Games and Children. ERIC Digest. http:// www.ericae.net/edo/ED365477.htm, (Accessed: 2 April 2018).

Ceyhan E. & Ceyhan, A.A. (2011). Çocuk ve Ergenlerde Bilgisayar İnternet Kullanımının Gelişimsel Sonuçları. Abdullah Kuzu (Ed). Bilgisayar II içinde, pp.165-188. Açık öğretim Fakültesi Yayınları, Eskişehir.

Ceyhan, A. (2008). Predictors of Problematic Internet Use on Turkish University Students. CyberPsychology & Behavior, 11(3): 363-366.

Cheng, H. & Furnham, A. (2002). Personality, Peer Relations, and Selfconfidence as Predictors of Happiness and Loneliness. Journal of Adolescence, 25 (3), 327- 339.

Chisholm JF. (2006) Cyberspace Violence against Girls and Adolescent Females, Annals. New York Academy of Sciences; 1087:74-89.

Chou C. & Hsiao M.C. (2000) Internet Addiction, Usage, Gratification, And Pleasure Experience: The Taiwan College Student's Case. Computers and Education, 35: 65-

80.
Chou, C., Condron, L., Belland, J.C. (2005). A Review of the Research on Internet Addiction. Educational Psychology Review, 17 (4): 363-388.
Chou W.J.; Liu T.L.; Yang P.; Yen C.F.; Hu H.F. (2015). Multi-Dimensional Correlates of Internet Addiction Symptoms in Adolescents with Attention-Deficit/Hyperactivity Disorder, PsychiatryResearch, 225: 122–128.
Colwell, J. & Kato, M. (2003). Investigation Of The Relationship Between Social Isolation, Self-Esteem, Aggression and Computer Game Play in Japanese Adolescents. Asian Journal of Social Psychology, 6(2); 149-158.
Cömert-Tarı, I. & Kayıran, S.M. (2010). Çocuk ve Ergenlerde İnternet Kullanımı. Çocuk Dergisi, 10(4):166-170.
Çalık D, Çınar ÖP. (2009). Geçmişten Günümüze Bilgi Yaklaşımları Bilgi Toplumu ve İnternet. XIV. Türkiye'de İnternet Konferansı, 12-13 Bilgi Üniversitesi, Aralık-2009, İstanbul.
Çetinkaya, M. (2013). İlköğretim Öğrencilerinde İnternet Bağımlılığının İncelenmesi. Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü Eğitim Bilimleri Anabilim Dalı Rehberlik ve Psikolojik Danışmanlık Programı Yüksek lisans Tezi, İzmir.
Davis, R. A. (2001). A Cognitive-Behavioral Model of Pathological Internet Use. Computers in Human Behavior, 17: 187-195.
Demirci, A. & Nazik H. (2001). Çocuk ve Bilgisayar. Tüketici Bülteni.
Dinç M. (2010). İnternet Bağımlılığı, Ferfir Eğitim ve Yayıncılık, İstanbul.
Esen, E. (2010). Ergenlerde İnternet Bağımlılığını Yordayan Psikososyal Değişkenlerin İncelenmesi. Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü Eğitim Bilimleri Anabilim Dalı Rehberlik ve Psikolojik Danışmanlık Programı Yüksek Lisans Tezi, İzmir.
Gross, E.F. (2004). Adolescent Internet Use: What We Expect, What Teens Report. Journal of Applied Developmental Psychology, 25(6); 633-649.
Günay O. Ö.; Öztürk A.; Arslantaş E.E.; Sevinç N. (2018). Erciyes Üniversitesi Öğrencilerinde İnternet Bağımlılığı ve Depresyon Düzeyleri. Düşünen Adam The Journal of Psychiatry and Neurological Sciences, 31:79-88.
Günlü, A. & Ceyhan, A. A. (2017). Ergenlerde İnternet ve Problemli İnternet Kullanım Davranışının İncelenmesi. Addicta: The Turkish Journal on Addictions, 4: 75–117.
Jang, K.S., Hwang, S.Y.; Choi, J.Y. (2008). Internet Addiction and Psychiatric Symptoms among Korean Adolescents. Journal of School Health, 78: 165- 171.
Kahraman, Ö. & Demirci, E.Ö. (2018). The Relationship of Internet Addiction with Attention Deficit Hyperactivity Disorder; Effects of Anxiety, Depression and Self-Esteem. Pediatr Int, doi: 10.1111 / ped.13573.
Kaplan, N. (2016). Ortaokul Öğrencilerinde İnternet Bağımlılık Düzeylerinin Sağlık Üzerine Etkilerinin İncelenmesi. İzmir Katip Çelebi Üniversitesi Sağlık Bilimleri Enstitüsü, Halk Sağlığı Hemşireliği Anabilim Dalı, Halk Sağlığı Hemşireliği Yüksek Lisans Tezi, İzmir.
Karademir, M. (2017). Sosyal Ağların Kullanımının Ortaokul Öğrencilerinin Fiziksel Aktivite Düzeylerine Etkisinin İncelenmesi, Bartın Üniversitesi Eğitim Bilimleri Enstitüsü, Beden Eğitimi ve Spor Öğretmenliği Anabilim Dalı, Yüksek lisans tezi, Bartın.
Kelleci M. (2008). İnternet, Cep Telefonu, Bilgisayar Oyunlarının Çocuk ve Gençlerin

Ruh Sağlığına Etkileri. TAF Prev Med Bull., 7(3): 253- 256.
Kerber, C.J. (2005). Problem and Pathological Gambling Among College Athletes. Ann Clin Psychiatry, 17(4); 243-247.
Kılıççı, Y. (2000), İlköğretimde Rehberlik (Ed. Yıldız Kuzgun), Nobel Yayın Dağıtım, Ankara.
Kılınç, H. & Sevim, A. S. (2005). Ergenlerde Yalnızlık ve Bilişsel Çarpıtmalar. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi. 38(2); 68-89.
Kim, K.;Ryu, E.; Chon, M-Y.; Yeun, E-J.; Choi, S-Y.; Seo, J-S.; Nam, B-W. (2006). Internet Addiction in Korean Adolescents and Its Relation to Depression and Suicidal Ideation: A Questionnaire Survey. International Journal of Nursing Studies, 43; 185–192.
Kozaklı, H. (2006). Üniversite Öğrencilerinde Yalnızlık ve Sosyal Destek Düzeyleri Arasındaki İlişkilerin Karşılaştırılması. Mersin Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi, Mersin.
Kraut, R.; Patterson, M.; Lundmark, V.; Kiesler, S.; Mukhopadhyay, T.; Scherlis, W. (1998). Internet Paradox: A Social Technology that Reduces Social Involvement and Psychological Well-Being?. American Psychologist, 53:1017-1031.
Kubey RW.; Lavin MJ.; Barrows JR. (2001). Internet Use and Collegiate Academic Performance Decrements: Early Findings. Journal of Communication; 366–382.
Kurtaran, G. T. (2008). İnternet Bağımlılığını Yordayan Değişkenlerin İncelenmesi. Mersin Üniversitesi Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi, Mersin.
Laursen, B. & Williams,V.A. (1997). Perceptions of Interdependence and Closeness in Family and Peer Relationships among Adolescents with and without Romantic Partners.
Lawrence T. L. (2015). Parental Mental Health and Internet Addiction in Adolescents. Addictive Behaviors, 42: 20–23.
Lin, S.S.J. & Tsai, C.C. (2002). Sensation Seeking and Internet Dependence of Taiwanese High School Adolescents. Computer in Human Behavior, 18: 411-426.
Liu HC.; Liu SI.; Tjung JJ.; Sun FJ.; Huang HC.; Fang CK. (2017). Self-harm and Its Association with Internet Addiction and Internet Exposure to Suicidal Thought in Adolescents, Journal of the Formosan Medical Association, 116: 153-160.
Livingstone, S. & Bober, M. (2004). U.K. Children Go Online: Surveying the Experiences for Young People and their Parents. LSE, London.
Makas, Y. (2008). Lise Öğrenimi Gören Gençlerin İnternet Kullanımının Psikososyal Durum ile İlişkisi, Yayımlanmamış Yüksek Lisans Tezi Beykent Üniversitesi Sosyal Bilimler Enstitüsü Eğitim Bilimleri Anabilim Dalı, İstanbul.
Malakeh Z.; Malak, Anas H.; Khalifeh; Ahmed H.; Shuhaiber, S. (2017). Prevalence of Internet Addiction and Associated Risk Factors in Jordanian School Students. Computers in Human Behavior, 70: 556-563.
Odacı, H. & Çıkrıkçı, Ö. (2017). Problemli İnternet Kullanımında Depresyon, Kaygı ve Stres Düzeyine Dayalı Farklılıklar. Addicta: The Turkish Journal on Addictions, 4: 41–61.
Ögel K. (2012). İnternet Bağımlılığı: İnternetin Psikolojisini Anlamak ve Bağımlılıkla Başa Çıkmak. İş Bankası Kültür Yayınları, İstanbul.
Özcan, N. (2004). The Relation between Internet Use and Psychosocial State in University Students. İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü,

Yayınlanmamış Doktora Tezi, İstanbul.
Öztürk Ö.; Odabaşıoğlu G.; Eraslan D.; Genç, Y.; Kalyoncu, A. (2007) İnternet Bağımlılığı: Kliniği ve Tedavisi. Bağımlılık Dergisi, 8(1): 36-41.
Park S.; Kang, M.; Kim, E. (2014). Social Relationship on Problematic Internet Use (PIU) Among Adolescents in South Korea: A Moderated Mediation Model of Self-esteem and Self-control, Computers in Human Behavior, 38: 349–357.
Pawlak, C. (2002). Correlates of Internet Use and Addiction in Adolescents (Dissertation Abstracts). International Section A: Humanities & Social Sciences, 63(5-A), pp. 1727.
Sezer, A.; Kolaç, N.; Erol, S. (2013). Bir İlköğretim Okulu 4., 5., ve 6. Sınıf Öğrencilerinin Saldırganlık Düzeylerinin Anne Baba Tutumları ve Bazı Değişkenler ile İlişkisi. Marmara Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi, Cilt: 3, Sayı: 4.
Shields, M.K. & Behrman, R.E. (2000). Children and Computer Technology: Analysis and Recommendations. The Future of Children, 10(2); 4–30.
Sinkkonen H.; Puhakka H.; Meriläinen M. (2014). Internet Use and Addiction Among Finnish Adolescents (15–19 years). Journal of Adolescence, 37: 123–131.
Siomos, K.E.; Dafouli, E.D.; Braimiotis, D.A.; Mouzas, O.D.; Angelopoulos, N.V. (2008). Internet Addiction among Greek Adolescent Students. Cyberpsychology & Behavior, 11(6); 653-7.
Subrahmanyam, K.; Smahel, D.; Greenfield, P. (2006). Connecting Developmental Constructions to the Internet: Identity Presentation and Sexual Exploration in Online Teen Chat Rooms. Developmental Psychology, 42: 395–406.
Tahiroğlu, A.Y.; Celik, G.G.; Uzel, M.; Ozcan, N.; Avci, A. (2008). Internet Use Among Turkish Adolescents. CyberPsychology & Behavior, 11(5); 537-543.
Thatcher A, Goolam S. (2005). Development and Psychometric Properties of the Problematic Internet Use Questionnaire. S Afr J.Psychol, 35:793-804.
Tsai, C. & Lin, S.J. (2003). Internet Addiction of Adolescents in Taiwan: An Interview Study. CyberPsychology & Behavior, 6 (6); 649- 652.
Ulusoy, O. (2008). Ergenlerde Bilişim Teknolojileri Kullanımı ve Saldırganlık İlişkisi. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü, Eğitim Bilimleri Anabilim Dalı Yüksek Lisans Tezi, Adana.
URL: 2018 İnternet Kullanımı ve Sosyal Medya İstatistikleri. https://dijilopedi.com/2018-internet-kullanimi-ve-sosyal-medya-istatistikleri/(Accessed: 2 April 2018).
Ülken F. (2011). Televizyon İzlemede Anne-Baba Aracılığı İle Çocukların Saldırgan Davranışları Arasındaki İlişki. Anadolu Üniversitesi Sosyal Bilimler Dergisi; 11(1): 195-216.
Wang, R.; Bianchi, S. M.; Raley, S. B. (2005). Teenagers' Internet Use and FamilyRules: A Research Note. Journal of Marriage and Family, 67: 1249–1258.
Widyanto L. & Mcmurran M. (2004). The Psychometric Properties of the Internet Addiction Test. Cyberpsychology, Emotion Regulation: Affective, Cognitive, and Social Consequence, pp. 443–50 Taylor & Francis Group, New York.
Wolak, J.; Mitchell, K.; Finkelhor, D. (2002). Close Online Relationships in A National Sample of Adolescents. Adolescence, 37(147); 441-55.
Yang SC, Tung CJ. (2007). Comparison of Internet Addicts and Non-addicts in Taiwanese High School. Computers in Human Behavior, 23(1);79-96.

Young K. (2007). Cognitive Behavior Therapy with Internet Addicts: Treatment Outcomes and Implications. CyberPsychology & Behavior. October, 10(5): 671-679.
Young, K. (1996). Internet Addiction; The Emergence of New Clinical Disorder. CyberPsychology & Behavior, 1: 237-244.
Young, K. (1997). What Makes the Internet Addictive: Potential Explanations for Pathological Internet Use. 100. Annual Conference of the American Psychological Association, Chicago.
Young, K. S. (2007). Cogniti ve Behavior Therapy with Internet Addicts: Treatment Outcomes and Implications. CyberPsychology and Behavior, 10(5), 671-679.

Chapter 17

Innovation Management and Nursing

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INTRODUCTION

"Every organization needs a single core competency: Innovation"
Peter F. Drucker

Rapid development in the world of communication and information provides rapid spread of information and progress of technology in an ever-increasing international competitive environment (Bulut & Arbak, 2012). As a result of increasing expectations of society with technological advances and socio-demographic changes, it is important and essential for institutions to find creative ideas and to transform them into new products, processes and services to maintain their presence. Competition of institutions in the global economy and development of products, processes and services are realized with innovation (Khorshtd, 2016). It is crucial and necessary to spread "innovation", one of the key concepts in every area where development is taking place in recent years, as a form of thought and behavior to all areas of society.

CONCEPT OF INNOVATION

The English word "innovation", derived from the Latin verb of "innovare" in the sense of renewing, changing and metamorphosing means using new methods to reach useful and marketable outputs in social, cultural and managerial fields by making use of science and technology to adapt to changing conditions and is expressed as "innovation" with the proposal of the Turkish Language Institution in Turkish language (Akalın, 2007).

The concept of innovation is described by Risley as "the use of something that was previously done in another area in a different place for the first time". According to Rogers; innovation is "a new perceived idea, practice or an object", to Kanter; it is "the use of a new idea for problem solving". While Porter integrates innovation with new technology and business-building techniques that create advantage in a new market away from competition; Trott defines it as the management of all activities including thinking, technology development, a new or updated product, the manufacturing cycle or the production and marketing of the equipment and states that, with this definition, innovation has a management process characteristic (Risley, 1973; Rogers, 2003; Kanter, 2006; Porter, 1990; Trott, 2008).

Innovation, as a concept, refers to a process (innovation/renewal) while at the same time including a result (novelty). In the Oslo Manual, prepared by the Organization for

Economic Co-operation and Development (OECD) and the European Commission, and translated into Turkish by the Scientific and Technological Research Council of Turkey (TÜBİTAK), innovation is defined as "novelty " and "the implementation of a new and significantly improved product or service or process, a new marketing technique, or a new enterprise technique in business practices in the enterprise" (Oslo Kılavuzu, 2005; Aksay & Orhan, 2013; Ekiyor & Arslantaş, 2015).

Drucker describes the process of innovation as an instrument of entrepreneurship and a successful outcome of the activities process that constitute a new capacity and resources for reaching refinance, and he lists the factors that lead the individuals and institutions to this process and make up the innovation;

- **Unexpected situations**: Sudden changes may occur in events where individuals or a group of people live daily. In the face of such situations, individuals create innovations that adapt to new conditions by using creative thinking.
- **Incompatibility between expectation and result:** As a result of a product, service or process does not respond to the expectations of individuals or groups, the individuals seek a new product, service or process.
- **Process needs:** The work carried out in the process of innovation development and related policies may lead individuals to carry out different innovative work on the process.
- **Demographic changes:** The features of individuals' perceptions and responses to uncertainties, and behaviors taking risk etc. can lead individuals to innovate.
- **New informations**: New information provides producing of new technologies and ideas. New informations are important because they are the source of innovation (Drucer 1985; 2002, 2007).

Factors that are effective for the adoption and dissemination of new products and services that come into play after the innovation process (Rogers, 2003);

- **Relative advantage;** it is necessary to have different features and functions that allow the innovations developed to be the reason for preference when compared to existing innovations. Admission rates for new products which do not differ from those available, are low
- **Compatibility;** It is important that the innovations integrate with the needs, beliefs and values of the target group. The realization of innovations by taking similar past experiences of target group into consideration supports the acceptance and rapid spreading of them.
- **Complexity;** Admission rates for new products or services which are perceived as very complex by the users are low. For this reason, innovations should be made as simple as possible, taking into consideration user characteristics.
- **Testability;** The vast majority of consumers may initially have prejudice and be distant from new products and services. Innovations should be testable for the short duration of this process. The fact that innovations can be tried and tested before they are used or purchased makes them effective in short-term acceptance.
- **Observability;** The results must be predictable and observable so that innovations are more easily accepted by users. For this reason, it is useful to be able to access information about the results of innovations and to provide the users with a test, especially during the marketing process (Behkami & Daim, 2016; Uzkurt, 2010; Rogers, 2003; ICN, 2009).

TYPES OF INNOVATION

Innovations are classified in various forms according to the literature, characteristics, strategic value, extent, sources and effects of the results (Şengün, 2016; Sönmez, 2014; Oslo, 2005; Kartal & Kantek, 2018).

Table 1. Types of Innovation

Oslo Guide (2005) According to the Subject Matter of Innovation	1. Product Innovation 2. Process Innovation 3. Marketing Innovation 4. Organizational Innovation
According to Features	1. Technological 2. Non-Technological
In terms of Innovation Strategies	1. Open Innovation 2. Installed Innovation
According to the extent of results	1. Competitive /Incremental Innovation 2. Radical Innovation 3. Heavy Starter /Seminal
In terms of Sources	1. With R&D 2. Without R&D
According to their effect	1. Devastating 2. Supporting

Although the types of innovation are classified in different forms, in general, in the writing of this chapter; the classification in the Oslo Manual, which is jointly issued by the OECD and the European Commission and which is applied to international publications, will be taken into consideration.

Product Innovation; is the development of a a new or improved good or service according to its existing features or intended use. For example; the first portable MP3 player; anti-lock braking systems (ABS), navigation systems or other subsystem improvements in automobiles and internet banking. In the health sector, technology-intensive product innovations (such as laparoscopic procedures) are found and dominate health care (Oslo Klavuzu, 2005; Sözmez, 2014).

Process Innovation; is the use of a new or significantly improved production or delivery method and contains significant changes which have been made in techniques, equipment and / or software. As an example, in the 1990s, a Japanese company, Toyota's "continuous improvement" or "kaizen" approach could be given. According to this approach, all working individuals in a firm have a say in improving the processes related to their jobs, and they produce and develop new ideas. Individuals who are affected by the process know the best of their current processes. In the field of health; nurses' ideas of care contributes to process innovation by solving the living problems, accelerating the service process and providing quality patient care. Also, “tracking patients via phone” can be counted among the types of process innovation in the field of health (Oslo Klavuzu, 2005; Sözmez, 2014; Elçi, 2006).

Marketing Innovation; is a marketing method that requires the first implementation of significant changes in product design, packaging, placement,

promoting or pricing. For example, the first time use of product placement on television programs or electronic commerce for goods or services that firms produce or sell. Measuring body temperature with gun thermometers, which can be easily applied by patients and nurses in the field of health, is an example of marketing innovation that is developed by developing a better measurement tool than the existing ones (Oslo Klavuzu, 2005; Sözmez, 2014).

Organizational Innovation; is a new organizational method which is applied in the commercial applications, workplace organization or in external relations of an institution. The distinguishing feature of organizational innovation is the application of an organizational method that has not previously been used in an institution (Oslo Klavuzu, 2005; Sözmez, 2014).

The first use of education-training systems, employee development and implementation of remedial work to ensure job retention, and the first use of systems such as quality management can be given as examples. In health institutions; the use of e-health systems and databases which ensure the management of information (regulation, storage and accessibility) and easy access to services by individuals who receive and provide health care services are examples of organizational innovation (Oslo Klavuzu, 2005; Sözmez, 2014).

INNOVATION PROCESS AND MANAGEMENT

Innovation process is a risky and challenging process involving uncertainty and it increases the ability of institutions to produce innovations by approaching the structure and practices. It is of great importance to know and effectively manage the factors that affect the innovation process (Sönmez, 2014). They existence of four key elements is essential for the initiation of the innovation process in an institution;

- **Awareness:** First, the management of the institution and its employees need to adopt the concept and the meaning of innovation. They must adopt the innovation. An awareness must be raised that innovation is necessary for increasing the quality of life and level of welfare of individuals and for the social and economic development of the country.
- **Agreement:** After the process of awareness on innovation, the management and employees of the institution must generally agree to cooperate.
- **Strategy:** Institutional management should identify and implement a common strategy for the implementation of the innovation process in cooperation with all employees.
- **System:** The final stage in the initiation of the innovation process is the creation of the appropriate system for managing the innovation process. This system allows all corporate governance and employees to generate ideas for innovation development; to follow innovation opportunities and to select the most appropriate idea and strategy for the organization and to identify the steps to be taken in transforming this idea into innovation (Elçi, 2006).

Having examined the literature, it is seen that the process of innovation is expressed in different stages. For example, Rogers refers to the invitation process as a total of five sub-steps: agenda setting, comparison, reformatting, clarification, and routinizing, with two main phases, initiation and implementation (Sönmez, 2014).

Innovation process, in institutions, generally takes place at three basic stages:

production of idea, the realization of ideas and commercialization of ideas.

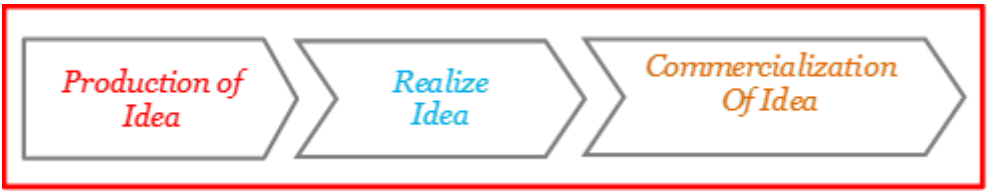

Figure 1: Innovation Process
Source: Sattler, 2011: 12.

In the first phase of the innovation process, which includes the production of ideas and the selection of appropriate ideas, the institution collects and selects new ideas for innovation by examining internal and external environmental factors (Aksay&Orhan 2013; Sattler, 2011).

After the process of idea collection and choosing the appropriate idea for the institution, ideas is realized and the achievement achieved is evaluated (Sattler, 2011). Whether this innovation is technologically feasible, and if it is so, the features of that innovation are revealed (Aksay & Orhan, 2013).

The final stage of the innovation process is the phase of the commercialization of the idea which involves the production, promotion and presentation of the innovation. The work of innovation reaches a commercial form (Aksay & Orhan, 2013; Sattler, 2011).

INNOVATION IN HEALTH SECTOR

Innovation has become a noteworthy concept in the health sector where intensive technology and information flow are being used as well as constant change and development in recent years. Innovation development is essential in order for a health institution to continue its existence. The novelties and progresses achieved as a result of innovation provide social welfare and upgrading of the quality of life. Innovative products and services enable early detection and treatment, reducing costs. In this way, productivity is increased with limited resources and cheap and accessible alternative solution options can be created by using advanced technologies for patient benefit (Şengün, 2016; Yılmaz et al., 2014; Ekiyor & Arslantaş, 2015).

Innovation is indispensable in the healthcare sector. Akenroye (2012) lists in his study why innovation in the health sector is necessary;

- Variable transaction nature,
- Technological changes,
- Changing patient needs;
- Budget breaks,
- Continuous and long-lasting health problems,
- Social anxiety,
- Sustainable efforts (Avcı, 2017).

Once the necessity of innovation in health sector is revealed, fighting them with awareness of the obstacles to innovation is crucial to the success of the innovation

process. Stanley (2012) lists these obstacles as follows:

- Unwillingness in implementing of change management principles,
- Inadequacy of critical thinking,
- Inadequacy in accessing to educational resources and using information technology.
- Lack of support to the employees.
- Lack of time,
- Inability to communicate (Networking),
- Inability to delegate authority,
- Being very busy & role in private life (spouse, mother, carer etc.)
- Fear, uncertainty and doubt – Lack of trust on ideas and suggestions,
- Perception about the professional image of the nursing,
- The hierarchy in unit/institution.
- Bureaucracy
- Experts are already here ... You can not do this like this. Silencing people who are at the stage of new learning
- Limited autonomy / freedom in being creative,
- Lack of role models
- Low status of clinical practices (in comparison with education, management, and research-related works
- Decent personel in non-clinical positions (if you are not in practice, you are not innovative!),
- Horizontal violence, conflict or intimidation
- Organizational culture
- Each of the above (Stanley, 2012).

INNOVATION IN NURSING

The International Council of Nurses (ICN) describes health innovation as the transformation process of a good idea into a viable and achievable outcome for the development of health, the prevention of illnesses, the provision of quality patient care. According to the ICN 2009 "Innovation in Nursing Care" theme, in nursing practices, innovation is crucial in providing new information/methods/services in order to prevent diseases by determining the risk factors, to promote health through improved healthy lifestyle behaviors, and to raise and sustain the quality of the care provided. Innovation also provides creative and innovative solutions that will make a significant difference in the daily lives of patients, in institutions, in the community, and in the field of occupation (ICN, 2009; Amo, 2006).

In 1800s, Florence Nightingale, founder of modern nursing, emphasized that a more livable world would not be offered to us, that we should work to reach such a world, and that it is important to change instead of adapting to life. This thought of Florence Nightingale is extremely important in terms of it being the first emphasis on the necessity of innovation in nursing (Dil et al., 2012; Kara, 2015).

Innovation in Nursing Education

In recent years, as a result of the increase in scientific knowledge and the rapid

changes in health care practices, the integration of changes in information and communication technologies into nursing education has an ever-increasing emphasis. In this process, educational institutions should have a more flexible and innovative structure to be able to meet the needs of modern societies. Educational institutions constitute the foundation for achieving the goals and objectives of education. For this reason, planned changes and innovations must first be initiated in educational institutions. Educational institutions should make the necessary arrangements to keep pace with the needs of the time and the innovations (Bodur, 2018; Dil et al., 2012).

For the first time in history, in the 1980s, the concept of innovation in nursing education began to gain importance as a result of the "American Nursing Association: Restructuring of Nursing Curricula" study. According to this study, it was emphasized that nursing educators should give more importance to contemporary teaching-learning techniques by supporting innovative initiatives and by providing students with critical thinking, problem solving and research skills (Dil et al., 2012).

In order to provide innovation in nursing practice, first, education innovation is needed. According to Diekelmann, innovation in education direct the nature of nursing education to investigation which curriculum program can encourage or prevent learning to develop nursing and bring in the necessary research sprit (Herdman, 2009). In order to increase learning in education, new curricula, new presentation methods and technologies should be developed and a culture of continuous innovation and quality improvement should be adopted. Distance education, in-service training and alternative curriculum programs can be effective to improve nurses' skills (Khorshtd, 2016).

Innovation in Nursing Practices

The term of innovation in practice means the process of professional members being encouraged to use their knowledge and skills for further development and evaluation of practice by benefiting from technology, system, theory and related individuals in order to create and develop new forms of work creatively. Innovation in practice is essential for improving patient safety and the quality of healthcare (Mcsherry & Douglas, 2011; Kara, 2015; Kaya et al., 2016).

Healthcare is at the forefront of services in which innovation is involved. Many reasons such as changes in the structure of the population, disease diversification and increase in chronic diseases, and increasing expectations in the society are bringing new needs and requirements in the existing health system and necessitating these changes. Nurses make the most important place among the healthcare workers who provide these changes to the individuals/families and community (Sarıoğlu, 2014; Jackson et al., 2014; Kara, 2015).

Nurses have to integrate innovative approaches and services with their development and change in order to achieve effective and desired results in service delivery. Therefore, the concepts of simulation, technology and knowledge should be integrated into the content of the inter-vocational education and nurse managers should facilitate creative efforts and innovative programs in teaching and clinical practice of faculty members (Gümüşsoy et al., 2017).

When the literature is reviewed, it is seen that nursing practice has implemented small but effective innovative practices that provide significant improvements in the protection of community health and improvement of the health care system. To exemplify these applications, in 1860, Nightingale determined that death rates were

frequent among women who gave birth in hospitals, and emphasized that patient care was important, thus saving the lives of women who gave birth. In North Africa, the nurses' communication with patients to support people with HIV / AIDS through their mobile phones has been found to reduce the stress levels of the patients significantly as a result of their participation in treatment as a consultant. Kangaroo care, developed by an American nurse, is a socially acceptable, easy, safe and economical method of application. The application of this method in developing countries has reduced the neonatal mortality rate. Furthermore, STOMAKIT, which is defined as adapter cutter, skin protective stoma dressing device, removes the use of scissors in the cutting of adapter in the course of colostomy, ileostomy, urostomy, and protects skin around stoma from contamination with stoma content by restraining the stoma content (ICN, 2009; Sönmez, 2014; Şengün, 2016; Gümüşsoy et al., 2017).

Innovative Roles of Nurses

It is important to monitor innovations and transfer them to practice for the fulfillment of the duties, powers and responsibilities of the nurses stated in the Nursing Regulation published in 2010, for identification and elimination of health needs of individual, family and community, for the planning, implementation and evaluation of the nursing care to be applied based on the evidence and raining, and for counseling and research activities related to nursing. Rapid changes in recent years have increased the role of nurses and have been influential in the formation of new roles (Çetin, 2017; Sarığlu, 2014).

Innovation is an indispensable element for the development and progress of nursing. Innovative nurses are defined as salaried nurses who produce, develop and distribute innovative health or nursing programs or projects in health care settings. While an innovative nurse is able to reduce the institution's cost and make profit, she also plays an effective role in applying research results at the same time (Yılmaz et al., 2014,; Kartal & Kantek, 2018). The nurses in health institutions should be aware of the importance of innovation and have played an important role on this issue no matter which unit or position they work at. The role of nurses in an effective innovation process;

- Being open to novelty
- Being able to question the emerging innovation and reflect it on the working areas,
- Thinking about innovations which can be done in problem areas in their own professional practice,
- Develop existing applications
- Ensuring that the results are visible using the innovations in the institution.

The duties of the nurses in the position of managers in this process;

- Supporting nurses with innovative ideas or initiatives, awarding the successful ones,
- Ensuring personal and professional development of nurses
- Supporting project productions,
- Supporting and appreciating the creative ideas of the nurses
- Developing self-confidence of the nurses on innovation,

- Effective leadership in innovation,
- Establishing a platform for nurses to communicate with the top management about innovative ideas,
- Ensuring high morale and motivation of nurses about innovations (Çetin, 2017; Sarığlu, 2014).

CONCLUSION

It is seen as an up-to-date strategy to find creative thoughts and transform them into new products, processes and services in an environment where international competition are increasing and mutual expectations are differentiated with rapid changes in the technological field. The continuation of personal, professional and institutional life in addition to the rapid change and innovation that exists throughout life is achieved primarily by the institutions, managers and employees constantly adopting innovations and innovative behavior. It is expected that the employees should be the ones who initiate the change themselves instead of being the ones who follow the change. The health sector, which is the strongest among the service sectors, is also experiencing continuous improvement and change. Innovation is important in terms of improving quality of care in health care services and achieving quality patient outcomes. Nurses must develop innovative ideas and initiate innovation to maintain and improve health, to prevent diseases, to find better ways to care for and treat diseases, and to get new information. As ideas that can not be transformed into novelty are destined to disappear, it will be an inevitable end for the institutions, administrators and individuals who are far from novelty.

REFERENCES

Akalın, Ş.H. (2007). Innovation, İnovasyon: Yenileşim, Türk Dili ve Edebiyatı Dergisi, Türk Dil Kurumu Yayını, C.XCIII, (S.66), 483-486.

Aksay, K. &, Orhan, F. (2013). Hastanelerde İnovasyon Sürecinin Risk Yönetimi Bağlamında Değerlendirilmesi: Bir Model Önerisi. Dicle Üniversitesi, İktisadi ve İdari Bilimler Fakültesi Dergisi C:2 (S:3), 10-23.

Amo, B.W. (2006). Employee Innovation Behaviour In Health Care: The Influence From Management And Collegues, International Nursing Review, 53(3), 231-237.

Avcı, P. (2017). Sağlık Örgütlerinde İnovasyon, Kırklareli Üniversitesi İktisadi ve İdariBilimler Fakültesi Dergisi (ISSN: 2146-3417 / E-ISSN: 2587-2052), Cilt: 6 – Sayı:5, 24-35.

Behkami, N.A. & Daim, T.U. (2016). Methods and Models, Carayannis, E.D. (Ed), inside Innovation, Technology, and Knowledge Management Healthcare Technology Innovation Adoption, e-book, DOI 10.1007/978-3-319-17975-9_3, Chapter 3, 37-81.

Bulut, Ç, & Arbak, H. (2012). İnovasyon, Direnç ve İletişim: Kavramsal Bir Tartışma. Selçuk Karaata,(Ed.) Yenilik – Yenileşim -İnovasyon Dünyasına Bir Yolculuk onlin kitap içinde (bölüm 1), Ege Genç İşadamları Derneği, Available at:www.egiad.org.tr/wp-content/uploads/arastirma-raporlari/inovasyon-raporu.pdf. (Accessed: 25.04.2018)

Bodur, G. (2018). Hemşirelik Öğrencilerinin Bireysel Yenilikçilik (İnovasyon) Düzeyleri ile Girişimcilik Eğilimleri Arasındaki İlişki. HSP;5(2):139-148.

Çetin, Y. (2017). Yönetici Hemşirelerin Yenilikçi Davranışlarının Örgütsel Vatandaşlığa Etkisi, İnönü Üniversitesi, Sağlık Bilimleri Enstitüsü Yayınlanmamış Yüksek Lisans Tezi. Malatya.

Dil, S.; Uzun, M.; Aykanat, B. (2012). Hemşirelik Eğitiminde İnovasyon, International Journal of Human Sciences [Online]. (9) 2, 1217-1228.

Drucker, P.F. (1985). Innovation and Entrepreneurship. New York: Harper & Row Publishers.

Drucker, P. (2007). Innovation and Entrepreneurship, Elsevier Limited, 6th ed. Revised Edition, 19-27, USA.

Drucker, P. (2002). The Discipline of Innovation, Harvard Business Review Special Issue: The Innovative Enterprise, Special Issue: 95-102.

Ekiyor, A. & Arslantaş, S. (2015). Sağlık Sektöründe İşgören Motivasyonunun İnovasyon Performansına Etkileri, Çankırı Karatekin Üniversitesi, Sosyal Bilimler Enstitüsü Dergisi, (2):113-136.

Elçi, Ş. (2006). İnovasyon: Rekabet ve Kalkınmanın Anahtarı: Tasarım, Ar-Ge, İnovasyon. Çerçeve,52: 62-68.

Gümüşsoy, S.; Keskin, G.; Yıldırım, G.O.; Aktekin, E. (2017). The Importance of Innovative Approaches in Nursing. PressAcademia Procedia (PAP), V.3, p.759-761.

Herdman, E.A. (2009). Nursing and Innovation. HEAD, 6(2): 2-4.

ICN, (2009). Delivering Quality, Serving Communities: Nurses Leading Care Innovations, Available at:.http://www.icn.ch/images/stories/documents/publications/ind/indkit2009.pdf, (accessed: 15.02.2018).

Jackson, D.; Girvin, J.; Davidson, P. M. (2014.) Nursing Innovation and Reform in Health Care. Contemporary Nurse, 48(2): 130–132.

Kara, D. (2015). Innovation in Nursing Practices, Global Journal on Advances in Pure & Applied Sciences. [Online]. 07, pp 170-174. Available at: http://www.world-education-center.org/index.php/paas, (accessed:15.04.2018).

Kartal, H. &Kantek, F. (2018). Hemşirelikte İnovasyon Örnekleri, Sağlık ve Hemşirelik Yönetimi Dergisi, 1(5), 57-63.

Kanter, R.M. (2006). Innovation The Classic Traps. *Harvard Business Review*, 11:1-13.

Kaya, N.; Turan, N.; Aydın, G.Ö. (2016). Innovation in Nursing: A Concept Analysis, J Comm Pub Health Nursing 2: 108. doi:10.4172/2471- 9846.1000108, 2-4.

Khorshtd, L. (2016). Yenileşim Kültürü Oluşturma, Ege Üniversitesi Hemşirelik Fakültesi Dergisi, 32(1):141-155.

Mcsherry, R.. & Douglas, M. (2011). Innovation In Nursing Practice: A means To Tackling the Global Challenges Facing Nurses, Midwives and Nurse Leaders and Managers In The Future, Journal of Nursing Management, 19, 165–169.

Porter, M. (1990). The Competitive Advantage of Nations, Macmillan, London.

Risley, G. (1973). Modern Industrial Marketing, 1st ed. Mc Graw-Hill Incorporated, 273, New York.

Rogers, E.M. (2003). Diffusion of İnnovations, 4th ed. Simon & Schuster Press, 12-23, New York.

Sarıoğlu, A. (2014). Bireysel Yenilikçilik Ölçeğinin Hemşirelikte Geçerlik ve Güvenirliği, Atatürk Üniversitesi Sağlık Bilimleri Üniversitesi Yayınlanmamış Yüksek Lisans Tezi, Erzurum.

Sattler, M. (2011). Excellence in Innovation Management: A Meta-Analytic Review on

thePredictors of InnovationPerformance, Gabler Verlag Springer Fachmedien Wiesbaden GmbH.
Stanley, D. J. (2012). Clinical Leadership and Innovation, Journal of Nursing Education and Practice, Vol. 2, No. 2.
Sönmez, B. (2014). Yenileşim Yönetimi. Ülkü Tatar Baykal & Emine Türkmen (Ed.) Hemşirelik Hizmetleri Yönetimi kitabı içinde (1.Baskı, sayfa 289-303). Akademi Basın ve Yayıncılık: İstanbul.
Şengün, H. (2016). Sağlık Hizmetleri Sunumunda İnovasyon, Haseki Eğitim ve Araştırma Hastanesi Haseki Tıp Bülteni, 54:194-8, DOI: 10.4274 /haseki.3057.OECD-Oslo Kılavuzu (2005). Yenilik Verilerinin Toplanması ve Yorumlanması İçin İlkeler. OECD ve Eurostat Yayını, 3. Baskı, Çeviri: Tübitak.Available at:http://www.tubitak.gov.tr/tubitak_content_files/BTYPD /kilavuzlar /Oslo _3_TR.f, (accessed: April 15, 2018).
Trott, P. (2008). Innovation Management & New Product Development (4th ed.). Financial Times Pearson Education Limited: London.
Uzkurt, C. (2010). İnovasyon Yönetimi: İnovasyon Nedir, Nasıl Yapılır ve Nasıl Pazarlanır? Ankara Sanayi Odası Yayın Organı, 2-16.
Yılmaz, F.T.; Şen, H.Ş.; Demirkaya, F. (2014). Başhemşirelerin Yenilikçilik ve Risk Alma Davranışlarının Belirlenmesi, Balıkesir Sağlık Bilimleri Dergisi, Cilt:3 Sayı:3, 147-154.

Chapter 18

Place of Regular Physical Activity Reducing Cancer Risk

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INTRODUCTION

Cancer is a multifactorial disease characterized by abnormal cell growth and proliferation and diseases is the second cause of death after cardiovascular diseases in the world. (Nowell, 1976). According to cancer statistics, a total of 14.1 million new cases of cancer developed worldwide in 2012 and 8.8 million cancer-related deaths in 2015 (WHO, 2018).

Regular physical activity; are defined as regular, planned and repeated physical activities for the maintenance or improvement of health. As well as regular physical activity psychologically and physically improve the well-being and reduces the risk of cancer (American Cancer Society, 2018; Turkey Physical Activity Guide (FAR), 2014; Knols et al., 2005).

Physical activity is one of the factors effective in the prevention of cancer. It is assumed that physical activity can reduce the risk of cancer by reducing hormones with oncogenic potential such as androgens, insulin and insulin-like growth factor (IGF). It can also reduce the risk of developing some cancers by preventing the obesity and regulating the immunological and antioxidant activity. Inadequate level of physical activity increases cancer risk by causing weight gain and thus increasing body mass index. Especially in women after menopause, weight gain is reported to increase breast cancer risk (Monninkhof et al., 2007; Knols et al., 2005).

As the body mass index increases (5 kg / m2 more than necessary), increased risk of esophagus, thyroid, colon and kidney in men and endometrium, bladder esophagus and renal cancers in women (Taylor, 2012; Renehan et al., 2008).

Physical inactivity, a common risk factor for chronic diseases, ranks fourth in the world in terms of the risk factors leading to death and is responsible for the deaths of 3.2 million people worldwide (FAR, 2014).

Studies of the benefits of physical exercise in cancer patients are still inadequate. It is also difficult to arrive at a decision on the effect of physical activity, excluding the effects of other factors (lifestyle, nutrition, tobacco use, stress, alcohol etc.) on cancer in studies. For this reason, this review focuses on cancer types that have been studied more about cancer and physical exercise.

These are colorectal cancers, breast, lung and endometrium cancers, respectively.

COLORECTAL CANCERS

Colorectal cancers are the most common cancer type after breast and prostate

cancer in the world (DeSantis, 2014). Colorectal cancer is a multi-factorial disease with a range of genetic and environmental effects. In this disease, a number of factors play a key role in cancer susceptibility, such as lifestyle, nutrition and physical activity. The role of physical activity in colorectal cancer susceptibility is quite significant. Findings in the majority of studies show that physical activity has an effect on reducing the risk of colorectal cancer susceptibility (Campbell et al., 2013). In people with physical activity, the risk of colorectal cancer is 27% lower than for people without physical activity (Golshiri et al., 2016; Miles, 2007; International Agency for Research on Cancer WHO, 2002). Exercise has been reported to be an important protective approach for colorectal cancers (Wilkes, 2011; Slattery, 2004).

A meta-analysis of Wolin and colleagues to determine the association between physical activity and prevention of colon cancer showed a 24% reduction in the risk of colon cancer in participants with a high level of physical activity (Wolin et al., 2009). In another systematic analysis, it was observed that high-level physical activity in cancer patients decreased cancer-related mortality by 45-61% (Ballard et al., 2012).

BREAST CANCER

Breast cancer is a disease characterized by uncontrolled proliferation of milk glands and milk ducts in the breast (Karayurt, 2015). According to the World Health Organization (WHO), breast cancer is the second most common cancer among all the cancers in the world and the most common type of cancer among women (Cancer Country Profiles, 2014).

There is evidence to support that physical activity reduces breast cancer risk. The relationship between physical activity and decreased risk of breast cancer is explained by the positive effects of physical activity on body mass, hormones and energy balance. It has been shown that women with regular exercise have lower breast cancer risk by 10-20% (Steindorf et al., 2013; Lynch et al., 2011; Eliasscn et al., 2010; Neilson et al., 2009). Studies of Eliasscn and colleagues with more than 95,000 postmenopausal women have shown that moderate physical activity, including slow walking, reduces 10% of the risk of breast cancer and increases postmenopausal activity can be extremely beneficial (Eliasscn et al., 2015).

LUNG CANCER

Lung cancer is the leading cause of cancer deaths in women and men worldwide. More than 1.6 million people worldwide are diagnosed with lung cancer each year, and the five-year survival rate of people diagnosed with cancer is only 3% in the last 25 years (American Cancer Society, 2018).

There are studies suggesting that physical activity is effective in reducing the risk of lung cancer, 20-30% in women and 20-50% in men (Carol, 2016; Leitzmann et al., 2015; Steindorf et al., 2013; Emaus & Thune, 2011; Sui et al., 2010). A meta-analysis of 14 prospective studies by Sun et al. found that high and moderate physical activity was associated with a reduced risk of lung cancer (Sun et al., 2012).

The biological mechanisms that try to explain the relationship between physical activity and lung cancer are quite complex. This relationship is influenced by many factors such as inherited or acquired susceptibility genes, sex, smoking and other environmental factors. Physical activity interacts with cigarette carcinogens or affects key genes in lung cancer. it may also reduce the risk of lung cancer by increasing

immunological functions and reducing inflammation (Emaus & Thune, 2011).

ENDOMETRIUM CANCER

With regular exercise, the incidence of endometrium cancers is reduced by 30-40% (Borch et al., 2017, Şenışık, 2014, Voskuil et al., 2007). Exercise reduces fat in the abdominal area, causes delayed menarche, and reduces the number of ovulatory cycles and estrogen production. At the same time, exercise reduces endometrial cancer risk by reducing free estrogen and testosterone levels in circulation (Rodriguez et al., 2007; Friedenreich & Orenstein, 2002).

it is suggested that physical activity reduces the risk of endometrial cancer in individuals with high body mass index (Friedenreich et al., 2010).

RESULT

Many studies have been conducted to date to replace regular physical activity in reducing cancer risk. While there is significant and strong evidence for some types of cancer and physical activity, some associations with cancer have been mentioned as less relevant.

The meta-analysis of physical activity by Moore and colleagues on the risk of cancer suggests that an increase in physical activity levels reduces the risk of colon, breast and endometrial cancer in particular (Moore et al., 2016).

There is insufficient information about the level of physical activity and exercise that may suggest cancer patients. It is suggested that at least 30 minutes of moderate physical activity should be done every day for today.

In cancer patients, physical activity decreases in patients' complaints and treatment side effects, resulting in an increase in psychological wellbeing. Physical exhaustion extends the quality of life and life span of patients with cancer. Therefore, physical activity in cancer patients can be included as part of treatment.

REFERENCES

American Cancer Society. Cancer Facts & Figures 2018. Atlanta: American Cancer Society; 2018.

Ballard-Barbash, R.; Friedenreich, C.M.; Courneya, K.S.; Siddiqi, S.M.; McTiernan, A.; Alfano, C.M. (2012). Physical Activity, Bionarkers, and Disease Outcomes in Cancer Survivors: A Systematic Review. J Natl Cancer Inst. 104 (11), 815-40.

Borch, K.B.; Weiderpass E.; Braaten T.; Jareid M.; Gavrilyuk O.A.; Licaj, I. (2017). Physical Activity and Risk of Endometrial Cancer İn Thenorwegian Women and Cancer (NOWAC) Study. Int. J. Cancer: 140, 1809–1818.

Campbell, P.T.; Patel, A.V.; Newton, C.C.; Jacobs, E.J.; Gapstur, S.M. (2013). Associations of Recreational Physical Activity and Leisure Time Spent Sitting with Colorectal Cancer Survival. J Clin Oncol. 31(7), 876–85.

Carol, M. (2016). The Importance of Exercise in Lung Cancer Treatment. Transl Lung Cancer Res. 5(3), 235-238.

DeSantis, C.E.; Lin C.C.; Mariotto, A.B.; Siegel, R.L.; Stein, K.D.; Kramer, J.L.; Alteri, R.; Robbins, A.S.; Jemal, A. (2014). Cancer Treatment and Survivorship Statistics. CA Cancer J Clin. 64, 252– 271.

Eliasscn, A.H.; Hankinson, S.E.; Rosner, B.; Holmes, M.D.; Willett, W.C. (2010).

Physical activity and Risk of Breast Cancer among Postmenopausal Women. Arch Intern Med. 170 (19), 1758-64.
Emaus. A.; Thune. I. (2011). Physical Activity and Lung Cancer Pre-Vention. Recent Results. Cancer Res. 186, 101-33.
Friedenreich, C.M.; Cook, L.S.; Magliocco, A.M.; Duggan, M.A.; Courneya, K.S. (2010). Case-Control Study of Lifetime Total Physical Activity and Endometrial Cancer Risk. Cancer Causes Control. 21(7), 1105-16.
Friedenreich, C.M.; Orenstein, M.R. (2002). Physical Activity and Cancer Prevention: Etiologic Evidence and Biological Mechanisms. J Nutr 132 (11 Suppl), 3456-64.
Golshiri, P.; Rasooli, S.; Emami, M.; Najimi, A. (2016). Effects of Physical Activity on Risk of Colorectal Cancer: A Case–Control Study. Int J Prev Med, 7: 32.
International Agency for Research on Cancer WHO. (2002). IARC Handbooks of Cancer Prevention: Weight Control and Physical Activity, Vol. 6.
Karayurt, Ö. (2015). Meme Kanseri. Gülbeyaz Can (Ed) Onkoloji Hemşireliği kitabı içinde (bölüm 5/49 sayfa 619-623). Nobel Tıp Kitabevleri: İstanbul.
Knols, R.; Aaronson, N.K.; Uebelhart, D.; Fransen, J.; Aufdemkampe, G. (2005). Physical Exercise in Cancer Patients during and After Medical Treatment: A Systemic Review of Randomized and Controlled Clinical Trials. J Clin Oncol. 23, 3830-42.
Leitzmann, M.; Powers, H.; Anderson, A.S.; Scoccianti, C.; Berrino, F.; Boutron-Ruault, M.C.; Cecchini, M.; Espina, C.; Key, T.J.; Norat, T.; Wiseman, M.; Romieu, I. (2015). European Code against Cancer 4th Edition: Physical Activity and Cancer. Cancer Epidemiology. 39 Suppl 1, 46-55.
Lynch, B.M.; Neilson, H.K.; Friedenreich, C.M. (2011). Physical activity and breast cancer prevention. Recent Results Cancer Res. 186, 13-42.
Miles, L. (2007). Physical Activity and the Prevention of Cancer: A Review of Recent Findings. Nutr Bull. 32 (3), 250–82.
Monninkhof, E.M.; Elias, S.G.; Vlems, F.A.; Tweel I.; Schuit, A.J.; Voskuil, D. W.; Leeuwen, F.E. (2007). Physical Activity and Breast Cancer: A Systematic Review. Epidemiology. 18, 137-157.
Moore, S.C.; Lee, I.M.; Weiderpass, E.; Campbell, P.T.; Sampson, J.N.; Kitahara, C.M.; Keadle, S.K.; Arem, H.; Berrington de Gonzalez, A.; Hartge, P.; Adami, H.O.; Blair, C.K.; Borch, K.B.; Boyd, E.; Check, D.P.; Fournier, A.; Freedman, N.D.; Gunter, M.; Johannson, M.; Khaw, K.T.; Linet, M.S.; Orsini, N.; Park, Y.; Riboli, E.; Robien, K.; Schairer, C.; Sesso, H.; Spriggs, M.; Van Dusen, R .; Wolk, A.; Matthews, C.E.; Patel, A.V. (2016). Association of Leisure-Time Physical Activity with Risk of 26 Types of Cancer in 1.44 Million Adults. JAMA Intern Med. 1;176 (6), 816-25.
Neilson, H.K.; Friedenreich, C.M.; Brockton, N.T.; Millikan, R.C. (2009). Physical Activity and Postmenopausal Breast Cancer: Proposed Biologic Mechanisms and Areas for Future Research. Cancer Epidemiol Biomarkers Prev. 18 (1).
Nowell, P.C. (1976). The Clonal Evolution of Tumor Cell Populations. Science 1976. 194 (4260), 23-28.
Renehan, A.G.; Tyson, M.; Egger, M.; Heller, R.F.; Zwahlen, M. (2008). Body-Mass İndex and Incidence of Cancer: A Systematic Review and Meta-Analysis of Prospective Observational Studies. Lancet. 371, 569-578.

Rodriguez, C.; Freedland, S.J.; Deka, A.; Jacobs, E.J.; McCullough, M.L.; Patel, A.V.; Thun, M.J.; Calle, E.E. (2007). Body Mass İndex, Weight Change, and Risk of Prostate in the Cancer Prevention Study II Nutrition Cohort. Cancer Epidemiol Biomarkers Prev. 16, 63-9.

Slattery, M.L. (2004). Physical Activity and Colorectal Cancer. Sports Med, 34(4), 239–52.

Steindorf, K.; Leitzmann, M.F.; Friedenreich, C.M. (2013). Physical Activity and Primary Cancer Prevention. In: Ulrich, C.M.; Steindorf, K.; Berger NA. (Ed). Exercise, Energy Balance, and Cancer, First ed. p.83-106, Springer: Dordrecht, Heidelberg, London, New York.

Sui, X.; Lee, D.; Matthews, C.E.; Adams, S.A.; Hébert, J.R.; Church, T.S.; Lee, C.D.; Blair, S.N. (2010). Influence of Cardiorespiratory Fitness on Lung Cancer Mortality. Med Sci Sports Exerc. 42 (5), 872–878.

Sun, J.Y.; Shi, L.; Gao, X.D.; Xu, S.F. (2012). Physical Activity and Risk of Lung Cancer: A Meta-Analysis of Prospective Cohort Studies; Asian Pacific Journal of Cancer Prevention. 13 (7), 3143-3147.

Şenışık, S. (2014). Kanser ve Egzersiz. Spor Hekimliği Dergisi. Cilt: 49, 99-110.

Taylor, C. (2012). Best Practice in Colorectal Cancer Care. Nursing Times. 108 (12), 22-25.

URL: http://www.who.int/cancer/en/ (Accessed: 10 May 2018).

URL: Türkiye Fiziksel Aktivite Rehberi (2014). http://beslenme.gov.tr/content/files/basin_materyal/Fiziksel_aktivite_rehberi/turkce.pdf (Accessed: 10 March 2018).

URL: World Health Organization - Cancer Country Profiles, 2014 (http://www.who.int/cancer/country-profiles/tur_en.pdf?ua=1) (Accessed: 21 May 2018).

Voskuil, D.W.; Monninkhof, E.M.; Elias, S.G.; Vlems, F.A.; Leeuwen, F.E. (2007). Physical Activity and Endometrial Cancer Risk, A Systematic Review of Current Evidence. Cancer Epidemiol Biomarkers Prev. 16 (4), 639-48.

Wilkes, G.A. (2011). Colon, Rectal, and Anal Cancers. In: Yarbro, C. H.; Wujcik, D.; Gobel, B.H. (Eds). Cancer Nursing. 7 th ed. p.1205-1257.Sudbury: Jones and Barlett Publishers.

Wolin, K.Y.; Yan, Y.; Colditz, G.A.; Lee, I.M. (2009). Physical Activity and Colon Cancer Prevention: A Meta-Analysis. Br J Cancer. 100 (4), 611-6.

Chapter 19

Importance of Nursing Informatics in Practice

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INTRODUCTION

Information technologies have developed rapidly in recent years and become an indispensable part of healthcare services as in very field. (Bilgiç & Şendir, 2014; Maryniak, 2013). Consequently, use of informatics in healthcare services and nursing practices has become widespread. Knowledge required for nursing informatics has extended and today nursing informatics is recognized as a field of expertise of the profession. Nursing informatics has been recognized as a science and system that involves the nursing process and data (Elsayed et al., 2016; Maryniak, 2013).

NURSING INFORMATICS

Concept of nursing informatics has appeared as a result of accumulated knowledge of nursing field after its use in nursing practices (Bilgiç & Şendir, 2014). Informatics technologies are necessary for storing, planning and displaying nursing practices on electronic environment (Uysal et al., 2017).

In 1985, Hannah defined nursing informatics as the use of informatics technologies by nurses for their professional functions while carrying out their jobs (Asiri, 2016). Graves and Corcoran defined nursing informatics in 1989 as the use of informatics and nursing together in every field of nursing care from planning to evaluation (Asiri, 2016; Aydın, 2010). In 1994, American Nurses Association (ANA) started to develop an expression to involve practice aspect of nursing informatics. Thus, nursing informatics is the development and evaluation of practices, tools, process and structures used to help data management and support nurses in patient care and nursing practices (Baker, 2012).

ANA defined nursing informatics in 2008 as a field of expertise that integrates nursing science, computer sciences and information science to manage and transfer data in nursing practices (Figure 1) (Baker, 2012). Nursing informatics facilitates integration of data and knowledge to support nurses, patients and other healthcare professionals in nursing practices and decision-making process (Baker, 2012).

According to the definition updated by International Medical Informatics Association-Special Interest Group on Nursing Informatics (IMIA-NI) in 2009 during a summit in Helsinki, Finland; nursing informatics is a science and practice that integrates information and communication technologies with nursing knowledge and data management to improve health conditions of individuals, families and communities around the world (IMIA, 2009).

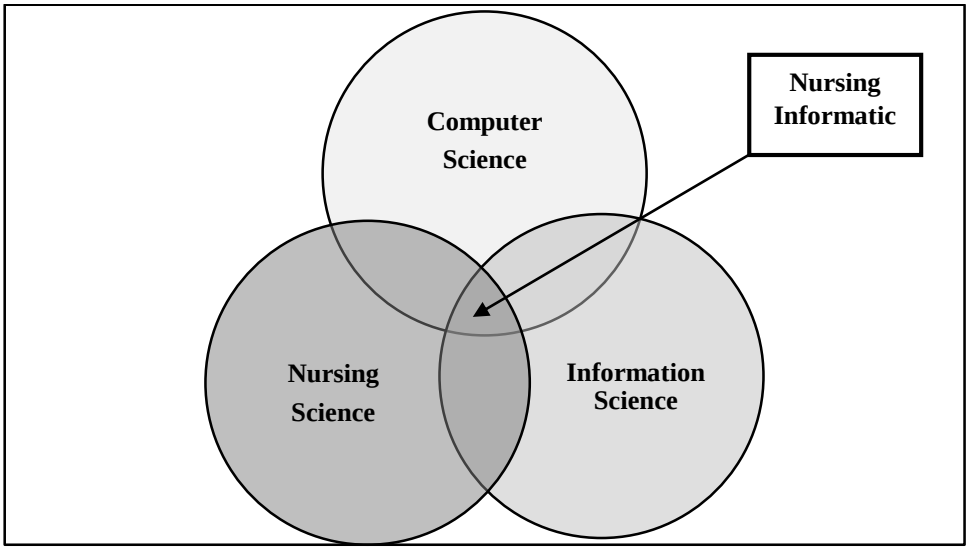

Figure 1: Nursing informatics
Reference: Baker, J. (2012). Nursing Informatics. Perioperative Nursing Clinics 7, 151-160.

According to these definitions, we might say that nursing informatics;

- Integrates nursing science with multiple information and analytical sciences to define, manage data and information and enhance communication,
- Supports nurses, healthcare teams and other healthcare professionals in decision-making process,
- Continues to improve health condition of communities, groups, families and individuals (Brown & Feinberg, 2018).

DEVELOPMENT OF NURSING INFORMATICS

Nursing informatics began in the U.S.A. with storage of social-security transactions and nursing practices in computer environment in 1965 and took a place in literature as a term first in 1980. Nursing informatics was defined by ANA as a field of expertise in 1992, its definition and scope was specified in 1994 and its standards were published in 1995 (Mutluay & Özdemir, 2014).

Nursing informatics congresses are being held in various countries today to contribute to the development of nursing informatics and nursing informatics specialists are presented an ideal platform where developments in the field of informatics and health information technologies are shared. These congresses are hosted by IMIA-NI. IMIA-NI is an international organization established in 1983 to develop nursing informatics all around the globe. Its goals include;

- Strengthening cooperation among nurses and other healthcare professionals who are interested in nursing informatics,
- Supporting development of nursing informatics in practice, research, management and training fields,
- Developing courses, guidelines and suggestions on nursing informatics (Seçginli & Erdoğan, 2012).

NURSE IN NURSING INFORMATICS PROCESS

Technology plays a key role in dynamic health systems, training and nursing practices today (Darvish et al., 2014). It is remarkable that use of technologies to support care services in health sectors has increased (Nagle et al., 2017). Nurses have various specific roles in implementing, sustaining and developing technology in providing service to ill/healthy individuals despite their inclusion in developing technology. Nursing informatics has become one of these specific roles (Ebrahem et al., 2014).

Nursing informatics supports nurses, patients, other healthcare professionals and stakeholders in decision-making in every role and environment. This support occurs with the use of information structures, processes and informatics technology (Elsayed et al., 2016). Therefore, nurses must be able to use global information technology, particularly clinical technology in modern healthcare services (Chang et al., 2011). Informatics training must be a basic part of nursing curriculum for nurses to be able to use informatics practices. Nursing informatics training is necessary in all undergraduate and postgraduate nursing programs. Nursing informatics training must not only be given in nursing professional education but also become a part of continuous learning in workplaces (Nursing Informatics Position Statement, 2017). In nursing informatics process; nurses must use digital tools to communicate with a professional team, pay digital visits to patients, families and caregivers, interact with them through patient portals, social media and personal robot assistants (Nursing Informatics Position Statement, 2017).

Nursing informatics practice standards have been designed according to the stages of nursing process. These standards emphasize that nursing informatics practice must be involved in nursing process (Uysal et al., 2017). Practice standards include various aspects of nursing process such as detection of patients' condition and problems, definition of results, planning, implementation and evaluation of nursing initiatives in addition to training and professional evaluation (Çakırlar & Mendi, 2016; Mutluay & Özdemir, 2014). Nurses who use nursing informatics in nursing process are influenced positively in every stage of the process. The following figure displays how nursing informatics influences nursing process (Figure2).

INFORMATICS IN NURSING PRACTICES

Nurses constitute one of the profession groups who are at the closest position to the community members, providing continuous healthcare service at hospitals or in public. They not only work efficiently on digital environment and improve health patient outcomes but also play a facilitator role in supervision of ill/healthy individuals and clinicians (Nursing Informatics Position Statement, 2017).

Nurses have to face constantly changing and challenging practices. Competence in nursing informatics helps them to improve their clinical decision-making skills. Despite several difficulties of new technologies, it is apparent that informatics will improve nursing practices. Thanks to nursing informatics practices, nurses might access patient data faster, increase their work efficiency and reduce the number of possible mistakes (Lee, 2014).

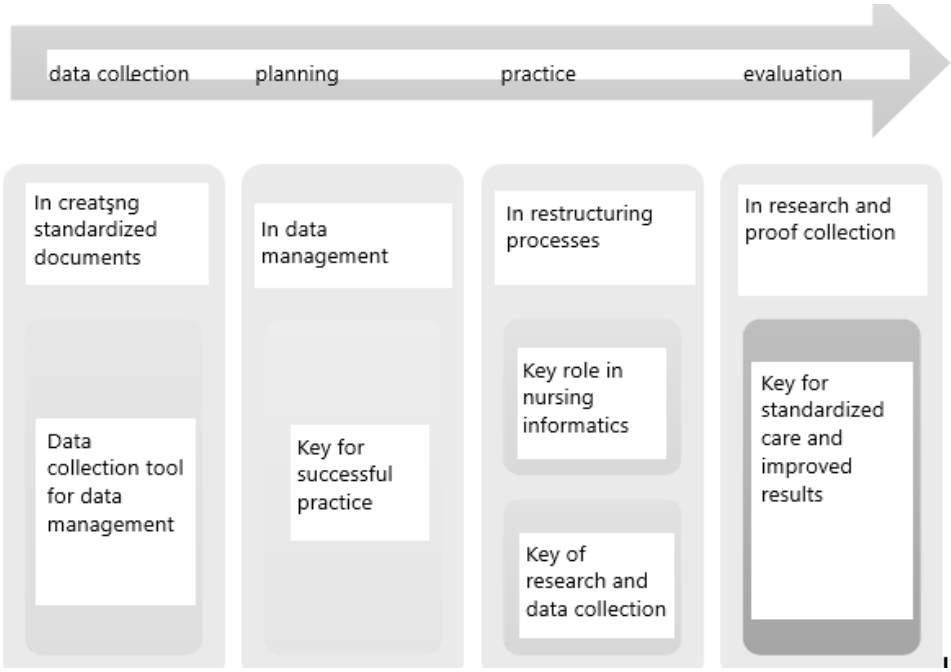

Figure 2: Effects of nursing informatics on nursing process.
Reference: Nursing Informatics. 101_1431463337681_1.www.himss.org/file/1277691/ download? token…(accessed: 11 May 2018).

Informatics in nursing is used in many fields including management, training, care practices. Informatics technologies are often used in staff planning, efficiency assessment, risk management and proof-based practices in nursing management. Informatics play a key role in nursing care practices in recording patient care and treatment, observing changes in patient condition, monitoring patient outcomes statistically, evaluating and sharing results with other healthcare professionals. Using internet, web-based applications, e-mail applications, computer-supported distance learning systems and media tools in nursing training and research contribute significantly to nurses' development (Bilgiç & Şendir, 2014).

Nursing informatics must involve the fields of practice, management, training and research (Table 1). These four fields are inter-related for nurses to provide proof-based data during practice (Daniel & Oyetunde, 2013).

Table 1: Importance of informatics in nursing practices in terms of work fields.

In clinical practices;
1. A check list to remind to remind nurses of planned nursing initiatives,
2. Electronic medical records and computer-based patient records,
3.Monitoring devices that directly record vital findings and other measurement results into the patient file,
4. Nursing care plan composed on computer,
5. Automatic invoicing for care and procedures,

6. Visible reminders on documents to provide comprehensive graphics.
In nursing management;
1. Automatic staff timing,
2. E-mail for advanced communication between departments,
3. Finding trends for cost analysis and budget goals,
4. Quality warranty and result analysis.
In nursing training,
1. Keeping records on computer,
2. Computer-based instruction,
3. Interactive video technology (Telenursing),
4. Distance learning, web-based courses and licence programs,
5. Instructions and presentations.
In nursing research
1. Computer-supported literature review,
2. Proof-based applications,
3. Adopting standardized language of nursing terms,
4. Finding trends in mass data; in other words, data of big population groups obtained from statistics software,
5. Use of data base on Internet.

Reference: Daniel, G.O. & Oyetunde, M.O. (2013). Nursing Informatics: A Key to Improving Nursing Practice in Nigeria. International Journal of Nursing and Midwifery 5 (5), 90-98.

Today, information and communication technology is increasing its practice potential, helping to enhance quality of nursing fields. Nurses have to interact more with technology as they constitute the profession group who communicate most with patients. They display a positive attitude in nursing efficiency by using technology. Nurses must be involved in initial design of systems to improve healthcare quality and change their culture in this context. Nurses must also have adequate knowledge and skills of computer, informatics technology, informatics (Darvish et al., 2014).

REFERENCES

Asiri, H. (2016). An Overview of Nursing Informatics (NI) as a Profession: How we Evolved Over the Years. In Proceedings of the 9th International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2016) 5: HEALTHINF, 200-212.

Aydın, N. (2010). Hemşirelikte Bilişim Bilgi Teknolojileri. Available at: www.saglikyoneticilerizirvesi.org/.../hemsirelikte_bilgi_teknolojileri (accessed: 02 June 2018).

Baker, J. (2012). Nursing Informatics. Perioperative Nursing Clinics 7: 151-160.

Bilgiç, Ş. & Şendir, M. (2014). Hemşirelik Bilişimi. Cumhuriyet Hemşirelik Dergisi 3 (1), 24-28.

Brown, S. & Feinberg, D. Workforce Development: The Future of Nursing Informatics. Nursing Informatics Institute. https://pdfs.semanticscholar.org/presentation/a14b/e9a209177ed6d9c53a957038025aa177e426.pdf. (Accessed: 02 June 2018).

Chang, J.; Poynton, M.R.; Gassert, C.A.; Staggers, N. (2011). Nursing Informatics Competencies Required of Nurses in Taiwan. International Journal of Medical Informatics 80, 332-340.

Çakırlar, A. & Mendi, B. (2016). Hemşirelerin Elektronik Sağlık Kaydı ve Bilişim Uygulamaları Kapsamındaki Bilgi ve Tutumlarının Değerlendirilmesi. FNG & Bilim Tıp Dergisi 2 (1), 32-39.

Daniel, G.O. & Oyetunde, M.O. (2013). Nursing Informatics: A Key to Improving Nursing Practice in Nigeria. International Journal of Nursing and Midwifery 5 (5), 90-98.

Darvish, A.; Bahramnezhad, F.; Keyhanian, S.; Navidhamidi, M. (2014). The Role of Nursing Informatics on Promoting Quality of Health Care and the Need for Appropriate Education. Global Journal of Health Science 6 (6), 11-18.

Ebrahem, R.; El-Din, S.; Habib, N.; El-Kheir, S.A. (2014). Nurses' Knowledge, Attitude and Practices of Nursing Informatics System in Outpatient Clinics of Children's Cancer Hospital (57357) at Cairo. Journal of Education and Practice 5 (32), 88-96.

Elsayed, L.A.; El-Nagger, N.; Mohamed, H.A.A. (2016). Evolution of Nursing Informatics: A Key to Improving Nursing Practice. Research Journal of Medicine and Medical Sciences 11 (1), X-X.

IMIA (International Medical Informatics Association) (2009). The Nursing Informatics Special Interest Group–Definition. Available at: http:www.imiani.orgindex.phpoption=com_content&task=view&i d=27&Itemid=5. (Accessed: 30 May 2018).

Lee, A. (2014). The Role of Informatics in Nursing. Nursing Made Incredibly Easy! 12 (4), 55.

Maryniak, K. (2013). Nursing Informatics the Future is Here. RN.com. Available at: https://lms.rn.com/getpdf.php/1860.pdf (accessed: 30 May 2018).

Mutluay, E. & Özdemir, L. (2014). Sağlık Bilişim Sistemleri Kapsamında Hemşirelik Bilişiminin Kullanımı. F.N. Hem. Derg 22 (3), 180-186.

Nagle, L.M.; Sermeus, W.; Junger, A. (2017). Evolving Role of the Nursing Informatics Specialist. Forecasting Informatics Competencies for Nurses in the Future of Connected Health. In: J. Murphy et al. (Eds.) IMIA and IOS Press. P.212-221.

Nursing Informatics Position Statement – ACN | HISA | NIA August 2017.

Nursing Informatics 101_1431463337681_1.www.himss.org/file/1277691/ download? token ... (accessed: 11 May 2018).

Seçginli, S. & Erdoğan, S. (2012). 11. Uluslararası Hemşirelik Bilişimi Kongresi: Bilişim Yoluyla Global Sağlığın Geliştirilmesi. Smyrna Tıp Dergisi 2, 53-54.

Uysal, H.; Yıldız, M.; Dinçer, M.; Eybek, Z. (2017). Hemşirelik Öğrencilerinin Bilgisayar ve Bilişim Teknolojileri Hakkındaki Farkındalıklarının Değerlendirilmesi. G.O.P. Taksim E.A.H. JAREN 3 (3), 153-162.

Chapter 20

Postoperative Respiratory Complications

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INTRODUCTION

Any external intervention made on the body can lead to unintended and undesirable situations. When this intervention is a surgical procedure, various complications may be encountered during or after the procedure. It is reported that respiratory complications constitute the vast majority of the complications that occur after any surgical intervention (Günlüoğlu 2010; Fisher 2002). The main reason of this situation is the dysfunction of respiratory muscles caused by anesthesia and the change of lung volumes resulting from deteriorated chest wall mechanics. These complications are the most important causes of postoperative morbidity and mortality (Warner 2000; Günlüoğlu 2010).

It is very difficult to determine the effects of general anesthesia and surgery postoperatively. However, general anesthesia causes mechanical and functional effects on the respiratory system and leads to postoperative respiratory complications (Annakaya 2005).

Postoperative respiratory problems may develop due to some factors. Existing lung diseases such as emphysema, infection, asthma make individuals more susceptible to respiratory problems. Smoking individuals have a higher risk of experiencing respiratory problems due to chronic irritation of the respiratory tract and excessive mucus production. Chest wall deformities, obesity, advanced age are other factors leading to the development of respiratory problems (Philips 2008).

The ability of the patient to perform postoperative deep breathing and coughing exercises in order to remove secretions is very important. Superficial respiration depending on pain is seen especially in individuals who have undergone abdominal or thoracic surgery, thus they cannot effectively remove their secretions (Philips 2008; Mohn-Brown and Eby 2011).

The postoperative period that begins after the surgery is a process that continues until the life functions of the patient return to normal or until the medical care process is completed. ***The purpose of the care*** is to improve the hemostatic balance of the patient and to allow the patient to return to normal life activities as soon as possible by preventing complications.

The postoperative period consists of two parts: early and late postoperative period.

The early postoperative period covers the first few hours after the surgery when the patient gets over the effects of anesthesia.

The late postoperative period is a period of several weeks or months after the surgery, in which complications are prevented and the healing is ensured.

1. Early Postoperative Respiratory Complications

a. Aspiration
b. Airway obstruction
c. Hypoxemia
d. Pulmonary edema
e. Bronchospasm
f. Hypoventilation

2. Late Postoperative Respiratory Complications

a. Atelectasis
b. Pneumonia
c. Pulmonary edema

1. EARLY POSTOPERATIVE RESPIRATORY COMPLICATIONS

The most common postanesthesia respiratory complications are airway obstruction, hypoventilation and hypoxemia. These can be seen in any patient but the patients who smoke, who are old, obese and who have undergone thoracic or abdominal surgery constitute the risk group (Akyolcu 2012).

a. Aspiration

It results from the inhalation of the gastric contents to the lungs due to the decrease in the swallowing reflex in the surgical patient who has airway anesthesia due to conscious or unconscious bronchoscopy. It can also develop in the induction room, operating room, recovery room or during the transfer of the patient.

Aspiration of gastric contents may result in bronchospasm, edema or bleeding in alveoli, hypoxemia, atelectasis and respiratory insufficiency.

Pulmonary edema, collapse in alveoli, decreased ventilation and perfusion, and hypoxemia develop. In addition, bronchospasm may develop due to the aspiration of gastric content and pneumonia may develop due to atelectasis (Philips 2008; Manley and Belman 2000).

Etiology: All patients with high stomach contents carry a risk of aspiration. Patients who receive excessive sedation, who are in coma, who are pregnant, obese, who have tracheostomy, who have a neuromuscular disease or nasogastric tube are the high-risk patients for aspiration. Diaphragmatic hernia causing an increase in intragastric pressure, gastrointestinal bleeding, intestinal obstruction or flatulence due to positive pressure ventilation also cause aspiration (Philips 2008; Manley and Belman 2000; Akyolcu 2012).

The main symptoms are central cyanosis, dyspnea, tachycardia, bronchospasm, atelectasis, respiratory distress, decreased oxygen saturation, crackle sound in lungs (Akyolcu 2012; Philips 2008).

Individuals with obesity, pregnancy, gastroesophageal reflux, peptic ulcer or a hiatus hernia should be well questioned before anesthesia and H_2 receptor antagonist should be administered preoperatively to prevent aspiration of gastric contents into the lungs. Also, measures should be implemented to protect the airway (Akyolcu 2012).

b. Airway Obstruction

Airway obstruction is the positioning of the patient's tongue on the posterior wall of the pharynx due to the post-anesthesia loss of control of the jaw and tongue muscles. Airway obstruction is the most common respiratory complication encountered in the early postoperative period.

Etiology: Tongue is the most common cause of airway obstruction due to anesthesia. Soft tissue and structures in other parts of the body such as teeth, blood clots and bone fragments are also the factors that cause upper airway obstruction. Laryngospasm, laryngeal edema, bronchospasm, loss of swallowing reflex, accumulation of blood and secretion in the pharynx, trachea or bronchioles, or incorrect head-neck position and external pressure on trachea (neck hematoma) are the other causing factors. Patients who have weak muscles and swollen tongue, who are obese, who have short or large neck, and individuals with Down's syndrome due to having larger tongue compared to others are at risk for airway obstruction.

It is frequently seen in patients who oversleep or lie in supine position postoperatively.

Symptoms and Findings: Hypoxia and paradoxical respiration resulting in an increase in PaCO2 pressure may be observed in the patient. At the following stage, many serious problems, including restlessness, sweating, cyanosis and cardiac arrest may occur in the patient. Other symptoms and findings are the use of respiratory accessory muscles, hypoventilation, crackling and noisy respiration (stridor), wheezing, decrease in oxygen saturation, dyspnea, peripheral or central cyanosis (Akyolcu 2012; Manley ve Belman 2000; Phillips 2008; Güler 2010; Şimşek et al. 2012).

c. Hypoxemia

It is characterized by a partial oxygen pressure (PaO2) below 60 mm Hh and the symptoms such as agitation, hyper/hypotension, tachycardia-bradycardia are seen in patients. The arterial blood gas measurement values are important. The causes of hypoxemia are the decrease in respiratory movements, accumulation of lung secretions (in bronchi) and development of atelectasis. In addition, aspiration, bronchospasm and pulmonary edema are among the other causes.

The main indications are the decrease in respiratory sounds, the decrease in oxygen saturation, tachypnea, dyspnea, tachycardia, hypotension, bronchospasm (Akyolcu 2012; Manley and Belman 2000).

d. Hypoventilation

Insufficient or reduced alveoli lead to decreased ventilation oxygenation, resulting in decreased respiration rate and effort, hypoxemia and decreased partial oxygen pressure (PaO2) (hypoxemia) and hypercarbia. It can also result from reduced tonus of the respiratory muscles or depressed respiratory center (Akyolcu 2012; Phillips 2008).

Etiology: The most common factors are deterioration of the structure of alveoli, pain, dispositioning, and overfull bladder. In addition, permanent paralysis in respiratory muscles, suppression of the respiratory center, increased resistance in the respiratory tract, and decreased lung and thoracic wall compliance are the factors that cause hypoventilation. Insufficient ventilation that develops in lungs due to medullary depression by narcotic or anesthetic agents, spinal or epidural drug effects, low cardiac

output, blood loss and airway narrowing are the other causing factors (Phillips 2008; Manley and Belman 2000).

Symptoms and Findings are tachycardia, pale skin, central cyanosis (hypoxia-related), hypercapnia, decrease in respiratory rate, acid-base imbalances (Phillips 2008).

Shivering

Shivering is a normal response that is given by hypothalamus, the thermoregulatory center, in order to increase the body temperature. Shivering frequently occurs due to a rapid decrease in body temperature during open heart or brain surgery operations. Shivering greatly increases metabolism rate and oxygen demand by 400-700%. Thus, patients with insufficient respiratory functions become insufficient to meet the increasing oxygen demand. Patients who have undergone long-lasting surgery, excess fluid or blood loss and large abdominal surgery are at risk for developing hypothermia. In this respect, the muscle relaxants given to the patients can prevent the increase of body temperature by enabling patients to shiver effectively.

e. Pulmonary Edema

Pulmonary edema occurs as a result of fluid accumulation in alveoli and intestinal area. It may develop due to the increase in capillary permeability in surgical patients. Blood circulation decelerates in lungs. Hypoxia occurs due to decreased membrane perfusion in the capillary membrane. Pulmonary edema is no clinically different than acute respiratory distress syndrome (ARDS).

Etiology:

Pulmonary Factors

- Long-lasting lung destruction (cigarettes, etc.)
- Aspiration pneumonia
- Severe pulmonary infection
- Major thoracic or vascular surgery
- Pulmonary embolism

Extra-pulmonary Factors

- Coronary artery bypass surgery
- Blood transfusion
- Drug intoxication
- Multiple fractures

In a study conducted, it was reported that high mechanical ventilation pressure increased the risk of pulmonary edema by 3.3 fold and that increased level of airway pressures during operation lead to edema due to barotrauma in the lung (Günlüoğlu 2010).

Symptoms and Findings are tachycardia, dyspnea, peripheral vein fullness, hypoxemia, severe respiratory distress ***(despite O_2 support)***, use of accessory muscles, cyanosis, dry cough, chest pain, numbness, anxiety, agitation, confusion, presence of extensive infiltration on chest X-ray, pulmonary capillary wedge pressure (PCWP) below 18 mmHg (Akyolcu 2012; Günlüoğlu 2010; Manley and Belman 2000).

f. Pulmonary Embolism

Pulmonary embolism is the biggest cause of death in the postoperative period, especially those following major surgical procedures (abdominal, thoracic) and is responsible for 15% of postoperative deaths. It occurs due to the clogging of the pulmonary artery or its branches with blood clots or fat (fat embolism).

Especially in deep veins (pelvic, leg), low pressure is an important factor that leads to thrombus formation. It may develop due to the deceleration of blood flow in lower extremities during long-lasting surgical procedures. Fat embolism can also be seen after blood transfusions, intravenous fat emulsion infusion, and bone marrow transplantations (Uras 2006).

Etiology: Long-lasting surgical intervention, obesity, dehydration, congestive coronary failure, atrial fibrillation, coagulation disorders.

Symptoms and Findings: thrombophlebitis, edema, redness, lower-leg pain, positive Homan's sign, dyspnea, hypoxia, cough, cyanosis, syncope, sweating, fever, confusion, anxiety, D-dimer test (+), pleural pain, tachypnea, tachycardia, crackling sound, hypotension (Akyolcu 2012; Phillips 2008; Manley and Belman 2000).

g. Bronchospasm

It is a closure or embolization which occurs in bronchi as a result of long-lasting severe contraction of bronchi and bronchial smooth muscles. It leads to decreased tissue perfusion, decreased PaO2 and increased PaCO2.

Etiology: It is frequently seen in patients with gastric content aspiration, endotracheal intubation, allergic reactions, vasovagal reflex, and asthma, foreign bodies in the tracheobronchial area, incorrect head-neck positions and COPD.

Symptoms and findings: Tachypnea, dyspnea, hypoxemia, respiratory effort, wheezing and central cyanosis are (Akyolcu 2012; Phillips 2008; Manley and Belman 2000).

In the study conducted by Başoğlu et al. (2000), respiratory complications developed during postoperative period (19%) were atelectasis and/or pleural fluid (42%), pneumonia and/or respiratory insufficiency (25.3%), COPD inflammation (10.5%), acute bronchitis (10.5%), ARDS (5.3%), bilateral pleural fluid (5.3%).

2. LATE POSTOPERATIVE RESPIRATORY COMPLICATIONS

A report about the patient is given to the clinical nurse before the patient leaves the postoperative care unit (POCU). Since the early postoperative period is short, many complications can develop in the clinic in the late postoperative period. The most common late postoperative respiratory complications are atelectasis, pneumonia and pulmonary edema (Akyolcu 2012; Manley and Belman 2000).

a. Atelectasis

It is the collapse of some parts of the lungs and is one of the most common postoperative respiratory complications. It occurs with the collapse developed due to secretion and amount of surfactants that surround the alveoli and provide their patency and to the prevention of air passage to the alveoli blocked by secretion. Pneumonia may develop due to long-lasting secretion presence (72 h <) and contamination of secretion (Akyolcu 2012; Phillips 2008; Uras 2006; Manley and Belman 2000).

It is more common among old, obese, smoking individuals and people with respiratory diseases. The incidence rate after abdominal and thoracic surgery is between 6% and 75% (Erk 2011).

Etiology: The main factors affecting surfactant production are increased mucous production, retention of secretion, narrowing in bronchi (due to surgical intervention), intubation, mucous membrane dryness and acute or chronic lung infections due to insufficient fluid intake, irritation of anesthetic gases, clothes close-fitting abdominal region, continuous resting in recumbent position, hypoventilation, insufficient pain control, ineffective coughing and cigarette use.

Symptoms are high fever, tachycardia and tachypnea, dyspnea, restlessness and cyanotic appearance, increased pain due to coughing, decreased respiratory sounds, crackling sound, increased opacity on chest X-ray (on the area where collapse develops) (Akyolcu 2012; Phillips 2008; Manley and Belman 2000).

b. Pneumonia

It is an infection that occurs in the lung parenchyma. In addition, pneumonia is an important cause of morbidity and mortality in the postoperative period (Licker 2002; Günlüoğlu 2010).

Etiology: The causes of pneumonia in the late postoperative period are the accumulation of secretions and the colonization of microorganisms on non-healed atelectasis area or the dissemination of pathogen microorganisms to the lungs by the effect of unrecognized aspiration (Günlüoğlu 2010).

Insufficient treatment of the pain during the postoperative period may lead patient not to cough effectively, to fail to remove the secretions, and thus to pneumonia. However, the treatment of pain with frequent and high-dose narcotics can lead to sedation and loss of cough reflex, as well as to ileus, vomiting and tendency to aspiration, and subsequently to pneumonia (Manley and Belman 2000).

The Main Symptoms are fever, tachycardia, cough, dyspnea, a decrease in breathing sounds, the presence of infiltration on radiological images.

In the study conducted by Stephan et al. (2000), it was reported that the mortality rate in patients who developed postoperative respiratory complications increased by 14.9 fold compared to those who did not. The main cause of this increased mortality was reported to be hospital-acquired pneumonia (Wada et al. 1998).

c. Pulmonary Edema

It occurs as a result of blood clots or fat embolism after major surgical interventions (abdominal and long bone surgeries). It develops with the occlusion of lung capillaries by the resulting thrombus and with the decrease of blood flow. The main symptoms are dyspnea, pleural pain, fever, and hemoptysis (Akyolcu 2012; Manley and Belman 2000).

In a study conducted, it was seen that respiratory complications mostly developed in general surgery patients by general anesthesia (Yavaşçaoğlu et al. 2009). On the other hand, in the study conducted by Başoğlu et al. (2000), it was found that the rate of respiratory complication development was higher in patients who have undergone laparotomy and it was stated that it occurred as a result of decreased diaphragmatic and abdominal muscles activity due to laparotomy-related pain.

In the study conducted by Annakaya et al. (2005), it was found that the most common respiratory complications encountered during the postoperative period were diaphragmatic dysfunction, bronchospasm, atelectasis, and pneumonia. In addition, prolonged mechanical ventilation and pleural effusion were found significantly higher in the upper abdominal and thoracic surgeries than those in the lower abdominal and other surgeries.

REFERENCES

Lemone P, Burke K (2008). Nursing care of clients having surgery. In: Medical Surgical Nursing Critical Thinking in Client Care (4th ed.). New Jersey; Pearson Prentice Hall, Volume 1: 53-83.

Smith, D.J (2004). Nursing management postoperative care. In: S.M. Lewis, M.M. Heitkemper, S.R. Dirksen (Eds.), Medical Surgical Nursing: Assessment and Management of Cilinical Problems (6th ed.). St. Louise: Mosby; 393-414.

Warner DO, (2000). Preventing postoperative pulmonary complications: the role of the anesthesiologist. Anesthesiology, 92:1467-72.

Annakaya, A., Tozkoparan, E., Deniz, Ö., Bedirhan, İ., Bilgiç, H., Ekiz, K., Demirci, N. (2005). Postoperatif Solunumsal Komplikasyonlar, Toraks Dergisi, 6(2):104-108

Uras, C. (2006). Ameliyat sonrası komplikasyonlar, www.ctf.edu.tr/.../pdf/559/Ameliyat_Sonrasi_Komplikasyonlar.pdf, erişim tarihi: 28.03.2012

Başoğlu ÖK, Bacakoğlu F, Ersin S, Erikoğlu M, Köse T. (2000). Üst Karın Cerrahisinde Postoperatif Solunumsal Komplikasyon Riskinin Preoperatif Parametrelerle İlişkisi. Toraks Dergisi,;2: 17-22.

Yavaşçaoğlu, B., Kaya, F., Özcan, B., Uzunalioğlu, S., Güven, T., Yazıcı, Ş., Ocakoğlu, G. (2009). Erişkinlerde Anestezi Sonrası Görülen Komplikasyonların Retrospektif Değerlendirilmesi, Uludağ Üniversitesi Tıp Fakültesi Dergisi, 35 (2) 73-78

Fisher BW, Majumdar SR, McAlister FA. Predicting pulmonary complications after nonthoracic surgery: a systematic review of blinded studies. Am J Med 2002; 112:219–225

Stéphan F, Boucheseiche S, Hollande J, Flahault A, Cheffi A, Bazelly B, et al. Pulmonary complications following lung resection: a comprehensive analysis of incidence and possible risk factors. Chest. 2000 Nov; 118(5):1263-70

Wada H, Nakamura T, Nakamoto K, Maeda M, Watanabe Y. Thirty-day operative mortality for thoracotomy in lung cancer. J Thorac Cardiovasc Surg 1998;115:70-3

Licker M, Spiliopoulos A, Frey JG, Robert J, Höhn L, de Perrot M, et al. Risk factors for early mortality and major complications following pneumonectomy for non-small cell carcinoma of the lung. Chest 2002; 121:1890-7

Ozdilekcan C, Songur N, Berktaş BM, Dinç M, Uçgül E, Ok U. Risk factors associated with postoperative pulmonary complications following oncological surgery. Tuberk Toraks. 2004; 52(3):248-55

Şimşek, T., Alper, I., Dizdar, G. (2012). Postanestezi bakım ünitesi komplikasyonları, anestezi.med.ege.edu.tr/sem/pabu_komp.ppt, erişim tarihi: 28.03.2012

Erk, M. (2011).postoperatif komplikasyonların önlenmesine yönelik gitişimler, *file.toraks.org.tr/.../1513/22e8jtza5ry4nky.ppt, erişim tarihi: 27.03.2012*

Günlüoğlu, Z. (2010). Postoperatif Pulmoner Komplikasyonlar, Journal of Clinical and Analytical Medicine

Phillips, N. (2008). Potential Perioperative Complications, (In) Operating room Technique, 609-614
Akyolcu, N. (2012). Ameliyat Sonrası Bakım, Cerrahii Hastalıkları Hemşireliği I, Nobel Kitabevi, İstanbul.
Burke K, Brown EM, Eby L. (2011). Medical surgical nursing care. 3rd. United States of America: Upper Saddle River, N.J.: Pearson; p. 317-339.

Chapter 21

Health Care Needs of Children with Down Syndrome

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Down Syndrome

Down syndrome (DS) is the most common genetic causes of mental retardation. DS occurs in 1 in 691 to 1,000 live births. It has no link to race or economic level, but incidence is related to maternal age. Incidence increases as the mother's age increases: 1:4,000 among women in their twenties, 1:900–1:500 among women aged 30–34, 1:350 in women aged 35, 1:100 among women in their forties (Beytut, 2013; Bryant, 2013; Kusters, 2009; Riper, 2007).

The cause of DS is not known, but studies support multiple causalities. Trisomy 21 is caused by the production of an extra copy of chromosome 21 in the cleavage of meiosis. Approximately 93% of children with DS are in the Trisomy 21 group. In 2.5% there is mosaicism, which is diagnosed when there is a mixture of two types of cells (some containing the usual 46 chromosomes and some containing 47) (Bryant, 2013; Small, 2016; Nadel, 2003; Frydman, 2012). Children with DS have small ears, which are curved and below eye level. The nose is small and flattened. Prominent epicanthic folds, Brushfield stains, and slanted eyes are typical. Hearing loss (75%) is seen due to recurrent infections (otitis media) and the most common medical conditions are obstructive sleep apnea (50%–79%); eye disease (60%); congenital heart defects (50%); neurologic dysfunction (1%– 13%), and thyroid disease (4%–18%) (Whaley & Wong, 1987).

Prolonged crisis and chronic sorrow are reported as negative symptoms by parents of children with DS (Damrosch & Perry, 1989; Olshansky, 1962). After a baby is diagnosed with DS (prenatally or postnatally), parents should be trained in medical management, maintenance of the home environment, early intervention, and education, which can significantly affect the quality of care. In this article, the authors will describe the health care needs of babies/children/adolescents with DS.

Health Care Requirements

1. At the Hospital

Infants with DS are usually diagnosed at birth because their physical characteristics are unique. Parents should be informed of the diagnosis at this time (Whaley & Wong, 1987). After birth, the baby should be close to his/her mother on the postnatal ward. Babies with indications for vomiting, polycythemia, cardiac failure, cyanosis, anemia, feeding issues, etc. should be admitted to an intensive care unit (Helvacı, 2014; Small, 2016)

- The baby must not be discharged until it can feed and/or the parents have been taught to manage feeding
- The parents/carers should be informed about feeding on the postnatal ward

soon after thebirth

- If the results of cardiovascular examination are normal, an echocardiogram needs to be arranged within the first week of life
- An ECG should be performed on all neonates with DS. If congenital heart disease is suspected clinically, cardiologists should be consulted for urgent assessment
- Parents should be informed about: the condition of DS, local resources, medical conditions associated with DS
- The timing of discharge will vary. The baby should not be discharged until at least 48 hours have been spent in the hospital. (Small, 2016).

2. Feeding and Weaning

Morphological deviations affect the oral cavity and dentition and lead to problems with sucking, swallowing, and salivation (Mitchell, Call, & Kelly, 2003; Bradley & McAlister, 2004; Musich DR, 2006). Lewis and Kritzinger (2004) found that 75% of their participants spent between 30 and 60 minutes feeding their babies at each meal in the first three months of life. Wolf and Glass (1992) stated that feeding for more than 30 minutes can lead to feeding problems. If there is no problem, the child with DS should be breastfed. When mothers breast feed, the maternal stress associated with the diagnosis of DS decreases (Wolf & Glass, 1992). Heart conditions lead to problems with breastfeeding since babies may become tired or breathless. Mothers of such babies can express breast milk to build up their milk supply. A naso-gastric tube can be used to feed with milk (Forchielli, McColl, Walker, & Lo, 1994).

Weaning – Babies with DS should be introduced to solids at the same time and in the same way as other babies, though it may take longer than other children (DSA, 2012).

3. Growth

Statural growth is a good indicator of health during childhood. The growth retardation of children with DS commences prenatally. Due to differences in growth and development, standard growth charts should not be used for children with DS. If they are used, diseases which lead to growth retardation, such as cardiac disease or hypothyroidism, may be overlooked (Myrelid, Gustafsson, Ollars, & Annerén, 2002).

4. Cardiac Disease

About half of children with DS have congenital heart disease requiring surgical repair (Roizen, 2003; Kuzucu et al., 2008). It is important to identify serious cardiac problems in the first two months as early treatment may be required. Hayes et al. (1997) reported a 47% mortality rate due to cardiac anomalies in DS patients in a ten-year follow-up study. The following heart checks are recommended:

- After birth, a pediatric cardiologist should evaluate babies whose echocardiogram results are not normal
- If the results of cardiovascular examination are normal after the first week of life, an echocardiogram needs to be arranged
- An ECG also should be performed on all neonates with DS. If congenital heart disease is suspected clinically, cardiologists should be consulted for assessment
- By the age of six weeks, formal heart assessment, including echocardiogram, should be conducted
- At all ages, it is necessary to be alert for signs or symptoms of cardiac disease

- Besides routine health checks, the heart should be listened to for signs of acquired heart disease. (Small, 2016; Roche, Murphy, & Joan, 2015).

5. Thyroid Disease

Thyroid dysfunction is common in adults with DS. Onset often occurs in childhood. Half of patients are diagnosed with hypothyroidism before the age of eight. Prevalence increases with age. Thyroid disorders are often symptomatic and have significant morbidity. The signs of thyroid disorders cay be mistakenly attributed to other illnesses (Karlsson, 1998; Roche, Murphy, & Joan, 2015; Chen et al., 2007; Murphy et al., 2008).

- All babies should be screened for hypothyroidism
- Testing of T4, TSH, and thyroid antibodies should be performed twice yearly from the age of five and throughout life
- If lethargy and/or cognitional, growth, or weight changes are seen, thyroid disease should be suspected. (Takahashi et al., 1979; Grant & Smith, 1988; Prasher, 1995).

6. Ophthalmic Disorders

An ophthalmologist should examine babies with DS. Cataracts which may progress slowly and refractive errors which lead to amblyopia are common ophthalmic disorders in DS (Berk et al., 1996).

- Children with DS should consult a pediatric ophthalmologist or ophthalmologist for strabismus, cataracts, and nystagmus (Berk et al., 1996)
- Children with DS should undergo a full assessment by an optician/optometrist at least every two years between the ages of five and 13 and every three years between the ages of 13 and 21
- When examination is difficult, assessment should be done by a specialist optician or ophthalmologist
- To prevent amblyopia and encourage normal visual development, strabismus and refractive errors should be handled at an early age. (Woodhouse et al., 1996; Stephen et al., 2007).

7. Hearing Impairment

Hearing problems are more prevalent in individuals with DS. These problems may be mild, moderate, severe, or profound. Conductive and/or sensorineural loss may be present at any age (Cunningham & McArthur, 1981; Dahle & McCollister, 1986). The incidence of hearing loss in DS is reported to be very high during the first year of life (Raut et al., 2011).

- *Conductive loss* is a common problem, and is caused by recurrent infections in the middle ear (otitis media) and/or glue ear (Balkany et al., 1979)
- *Sensorineural loss* occurs when the cochlea or the acoustic nerve is damaged. Balkany et al. (1979) stated that this type of loss becomes more severe in later childhood

- Audiology services should be accessible for children with DS at all ages (Cunningham & McArthur, 1981)
- Eye examinations should be performed between the sixth and tenth month regardless of the baby's previous evaluations
- These audiological assessments should be performed yearly until age five and

thereafter twice yearly for life (Schwartz & Schwartz, 1978).

8. Orthopedic Problems

The musculoskeletal problems in DS arise from abnormal collagen type 6 that forms part of the structure of ligaments and other musculoskeletal tissues. This results in excessive joint laxity and, together with the muscle hypotonia which is also characteristic of the disorder, affects the hip, knee, feet, and spine (Diamond et al., 1981, Cristofaro et al., 1986). Parents should contact their physician if they see the following symptoms:

- Stiff neck
- Neck pain
- Torticollis
- Head tilt
- Change in bowel or bladder function
- Change in general function
- Change in gait or in use of arms or hands
- Weakness

8.1 Atlantoaxial Instability

Atlantoaxial instability (AAI) is seen as a result of excessive movement at the junction between the atlas (C1) and axis (C2) (because of bony or ligamentous abnormality) (Bryant, 2013). Neck pain, weakness, and torticollis are symptoms of AAI. Affected children are at risk for spinal cord compression. Approximately 15% of patients with DS (in the pediatric age group) have AAI. Almost all the persons affected are asymptomatic (Peuschel & Scola, 1987). If a child has significant neck pain, radicular pain, weakness, gait difficulties, hyper-reflexia, spasticity or change in tone, change in bowel or bladder function, or other signs or symptoms of myelopathy, parents should consult a specialist (Roche, Murphy, & Joan, 2015).

- Normal radiography is not routinely recommended because it cannot prevent spinal cord problems (Marilyn & Bull, 2011)
- If significant radiographic abnormalities are present, the patient should be referred to a pediatric neurosurgeon or pediatric orthopedic surgeon with expertise in evaluating and treating atlantoaxial instability (Brockmeyer, 1999)
- There is no evidence that the child is at risk for cervical spinal cord injuries from doing sports so children with DS should not be excluded from sporting activities (Morton et al., 2012)
- Children with AAI and neurologic signs should be restricted from engaging in all strenuous activities (AAP Committee on Sports Medicine, 1984)

9. Immunization

People with DS should be offered all the routine immunizations suggested by their local immunization schedule. The schedules differ a little from country to country, but are broadly similar (Marder, 2014). The Expanded Immunization Program Circular, published in Turkey in 2008, states that children with DS should not be prevented from being immunized.

Table 1: Down Syndrome Medical Management Guidelines

	Growth	Hearth	Thyroid	Sight	Hearing
0–2m	Length/Weight/Head circumference (use neonatal infant and close monitoring charts for preterm babies) Mother should be supported for breastfeeding	Clinical Examination Electrocardiogram (ECG) and Echocardiogram (ECHO)	Routine Guthrie test (TSH, T3, T4, free T4)	Congenital cataracts, congenital glaucoma and other eye abnormalities should be checked	National neonatal hearing screening
2–12m	Growth assessment should be done at each routine visit	Infective endocarditis advice/information if necessary	Full thyroid function tests or TSH (finger prick) yearly where available	Visual behavior, check for squint	Otoscopy, Impedance, hearing thresholds test should be reviewed
12–36m	Growth assessment should be done at each routine visit - if overweight is suspected, BMI is used in children above 2 years of age	Infective endocarditis advice/information if necessary	Full thyroid function tests or TSH (finger prick) yearly	Formal ophthalmological examination should be conducted around 18 months and 2 years	Full audiological review
36m–12y	Growth (Height/Weight) assessment and advice as above	Should be careful about mitral valve regurgitation (MVR)	Thyroid function tests, from age 5 year throughout life	2 yearly ophthalmological examinations (refraction and fundal examination and focusing ability)	2 yearly audiological review
12–18y	• Infective endocarditis information to be given • Attention should be paid to respiratory and sleep interruption problems • Vision checks every 2 years between ages 5 and 13 and every 3 years between ages 13 and 21 • Hearing checks yearly until age 5 and thereafter every 2 years • Dental control every year • Thyroid tests twice yearly from 5 years (venous) or TSH (fingerprick) annually • General physical and neurological controls. • Obesity • Sexual education • Evaluation for behavioral disorders, if any • Education should continue to include independent living and self-care.				
>18y	• Echocardiograms should be taken when young people without any heart disease are 18 to 20 years old • Age-related function impairment, memory (Alzheimer), and general physical problems should be checked				

REFERENCES

American Academy of Pediatrics, Committee on Sports Medicine. Atlantoaxial instability in Down syndrome. Pediatrics. 1984;74:152-154

Backman, Grever-Sjolander, AC., Bengtsson, K., Persson, J., Johansson I. (2007). Children with Down syndrome: oral development and morphology after use of palatal plates between 6 and 48 months of age. Int J Paediatr Dent, 17:19–28

Balkany, T.J., Mischke, R.E., Downs, M.P. & Jafek, B.W. (1979). Ossicular abnormalities in Down's syndrome. Otolaryngology: Head and Neck Surgery, 87, 372-384.

Berk, A.T., Saatci, A.O., Erçal, MD., Tunç, M., Ergin, M. (1996). Ocular findings in 55 patients with Down's syndrome. Ophthalmic Genet, 17(1):15–19

Beytut, D. (2013). Genetik Sorunu Olan Çocuklar ve Hemşirelik Yaklaşimi.Z. Conk, Z. Başbakkal, H. Bal Yılmaz, B. Bolışık (ed). İçinde Pediatri Hemşireliği. (ss:271-286). Ankara: Akademisyen Kitapevi

Bradley, C., & McAlister, T. (2004). The oral health of children with Down syndrome in Ireland. Special Care in Dentistry : Official Publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry, 24(2), 55–60.

Brockmeyer, D. (1999). Down syndrome and cranio- vertebral instability: topic review and treat- ment recommendations. Pediatr Neuro- surg,31(2):71–77

Bryant, R. (2013). Impact of Cognitive or Sensory Impairment on the Child and Family. In D. Hockenberry, Marilyn Wilson (Ed.), Wong's Essentials of Pediatric Nursing (9th ed., pp. 576–9). Mosby Company.

Chen, M.H., Chen, S.J., Su, L.Y., Yang, W. (2007). Thyroid dysfunction in patients with Down syn- drome. Acta Paediatr Taiwan, 48(4): 191–195

Cristofaro, R.L., Donovan, R., Cristofaro, J. (1986). Orthopaedic abnormalities in an adult population with Down's syndrome. Orthop Trans, 10:150.

Cunningham, C., McArthur, K. (1981) Hearing loss and treatment in young Down's syndrome children. Child: care, health and development, 7 : 357-374.

Dahle, A.J., McCollister, F.P. (1986) Hearing and otologic disorders in children with Down syndrome. American Journal of Mental Deficiency. 90 (6) : 636-642.

Damrosch, S., & Perry, L. (1989). Self-reported adjustment, chronic sorrow, and coping of parents of children with Down syndrome. Nursing Research, 38, 25–30.

Diamond, L.S., Lynne, D., Sigman, B. (1981). Orthopedic disorders in patients with Down's syndrome. Orthop Clin North Am,:57-71.

DSA. (2012). Information about Down syndrome, 1–89.

Forchielli, M. L., McColl, R., Walker, W. & Lo, C. (1994). Children with congenital heart disease: a nutrition challenge. Nutrition Reviews, 52(10), 348–353.

Frydman, A., Nowzari, H. (2012). Down Syndrome-Associated Periodontitis: A Critical Review of the Literatüre. Compend Contin Educ Dent, 33:356-61.

Grant, D.B., Smith, I. (1988). Survey of neonatal screening for primary hypothyroidism in England, Wales and Northern Ireland 1982-84. Br Med J, 296: 1355-8.

Hayes, C., Johnson, Z., Thornton, L., Fogarty, J., Lyons, R., O'connor, M., & Buckley, K. (1997). Ten-year survival of Down syndrome births. International journal of epidemiology, 26(4), 822-829.

Karlsson, B., Gustafsson, J., Hedov, G., Ivarsson, S.A. & Annerén, G. (1998). Thyroid

dysfunction in Down's syndrome: relation to age and thyroid autoimmunity. Arch Dis Child, 79:242-245. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1717691/pdf/v079p00242.pdf

Kusters, M.A.A., Verstegen, R.H.J., Gemen, E.F.A., De Vries, E. (2009). Intrinsic Defect of the Immune System in Children with Down Syndrome: A Review. Clin Exp Immunol, 156:189-93.

Lewis, E., & Kritzinger, A. (2004). Parental experiences of feeding problems in their infants with Down syndrome. Down Syndrome, Research and Practice : The Journal of the Sarah Duffen Centre / University of Portsmouth, 9(2), 45–52. https://doi.org/10.3104/reports.291

Marder, L. (2014). Immunisation; Protecting people with down's seyndrome against infections. DSA journal, 129

Mitchell, R. B., Call, E., & Kelly, J. (2003). Ear, nose and throat disorders in children with Down syndrome. The Laryngoscope, 113(2), 259-63. https://doi.org/10.1097/00005537-200302000-00012

Morton, R.E., Khan, M.A., Murray-Leslie, C., Elliott, S. (1995). Atlantoaxial instability in Down's syndrome: a five year follow up study. Arch Dis Child, 72:115-8. Cervical spine. Revision March 2012

Murphy, J., Philip, M., Macken, S., etal. (2008). Thyroid dysfunction in Down's syndrome and screening for hypothyroidism in children and adolescents using capillary TSH mea- surement. J Pediatr Endocrinol Metab, 21(2):155–163

Musich, DR. (2006). Orthodontic intervention and patients with Down syndrome. The Angle Orthodontist, 76, 734–735.

Myrelid, Å., Gustafsson, J., Ollars, B., & Annerén, G. (2002). Growth charts for Down's syndrome from birth to 18 years of age. Arch Dis Child, 87(cm), 97–103. https://doi.org/10.1136/ADC.87.2.97

Nadel, L. (2003). Down's Syndrome: A Genetic Disorder in Biobehavioral Perspective. Genes Brain Behav, 2:156-66.

Olshansky, S. (1962). Chronic sorrow: A response to having a mentally defective child. Social Casework, 43, 190–193.

Peuschel, SM., Scola, FH. (1987). Atlantoaxial instability in individuals with Down syndorme: epidemiologic, radiographic and clinical studies. Pediatrics,80:555-560

Prasher, V. (1995). Reliability of diagnosing clinical hypothyroidism in adults with Down syndrome. Aus. and NZ J of Developmental disabilities, 20: 223 - 233.

Raut, P., Sriram, B., Yeoh, A., Hee, K. Y., Lim, S.B., & Daniel, M.L. (2011). High prevalence of hearing loss in Down syndrome at first year of life. Annals of the Academy of Medicine-Singapore, 40(11), 493.

Riper, M.V. (2007). Families of Children with Down Syndrome: Responding to "A Change in Plans" with Resilience. J Pediatr Nurs, 22:116-28.

Roche, E., Murphy, J., & Joan, H. M. H. (2015). Children & Adolescents Down Syndrome in Ireland Children & Adolescents Down Syndrome in Ireland Approved Guidelines, 1–30.

Schwartz, D.M., Schwartz, R.H. (1978) Acoustic impedance and otoscopic findings in young children with Down's syndrome. Arch Otolaryngol, 104.652-656

Small, M. (2016). Care Pathway for Children and Adults with Down's syndrome Birth to adulthood.

Stephen, E., Dickson, J., Kindley, A.D., Scott, C.C., Charleton, P.M. (2007). Surveillance of vision and ocular disorders in children with Down syndrome. Dev Med Child Neurol, 49(7):513–515

Takahashi, H., Bordy, M.D., Sharma, V., Grunt, JA. (1979). Hyperthyroidism in Patients with Down's syndrome. Clinical paediatrics, 18: 273 - 275.

URL: National Down Syndrome society: https://www.ndss.org/about-down-syndrome/down-syndrome/ (Accessed: 12 May 20)

Whaley, L. F., & Wong, D. L. (1987). Nursing Care of Infant and Children (3th ed.). Toronto: Mosby Company.

Wolf, L.S. & Glass, R.P. (1992). Feeding and Swallowing Dis- orders in Infancy. Assessment and Management. (e-book) Tucson: Therapy Skill Builders.

Woodhouse, JlM., Pakeman, V.H., Saunders, KlJ., et al. (1996). Visual acuity and accommodation in infants and young children with Down's syndrome. J Intellect Disabil Res, 40(1):49–55

Chapter 22

Communication and Ways of Managing Difficult People

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INTRODUCTION

Communication is an interaction which is based on negotiation, sharing ideas and feelings and conversation between two or more individuals. Communication is the most important tool of mankind. There is almost no moment when there is no communication in human life. "Expressing oneself" is one of the most important requirements of a person. For this reason, an individual always finds a way to express him/herself no matter what the circumstances are.

When individuals ask themselves the questions such as "What is happiness?" "What is the purpose of my life?" they usually respond with the answers such as "To live happily", or "to make success". When an individual has longing for what he/she cannot have, when he/she tries to change the outside world, when he/she has negative thoughts, when he/she does not know the value of the moments he/she lives or when he/she feels lonely, he/she becomes unhappy. On the basis of happy and peaceful life, there lies healthy communication. The individual has to adapt to the changes. In this process, the emotional intelligence plays an important role.

Daniel Goleman defines "emotional intelligence" as the ability of an individual to know him/herself, to understand others' feelings, and to regulate his/her feelings in a way that enriches his/her life. According to the outcomes of the studies on the subject of emotional intelligence made by Goleman (1998) and Mayer *et al.* (2008) emotional intelligence can define the academic achievement to a certain level. As long as the individual knows him/herself and manage him/herself, if he/she has a strong motivation, if he/she can empathize with others, and if he/she has communication skills and social skills, then he/she is emotionally intelligent (Yalçın, 2013).

Emotional Intelligence

Emotional intelligence can be defined as an individual's ability of understanding his/her emotions, putting him/herself in place of others, organizing his/her feelings in a way that enriches his/her life. Emotionally intelligent individuals can control their own body language. They are sensitive to the body language of others. They can communicate empathically. They establish positive relationships with people. They are ambitious about change, able to orient themselves, tolerant and successful in stress management.

Core Competencies for Emotional Intelligence

- Self-Awareness (Self-consciousness)
- Self-direction
- Motivation
- Empathy
- Social Skills and

- Communication Skills

Self-Awareness

Self-awareness is an individual's abilities of recognizing his/her emotions, needs and objectives and making his/her preferences.

An individual, who is self-aware is;

Aware of his/her feelings and thoughts. He/she controls him/herself during his/her angry moments. He/she is aware of the limits of his/her performance. He/she does not avoid criticisms, but trusts him/herself. He/she establishes healthy communications.

Self-Direction

An individual's ability to direct him/herself by controlling the emotions and thoughts that he/she possesses.

A person, who is self-directed;

Controls his/her emotions. For example, he/she is successful in responding to stress. Everyone may face frustrations and disappointments in life, but the one who is self-directed, can manage to control these undesirable situations. He/she acts comfortable in the situations of change and uncertainty.

Motivation

Motivation can be defined as one's ability to motivate him/herself and to have the desire and aspiration to accomplish at all instances. This ability is particularly beneficial while struggling with difficulties. The self-governing person, know how to motivate him/herself.

An individual who has a strong motivation;

is successful. He/she is committed his/her job with passion. He/she seeks for creative opportunities. He/she has limitless energy. He/she is happy to work and accomplish. He/she has high self-esteem.

Empathy

Empathy is one's ability of understanding the emotions and thoughts of other person by putting him/herself in the place of the other person. In other words, it is to be able to see the external world from someone's point of view. The origin of the empathy is self-awareness.

A person who knows empathising; takes the feelings and thoughts of the other person into account, shares them in a conversation and clarifies issues. He/she contributes to establish a healthy communication in order to solve the problems.

Empathy in the work life is effective in people's fulfilling their duties, in the realization of communication correctly, in ensuring mutual understanding and trust. In order for the development of empathy, there must be an interaction between the two persons and this interaction should have psychological and interpersonal aspects.

It is observed that children whose emotional reactions are restricted during infancy cannot express themselves during the developmental periods and at the same time cannot understand other people. Emotional neglect of the child, constant verbal abuse with defamation and harassment causes emotional atrophy. It has been observed that these children have exhibited empathy deficiency when they grew up and generally experienced psychological problems. People who have empathy skills are happier as they are more stable in emotional terms and can establish more meaningful

relationships.

Social Skills

Social skills cover the abilities of establishing relationships with others and maintaining these relationships for a long time. It is with this competence to establish good interpersonal relationships as well as to ensure the team spirit and demonstrate the managing abilities.

Those Who Have Social Abilities;

Collaborate with people, establish friendships, and sociable. They have an extensive social environment.

Communication Skill

Communication is the process of understanding and explaining emotions and thoughts by means of messages. According to Özer (2006), one's communication skills are composed of investigation, inquiry and to be integrated about the event that one is confronted with.

In order to develop communication skills;

An individual should express him/herself open and clearly and listen to others carefully and understand them. Individuals' understanding their and other people's emotions, expressing and reflecting them their lives is a process strengthening social skills, achieving success, and thus contributing to social development. The success of this process constitutes the basis of happiness in the individual's life.

Healthy Interpersonal Communication can be defined as respecting the other people, accepting their presence, making them to feel that they are important and valuable, embracing them as they are and behaving naturally.

Dökmen (2003) explains communication as "process of producing and transferring information and attaching meaning". The basic skill for happy life is communication. Healthy interaction makes it necessary to be aware of the existence of important items forming communication. The elements of communication are Source (Sender), Message and Target (Recipient).

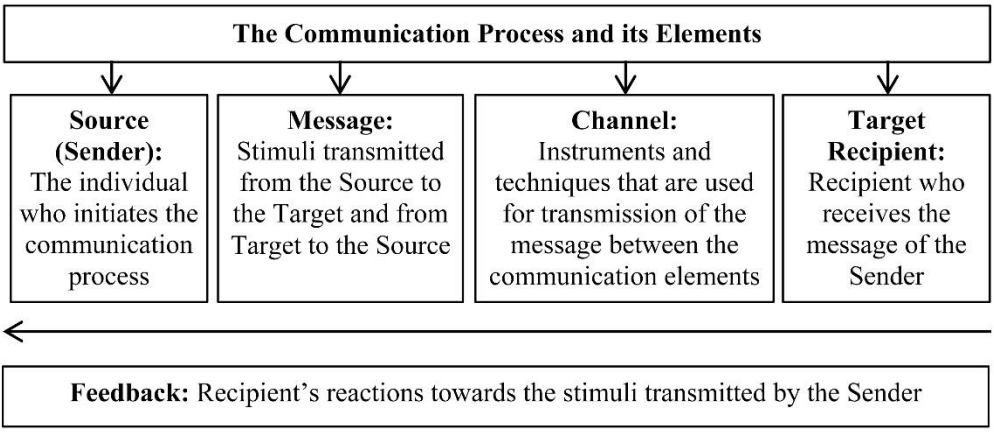

Figure 1: Communication processes and its elements

There is an exchange of ideas, attitudes and emotions between the source and the recipient. Şirin & Izgar (2013) thus states that in this way people try to make sense of the messages. In the communication model; the sender creates the message and transforms into symbols through the channels (Karcıoğlu et al., 2009). On the other hand, the recipient receives the message, deciphers it and after that transmits it as feedback. The communication process continues in this way. It is possible for the person to receive feedback via internal communication, as well as for the external environment related to him/her. Such type of interaction prevents misunderstandings. Barriers are the factors that negatively affect the communication process. The communication channel used by the individual plays an important role in determining the level of communication. For example, very loud music sound etc.

Types of Communication

When the individual expresses him/herself, he/she makes use of verbal or non-verbal communication. Non-verbal communication is carried out with body language. Body language is the non-verbal messages that are created by body can be seen with the eyes. Altıntaş & Çamur (2004) explains this concept as the body's presentation of its own stance by encoding in the face of a situation. Schober (2001) on the other hand, states that the verbal language is the transfer of the voices to the other person within the framework of the relevant mother tongue rules.

Oral Communication is defined as speaking and listening whereas, non-verbal communication is defined as body language and emotions.

Nonverbal communication while giving important and reliable hints for construing and interpreting verbal content, at the same time supports and improves verbal communication. But since verbal communication is about emotions, it could be obscure or polysemous.

Oral Communication

Oral communication is the transmission of emotions, thoughts, impressions and plans verbally. Verbal communication is divided into two sub-classes as "lingual" and "trans-lingual". The conversations between people are communications through language. Translingual communication, on the other hand, is about the quality of voice; it covers the aspects of voice such as its tone, its speed, magnitude, the words which are emphasised, pauses and etc.

Voice tone

No matter what the content of the message is, the tone of voice does not depend on it. The tone of the person who is saying "No, I'm not angry with you" with words, should not be angry. In communication, the listener is sensitive to the tone rather than the words used. The incompatibility between the words and the voice tone creates anxiety and restlessness in the listener.

Fluency

The fluency in speaking is not tied to the content of the message too. Those who speak with many pauses between their words, filling the gaps with phonemes and words such as "hmm, eee, aaaaaa" are considered to be timid. The messages transmitted by those who speak fast, cannot be understood because they cannot be listened well. In the healthy communication, speech is fluent enough not to disturb listeners.

Non-verbal communication

Cüceloğlu (1992) states that nonverbal communication is of capital importance and very effective as it is used to express emotions (gestures, eye and head movements, body position, facial expressions and interpersonal social distance). It is impossible to conceal the body language. Non-verbal communication is shaped by the culture. According to Kaşıkçı (2002) the cultural differences in body language emerge as a result of changing life styles and habits due to the increase in population, and with respect to the geography and climates.

Head Movements

In this way, different messages can be transmitted to the other party. For example, listen to the person while shaking head during a conversation means to be interested in the subject, and be willing to continue communication.

Eye contact

The intent of the message is often reflected in his gaze. The person with good intents is he can look at the face of the recipient for a certain period without disturbing him/her. In order to be convincing and impressive, some people may use looking at others' eyes as a strategy.

Facial expression

If the person is angry, his smile would not be convincing. The person who clenches his/her teeth while saying he/she loves, would deny his/her words. From the childhood, as much as the words, the emotions of the person are tried to be understood by observing the accompanying facial expressions and the tone of voice.

Body Position

It transmits many messages. It may be thought that the person who gathers his/her arms in his/her chest is defensive or insecure. Putting hands on waist, putting the hands constantly in the pockets can be regarded as being ready to fight, and acting superiority over the other. An immobile, frozen person can be considered a frightened person. In self-confident behaviour, hand and arm movements are not exaggerated.

Table 1: Elements of body language

Body position	Gestures
Mimics	Eye contact
Use of head	Use of feet
The place selected for sitting	Sitting position
Clothing	Distance
Personal care and makeup	Accessories worn

Distance

Interpersonal distance varies with cultures. We become disturbed when strangers approach too close to us. In some societies, hand jokes, body contact are not find odd while in some societies they are rather limited. In the behaviour of assertiveness, the individual speaks at a distance that will not disturb others.

Touching

Touching plays a significant role in expressing emotional state. Touching to whom, when, where and how are determined by non-written social rules. The reason for the often negative implications attached to touching is that it is considered as a sexual behaviour. However, touching is a physical behaviour and the important thing is how the person perceives this issue.

Table 2: The importance of nonverbal communication in communication

Words Sound	}	7%
Body language	→	93%

In communication, nonverbal messages as well as the way how verbal messages are said are important. By observing somebody's body language, the information about the situation he/she is in at that moment can be obtained. In case of a communication failure, emotions become intensified, and somatic changes are observed. For example, a person feels palpitations, his/her skin colour changes, his/her respiration accelerates, hands shakes, cannot stand in place, hand and face movements change. The verbal and non-verbal messages that are used correctly and effectively are reflected in every aspect of the power life and give happiness.

In interpersonal relationships, there are three forms of communication, usually passive, aggressive, and self-confident (assertive).

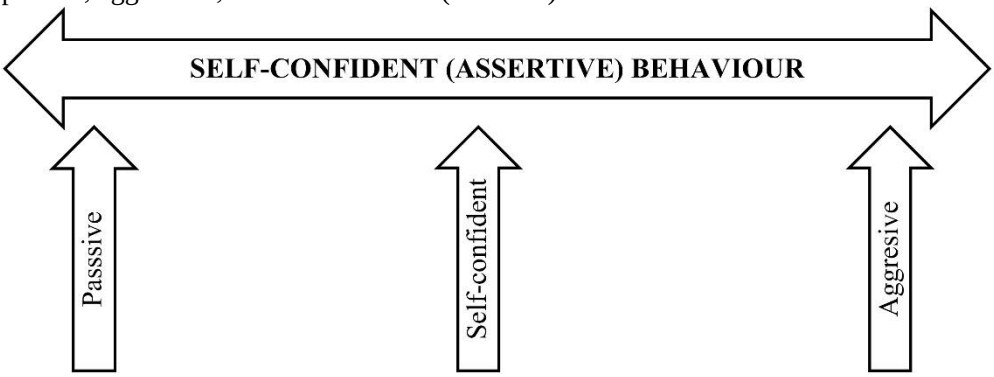

Figure 2: Types of communication in interpersonal relationships

The information contained in the passive message is not clear; in this message type, the individual transmits his requests in an obscure form. He/she does not want to understand his/her own responsibilities in his/her problems; he/she wants to be protected, he/she has unrealistic expectations. Direct aggressive behaviour can be observed. In the face of aggression, the person would respond by attacking in the same way or withdrawing.

Passive behaviour is in a way the suppression of aggression and, when it lasts for a long time, it functions like "the last drop of glass" and an aggression outburst happens. The reaction of "I'm tired, I'm gone now" is a reflection of the anger that accumulates as a consequence of passivity. In assertive behaviour, the individual can explain his/her emotions to others, and this form of interaction raises his/her self-esteem. It is more effective than passive and aggressive behaviours. When the individual is saying "I would like my opinion to be taken for the conclusion about the subject", he/she chose the appropriate words in the communication.

In assertive behaviour, because the verbal and non-verbal elements of communication are in equilibrium, healthy communication is established.

Ways to Manage Difficult People

In social and professional life, different people are encountered. Although interaction can be established easily with some of them, difficulties are experienced while communicating with others. Those who do not have communication skills are considered difficult, and this cause negative emotions in interaction. In order to understand the difficult people, first of all, their attachment behaviours should be examined and understood.

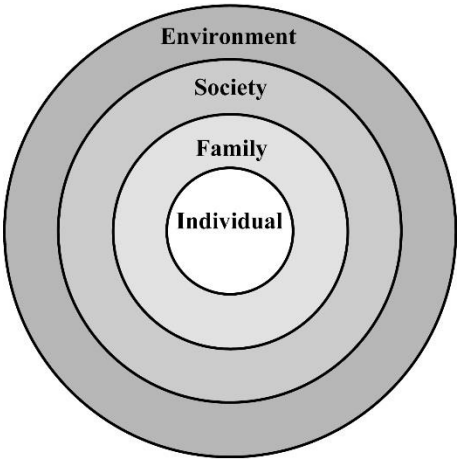

Figure 3: Factors affecting communication skills

Every individual is influenced by personal, environmental and social factors he/she is exposed to. If a child sees loving and caring behaviours within his/her family, he/she develops positive thinking behaviour and consequently, learns establishing healthy communication. Later on he/she develops communication skills with the aid of social interactions by engaging in the peer and friendship groups.

In their studies, Tokmak et al. (2013) emphasize the importance of attachment established in the early childhood in the communication skills and social relationships established in the adulthood.

Babies who have established secure attachment exhibit stress in normal levels when their mothers leave and they become happy when their mothers return. On the other hand, babies who experienced anxious/ambivalent or resistant attachment exhibit intensive stress and anxiety and angry behaviours when their mothers return back. Babies who have established avoidant attachment remain calm when their mothers leave and do not care that their mothers return, when their mothers return. Babies who have developed distributed attachment style exhibit incompatible and unhappy behaviours. Carver & Scheier (2012) point out that mothers of babies who have developed anxious/ambivalent attachment behave inconsistently, while the mothers of babies who have developed avoidant attachment behave indifferently and neglectful.

Table 3: Adult attachment models (Bartholomew & Horowitz, 1991)

Secure Attachment Positive view of self and others Comfortable in developing intimacy, successful communication	**Ambivalent (Anxious Attachment)** Negative view of self, positive view of others Obsessive in relations, unsuccessful communication
Avoidant Attachment) Positive view of self, negative view of others Indifferent to relationships, unsuccessful communication	**Fearful (Distributed Attachment)** A negative view of self and others Afraid of intimacy, unsuccessful communication

Adults who have a secure attachment style, exhibit contented, secure and independent behaviours in establishing intimacy because they positively approach the self and others. If they encounter a problem, they can establish successful communication in order to solve the problem. Adults who have an ambivalent/anxious attachment style are overly addicted and obsessed with relationships. Those who have developed ambivalent/anxious attachment exhibit obsessive and more jealous behaviours during adulthood. Hazan & Shaver (1987) state in their study that these people are stressful and restless in their peer and romantic relationships, and they cannot establish healthy communication. Positive self and negative others model points to indifferent attachment. This is related to avoidant attachment style developed in infancy. Those who develop this style of attachment become less sensitive and inconsiderate in adulthood, so they do not want to have close communication with their friends, and romantic relationships. An adult with fearful attachment style avoids social relationships. This condition is associated with the distributed attachment style developed in infancy (Bartholomew & Horowitz, 1991; in Yılmaz, 2007). Those who have developed distributed attachment exhibit low self-esteem, aggressive attitudes and indifferent behaviours towards their parents and other people except for the members of their families. Wicks-Nelson & Israel (2014) explain in their studies that those who establish distributed attachment establish unsuccessful communication in their social relations.

It has been observed that the children who have developed secure attachment are happy in their interactions, that they have not experienced too many negative events in their lives. It has been stated in different studies that they continue to establish secure relationships in adulthood, and develop positive social behaviours and positive social relationships (Waters et al., 2000).

Kılıç & Kümbetlioğlu (2016) have also point out in their studies that, adult individuals who developed secure attachment style in their early childhood through attachment figures have healthier, successful and effective communication skills and thus have positive and satisfying social relationships. Individuals who develop unsecure attachment style do not have sufficient and effective communication skills, so they appear to exhibit different behaviours as difficult people in their social relations. Individuals who have developed this attachment style, from early childhood, exhibit negative behaviours such as indecisiveness, to be unable to fulfil their promises, selfishness, and accusing others in their social relationships such

as family, social and friendship since they cannot have sufficient and effective communication skills as a result of the lack of confidence. Attachment styles not only affect the individual communication skills, but also organizational communication skills.

If the secure connection cannot be established, challenging relationships between the mother and child can start from the age of two. In case this period is parried calmly, the child may act restlessly, and attention deficits can contribute to this negative interaction.

Child may act compulsively against their parents and in return parents, because they lose control by acting impatiently, may apply to non-effective, restless solutions. Child is neglected emotionally, feels valueless and his/her mental health is negatively affected. Parents cannot communicate well with their children and become stressed intensely and this situation negatively affects their communication. In this interaction, child cannot make sense of his/her life and emotions. He cannot set goals or realize him/herself in front of the family who suppresses him/herself and obstruct his/her development. Children who cannot recognize themselves in the early childhood and who cannot learn to express themselves are not able to build successful communication when they reach adolescence and adulthood. In a research on the role of attachment in social relationships in adulthood, it was pointed out that early experiences about attachment become prominent as strong determinants in long term social relationships (Zayas et al., 2011).

Among the environmental factors, the influence of the media is important. Challenges in building relationships in big cities lead to alienation and unhealthy interaction. As a result of insecure attachment conflicts and disputes within family or in business life and criminal behaviours lead individuals to negative behaviours. It is beneficial to organize seminars and education programs with the aim of adding more effective, adequate and healthy communication skills to employees who have insecure attachment style in business life.

It is preferable to stay away from them because of these characteristics in people defined as difficult people in communication, but with some behaviors these people can be easily managed. Saxena & Jain (2013) stated that in society it is difficult to maintain successful communication and life without social intelligence.

The concept of social intelligence which was first invented by the psychologist Edward Thorndike is defined as thinking, understanding and managing other people and behaving appropriately in human social relation relationships (Njoroge & Yazdanifard, 2014).

Social intelligence explains how an individual understand him/herself and his/her interactions with others in the social context and skills for dealing with daily requests and facilitating factors (Yeh, 2013).

Kumar & Iyer (2012) & Albrecht (2005) explained that social intelligence effectively manages individual, social and environmental change by dealing with the current situation realistically and flexible, solving problems and taking decisions as needed. Thakur et al., (2013) define social intelligence as the having the ability to establish cooperation with other people while building good relationships with them. King & Ibolya (2013) argues that individuals seen competent socially are those who can develop interaction effectively with others. It was determined that all dimensions

forming social intelligence that are social awareness, then social knowledge process and finally social skills play an important role in reducing the conflict between family and work (Kanbur, 2015). The people who are defined as difficult experience communication problems because they have challenges in building communication and thus they have low social competency.

Erigüç et al., (2013) stated that people express themselves by transmitting their own thoughts, feelings and experiences to other people through the communication and they understand other people and that they are socialized in this way. Yıldırım (2006) states that all kind of helping process with personal, social, psychological and economical aspects such as the honest and empathic response, attention, love, trust, respect, appreciation and financial assistance that the individual sees around him constitute social support of the individual.

Because of the lack of social support elements in communication with a difficult person, often the individual cannot tell himself, and find out what the communication problem is. People who have difficulty in communicating with these people try to beat them or he/she prefers to walk away because he/she cannot express him/herself.

Examples for Difficult People

Indecisive people: Staying away from these people who cannot make decisions may be a state of relief for those who communicate with them. They do not make decision as the alternatives are proposed, they only respond to the proposals.

In communication; it is better to ask indecisive people what they do not want.

Those who promise and do not keep their promises: When any proposal is presented to them, they give positive responses such as acceptance. But they never fulfil their promises. Their desire is always a postponement behaviour.

In communication; it may be possible to enforce them to fulfil their promises by asking questions that evoke the power within, indicate orders are given.

Those who cannot give a definite answer: Some people find it difficult to give a clear answer even to a simple question. As they answer the question asked, they bring with many alternatives and struggle about which option is right. They cannot look at events in general, they go down in detail.

A question with a sentence that is answerable with only ‘yes’ or ‘no’ shall be used in communication. Yet, if they come up with a long answer, their speech should be interrupted calmly, and it should be said that they will be revisited soon.

The people who never listen: In some cases, the individuals never listen. Even the simplest dialogues can turn to debate after a certain period of time, or even establishing communication becomes difficult.

In communication; after s short break, request must be negotiated.

Those who believe that they think the best: Thinking that he/she knows everything well, those who do not care about other people, do not care about the results of their behaviours in communication. Most of the time they behave without thinking carefully.

In communication; if the person wants to express himself in the face of the behaviours of such people he/she can try warning jokingly.

Those who make you feel you are inadequately qualified: Mostly you feel a sense of inadequacy in communication due to the people who interact negatively with the messages containing “you” language. In this respect, the ability of the individual to

manage himself is important.

In communication; instead of staying in defensive stance for messages from these people, self-confident behaviours should be exhibited.

Those who always do the best: Most often they try to convince the counterpart that they are doing better or better than others.

In communication; clear communication that both parties listen to and understand each other very well should be maintained, the details should not be expressed too much and the subject should be changed. Therefore, behaviours of pretension and always being the best of everything can be prevented.

People who always blame others: People who blame others, would not take responsibility for anything. They avoid non-verbal messages in conversations or there are clues of blaming the other side in tone of voice.

In communication; instead of questioning personalities and emotions of difficult individuals, their behaviours should be examined.

In Communicating with Difficult People

Sentences showing attentive sentiments should be used instead of judging. This communication encourages them to take responsibility. Pre-requisite for success in human relationships listening and understanding the other person. For this; it is beneficial to improve the ability of recognizing people, to analyse the relationship carefully, to understand the cause of behaviours, to accept the other person as he/she is without changing his/her point of view, to evaluate his/her behaviours without forcing in issues that the person is sensitive, to be able to see negative properties as well as the positive properties and embracing with the patience and tolerance that established communication is difficult.

- Being a good listener,
- Knowing which message to say when,
- To create the sense in the other person that he/she is understood,
- To make it easier for him/her to express him/herself and accept him/her as he/she is,
- Trying to understand and care, are the ways of managing difficult people.

Knowing oneself, trusting, learning to control emotions, keeping the personal features open to others, listening well, and so trying to understand others are ways of a healthy communication. Successful communication is learned during early childhood and it means happiness.

REFERENCES

Albrecht, K. (2005). Social intelligence: The new science of success, Pfeiffer Publisher, New York.

Altıntaş, E. & Çamur, D. (2004). Beden Dili Sözsüz İletişim, Aktüel Basım Yayın, 1. Baskı, İstanbul.

Bartholomew, K. & Horowitz, L.M. (1991). Attachment Styles among Young Adults: A Test of a Four-Category Model. Journal of Personality and Social Psychology 61 (2), 226-244.

Carver, C.S. & Scheier, M.F. (2012). Psychosocial Theories. Perspectives on Personality, 7. Edition, Pearson International Edition, Boston.

Cüceloğlu, D. (1992): Yeniden İnsan İnsana, 3. Basım, Remzi Kitabevi, İstanbul.

Dökmen, Ü. (2003). İletişim Çatışmaları ve Empati, 23. Baskı, Sistem Yayıncılık, İstanbul.
Erigüç, G.; Şener, T. & Eriş, H. (2013). İletişim Becerilerinin Değerlendirilmesi: Bir Meslek Yüksekokulu Öğrencileri Örneği. Hacettepe Sağlık İdaresi Dergisi 16 (1), 45-65.
Goleman, D. (1998). İşbaşında Duygusal Zeka, 10. Baskı, Varlık Yayınları, İstanbul.
Hazan, C. & Shaver, P. (1987). Romantic Love Conceptualized as an Attachment Process. Journal of Personality and Social Psychology 52 (3), 511-524.
Kanbur, A. (2015). İş-Aile/Aile-İş Çatışması ile Mücadele Etmenin Bir Yolu Olarak Sosyal Zekanın Keşfedilmesi Üzerine Bir Araştırma. Kastamonu Üniversitesi İktisadi ve İdari Bilimler Fakültesi.
Karcıoğlu, F.; Timuroğlu, M.K. & Çınar, O. (2009). Örgütsel İletişim ve İş Tatmini İlişkisi -Bir Uygulama. Yönetim 20 (63), 59-76.
Kaşıkçı, E. (2002). Doğrucu Beden Dili, 2. Basım, Hayat Yayıncılık, İstanbul.
Kılıç., T. & Kümbetlioğlu, M. (2016). Bağlanma Stillerinin İletişim Becerilerine Etkisini Araştırma. Çukurova Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 25 (3), 381-396.
Kinga, S. & Ibolya, K. (2013). The predictive value of social intelligence for cooperative behavior in a task-oriented interaction paradigm: A pilot study. Transylvanian Journal of Psychology 14 (2), 255-274.
Kumar, J.S. & Iyer, V.R. (2012). Emotional intelligence and quality of work-life among employees in the educational institutions. SIES Journal of Management 8(2), 21-26.
Mayer, J.D.; Roberts, R.D. & Barsade, S.G. (2008). Human Abilities: Emotional Intelligence. Annual Review of Psychology 59, 509-519.
Njoroge, C.N. & Yazdanifard, R. (2014). The impact of social and emotional intelligence on employee motivation in a multigenerational work place. International Journal of Information, Business and Management 6 (4), 163-170.
Özer, K. (2006). İletişimsizlik Becerisi, Sistem Yayıncılık, İstanbul.
Saxena, S. & Jain, R.K. (2013). Social intelligence of undergraduate students in relation to their gender and subject stream. IOSR Journal of Research & Method in Education 1 (1), 1-4.
Schober, O. (2001). Beden Dili (Davranış Anahtarı), 5. Baskı, Arion Yayınevi, İstanbul.
Şirin, H. & Izgar, H. (2013). Üniversite Öğrencilerinin İletişim Becerileri ve Olumsuz Otomatik Düşünceleri Arasındaki İlişki. İlköğretim Online 12 (1), 254-266.
Thakur, R.; Sharma, S. & Pathania, R. (2013). Social intelligence of adolescents: A study of Himachal Pradesh. Studies on Home and Community Science 7(3), 161-166.
Tokmak, İ.; Turgut, H. & Öktem, Ş. (2013). Turizm ve Otelcilik Öğrencilerinin Sosyotropik-Otonomik Kişilik Özelliklerinin İletişim Becerilerine Etkisi. Anatolia: Turizm Araştırmaları Dergisi 24 (1), 83-95.
Waters, E.; Merrick, S.; Treboux, D.; Crowell, J. & Albersheim, L. (2000). Attachment Security in Infancy and Early Adulthood: A 20-Year Longitudinal Study. Child Development 71 (3), 684-689.
Wicks-Nelson, R. & Israel, A.C. (2014). The Developmental Psychopathology Perspective. Abnormal Child and Adolescent Psychology, 8. Edition, Pearson New International Edition, Edinburg.

Yalçın, S. (2013). Duygusal Zeka ve Stres Yönetimi, Songür Eğitim Hizmetleri, Ankara.
Yeh, Z.T. (2013). Role of theory of mind and executive function in explaining social intelligence: A structural equation modeling approach. Aging & Mental Health 17 (5), 527-534.
Yıldırım, İ. (2006). Anne Baba Desteği ve Başarı, Anı Yayıncılık, Ankara.
Yılmaz, B. (2007). Üniversite Öğrencilerinin Kişilerarası İletişim Becerileri ve Bağlanma Stilleri Arasındaki İlişki (The Relationship between the Interpersonal Communication Skills and The Attachment Styles of University Students), Yayımlanmamış Yüksek Lisans Tezi, Muğla Üniversitesi/Sosyal Bilimler Enstitüsü, Muğla.
Zayas, V.; Mischel, W.; Shoda, Y. & Aber J.L. (2011). Roots of Adult Attachment: Maternal Caregiving at 18 Months Predicts Adult Peer and Partner Attachment. Social Psychological and Personality Science 2 (3), 289-297.

Chapter 23

Non-Pharmacological Pain Management and Nursing Interventions in Neonates

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INTRODUCTION

The neonatal period includes the one-month period after birth. Neonates, who have to spend this period in hospital, experience numerous pains and stress for very different reasons. Pain is defined as an undesired experience associated with actual or probable tissue damage due to trauma, illness in any part of the body or medical interventions (Walden, 2010; Aliefendioğlu & Güzoğlu, 2015).

Neonates are exposed to many invasive interventions without an analgesic administration. These interventions include neonatal examination, blood collection from the heel, intramuscular injections, dressing changes, postural drainage, venous interventions, gavage insertion, etc. (Michele et al., 2012).

Until the end of the 1980s, it was thought that pain was not felt and remembered since the nervous system is not sufficiently developed in neonates. However, studies have shown that pain is felt even during the intrauterine period (Derebent & Yiğit, 2006) (Table 1). It was found out that neonates do not have fully developed connections that transmit pain, but they have a potentially higher response to pain compared to adults and feel pain in a wider area, although they cannot perform pain localization completely. It was determined that pain impulses are transmitted more strongly in neonates than adults, and the stimuli coming to the central nervous system from the environment are effective, so pain management became more important in neonates in this respect. Transmission of pain in neonates is performed by C fibers that ensure unmyelinated and slow transmission within the peripheral nerves. With these fibers ensuring slow and uncontrolled transmission, pain transmission causes neonates to feel pain more severely compared to adults (Dağoğlu & Ovalı, 2007; Törüner & Büyükgönenç, 2012).

Painful procedures cause short and long-term negative effects on neonates. The experience of pain by infants affects their adaptation to the outside world, interaction with the family, clinical condition, growth, and development. Pain causes short-term changes such as respiratory irregularity, reduction in oxygen saturation, electrolyte imbalance, increased stress hormone secretion, increased heart rate and increased blood pressure in neonates. Furthermore, pain can have negative effects on neonates in the long term due to changes such as the impairment of glucose balance, increased protein degradation, sensitivity to pain, anxiety, and impaired social adaptation. In order to prevent these negative effects of pain, the pain status of neonates needs to be evaluated and prevented without delay (Ludington-Hoe *et al.*, 2005; Derebent & Yiğit, 2006).

Table1: The facts known about pain in infants

Wrong	Correct
- Neonates do not feel pain. - Nurses can accurately estimate the infant's pain by looking at his/her appearance or activity. - Infants, who continue their activity or sleep, do not feel pain. - Narcotic analgesics are not used in infants due to side effects. - Pain does not harm children. - Infants are more resistant to pain than adults. - Infants cannot tell where the pain is	- Neonates feel pain. - Nurses underestimate the infant's pain. - Some infants can sleep because of excessive pain by suppressing the pain. - Even in infants with very low birth weights, narcotic analgesics can be used easily. - Neonates may develop cyanosis and bradycardia due to pain. - The physiological stress of the pain in neonates is not known exactly.

It is more difficult to diagnose pain in neonates than adults. Since neonates cannot respond verbally to painful stimuli, health team members should monitor the infant closely during the procedure. Physiological and behavioral changes that indicate pain are observed in neonates during painful procedures (Table 2) (Mathew & Mathew, 2003).

The causes of pain in neonates are usually the procedures that routine practices require. For this reason, the primary goal is to reduce painful interventions. When it is necessary to perform painful procedures, it should be aimed at helping neonates cope with pain by appropriate methods and to minimize the pain felt. Since nurses spend a longer time with neonates in the health team, they have an opportunity to closely monitor and evaluate pain experiences and coping methods. Nurses play an important role in the care, pain reduction and relief of neonates that feel pain (Akcan & Polat, 2017). It is more difficult to diagnose pain in neonates than in adults. Since neonates cannot respond verbally to painful stimuli, health team members should monitor the infant closely during the procedure. Physiological and behavioral changes indicating pain in neonates are observed during painful procedures (Table 2). The scales used especially in recent years for determining and diagnosing the severity of pain in neonates have provided great benefits (Mathew & Mathew, 2003).

PAIN SCALES

While pain is simply assessed by the verbal expression of an individual in adults, it is difficult to diagnose pain and identify its severity in neonates due to the lack of verbal communication. However, appropriate scales have been developed to diagnose pain in the studies conducted. Taking into account the criteria such as age, clinical condition, acute or chronic pain, the data collected with the appropriate scale provide us with objective results (Aliefendioğlu & Güzoğlu, 2015).

NIPS (Neonatal Infant Pain Scale)

It was developed by Lawrence et al. in 1993 and adapted into Turkish by Akdovan in 1999. It is used in the evaluation of acute pain due to procedures performed in term and preterm neonates. The shape of face, crying, respiration, the shape of arms and legs, sleeping condition are evaluated in scoring. The application of the scale takes a lot of

time, and it is difficult to apply in intubated infants (Akdovan, 1999).

Table 2: Pain symptoms in neonates

BEHAVIORAL CHANGES	PHYSIOLOGICAL CHANGES
Vocalizations	**Increases**
Crying Moaning	Heart rate Blood pressure Intracranial pressure Respiratory rate and effort Tension in the muscles Carbon dioxide (transcutaneous partial carbon dioxide pressure) Average airway pressure
Face expressions	
Grimace Brow furrow Eye squeezing	
Body movements	
General and common body movements Contractions in arms/legs, strong blows Convulsion Changes in tonus Increase in tonus/tension/fist clenching Decrease in tonus/relaxation Opposite reactions to touch	**Decreases** Respiratory depth Oxygenation Paleness/redness Diaphoresis /palmer sweating
	Hormonal changes
	Increases
Conditions	Plasma renin activity Catecholamine levels (epinephrine/norepinephrine) Cortisol levels Growth hormone, glucagon, aldosterone release
Changes in sleeping and awakening periods /wakefulness Changes in the activity level: increase in unease/ irritability Nutritional deficiencies Difficulty in relaxation, becoming calm and silent	**Decreases** Insulin release

PIPP (Premature Infant Pain Profile)

It was developed by Stevens et al. in 1996 and adapted into Turkish by Akcan and Yiğit in 2015. It is suitable for use in premature infants at the age of 28-36 weeks. Gestational age, behavioral state, maximum heart rate, minimum oxygen saturation, brow bulge, eye squeeze and nasolabial furrow are evaluated for scoring (Akcan & Yiğit, 2015).

NFCS (Neonatal Facial Coding System)

It was developed by Granau et al.in 1987. It is suitable for use in term and preterm neonates and infants under 4 months of age. It is only used in the evaluation of operative pain by looking at the movements of only facial muscles. Eight parameters, which consist of brow bulge, eyes squeezed shut, nasolabial furrow, partially open lips, vertical or horizontal mouth stretch, taut tongue and chin quiver, are evaluated. Facial movements require good observation because they can occur and disappear in a short time in case of pain (Granau *et al*., 1994).

CRIES (Crying, Requires O2, Increased vital signs, Expression, Sleeplessness-Neonatal Postoperative Pain Measurement Scoring)

The scale developed by Krechel and Bildner in 1995 is used to evaluate postoperative pain in premature infants. The crying condition, oxygen requirement, heart rate or blood pressure, facial expression and sleep stateare evaluated. It is recommended to perform evaluations at two-hour intervals in the first 24 hours after surgery, and then at four-hour intervals (Derebent &Yiğit, 2006; Aliefendioğlu & Güzoğlu, 2015).

N-PASS (Neonatal Pain Agitation and Sedation Scale)

It is used to evaluate pain in infants over 23 gestational weeks. The crying condition, uneasiness, facial expression, behavioral state, tonus of hands and feet, vital signs and oxygen requirements are evaluated in scoring. It is recommended to be used in postoperative pain and chronic pain conditions (Güney, 2017).

Neonates' pain should be diagnosed and evaluated using the appropriate scale. Appropriate interventions should then be planned and pain control should be ensured in a short time.

NON-PHARMACOLOGICAL METHODS USED IN NEONATAL PAIN MANAGEMENT

All of the methods that control pain without using medications or that increase the effect of medications when administered together with medications are called non-pharmacological treatment methods (Geyer *et al.,* 2002).

Kangaroo Care: Kangaroo care is a method of holding an infant, who is naked except for a diaper and a piece of cloth covering his or her head, wrapped in a blanket or under the clothes and placed in an upright position against a parent's bare chest, which involves skin-to-skin contact of the infant and the parent. It is an economical method that can be easily applied by mothers and nurses to reduce the pain that may occur during invasive interventions, and that ensures mother-infant interaction and does not require any preparation (Derebent, 2007; Kostandy *et al*., 2008). The effects of kangaroo care were evaluated in many studies and were found to have positive effects on pain. These effects include reducing pain, shortening the duration of crying, increasing the body temperature, accelerating the healing process, and increasing the duration of breast feeding (Ludington-Hoe & Hosseini, 2005; Gregson & Blacker 2011; Marin *et al.,* 2010). The practice of kangaroo care should be made more common in neonatal services, and parents should be informed about the benefits of this practice to the mother and infant. Neonatal nurses should support parents in kangaroo care during and after the procedure, starting before painful procedures.

Sucrose administration: Studies have shown that the administration of sucrose or other sweet solutions alone or with a pacifier prior to short-term painful procedures is an effective way to reduce pain in neonates (Efe & Savaşer, 2007; Dilli *et al.,* 2009; Okan *et al.,* 2007; Stevens *et al.,* 1997; Stevens *et al.,* 1999). It was reported in the study of Efe and Savaşer (2007) on the effect of administering sucrose solution to reduce pain caused by intravenous intervention in neonates that oxygen saturation increased and crying times shortened in infants receiving sucrose solution Dilli et al. (2009) administered sucrose and EMLA to neonates before vaccination, and as a result of the evaluation, they concluded that there was no difference between sucrose and

EMLA in terms of reducing pain.

Giving a pacifier: This is the most investigated non-pharmacological method in neonatal pain management and is thought to reduce stress in painful procedures in both term and preterm infants (Pillai *et al.*, 2011). It is thought that giving a pacifier takes attention away from pain, reduces the level of vitality and the duration of crying, increases the state of silent wakefulness, and reduces pain in this way (Eroğlu & Arslan, 2018). The analgesic effect of the use of a pacifier ends when the pacifier is released (Akman *et al.,* 2002; Boyle *et al.,* 2006).

Music: Music therapy is thought to have the effect of relaxation and diverting the attention elsewhere, although it is not known exactly by which mechanism it reduces pain. Furthermore, music plays a sedative, stimulating and awakening role for neonates by covering the undesired sounds in neonatal intensive care units (Derebent & Yiğit, 2006; İmseytoğlu & Yıldız, 2012).It has been found out in the studies conducted that music increases oxygen saturation, decreases blood pressure and heart rate, shortens the hospitalization period in premature infants, increases the daily weight gain and decreases stress behaviors (Ahmadshah *et al.,* 2010; Dinçer *et al.,* 2011).

Fetal position: The fetal position is defined as holding the infant's upper and lower limbs in flexionby hands and taking the body to the closed position close to the midline. When this method is applied, the infant may be given a lateral, prone or supine position. It is reported that the fetal position ensures heat and tactile stimulation in infants, stimulates the infants' own regulatory systems, activates the infant's attention, prevents painful stimuli from the outside, leads to the endogenous-endorphin release, distributes pain impulses in the spinal cord and reduces the pain felt by the infant (Çağlayan & Balcı, 2014).

It is reported that the infant should be kept in this position for at least 10 min for the infant to perceive the feeling of being in the fetal position and to cope with a painful procedure. Fetal position practice should be started 3 minutes before the painful procedure, it should be continued throughout the procedure, and the infant should be kept in the fetal position for at least 3 minutes more for the pain indicators of the infant to return to normal after the procedure. The studies report that the fetal position is effective in reducing crying time and pain after the procedure (Çağlayan & Balcı, 2014; Gürlü, 2017; Axelin *et al.,* 2006).

RESPONSIBILITIES OF NURSES IN NEONATAL PAIN MANAGEMENT

For the effectiveness of pain management in neonates, it is very important that pain is identified correctly and on time. Non-pharmacological methods which are easy to apply, practical and low in cost are effective when used alone, and they also increase the effect of medications when used in combination with pharmacological methods. An interdisciplinary team approach should be ensured for the treatment and practices to be carried out in neonatal pain management to reach the desired level.

In this context;

- Nurses should be knowledgeable about the possible causes of pain in neonates and should objectively evaluate the pain of neonates using standardized pain assessment tools.
- Nurses should know their individualized developmental care and roles well, and family-centered developmental care should be given to reduce stress.

- Nurses should constantly evaluate and compare the changes that occur withpain, apply appropriate pharmacological and non-pharmacological treatment methods, and evaluate the care plan continuously.
- Nurses should reduce environmental stimuli and minimize invasive interventions performed routinely and perform painful procedures together as much as possible.
- Evidence-based guidelines for reducing or treating the pain of neonates and its negative consequences should be developed and used in clinics (Derebent & Yiğit, 2006; Eroğlu & Arslan, 2018).

As a conclusion, nurses, one of the important team members in pain management, should know the physiological and behavioral changes caused by pain in neonates and continuously evaluate the care plan by aiming at and implementing individual care arrangements in order to reduce stress findings and to increase stability findings.

REFERENCES

Ahmadshah, F.; Rana, A.; Sohalia, K.; Habibollah, E.; Asraf, M. (2010). The effect of listening to lulla by music on physiologic responce and weight gain of premature infants. Journal of Neonatal Perinatal Medicine 3:(2), 103-107.

Akcan, E.; Yiğit, R. (2015). Prematüre Bebek Ağrı Profili: Türkçe Geçerlilik ve Güvenirliliği. Fırat Üniversitesi Sağlık Bilimleri Tıp Dergisi. 29: (3), 97 – 102.

Akcan, E.; Polat, S. (2017). Yenidoğanlarda Ağrı ve Ağrı Yönetiminde Hemşirenin Rolü. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi. (2):64-69.

Akdovan, T. (1999). Sağlıklı yenidoğanlarda ağrının değerlendirilmesi, emzik verme ve kucağa alma yönteminin etkisinin incelenmesi. Marmara Üniversitesi Sağlık bilimleri enstitüsü yüksek lisans tezi, İstanbul.

Akman, I.; Ozek, E.; Bilgen, H., Ozdogan, T.; Cebeci, D. (2002). Sweet solutions and pacifiers for pain relief in new born infants. J Pain. 3:(3), 199-202.

Aliefendioğlu, D.; Güzoğlu, N. (2015). Yenidoğanda ağrı. Çocuk sağlığı ve hastalıkları dergisi, 58:(1), 35-42.

Axelin, A., Salantera, S., Lehtonen, L. (2006). "Facilitated tucking by parents" in pain managment of preterm infants: A randomized crossover trial. Early Human Development, 82:(4), 241 –247.

Boyle, E.M.; Freer, Y.; Khan-Orakzai, Z.; Watkinson, M.; Wright, E.; Ainsworth. J.R.; et al. (2006). Sucrose and non-nutritive sucking for the relief of pain in screening for retinopathy of prematurity: a randomised controlled trial. Arch Dis Child Fetal Neonatal Ed. 91:(3), 166-168.

Çağlayan, N.; Balcı, S. (2014). Preterm Yenidoğanlarda Ağrının Azaltılmasında Etkili Bir Yöntem: Cenin Pozisyonu / F.N. Hemşirelik Dergisi, 22: (1), 63-68.

Dağoğlu, T.; Ovalı, F. Neonatoloji. s 193-202, 2.baskı. İstanbul: Nobel Tıp Kitabevleri, 2007.

Derebent, E.; Yiğit, R. (2006). Yenidoğanda Ağrı: Değerlendirme ve Yönetim. C.Ü. Hemşirelik Yüksekokulu Dergisi 10:(2), 41-48.

Derebent, E. (2007). Prematüre Bebeklere Yapılan İnvaziv Girişimler Sırasındaki Ağrıyı Azaltmada Kanguru Bakımının Etkisi, Mersin Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi, Mersin.

Dilli, D.; Küçük, I.G.; Dallar, Y. (2009). Intervention storeduce pain during vaccination

in infancy. Journal of Pediatrics. 154:(3), 385-90.
Dinçer, Ş.; Yurtçu, M.; Günel, E. (2011). Yenidoğanlarda ağrı ve non-farmakolojik tedavi. Selçuk Üniversitesi Tıp Dergisi. 27:(1), 46-51.
Efe, E.; Savaşer, S. (2007). The effect of the different methods used during peripheral venous blood collection on pain reduction in neonates. Ağrı. 19:(2), 49-52.
Eroğlu, A.; Arslan, S. (2018). Yenidoğanda Ağrının Algılanması, Değerlendirilmesi ve Yönetimi. Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi. 8:(1), 52-60.
Geyer, J.; Ellsbury, D.; Kleiber, C. (2002). An evidence based multi disciplinary protocol forneo natal circumcision pain management. Journal of Obstetric, Gynecologic & NeonatalNursing. 31:(4), 403-410.
Granau, R.V.; Whitfield, M.F.; Petrie, J.H. (1994). Pain sensivity and temperament in extremely low-birth-weight prematüre todlers and preterm and full term controls, Pain, 58: 341-346.
Gregson, S.; Blacker, J. (2011). Kangaroo Care in Preterm or Low Birth Weight Babies in a Postnatal Ward. British Journal of Midwifery. 19:(9), 568-577.
Güney, M. (2017). Yenidoğan Yoğun Bakım Ünitesinde Çalışan Hemşirelerin Ağrı Yönetiminde Kullanılan Nonfarmakolojik Yöntemlere İlişkin Bilgi ve Uygulamalarının Belirlenmesi. İstanbul Medipol Üniversitesi Sağlık Bilimleri Enstitüsü Yüksek Lisans Tezi. İstanbul.
Gür, R. (2017). Yenidoğanda Ağrı Değerlendirmesi ve Non-Farmakolojik Ağrı Giderme Yöntemlerinden Emzik Verme ve Anne Kucağının Etkisinin İncelenmesi. Uzmanlık Tezi, Ankara Eğitim ve Araştırma Hastanesi Çocuk Kliniği. Ankara.
Habich, M.; Wilson, D.; Thielk, D.; Melles, G.L.; Crumlentt, H.S.; Masterton, J.; Guire, J. (2012). Evaluating the Effectiveness of Pediatric Pain Management Guidelines. Journal of pediatric nursing. 27:(4), 336-345.
İmseytoğlu, D.; Yıldız S. (2012). Yenidoğan Yoğun Bakım Ünitelerinde Müzik Terapi. İ.Ü.F.N. Hemşirelik Dergisi 20: (2), 160-165.
Kostandy, R.; Cong, X.; Abouelfettoh, A.; et al. (2008). Effect of Kangaroo Care (skin contact) on crying response to pain in preterm neonates. Pain Management Nursing. 9:(2), 55-65.
Ludington-Hoe, S.M.; Hosseini, R.; Torowicz, D.L. (2005). Skin-to-Skin contact (kangaroo care), analgesia for preterm infant heel stick. AACN Clinical Issues; 16:(3), 373- 387.
Marín, G.; Martin, L.; Escobar, L.; Villalba. F.; Blanco, R.; Pol, T. (2010). Randomized Kontrolled Trial of Early Skin- to- Skin Contact: Effects on the Mother and the Newborn. Acta Paediatrica. 99, 1630–1634.
Mathew, P.J.; Mathew, J.L. (2003). Assessment and management of pain in infants. Postgraduate Medical Journal, Health & Medical Complete.79 :(34), 438-43.
Okan, F.; Çoban, A.; İnce, Z., Can, G. (2007). Preterm yenidoğanlarda analjezi: Sükroz ve glukozun karşılaştırmalı etkileri. Çocuk Dergisi. 7:(1), 28-35.
Pillai-Riddell, R.R.; Racine, N.M.; Turcotte, K.; Uman, L.S.; Horton, R.E.; Din-Osmun, L, et al. Non-pharmacological management of infant and young child procedural pain. Cochrane Database Syst Rev. 2011(10).
Stevens, B.; Taddio, A.; Ohlsson A, Einarson T. (1997). The efficacy of sucrose for relieving procedural pain in neonates--a systematic review and meta-analysis. ActaPaediatr. 86:(8), 837-842.

Stevens, B.; Johnston, C.; Franck, L.; Petryshen, P., Jack, A.; Foster, G. (1999). The efficacy of developmentally sensitive interventions and sucrose for relieving procedural pain in very low birth weight neonates. Nurs Res. 48:(1), 35-43.

Törüner, E.K.; Büyükgönenç, E. Çocuk sağlığı temel hemşirelik yaklaşımları. S.146-171. Ankara: Göktuğ yayıncılık, 2012.

Walden, M. (2010). Pain assessmentand management. M.T. Verklan & M. Walden (Ed.), Core curriculum for Neonatal Intensive Care Nursing. (4th ed). Missouri: Saunders Elsevier; 333-345.

Chapter 24

The Psychosocial Effects of Breast Cancer and its Surgical Treatment on Women and the Role of the Nurse

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INTRODUCTION

Breast cancer is one of the major health problems that threaten women worldwide. According to the World Cancer Report (2012), the incidence of breast cancer is 43.3% and its prevalence is 12.9 per 100.000 people. It is estimated that there are 1.7 million new breast cancer cases in the world and 0.5 million deaths are linked to breast cancer (Steward and Wild, 2014). While one in eight American women develops breast cancer (Siegel et al., 2016), one out of four cancer-affected women is diagnosed with breast cancer (Steward& Wild, 2014). According to the Cancer Statistics of Turkish Ministry of Health 2014 data, breast cancer ranks the first with 43% incidence among the most prevalent cancer types in women (Turkey Cancer Statistics, 2017). Breast cancer is of crucial importance since it is the most common type of cancer among women.

Cancer treatment involves a long and intensive process. In this long process, due to the problems encountered during treatment, women have difficulty fulfilling their daily life functions, and therefore their life quality is affected (Ganz, 2008; Gümüş, 2006 and Koçan & Gürsoy, 2016). The addition of surgical treatment to the process increases these problems. As the breast is attached different meanings in many societies, the problems experienced during the treatment process vary according to the meaning attributed to the breast by women. Nurses have an important role in the treatment of women with breast cancer. Studies report that the supportive care provided by nurses in this period is effective on the quality of life. For this reason, breast care nursing is practiced particularly in Europe and postgraduate level breast care nursing education is provided.

THE PSYCHOSOCIAL ASPECT OF BREAST CANCER AND ITS SURGERY TREATMENT

Following the breast cancer diagnosis, women may experience various psychosocial problems in the pre-, during, and post-treatment periods (Gümüş, 2006). In general, these problems center on areas such as family, marriage, sexuality, social relations, and professional responsibilities. In the pre-treatment period, the process of adaptation to the disease begins and the problems related to the acceptance of the disease are often encountered at this stage. Patients experience some stages in this period. Elisabeth Kübler-Ross described acceptance of cancer diagnosis in five stages (Tünel *et al.,* 2012; Koçan & Gürsoy, 2016). Denial is the first of these stages. At this

stage, patients may end up with ignoring the disease thinking that they do not have it, they feel well, and they think that there may be a mistake about the diagnosis. In the second stage, the individual enters a stage of anger where she questions why she has developed the disease. This anger may be with the person herself, family, friends, or even with her own belief system. This stage is followed by bargaining stage where treatment options are contemplated. The patient conditions himself/herself for recovery and exhibits adaptation and collaboration attitudes. With the initiation of the treatment period in the fourth stage, patients, who went through a depressive episode, may slip into depression. The final stage is acceptance stage, which is a silent period where anger and depression decrease. Patients may go through these five stages respectively, they can experience them in an intertwined manner, or they can bypass some stages (Tünel *et al.,* 2012; Koçan & Gürsoy, 2016). Fighting against life-threatening conditions during the treatment phase is in the foreground and surgical treatment induced-anxiety is often observed. In the post-treatment period, adaptation challenges and cancer recurrence anxiety are more frequent (Tünel *et al.,* 2012).

Adaptation to breast loss with the acceptance of cancer is an important process in the post-mastectomy period. Breast is considered as the symbol of femininity, maternity, and sexuality in many societies (Okanlı, 2004; Tünel *et al*., 2012; Koçan & Gürsoy, 2016). Responses to breast loss vary according to the meaning attributed to the breast by a given person. The main psychological problems experienced by women with breast cancer are anxiety, depression, anger, hopelessness, desperation, fear of recurrence of cancer, and fear of death (Ganz, 2008 & Gümüş, 2006). The impacts of breast loss on women occure as loss of body image, fear of losing feminine qualities, loss of self-esteem and loss of sexuality/attractiveness. Women can suffer from fatigue, pain, nausea, vomiting, and sleeping problems causes from severe treatments such as surgery, chemotherapy, and radiotherapy. Family relationships and roles of women may change and they may develop anxiety that they will be stigmatized by their close circle. During the disease, the workplace is sometimes distanced and there are problems such as unemployment and lack of health insurance (Gümüş, 2006 & Okanlı, 2004).

In this study, the psychosocial changes in patients who underwent surgical treatment due to breast cancer were studied under three titles such as changes in body image, changes in quality of life, and changes in family and relationships with the social environment. In addition, the importance of social support in adapting to breast cancer was highlighted.

Changes in the Quality of Life

The quality of life refers to the way in which a person perceives her health in socio-cultural setting and it consists of physical, social, psychological, and spiritual dimensions (Garratt *et al.,* 2002). An increase or decrease in one of these dimensions changes the life quality of the person. Cancer diagnosis and treatment are difficult processes that can affect the quality of life. While the provision of a good treatment condition, social support, family and social relationships, and a long period after the treatment affect the quality of life more positively, the stage of the disease, young age, and chemotherapy have an adverse impact on the disease (Jendrian *et al.,* 2017). The life quality of women is affected much more after mastectomy, particularly due to body image issues (Fang *et al.,* 2013). Especially young patients may prefer breast reconstruction to improve the impaired body image.

There are a considerable number of studies investigating the effects of breast cancer and the surgical intervention on the quality of life. Bloom et al. (2004) investigated the quality of life in younger patients under the age of 50 who underwent surgery for breast cancer. In this study, the general health condition of only 10% of women was found to have worsened 5 years after the surgery. It was reported that during the five-year period, critical developments were recorded in these women about surgery related symptoms, body image, and concerns about the future in addition to a fall in emotional support and a reduction in the social environment (Bloom *et al.*, 2004). Similarly, Ganz et al. (2002) studied changes in quality of life after surgery. According to the results of two follow-ups conducted with a three-year interval, a statistically significant decrease was found in terms of physical functioning score, general health, and social functioning on the quality of life scale (Ganz *et al.*, 2002). Jendrian et al. (2017) compared life quality of women who underwent mastectomy and breast-conserving surgery. While there were no significant differences between the two groups in terms of anxiety, depression, and fear levels in the study, significant differences were found in body image, social functioning, emotional status, and role functioning in patients with breast conserving surgery. Akça et al. (2014) reviewed quality of life in women who underwent breast-conserving surgery, mastectomy, and modifie radical mastectomy. In the study, the quality of life was found to be higher in women who had modifie radical mastectomy than those who had mastectomy. In the light of these studies, breast cancer and its surgical treatment can be seen to affect the quality of life. Healthcare professionals can change the life quality of a breast cancer patient by implementing interventions suitable for the factors that affect the quality of life. For this reason, nurses have important responsibilities in promoting the quality of life.

Changes in Body Image

Body image is the mental display of self that comprises all attitudes and perceptions related to physical appearance, health status, physical capacity, and sexuality (Mock, 1993). The table of a person's body and all senses belonging to the body is called the body image. There are a few factors that shape the body image. These are the personality, values, and thoughts of an individual. In other words, it is affected by both physiological and social conditions. In patients undergoing breast surgery, body image can be influenced by the type of surgery and perceptions of women. Mastectomy affects women's body image more than breast-conserving surgery and breast reconstruction intervention (Anagnostopoulos & Myrgianni, 2009; Fang *et al.*, 2013; Jendrian *et al.*, 2017; Rosenberg *et al.*, 2013).

There are a considerable number of studies that investigate the changes in body image according to the type of cancer and operation performed. Some participants in the qualitative study of Koçan and Gürsoy on body image after mastectomy stated that their image was disfigured, they tried to disguise the loss due to the feeling of embarrassment, they felt themselves disabled, they felt down due to failing to fulfill their daily affairs and duties, and that they preferred wearing loose-fitting clothes to escape people's gazes (Koçan & Gürsoy, 2016). Anagnostopoulos and Myrgianni (2009) found in their study comparing mastectomy and body image of women who underwent breast-conserving surgery that women who had mastectomy felt less attractive and self-confident, disliked their general appearance, and avoided contact with people. In some studies, average body image scores of women who had breast

reconstruction intervention (Fang *et al.,* 2013) and BCS (Jendrian *et al.,* 2017) were found to be higher than those of women undergoing mastectomy. Fobair et al. (2006) studied the body image and sexuality problems of young women undergoing mastectomy in a society with ethnic diversity. According to the findings of this study, half of the women who participated in the survey were found to have problems with their body image. Sexually active women experienced problems with their body image due to mastectomy and chemotherapy related hair loss, weight gain or loss, low self-esteem and partner insensitivity (Fobair *et al.,* 2006).

Relationship with Family and Social Environment

There are a number of social changes that patients experience during breast cancer treatment. They end up with feelings such as failing to care for their husband and children, loss of role, loss of femininity due to changes in body image, failing to look beautiful for their husband, being unwelcome, and being a burden on the family (Hocaoğlu *et al.,* 2007; Okanlı, 2004). In surgical cases where lymph nodes are removed, arm movements of the patient can be restricted due to lymphedema (Yıldız & Karayurt, 2011). Especially in housewives, this situation creates a change in role and the woman starts feeling she can not fulfill her familial duties. Women with children may have fear of death and anxiety that they will not be able to see the future of their children (Hocaoğlu *et al.,* 2007). In this long process, patients may lose their job or experience changes in their life, and be isolated from the social environment. This can lead to depression, social isolation, hopelessness and burnout in patients. Women may prefer staying away from their circle of friends due to their appearance (Koçan & Gürsoy, 2016). It was reported in the study of Şendil (2012) investigating the marital and sexual lives of women in Turkish society who underwent mastectomy that there was a decrease in the frequency of sexual activity and the pleasure from the activity compared to those of preoperative period. No emotional and social differences were found in the same study. This was thought to have arised from the identity of women in Turkish society.

The Importance of Adaptation to Surgical Treatment and Social Support

The psychological adaptation of women undergoing surgical treatment is important in regard to the acceptance of the disease and provision of adaptation to the treatment. According to Gynllesköld, the meaning that is attributed to the breast is classified under four headings such as "the most distinctive indication of femininity", "an organ that promotes a woman's femininity and charm", "the symbol of maternity, nutrition and reproduction" and "an organ with significant sexual significance that has sexual sensitivity" (transfer Okanlı, 2004). Due to various meanings attached to the breast by the society, responses to surgical treatment may also be of different dimensions. Some women have more difficulties in this period, while others can adapt easily. Younger age and the greatness of the meaning attributed to loss of the breast (Okanlı, 2004) are important factors that can affect women's adaptation. For this reason, elderly women may be better at adapting to surgical treatment psychologically (Özkan & Alçalar, 2009). In nursing care, it is important to prepare women psychologically starting from the preoperative period in order to ensure a good post-operative adaptation.

A successful coping process begins with the acceptance of the disease and

adaptation to it. For this reason, informing the patients about their condition before the operation is the primary and most important factor. According to Özkan and Alçalar (2009), in order for the patient to be able to adapt, she must first understand her situation, decide on a coping strategy, and be aware of her current situation. In this period, personal motivation and support from the environment are also effective. One of the universal means of relieving stressful times is spirituality. It has been stated that prayer, meditation, and the power given by God are effective coping methods (Gümüş, 2006). For this reason, women should also be supported spiritually.

In the process of adaptation to cancer-induced changes and treatment, the availability of support systems is gaining importance. One of the important concepts in this process is the existence of personal social support systems. Social support serves as a buffer against adverse effects in life and reduces the stressful impact of negative situations (Özyurt, 2007). Social support is referred to as "a resource from others", "a continuous network of relationships that can protect the physical and psychological integrity of the individual", or "material and moral support given by the immediate surroundings of the individual under stress" (Eylen, 2002; Işıkhan, 2007; Özyurt, 2007; Khorshid & Arslan, 2006). According to Wortman (1984), social support is defined as showing that the patient is cared, loved and valued; confirming that the beliefs, interpretations, and feelings of him/her are decent; encouraging her for the expression of beliefs and feelings; providing information and consultancy; providing financial assistance; and informing him/her about the support systems she is in. Among the social support systems are core family members, relatives, friends, neighbors, colleagues, healthcare personnel, and social service institutions. Among these systems, the husband is considered to be the greatest supporter of the patient with breast cancer. If support systems are not adequate, the psychosocial adaptation of cancer patients can be affected (Işıkhan, 2007).

Breast cancer patients need social support to avoid and cope with stress. The studies report that when the social support levels of cancer patients increase, their life quality increases and stress and depression levels decrease as well (Çalışkan *et al.,* 2015; Fernandes *et al.,* 2014). Therapies like chemotherapy and surgical treatment can affect women more and cause the body image of women to change. The support given during this period is particularly important for patients. The anxiety and depression experienced by chemotherapy-treated women with breast cancer affects psychosocial adjustment and reduces the level of social support they perceive (Fernandes *et al.,* 2014). It is reported that women having breast reconstruction show better adaptation than women who have mastectomy, in addition to increased patient satisfaction and quality of life (Al-Ghazal *et al.,* 2000). At this point, it may be suggested that the support systems for women who have mastectomy should be highlighted more.

Patients may require various types of support from different people for different stages of cancer treatment. While single women with breast cancer get support from their family members and friends, married women are mostly supported by their husband. Fernandes et al. (2014) reported that married women had better mental health and that the emotional and instrumental support they received from their husband, rather than other supporters, reduced the prevalence of depressive symptoms. For this reason, it may be important to increase the spousal support, especially during the post-surgical adaptation process of women. Emotional support influences the process of

adaptation to the treatment and the decisions regarding the treatment during- and/or post-treatment process. In addition to the support that women receive from their immediate surroundings, participating in support groups and method of writing the feelings also affect the quality of life positively. Women participating in support groups gain the ability to manage the process, and the level of their knowledge about cancer and cancer treatment increases (Fernandes *et al*., 2014). The support of healthcare personnel is especially important when making recommendations. Patients are more likely to pay attention to and remember the recommendations of healthcare personnel than the recommendations they receive from family and friends (Worthman, 1884). Patients attach more importance to information support from physicians, and emotional and trust support provided by nurses (Eylen, 2002). In some studies, the support received from nurses has been found rather low. It is stated that nurses who have the chance to communicate with patients for a longer time compared to others have been found to give patients less support than physicians and other supporters (Özyurt, 2007; Özkaraman *et al.,* 2015). At this point, it is clear that nurses should increasingly activate their social support systems. Patients should be given the opportunity to express their feelings, and they should be directed to support groups that they can share their feelings and the disease process with. In the process, not only women but also their families should be supported and directed to the resources that they can resort to.

BREAST CARE NURSING

The psychosocial aspect of the breast cancer process is quite complex and the process of the treatment is hard. This calls for the need for nursing care by qualified nurses who are specialized in their fields. Nurses play an important role in breast cancer process in terms of both providing information, support, and counseling. However, the areas in which nurses are accessible are limited outside the clinical setting. Every patient receiving cancer diagnosis may need the support of a specialized nurse as of the moment when they are first diagnosed to have the disease. For this reason, the importance of breast care nursing is increasing day by day. Breast care nursing (BCN) expertise emerged in the UK, Australia, the USA, Scandinavia, and Benelux countries in the 1980s (Eicher *et al.,* 2012) and has been adopted in many countries since then. In recent years, certificate programs and courses in breast care nursing have also been organized in Turkey, where interest in the topic is growing.

According to Yates et al. (2007), specialist breast care nurse is defined as "a registered nurse who applies advanced knowledge of the health needs, preferences and circumstances of women with breast cancer to optimize the individual's health and well-being at various phases across the continuum of care, including diagnosis, treatment, rehabilitation, follow-up and palliative care". The task of breast care nurses is to provide information, education and support, multidisciplinary care; encourage patients; collaborate with other health professionals; direct the patients to the required units; liaison nursing; and provide counseling (Karayurt and Andıç, 2011). In addition, nurses should be aware of the physical and psychosocial status of the individual affected by breast cancer and should evaluate the individual and her family appropriately (Eicher *et al.,* 2012).

In studies, coordinating patients and providing physical and psychological support is often emphasized as a task of the breast care nurse (Ahern & Gardner, 2015; Jones *et*

al., 2010). It was stated in Halkett et al. (2006) that the support provided by breast care nurses included communication, friendly relationship, awareness of women's needs, accessibility, giving confidence, and providing practical information. In another study, it was found that the general support of BCN was perceived as high, and that half of the women received information about their own status from BCN. For this reason, it is stated that BCN is an important part of the management of patients' diagnosis and care process (Kadmon *et al.*, 2015). Participants using BCN services were found to have low emotional statements about fatigue, unmet needs related to anxiety, future appearance, and death (Ahern *et al.,* 2016). In another study, the role of BCN was classified as awareness, access, coordination, and providing knowledge and psychosocial, emotional, and practical support. In the study, nurses were thought to be invaluable for participants in terms of providing information, supporting and being accessible at any time (Eley *et al.,* 2008). According to the findings of qualitative data analysis of Kadmon et al. (2015), BCN was perceived by women as a kind, supportive, empathic and sensitive figure, a professional and practical person giving a feeling of confidence and authority. The self-efficacy scores of women using BCN were found significantly higher in terms of accessing and understanding knowledge, and attending care. The patients using BCN services indicated positive results in terms of reduced unmet needs and increased self-sufficiency (Ahern *et al.,* 2016).

In conclusion, breast cancer is a type of cancer involving complicated processes affecting women's life in many ways. Its psychosocial effects may have consequences for patients. In this process, nurses should provide education, counseling, and support for women with breast cancer and give them care in a multidisciplinary manner. There is a need for breast care nurses in clinics because they are accessible at all times and have more knowledge. In order to sustain a multidisciplinary approach, it is thought that every clinic must have a specialized breast care nurse.

REFERENCES

Ahern, T. & Gardner, A. (2015). Literature review: An exploration of the role of the Australian Breast Care Nurse in the Provision of Information and Supportive Care. Collegian, 22(1), 99-108.

Ahern, T.; Gardner, A.; Courtney, M. (2016). Exploring Patient Support by Breast Care Nurses and Geographical Residence as Moderators of the Unmet Needs and Self-efficacy of Australian Women with Breast Cancer: Results from a Cross-sectional, Nationwide Survey. European Journal of Oncology Nursing, 23, 72-80.

Akça, M.; Ata, A.; Nayır, E.; Erdoğdu, S.; Arıcan, A. (2014). Impact of Surgery Type on Quality of Life in Breast Cancer Patients. J Breast Health, 10, 222-8

Al-Ghazal, S.K.; Fallowfıeld, F.; Blamey, R.W. (2000). Comparison of Psychological Aspects and Patient Satisfaction Following Breast Conserving Surgery, Simple Mastectomy and Breast Reconstruction. European Journal of Cancer. 36, 1938-1943

Anagnostopoulos, F. & Myrgianni, S. (2009). Body Image of Greek Breast Cancer Patients Treated with Mastectomy or Breast Conserving Surgery. Journal of Clinical Psychology in Medical Settings, 16(4), 311-321

Bloom, J.R.; Stewart, S.I.; Chang, S.; Banks, P.J. (2004). Then and Now: Quality of Life of Young Breast Cancer Survivors. Psycho-Oncology, 13(3), 147–160

Çalışkan, T.; Duran, S.; Karadaş, A.; Ergün, S.; Tekir, Ö. (2015). Kanser Hastalarının

Yaşam Kalitesi ve Sosyal Destek Düzeylerinin Değerlendirilmesi. Kü Tıp Fak Derg, 17(1), 27-36
Eicher, M.; Kadmon, I.; Claassen, S.; Marquard, S.; Pennery, E.; Wengstrom, Y.; Fenlon, D. (2012). Training Breast Care Nurses throughout Europe: The EONS Postbasic Curriculum for Breast Cancer Nursing. European Journal of Cancer, 48(9), 1257-1262.
Eley, R. M.; Rogers-Clark, C.; Murray, K. (2008). The Value of a Breast Care Nurse in Supporting Rural and Remote Cancer Patients in Queensland. Cancer Nursing, 31(6), E10-E18.
Eylen, B. (2002). Kanser Hastası Sosyal Destek Ölçeğinin Geçerlik, Güvenirlik ve Faktör Yapısı Üzerine Bir Çalışma. Uludağ Üniversitesi Eğitim Fakültesi Dergisi, 15(1).
Fang, S.; Shu, B.C.; Chang, Y.J. (2013). The Effect of Breast Reconstruction Surgery on Body Image among Women after Mastectomy: A Meta-Analysis. Breast Cancer Research and Treatment, 137(1), 13-21.
Fernandes, A.F.; Cruz, A.; Moreira, C.; Santos, M.C. (2014). Social Support Provided to Women Undergoing Breast Cancer Treatment: A Study Review. Advances in Breast Cancer Research, 3, 47-53
Fobair, P.; Stewart, S.L.; Chang, S.; D'onofrio, C.; Banks, P.J.; Bloom, J.R. (2006). Body İmage and Sexual Problems in Young Women with Breast Cancer. Psycho-Oncology, 15(7), 579-594.
Ganz, P.A. (2008). Psychological and Social Aspects of Breast Cancer. Oncology (Williston Oark), 22, 642-6.
Ganz, P.A; Desmond, K.A.; Leedham, B.; Rowland, J.H.; Meyerowitz, B.E.; Belin, T.R. (2002). Quality of Life in Long-Term, Disease-Free Survivors of Breast Cancer: A Follow-Up Study. J Natl Cancer Inst, 94(1), 39-49
Garratt, A.; Schmidt, L.; Mackintosh, A.; Fitzpatrick, R. (2002). Quality of Life Measurement: Bibliographic Study of Patient Assessed Health Outcome Measures. BMJ, 324(7351) :1417
Gümüş, A.B. (2006). Meme Kanserinde Psikososyal Sorunlar ve Destekleyici Girişimler. Meme Sağlığı Dergisi, 2(3).
Halkett, G.; Arbon, P.; Scutter, S.; Borg, M. (2006). The Role of the Breast Care Nurse during Treatment for Early Breast Cancer: The Patient's Perspective. Contemporary nurse, 23(1), 46-57.
Hocaoğlu, Ç.; Kandemir, G.; Civil, F. (2007). Meme Kanserinin Aile İlişkilerine Etkileri. Meme Sağlığı Dergisi, 3(3): 163-6.
Işıkhan, V. (2007). Kanser ve Sosyal Destek. Toplum ve Sosyal Hizmet, 18(1).
Jendrian, S.; Steffens, K.; Schmalfeldt, B.; Laakmann, E.; Bergelt, C.; Witzel, I. (2017). Quality of Life in Patients with Recurrent Breast Cancer after Second Breast-Conserving Therapy in Comparison with Mastectomy: The German Experience. Breast Cancer Research and Treatment, 3(163), 517-526.
Jones, L.; Leach, L.; Chambers, S.; Occhipinti, S. (2010). Scope of Practice of the Breast Care Nurse: A Comparison of Health Professional Perspectives. European Journal of Oncology Nursing, 14(4), 322-327.
Kadmon, I.; Halag, H.; Dinur, I.; Katz, A.; Zohar, H.; Damari, M.; & Kislev, L. (2015). Perceptions of Israeli Women with Breast Cancer Regarding the Role of the Breast

Care Nurse throughout all Stages of Treatment: A Multi Center Study. European Journal of Oncology Nursing, 19(1), 38-43.
Karayurt, Ö. & Andıç, S. (2011). Meme Bakım Hemşireliği, The Journal of Breast Health, 7 (4)
Khorshid, L.& Arslan, G.G. (2006). Hemşirelik ve sosyal desteğin önemi, Dirim, 81(1), 182-188
Koçan, S. & Gürsoy, A. (2016). Body Image of Women with Breast Cancer after Mastectomy: A Qualitative Research. J Breast Health, 12, 145-50
Mock, V. (1993). Body İmage in Women Treated for Breast Cancer. Nurs Res, 42, 153–157
Okanlı, A. (2004). Kadınlarda Mastektominin Psikososyal Etkileri. Uluslararası İnsan Bilimleri Dergisi, Issn: 1303-5134.
Özkan, S. & Alçalar, N. (2009). Meme Kanserinin Cerrahi Tedavisine Psikolojik Tepkiler. Meme Sağlığı Dergisi, 5, 60-4.
Özkaraman, A.; Culha, I.; Fadıloğlu, Z.C.; Köşgeroğlu, N.; Gökce, S.; Alparslan, G.B. (2015). Relationships between Social Support and Social Image Concerns in Turkish Women with Breast Cancer. Asian Pac J Cancer Prev, 16(5), 1795-1802.
Özyurt, B.E. (2007). Kanser Hastalarının Algıladıkları Sosyal Destek Düzeyine İlişkin Betimsel Bir Çalışma. Kriz Dergisi, 15(1), 1-15.
Rosenberg. S.M.; Tamimi, R.M.; Gelber, S.; Ruddy, K.J.; Kereakoglow, S.; Borges, V.F.; Come, S.E.; Schapira, L.; Winer, E.P.; Partridge, A.H. (2013). Body İmage in Recently Diagnosed Young Women with Early Breast Cancer. Psycho-Oncology, 22(8), 1849–1855.
Siegel, R.I.; Miller, K.Y.D.; Jemal, A. (2016). Cancer Statistics, 2016, Ca Cancer J Clin, 66, 7–30.
Stewart, B.W. & Wild C.P. (Eds) (2014). World Cancer Report 2014. Lyon: İnternational Agency for Research on Cancer.
Şendil, G. (2012). Mastektomi Geçirmiş Kadınların Evlilik İlişkisinin İncelenmesi. Psikoloji Çalışmaları Dergisi, 20, 151-158.
Tünel, M.; Vural, A.; Evlice, Y.E.; Tamam, L. (2012). Meme Kanserli Hastalarda Psikiyatrik Sorunlar. Arşiv Kaynak Tarama Dergisi, 21(3), 189-219
Türkiye Kanser İstatistikleri 2014 (2017). T.C. Sağlık Bakanlığı, Türkiye Halk Sağlığı Kurumu, Ankara. Available at: https://hsgm.saglik.gov.tr/depo/birimler/kanser-db/istatistik/2014-RAPOR._uzuuun.pdf (accessed: 10 May 2018).
Wortman, C.B. (1884). Social Support and the Cancer Patient Conceptual and Methodologic Issues. Cancer, 53(10), 2339-2362.
Yates, P.; Evans, A.; Moore, A.; Heartfield, M.; Gibson, T.; Luxford, K. (2007). Competency Standards and Educational Requirements for Specialist Breast Nurses in Australia. Collegian, 14(1), 11-15.
Yıldız, A.; Karayurt, Ö. (2011). Meme Kanserli Kadınların Lenfödem Nedeniyle Yaşadıkları Güçlükler. Meme Sağlığı Dergisi/ Journal Of Breast Health, 7(3).

Chapter 25

Mobbing and Its Effects on Nurses Working at the Hospitals

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Mobbing is a phenomenon that can be expressed in the literature with the concepts such as intimidation, violence in workplace, psychological abuse, psychological terror and is a big problem for organizations. "Mobbing", which can be translated as "organizational pressure" into Turkish, comes from the root of "mob" in English. The exact counterpart of the word "mob" can be expressed as an irregular crowd, intent on causing trouble or violence. It is a negative communication process in daily use operating as ganging up on someone, humiliating, blaming the target person with disharmony, oppressing through isolation and malicious behaviours, implications and dismissive attitudes (Çınar et al., 2016: 90). According to Leymann (1996: 168) mobbing emerges along with unethical communication in the workplaces, hostile attitudes, increasing competition and corruption of relationships. Mobbing is a communication of conflict between colleagues or superiors and employees in organizations. It is also defined as a situation which emerges as a result of a systematic hostile and unethical communication way towards one or more employees in a workplace. Mobbing which may cause “dissatisfaction” and “burnout syndrome” in employees is the attempt to discredit and humiliate someone through unfair accusitions, gossip, implication and sarcasm. The concept of mobbing which can also be expressed as psychological abuse, bullying, victimization and the terror in workplaces has been defined as a factor which increases the social stress causing psychological, social and psychosomatic problems in victims (Einarsen et al., 2003: 3). Even it is a malicious behaviour model which may cause harassment and leaving job through psychological abuse and emotional abuse (Kehribar et al., 2017: 2).

Today especially the staff in health sector have to cope with the high mobbing risk (Chappel and DiMartino, 2006: 58; Leymann, 1996: 177). We can say that the employees in health sector expose the mobbing risk more than the ones in other sectors due to some reasons such as busy and stressful working schedule, the necessity for different occupational groups to be together, direct communication with patients, working indoor together for long hours, shift work, majority of women employees, disorganized and unplanned working conditions, complex structure of hospitals (Akbolat and Ünal, 2017: 231; Bayrak Kök et al., 2014: 48).

It has been reported in the literature that nurses expose mobbing most within the health sector employees (Karakaş and Okanlı, 2013: 563; Çınar et al., 2016: 91). Mobbing can not only be made by peers or a group at the same status, but also by senior

management as well. For instance, it has been detected that nurses expose to verbal violance by physicians, administrators, colleagues, inferiors, patients and patient relatives (Shoghi et al., 2008: 184; Sofield and Salmond, 2003: 278; Demir et al., 2014: 2-3; Karakaş and Okanlı, 2013: 563). Nurses are more likely to experience mobbing due to the matrix organization in hospitals as the places where mobbing is experienced most among health institutions operating in a dynamic and variable atmosphere, 7 days and 24 hours of non-stop service, majority of women employees and busy working schedule (Tengilimoğlu et al., 2017: 185). Due to the dual authority line, the nurses can experience conflict, instability, oppression, unrest and therefore, job loss, post-traumatic stress disorder, material and nonmaterial losses. And therefore, mobbing should be regarded among the basic interest of nursery.

All of the factors such as the high mobbing rate in studies conducted in health sector, more number of patients, busy working schedule affecting even the family life, conditions of insufficient medical facilities, insufficient salaries of health sector employees as compared to working conditions, lack of professional competence, becoming a nurse at young ages and away from the family, taking the responsibilities of patients by unexperienced nurses, therefore lack of self-defence and patients' defense, problems in bureaucratic structure, favoritism to the ones in good communication with administration and discrimination for the ones contrary to administration are among the reasons stimulating mobbing (Kehribar et al., 2017: 4).

Most of the nurses working at the hospitals have to be silent and patient for negative behaviours that they experience in their workplace due to economic reasons. For that reason, the presence of unhappy and underperforming nurses unintentionally prevents a quality patient care (Aksu and Akyol, 2009: 70). When the studies on nurses about mobbing is examined, it was determined that mobbing exposure rate of nurses in a study by Baş (2012: 34) was 37,7% and it was 11,9% in a study by Demir et al. (2014: 3). In a study by Yıldırım (2009: 504) it was reported that 21% of nurses exposed to mobbing. In a study by Geçici and Sağkal (2011: 53) it was found that 43% of nurses exposed to mobbing throughout their professional life. However, in another study it was expressed that 12,7% of midwives and nurses exposed to at least one or some of mobbing behaviours once a week in last six months (Güven et al., 2012: 117). Thus, in the study by Ayakdaş and Arslantaş (2018: 36-43) it was found that one of two nurses exposed to psychological violance by colleagues. However, in another study by Yurdakul et al., about one of each five midwives and nurses exposed to psychological harassment behaviours in workplaces. It was determined that midwives and nurses exposed to psychological harassment behavior by administrators, physicians, colleagues, other coworkers, patients and patient relatives most (Baş, 2012: 42; Yurdakul et al., 2011: 39; Karakuş, 2011: 96). In studies by Günay et al. (2016: 12) and Karakuş (2011: 93) mobbing behaviours that nurses exposed to were detected as interruption without any reason, disregarding their ideas about the job, non-capacity tasks, criticizing private life, and exposore to gossips, swear and curse. Aiken et al. (2001: 44) and Sofield and Salmond (2003: 274) in their studies stated that restructuring the hospitals, excessive work, destaffing, increasing charge and verbal abuse were the most powerful factors contributing to nursery labour.

In a study conducted by Kingma (2001: 129), it was identified that health sector employees were 16 times more likely to expose to violence than other service sector

employees and nurses were 3 times more at risk than other health sector employees. In a study by Pai and Lee (2011: 1405) on nurses working in Taiwan it was reported that 155 (29,8 %) of the participants exposed to bullying / mobbing, 67 (12,9 %) of them exposed to sexual abuse, 268 (51,4 %) of them exposed to verbal abuse and 102 (19,6 %) of them experienced physical violance. It was determined that the nurses younger than 30 with bachelor's degree exposed to verbal and physical abuse more and working at night shift increased the risk of sexual abuse. According to an another study by Efe and Ayaz (2010: 328), nurses exposing to mobbing expressed that they had communication problems and they stated that the nurses younger than 25 and working at intensive care units expose mobbing more. However, in a study by Kulakçı et al., (2015: 136) it was identified that the employees in other units experience mobbing more than the ones in intensive care units and emergency services. In a study by Bayrak Kök et al. (2014: 54), on nurses working for public, university and private hospitals it was found that the nurses exposing to mobbing most worked in public hospitals. However, in the study by Yıldırım and Yıldırım (2007: 1444) it was identified that the nurses working for private hospitals exposed to mobbing remarkably more than the ones working for public hospitals.

EFFECTS

It is a fact that working life affects individuals and the individuals also affect the working life (Günay et al., 2016: 13). In scientific studies on psychology of management and working in recent years, mobbing, which are thought to initially emerge with psychological pressure originating from the competition in the workplace, but are not recognized when they are experienced and even are not wanted to be recognized, which leads the employees to leave work and which are unlimited actions, has many effects in working life (Çınar et al., 2016: 90). Mobbing is a kind of cancer in terms of organizations. Beginning from the malign cell, it is rapidly plunged into all vital organs of organization (Çarıkçı and Yavuz, 2009: 60). Mobbing is a phenomenon which causes permanent problems that can not be solved, which affects the success level of the organization, and that aggravates the price that is needed to be paid. Even heavier scenes can be experienced in which they may have to pay the price of their own life (Tınaz, 2006: 15). It is possible to appreciate the effects of mobbing in working life into two groups as for individuals and organizations.

THE EFFECTS FOR INDIVIDUALS

Mobbing may create deep problems on physical and psychological health of individuals. Among the attacks directly affecting individuals in mobbing behavior; the victim is physically forced to do heavy works and is exposed to physical violence threats, physical harm and direct sexual abuse (Kılıç et al., 2016: 67). In the following studies, the examples about the health problems in nurses led by mobbing related to both self-esteem and communication disorders and physical disturbances were given:

First of all, a negative scene which can stand out with extremely severe symptoms such as health problems and costs caused by stress and stress-related diseases on individuals, senseless fear and excitement in the form of depression, panic attack crises, high blood pressure, backaches, decrease in immune system, feeling of abandonment, anorexia, losing weight, post-traumatic stress disorder etc. can be seen (Einarsen et al., 2003: 271, Leymann and Gustafsson, 1996: 253; Vartia, 2001: 63-64).

Mobbing which appears in victims at the first stage with the problems such as perspiration and trembling at hands, anorexia, headaches and backaches, unexplained crying and sleep disorders may cause the complaints such as high blood pressure, stomach problems and depression at the second stage and panic attack, intense anxiety and even suicidal consequences at the third stage (Özdemir et al., 2013: 187).

However, in a study by Yıldırım (2009) physical disorders such as fatigue, excessive eating or poor appetite in stress and post-stress periods ad headache were identified. In a study by Aksu and Akyol (2009: 69) in which the exposure status of intensive care nurses to emotional abuse is analyzed, it was found that emotional abuse caused emotional and physical health problems.

Ayakdaş and Arslantaş in their study asserted that the effects of mobbing on nurses exposed to colleague violance were that more than four-thirds of the nurses recalled the behaviors to them and therefore felt deeply sad and remembered the behaviors to them again again. In a study by Yurdakul et al. (2011: 39) it was reported that midwives and nurses had some psychophysiological and emotional reactions such as feeling stressed and tired, headache, gastrointestinal system problems, severe sadness, resuscitation. In the study by Pai and Lee (2011: 1405) it was determined that verbal abuse increased the anxiety rate and the most serious psychological damage of the violence experienced by the nurses in the workplace was post-traumatic stress disorder.

According to another study by Efe and Ayaz (2010: 328), other adverse effects of mobbing on nurses were reported as shock, incredulity, guilt, physical wounds, diseases (such as migraine, vomiting), lack of self-esteem and belief in professional competence, sexual problems, deterioration in interpersonal relationships, and an increase in patient-nurse anxiety (Karakaş and Okanlı 2013: 572).

In studies by Dikmetaş et al., (2011: 9-10), Kulakçı et al., (2015: 139), Filizöz and Ay (2011: 239) a statistically significant relationship was identified between mobbing and the level of burnout. Midwives and nurses' exposure to mobbing may cause their health to deteriorate and experience burnout and therefore, to develop many risk factor such as a decrease in health care quality, influence in family and the negative influence in public health (Özdemir et al., 2013: 187; Güven et al., 2012: 118).

THE EFFECTS FOR ORGANIZATION

The problems affecting organizations in connection with the effects of mobbing for individuals can also be experienced to a great extent. It has been found in several studies in the literature as the following that mobbing may cause many organizational problems such as job dissatisfaction, unrest, loss of performance, job loss.

In the mobbing process affecting the life quality negatively and damaging the work peace we can observe low morale, dissatisfaction at work, job losses and absenteeism, taking a rest, damaging properties and increases in security expenditures, civil trials and personel shift loop rate (Zapf et al., 1996: 218; Yıldırım et al., 2007: 458; Yıldırım and Yıldırım, 2007: 1451). Among other effects of mobbing we can also say the decrease in performance, oganizational silence and the damage in organizational commitment (Erdirençelebi and Şendoğdu, 2016: 111; Duffy and Sperry, 2007: 398). The presence of the relationship between work commitment and mobbing was presented in a study by Camerino et al., (2008: 42-43).

In the study by Karakuş (2011) it was emphasized that mobbing caused the

performance to decrease and the personnel ship loop rate, releases and getting offs to increase. The team work in workplace will reduce and ooperation will also detoriorate. In addition, when the relationship between job satisfaction and mobbing is analyzed, it was identified that mobbing affected the job satisfaction negatively (Karakuş, 2011: 97).

In the study by Bayrak Kök et al., (2014: 55) psycho-social, physiological effects and the effects on the job were classified and the effects on job was determined to be the highest effects among these effects. In the study by Aksu and Akyol (2009: 69) it was found that emotional abuse stress forced nurses to cope with behavioural or performance problems, decreased the job satisfaction and weakened the work commitment. In a similar study by Kılıç and Tel (2017: 31) it was observed that more than half of health sector employees exposed to mobbing and this affected the job satisfaction.

In studies by Kulakçı et al. (2015: 139) and Johnson and Rea (2009: 87-88) it was suggested that the nurses exposing to mobbing thought to leave the job. However, in the study by Yıldırım and Yıldırım (2007) it was determined that nurses gave emotional and physical reactions against mobbing. It was stated that the most common behaviours against mobbing were "being more engaged to work and being organized" and "working more carefully to prevent criticism" and also 10% of the participants sometimes thought to suicide.

CONCLUSION AND RECOMMENDATIONS

The fact that nurses who have important duties and responsibilities related to sanitation and health development expose to mobbing may have some consequences such as being dissatisfied and unhappy, decreased business performance, increased misapplication risk and reduced patient care quality. For that reason, mobbing in nursery is a multidimentional and serious issue that needs to be addressed sensitively (Günay et al., 2016:13).

When mobbing is concerned, reformatory measures should be taken as soon as possible. It is important to raise awareness about mobbing to be done at the beginning in organizations in which mobbing exists. Ensuring a workplace culture in which all employees respect each other and applying legal processes when necessary prevent mobbing behaviors and excessive damages of mobbing whe it occurs (Çarıkçı and Yavuz, 2009: 60).

Health professionals and administrators have some responsibilities in order to prevent mobbing as a global problem in recent years. Since mobbing has a direct impact on patient safety in nursery, it is necessary to remove this serious problem that concerns the health of both the patient and the employees. Necessary regulations should be made by health sector administrators and bureaucrats in order to prevent mobbing since it leads both the level of health to decrease and economic costs to increase for societies and countries.

Education should be given to the community and to the health personnel to create consciousness about this issue. Especially institutions can prevent verbal abuse in nurses through educations and policies (Sofield and Salmond 2003: 278). Educations on definition of and coping with mobbing, interpersonal relationships, stress and coping skills with stress and self-expression should be given to new health sector employees

and orientation programmes for adaptation to workplace should be held, the definition of and coping with mobbing and its effects and legel framework should be added to midwives and nurses curriculum (Güven et al., 2012: 122).

To prevent mobbing on nurses, it is necessary to create a structure that values them and the communication network is open (Gökdere Çınar et al., 2016: 92). It is recommended that an open and effective communication should be maintained between the health care team members and the health care professionals and the health care professionals in the health care institutions (Kılıç and Tel, 2017: 39). The cost of mobbing to organization should be determined, legal precautions to prevent mobbing should be taken and victims of mobbing should be legally protected (Karakaş and Okanlı, 2013: 573; Kılıç and Tel 2017:39).

REFERENCES

Aiken, L. H., Clarke, S. P., Sloane, D. M., Sochalski, J. A., Busse, R., Clarke, H. et al., (2001), "Nurses' Reports on Hospital Care in Five Countries", Health Affairs, 20(3): 43–53

Akbolat, M., Ünal, Ö. (2017), "Sağlık Kurumlarında Mobbing", İçinde Sağlık Kurumları Yönetiminde Örgütsel Davranış Konuları, (Ed. M. Çimen, S. Deniz), 1. Basım, Ankara: Nobel Akademik Yayıncılık.

Aksu, T., Akyol, A., (2009), "Yoğun Bakım Hemşirelerinin Duygusal Tacizden Etkilenme Durumlarının İncelenmesi", Yoğun Bakım Hemşireliği Dergisi, 13(2): 69-76.

Ayakdaş, D., Arslantaş H., (2018), "Hemşirelikte Meslektaş Şiddeti: Kesitsel Bir Çalışma", J Psychiatric Nurs, 9(1): 36-44.

Baş, M., (2012), "Bir Eğitim Araştırma Hastanesinde Çalışan Hemşirelerde Mobbing ve Anksiyete", Selçuk Üniversitesi Sağlık Bilimleri Enstitüsü, Halk Sağlığı ABD, Konya.

Bayrak, Kök, S., Mohan Bursalı, Y., Eroğlu, Ş. G., (2014), "Psikolojik Şiddetin Bireysel ve Örgütsel Yansıması: Yıldırma", Pamukkale Journal of EurasianSocioeconomicStudies, 1(1): 44-62.

Camerino, D., Estryn-Beharc, M., Conwaya, P.M., Isabella, B., Heijdend JM, Hasselhorn, H. M., (2008), "Workrelated Factors and Violence among Nursing Staff in The European NEXT Study: A Longitudinal Cohort Study", International Journal of Nursing Studies, 45(1): 35-50.

Chappel, D., DiMartino, V., (2006), "Violence at Work", 3rd. Edition, Geneva: ILO.

Çarıkçı, İ. H., Yavuz, H., (2009), "Çalısanlarda Mobbing (Psikolojik Siddet) Algısı: Sağlık Sektörü Çalışanları Üzerine Bir Araştırma", Journal of Süleyman Demirel University Institue of Social Sciences, 2(10): 47-62.

Çınar, H. G., Korkmaz A. Ç., Yılmaz, D., (2016), "Hemşirelerde Mobbing", J Hum Rhythm, 2(2): 89-93.

Demir, G., Bulucu G. D., Özcan A., Yılmaz D., Şen H., (2014), "Hemşirelerin Mobbinge Uğrama Durumlarının Belirlenmesi", Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi, 4(1): 1-5.

Dikmetaş, E., Top, M., Ergin, G., (2011), "Asistan Hekimlerin Tükenmişlik ve Mobbing Düzeylerinin İncelenmesi", Türk Psikiyatri Dergisi 2011; 22(3):137-49.

Duffy M, Sperry L., (2007), "Workplace Mobbing: Individual and Family Health

Consequences", The Family Journal, 15(4): 398-404.
Efe, S. Y., Ayaz S., (2010), "Mobbing Against Nurses in The Workplace in Turkey", International Nursing Reivew, 57(3): 328-34.
Einarsen, S., Hoel, H., Zapf, D. and Cooper, C., (2003), "Bullying and Emotional Abuse in the Workplace", London and NewYork: Taylor&Francis.
Erdirençelebi, M., Şendoğdu, A. A., (2016), "Effects of Mobbing and Organizational Silence on Employee's Performance", The Macrotheme Review, 5(5): 101-116.
Filizöz, B., Ay, F. A., (2011), "Örgütlerde Mobbing ve Tükenmişlik Olgusu Arasındaki İlişkilere Yönelik Bir Araştırma", e-Journal of New World Sciences Academy Social Sciences, 6(2):229-41.
Geçici, B. N., Sağkal T., (2011), "Ödemiş'te Çalışan Hemşirelerin Mobbinge Maruz Kalma Durumlarının İncelenmesi", Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi. 4(1): 53-62.
Gökdere Çınar, H., Korkmaz, A. Ç. ve Yılmaz, D., (2016), "Hemşirelerde Mobbing", J Hum Rhythm, 2(2): 89-93.
Günay, U., Oltuluoğlu, H., Aylaz, R., Çalışkan, Z., Tuncay, S., (2016), "Hemşirelerin Mobbing Davranışlarına Maruz Kalma Durumlarının Belirlenmesi", İnönü Üniversitesi Sağlık Bilimleri Dergisi, 5 (2): 12-18.
Güven, Ş. D., Özcan, A., Kartal, B., (2012), "Nevşehir İl Merkezinde Kamuya Bağlı Sağlık Kuruluşlarında Çalışan Ebe ve Hemşirelerin Mobbing'e Uğrama Durumları", Balıkesir Sağlık Bilimleri Dergisi, 1(3), 117-123.
Johnson, S. L., Rea, R. E., (2009), "Workplace Bullying", The Journal of Nursing Administration, 39(2): 84-90.
Karakaş, S. A., Okanlı A., (2013), "Hemşirelik ve Mobbing", Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi /Gümüşhane University Journal of Health Sciences, 2(4): 562-576.
Karakuş, H., (2011), "Hemşirelerde Kurum ve Yönetimin Etkisine Bağlı Olarak Yaşanan Mobbing Davranışları", Akademik Araştırmalar ve Çalışmalar Dergisi, 3(5): 83-102.
Kehribar, A., Karabela, Ş. N., Kart Yaşar, K., Okur, A., Derya, M., Özgür, C. vd., (2017), "Çalışma Hayatında Mobbing: Nedenleri, Bileşenleri ve Ülkemizdeki Durumu", Medical Journal of Bakırkoy, 13(1): 1-9.
Kılıç N., Tel H., (2017), "Sağlık Çalışanlarında Mobbing Algısı ve İş Doyumunun Belirlenmesi". F. N. Hem. Derg, 25(1): 31-40.
Kılıç, T., Çiftçi, F., Şener, Ş., (2016), "Sağlık Çalışanlarında Mobbing ve İlişkili Faktörler", Sağlık ve Hemşirelik Yönetimi Dergisi, 3(2), 65-72.
Kingma, M., (2001), "Workplaceviolence in the Health Sector: A Problem of Epidemic Proportion", Int Nurs Rev, 48: 129-130.
Kulakçı, H., Ayyıldız, T., Veren, F., Kalıncı. N., Topan, A., (2015), "Zonguldak İl Merkezi Kamu Hastanelerinde Çalışan Ebe ve Hemşirelerin Mobbing ve Tükenmişlik Düzeylerinin ve Bunları Etkileyen Faktörlerin Değerlendirilmesi", Hemşirelikte Eğitim ve Araştırma Dergisi, 12(2): 133-141.
Leymann, H., (1996), "The Content and Development of Mobbing at Work", Eur J Work Organ Psychol, 5: 165-184.
Leymann, H., Gustafsson, A., (1996), "Mobbing at Work and the Development of Post-Traumatic Stress Disorders", European Journal of Work and Organizational

Psychology, 5(2): 251-275.
Özdemir S., Tosun B., Bebiş H., Yava A., (2013), "Hemşire Kaleminden Mobbing: İşyerinde Psikolojik Saldırı, TAF Prev Med Bull, 12(2): 183-92, http://dx.doi.org/10.5455/pmb.1-1329292489.
Pai, H.C., Lee, S., (2011), "Risk Factors for Workplace Violence in Clinical Registered Nurses in Taiwan", Journal Clinical Nursing 20 (9-10):1405-1412.
Shoghi M., Sanjari M., Shirazi F., Heidari S., et al., (2008), Workplace Violence and Abuse Against Nurses in Hospitals in Iran, Asian Nurs Res (Korean Soc Nurs Sci), 2: 184-93.
Sofield, L., Salmond, S. W., (2003), "Workplace Violence: A Focus on Verbal Abuse and Intent to Leave the Organization", Orthopaedic Nursing, 22(4): 274-283.
Tengilimoğlu, D., Işık, O. ve Akbolat, M., (2017), "Sağlık İşletmeleri Yönetimi", 8. Basım, Ankara: Nobel Akademik Yayıncılık.
Tınaz, P., (2006), "İşyerinde Psikolojik Taciz (Mobbing)", Çalışma ve Toplum, 4: 13-28.
Vartia, MA.-L., (2001), "Consequences of Workplace Bullying with Respect to the Well-Being of Its Targets and the Observers of Bullying", Scand J Work Environ Health, 27(1): 63-69.
Yıldırım, A., Yıldırım, D., (2007), "Mobbing in the Workplace by Peers and Managers: Mobbing Experienced by Nurses Working in Healthcare Facilities in Turkey and its Effect on Nurses", Journal of Clinical Nursing, 16(8): 1444–1453.
Yıldırım, D., Yıldırım, A., Timuçin, A., (2007), "Mobbing Behaviors Encountered by Nurse Teaching Staff", Nursing Ethics. 4(4): 447-463.
Yıldırım, D., (2009), "Bullying among Nurses and its Effects", International Nursing Review, 56(4): 504- 511.
Yurdakul, M., Türkleş, S., Yılmaz, D. V., Çelik, T., Şahin, M., Özcan, A., (2011), "Ebe ve Hemşirelerin İşyerinde Karşılaştıkları Psikolojik Bezdirme Davranışları", Hemşirelikte Araştırma Geliştirme Dergisi, 3: 28-41.
Zapf, D., Knorz, C., Kulla, M., (1996), "On the Relationship Between Mobbing Factors, and Job Content, Social Work Environment, and Health Outcomes", European Journal of Work and Organizational Psychology, 5(2): 215-237.

Chapter 26

Pediatric Fear-Avoidance Model of Chronic Pain

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INTRODUCTION

The fear-avoidance model is a scientific model encompassing the development process and the management of pain. It explains the stages of threat factors that might develop following acute pain and the mechanism by which pain becomes chronic. It has been modified a few times in light of behavioral and cognitive studies. In concept, it has helped the development and assessment of therapy choices regarding pain (Asmundson et al., 2012; Simons & Kaczynski, 2012). In recent years, it has become crucial for the pediatric pain to be assessed with the fear-avoidance model.

Fear-Avoidance Model

Pain is basically an important biological warning threatening our bodies and prompting protective behavior such as being mindful of the sources causing it, sudden withdrawal, facial expression and avoidance (Vlayen, Crombez & Linton, 2016). Injuries of musculoskeletal system can cause chronic pain, stress, and disability. In order to explain the causes of these symptoms that develop as a result of chronic pain the fear-avoidance model has been developed by Lethem and colleagues (1983) (Lethem, Slade, Troup & Bentley, 1983).

When an injury happens, pain is experienced and assessed. Even though most individuals do not regard the pain experienced as a catastrophe, for many pain is considered as an unwanted and unpleasant situation. In that regard, many individuals limit activities that favorable for themselves and make an effort to gradually increase these activities until recovery is ensured. However, for quite a few people such pain can mean catastrophe. For example, the individual might say “I will never be able to do the things I love doing because of this pain.” The extent of the catastrophe varies depending on the existing physiological characteristics of the person. As a result of that, the pain experienced results in anxiety due to fear and pain. For some people with chronic pain, this anxiety causes avoidance, functional disability, depression, experiencing even more pain and catastrophe. The most significant aspect of this situation is its transformation into a self-sustaining cycle. Even though, the model was initially used to determine chronic idiopathic musculoskeletal pains, it has also been used in headaches (Norton & Asmundson, 2004), fibromyalgia (Goubert et al. 2004) and serious burn pains (Sgroi, Willebrand, Ekselius, Gerdin & Andersson, 2005). Studies on the model (studies detailing the mechanisms of the model and revealing the effects of personality traits on the fear of pain) by researchers and theoreticians are ongoing (Asmundson, Norton &Vlaeyen, 2004; Norton& Asmundson, 2003; Greenberg & Burns, 2003). In recent years, some aspects of the fear-avoidance model have also been used to diagnose, assess and treat pediatric pains (Asmundson et al., 2012).

Fear-Avoidance Factors for Children/Adolescents

There are not many studies investigating the impact of the fear-avoidance model on pediatric chronic pain and disability. On the other hand, there are studies in the literature that examine the effects of those components (pain catastrophizing, sensitivity to avoidance etc.) which form the model. It is generally believed that pain catastrophizing in juveniles and adolescents is related to the state of disability caused by pain as well as the characteristics of pain. Studies have proven that pain catastrophizing causes disability in children with back pain (Lynch, Kashikar-Zuck, Goldschneider & Jones, 2006), recurrent abdominal pain (Langer, Romano, Levy, Walker, Whitehead, 2009), chronic mixed pain states (Crombez et al., 2003; Vervoort, Goubert, Eccleston, Bijttebier & Crombez, 2005). In addition to disability caused by pain, pain catastrophizing is directly related to the other aspects of the model such as pain anxiety (Pagé, Fuss, Martin, Escobar & Katz, 2010) and fear (Huguet, McGrath & Pardos, 2011).

The fear-avoidance model dictates that when children and adolescents continue activities that are important to them (e.g. spending time with friends, joining physical activities though some pain is experienced), it reduces disability and depression caused by pain. The model also explains the effects of psychological responses given to pain (by the changes on the levels of fear and anxiety caused by pain) on the state of disability (Leeuw et al. 2007).

Another insight by this model is that avoiding physical activity due to pain not only causes functional disability but also depression. Pinquart and Shen in the meta-analysis they have conducted have found out that adolescents with chronic pain have shown more signs of depression compared to adolescents and children who are healthy or with a chronic disease (Pinquart & Shen, 2010). In children and adolescents experiencing chronic pain, depression and functional disability are related to each other (Kashikar-Zuck, Goldschneider, Powers, Vaught& Hershey, 2001). The relationship between depression and chronic pain is bidirectional. While chronic pain causes the development of depression (by activity restriction and functional disability), depression presents a risk factor for chronic pain to persist (Stanford, Chambers, Biesanz & Chen, 2008).

Fear Avoidance Factors for Parents - Children/Adolescents

Social interactions, especially during the early childhood period during which children are more dependent on their families, are quite important in determining a person's pain experience. It has been stated that the knowledge and beliefs of children and adolescents (including fear avoidance) develop in the familial process (Wilson, Lewandowski & Palermo, 2011; Palermo & Chambers, 2005). Early learning experiences about pain provide children and adolescents with important information regarding natural threats and specific behavioral responses such as avoidance. Parent modeling is an important mechanism acquired during early childhood. This mechanism is manifested via fear and avoidance behaviors. For example, children who grow up with parents who display apprehensive behaviors learn and exercise these behaviors. That these early learning processes can also be influenced by a child's psychological characteristics is an important fact which must be taken into consideration (Asmundson et al., 2012).

In pediatric groups including both acute and chronic pain patients, while certain

parent behaviors (assuring, apprehensive, protective, critical) increase pain in children and adolescents, other parent behaviors (that are able to distract/occupy) decrease it. Children and adolescents with chronic pain especially in their periods of illness see more protective behavior from their parents compared to their healthy counterparts. These behaviors by parents can also increase children's and adolescents' attention to their bodily differences and the stimuli that might cause pain (Walker, Williams, Smith, Garber, Van Slyke & Lipani, 2006).

Parental behaviors can also increase a child's consciousness of stimuli associated with pain thus increasing the rate at which an avoidance behavior occurs. Parents' attitude towards painful stimuli, their fear and anxiety cause pain related complications experienced by children and adolescents to increase. At the same time, parents' protective behaviors and children's limiting their activities are closely related to the fear-avoidance beliefs of children and adolescents. In addition to parents' anxiety, stress and their level of depression over illness during childhood, children's pain-related catastrophizing such as their fear of being disabled affects their school attendance. Studies have also shown that parents' psychological responses (i.e. parents' being stressed or catastrophic) are also affected by their children's physical functionality (Vowles, Cohen, McCracken & Eccleston, 2010).

In order to describe a child's pain experience, it is necessary to acknowledge the complexity of the relationship between the child's characteristics and the parents' as natural. While parents' psychological and behavioral reactions can influence a child's pain experience, children's and adolescents' fear-avoidance response can affect parents negatively at the same time. Being parents of a child or adolescent with chronic pain can have adverse effects on a family's social, relational, emotional and financial aspects. In addition, these interrelationships are dynamic and when they are being interpreted the developmental process must be taken into consideration (Asmundson et al., 2012).

Pediatric Fear-Avoidance Model of Chronic Pain

The pediatric fear-avoidance model is based on the cognitive and behavioral aspects of Vlaeyen and Linton's model (Figure 1) which play a role in the progression and treatment of chronic pain (Vlaeyen & Linton, 2000). Pediatric fear-avoidance model is a unique model that emphasizes mutual influences of parental and pediatric factors in the progression and the mitigation of chronic pain. It argues that when an individual perceives pain as a threat and catastrophe, his or her functionality declines due to pain-related fear-avoidance behavior. Additionally, responses given to pain following an injury or illness are characterized by either gradual confrontation with pain and recovery or emotional distress, discomfort, and functional disability. These responses given to pain will involve maintaining a self-sustaining vicious cycle and reactions based on pain. Especially, parents' behaviors concerning the management of pain (protectiveness, intolerance), their psychological reactions (parents' catastrophizing related to their child's pain, their state of being generally apprehensive) and the psychological reactions of children and adolescents (anxiety sensitivity, pain acceptance) affect children and adolescent avoidance behaviors. The model also dictates that the avoidance behaviors of children and adolescents can directly influence their parents' psychological responses and through these responses, their behaviors aimed at the management of pain can be shaped. It stresses the direct effects of parental

behaviors aiming to manage pain (i.e. suspending a child/adolescent from pain-causing activities) on the avoidance behavior of children and adolescents. This situation is widely seen especially during early childhood in which dependence on parents is higher (Asmundson et al., 2012).

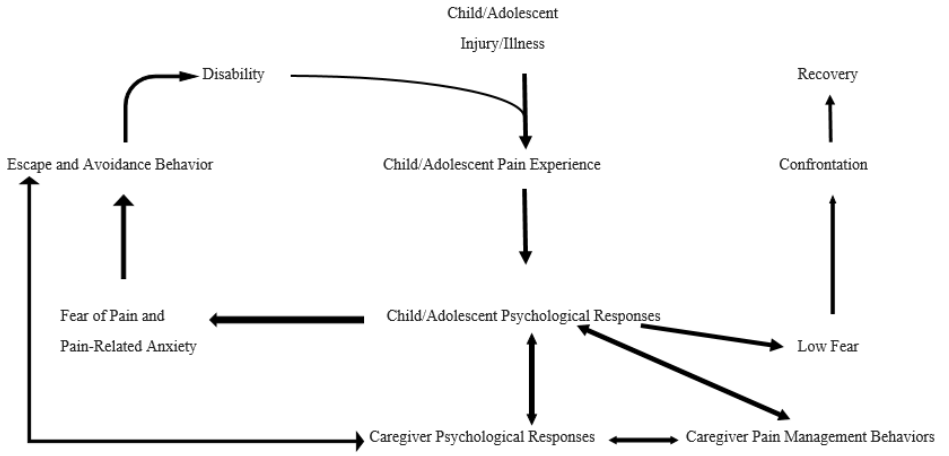

Figure 1. Pediatric fear-avoidance model of chronic pain (Asmundson, Noel, Petter, &Parkerson, 2012)

Figure 1. Pediatric fear-avoidance model of chronic pain (Asmundson et al. 2012)

Pain catastrophizing and fear of pain, which are the two aspects of the fear-avoidance model, have been studied in children. In the fear-avoidance model, it has been stated that pain catastrophizing, which is the first response to pain, causes adverse effects in children. This model has been included in studies about idiopathic chronic pain and juvenile idiopathic arthritis which cause higher pain intensity in children. Studies have shown that catastrophizing at a high level leads to low performance in domestic, school and social life (Crombez et al., 2003; Lynch, Kashikar-Zuck et al., 2006; Vervoort et al., 2005). Additionally, in a study conducted by Vervoort and colleagues (2010), it has been found out that pain catastrophizing in children has caused an increase in pain levels and the state of disability even after six months (Vervoort, Eccleston, Goubert, Buysse & Crombez, 2010).

The pain-related fear which is another aspect of the fear-avoidance model is a precursor of pain-related disability (Marti, McGrath, Brown & Katz, 2007; Simons, Sieberg, Carpino, Logan & Berde, 2011) and restricted physical activity (Wilson, Lewandowski & Palermo, 2011) in children. Also, acute postoperative pain and pain-related fear are directly correlated with pain and functional disability that can be experienced by children and adolescents two weeks after surgery (Pagé, Campbell, Isaac, Stinson, Martin-Pichora & Katz, 2011). Simons and Kaczynski (2011) in their study in which they have compared the efficiency of the fear-avoidance model between the age groups of 8-12 and 13-17 have determined that the model is more effective for adolescent patients (Simons & Kaczynski, 2012).

At its basics, this model describes children's and adolescents' reactions in response

to pain, parents' reactions towards children and adolescents experiencing pain, interactions between parents and children/adolescents and the reactions of each element towards pain in children and adolescents.

Scales That Can Be Used in the Application of the Model

The validity and reliability of the scale for the use of the model in the adult group are "The Fear-Avoidance Beliefs Questionnaire, The Tampa Scale for Kinesiophobia, The Pain Attitudes and Beliefs Scale".

The Fear of Pain Questionnaire Child (FOPQ-C) and Parent Proxy-Report (FOPQ-P) have been developed in line with the scales used for adults with pain. The FOPQ-C assesses two aspects of the Fear-Avoidance Model. Those are fear of pain and activity avoidance. On the other hand, the FOPQ-P is used to assess three components of this model including fear of pain, activity avoidance and school refusal (Simons et al., 2011).

The Fear-Avoidance Beliefs Questionnaire (Waddell, Newton, Henderson, Somerville & Main, 1993) *and The Pain Anxiety Symptoms Scale-20* (McCracken & Dhingra, 2002) scales are used to evaluate pain related fears of children with chronic pain and their parents.

The Pediatric Pain Fear Scale (PPFS) (Huhuet et al., 2011), is a scale that has been developed to determine the extent of pain-related fear.

Child Pain Anxiety Symptoms Scale (Pagé et al., 2010), is a version of Pain Anxiety Symptoms Scale, which has been adapted to children and adolescents. It is structurally (cognitive, anxiety, fear and avoidance) similar to the original scale.

The Pain-Related Parent Behavior Inventory (PPBI-CP) (Asmundson et al., 2012), has been developed to determine how parents influence pain in children and adolescents (the way children/adolescents and parents perceive pain).

Clinical Application of the Model in Nursing

Nurses can utilize the fear-avoidance model especially in the identification process of pain and also in non-pharmacological pain management applications. In the event of muscular pain occurring due to physiological agitation thus causing the cycle to begin, by using relaxation techniques, active coping strategies and cognitive behavioral therapies pain-related fear and avoidance can be prevented from happening. Cognitive behavioral therapies help children and adolescents improve their pain management and lessen pain-related disability (Vervoort et al. 2005). In addition to these, nurses play a role in teaching coping abilities to children and behavior strategies to parents. Among training provided in order to help children and adolescents in coping with chronic pain are relaxation exercises, positive self-talk, cognitive restoration and attention diversion. By using adaptive coping techniques, while negative consequences of pain (state of catastrophe) are reduced; positive behaviors of children and adolescents (going to school while experiencing some pain, not resisting physical activity) are increased (Failo, Beals-Erickson & Venuti, 2017).

Nurses must pay attention to reactions given by children and adolescents when they are exposed to a potentially pain-causing stimulus. If a child/adolescent interprets the pain resulting from this stimulus as a catastrophe (anxiety, fear) the best way to manage pain is ensured by anxiety directed interventions.

In Turkey, the number of pediatric studies using this model are limited. However, Tonga et al. (2012), have stated that training given to patients via seminars and booklets

reduce the fear-avoidance beliefs of patients and increase their physical activity levels (Tonga et al. 2012). Şimşek et al. (2015) have determined that training and the exercise programs given to patients with chronic mechanical back pain have reduced pain intensity, disability levels and fear-avoidance behaviors (Şimşek, Yağcı & Gedik, 2015). Güçlü et al. (2017), in a study, they have conducted, have examined fear-avoidance behaviors and life quality following surgery for back pain. It has been found out that the about work subdivision of the fear-avoidance beliefs questionnaire has shown a lower score compared to the pre-surgery period (Güçlü et al. 2017). Bingül and Aslan (2013), have suggested in their study that there is a significant relationship between functional disability, life quality and the days not worked by the patient (Bingül & Aslan, 2013). By combining fear-avoidance studies designed for pediatric groups and patient training activities, which nurses are responsible for, the efficiency of the model can be evaluated.

CONCLUSION AND RECOMMENDATIONS

In this compilation, the evolution of the pediatric fear-avoidance model and the mutual relationship between psychological and behavioral reactions given by children/adolescents and by parents in the presence of pain have been described. In addition, it is important to acknowledge and study biological factors, psychological factors and dynamic interactions present between children and parent reactions. When these interactions are not considered, it is necessary to remember that the vicious cycle happening between a child and a parent gradually worsens. In the literature, there are cross-sectional studies about the pediatric fear-avoidance model. Extensive prospective longitudinal studies on fear-avoidance factors affecting children/adolescents and parents also need to be conducted. The mutual relationship between factors affecting children/adolescents and parents are ongoing. Considering the importance of peer relationships, especially during adolescence stage, peer influences must also be investigated in future studies on the fear-avoidance model.

REFERENCES

Asmundson, G.J.; Noel, M.; Petter, M.; Parkerson, H.A. (2012). Pediatric fear-avoidance model of chronic pain: foundation, application and future directions. Pain Research and Management 17:(6), 397-405.

Asmundson, G.J.; Norton, P.J.; Vlaeyen, J.W. (2004). Fear-avoidance models of chronic pain: an overview. Understanding and Treating Fear of Pain 3-24.

Bingül, Ö.Ö & Aslan, U.B. (2013). Validity and reliability of the Turkish version of the Fear Avoidance Beliefs Questionnaire. Fizyoter Rehabil. 24:(1), 135-143.

Crombez, G.; Bijttebier, P.; Eccleston, C.; Mascagni, T.; Mertens, G.;Goubert, L.; Verstraeten, K. (2003). The child version of the pain catastrophizing scale (PCS-C): a preliminary validation. Pain 104:(3), 639-646.

Failo, A.; Beals-Erickson, S.E.; Venuti, P. (2017). Coping strategies and emotional well-being in children with disease-related pain. Journal of Child Health Care 22:(1),84-96.

Goubert, L.; Crombez, G.; Van Damme, S.; Vlaeyen, J.W.; Bijttebier, P.; Roelofs, J. (2004). Confirmatory factor analysis of the Tampa Scale for Kinesiophobia: invariant two-factor model across low back pain patients and fibromyalgia patients.

The Clinical Journal of Pain 20:(2), 103-110.
Greenberg, J. & Burns, J.W. (2003). Pain anxiety among chronic pain patients: Specific phobia or manifestation of anxiety sensitivity? Behaviour Research and Therapy 41:(2), 223-240.
Güçlü, D.G.; Şenormancı, Ö.; Gönüllü, O.; Çırak, M.; Şenormancı, G.; Koktürk, F. (2017). Fear avoidance beliefs and quality of life after lumbar disc surgery. JCBPR 6:(1), 1−8.
Huguet, A.; McGrath, P.J.; Pardos, J. (2011). Development and preliminary testing of a scale to assess pain-related fear in children and adolescents. The Journal of Pain 12:(8), 840-848.
Kashikar-Zuck, S.; Goldschneider, K.R.; Powers, S.W.; Vaught, M.H.; Hershey, A.D. (2001). Depression and functional disability in chronic pediatric pain. The Clinical Journal of Pain 17:(4), 341-349.
Langer, S.L.; Romano, J.M.; Levy, R.L.; Walker, L.S.; Whitehead, W.E. (2009). Catastrophizing and parental response to child symptom complaints. Children's Health Care 38:(3), 169-184.
Leeuw, M.; Goossens, M.E.; Linton, S.J.; Crombez, G.; Boersma, K.; Vlaeyen, J.W. (2007). The fear-avoidance model of musculoskeletal pain: current state of scientific evidence. Journal of Behavioral Medicine 30:(1), 77-94.
Lethem, J., Slade, P.D., Troup, J.D.G., & Bentley, G. (1983). Outline of a fear-avoidance model of exaggerated pain perception—I. Behaviour Research and Therapy 21:(4), 401-408.
Lynch, A.M., Kashikar-Zuck, S., Goldschneider, K.R., & Jones, B.A. (2006). Psychosocial risks for disability in children with chronic back pain. The Journal of Pain 7:(4), 244-251.
McCracken, L.M. & Dhingra L. (2002). A short version of the pain anxiety symptoms scale (PASS-20): Preliminary development and validity. Pain Res Manag 7, 45-50.
Norton, P. J. & Asmundson, G. J. (2003). Amending the fear-avoidance model of chronic pain: What is the role of physiological arousal? Behavior Therapy 34:(1), 17-30.
Norton, P.J. & Asmundson, G.J. (2004). Anxiety sensitivity, fear, and avoidance behavior in headache pain. Pain 111:(1-2), 218-223.
Pagé, M.G.; Campbell, F.; Isaac, L.; Stinson, J.; Martin-Pichora, A.L.; Katz, J. (2011). Reliability and validity of the Child Pain Anxiety Symptoms Scale (CPASS) in a clinical sample of children and adolescents with acute postsurgical pain. Pain 152:(9), 1958-1965.
Pagé, M.G.; Fuss, S.; Martin, A.L.; Escobar, E.M.R.; Katz, J. (2010). Development and preliminary validation of the Child Pain Anxiety Symptoms Scale in a community sample. Journal of Pediatric Psychology 35:(10), 1071-1082.
Palermo, T.M. & Chambers, C.T. (2005). Parent and family factors in pediatric chronic pain and disability: an integrative approach. Pain 119:(1-3), 1-4.
Pinquart, M. & Shen, Y. (2010). Depressive symptoms in children and adolescents with chronic physical illness: An updated meta-analysis. J Pedatr Psychol 36, 375-84.
Sgroi, M. I.; Willebrand, M.; Ekselius, L.; Gerdin, B.; Andersson, G. (2005). Fear-avoidance in recovered burn patients: association with psychological and somatic symptoms. Journal of Health Psychology 10:(4), 491-502.

Simons, L.E. & Kaczynski, K.J. (2012). The Fear Avoidance model of chronic pain: examination for pediatric application. The Journal of Pain 13:(9), 827-835.
Simons, L.E.; Sieberg, C.B.; Carpino, E.; Logan, D.; Berde, C. (2011). The Fear of Pain Questionnaire (FOPQ): assessment of pain-related fear among children and adolescents with chronic pain. The Journal of Pain 12:(6), 677-686.
Stanford, E.A.; Chambers, C.T.; Biesanz, J.C.; Chen, E. (2008). The frequency, trajectories and predictors of adolescent recurrent pain: a population-based approach. Pain 138:(1), 11-21.
Şimşek, Ş.; Yağcı, N.; Gedik, E. (2015). The effect of back school program on fear avoidance behavior, disability and pain in chronic mechanic low back pain. J Clin Anal Med 6, 389-393.
Tonga, E.; Daşkapan, A.; Düger, T.; Özünlü, N. (2012). Effects of different back health education on fear avoidance belief and occupational performance in chronic low back pain. Fizyoter Rehabil 23:(1), 17-25.
Vervoort, T.; Eccleston, C.; Goubert, L.; Buysse, A.; Crombez, G. (2010). Children's catastrophic thinking about their pain predicts pain and disability 6 months later. European Journal of Pain 14:(1), 90-96.
Vervoort, T.; Goubert, L.; Eccleston, C.; Bijttebier, P.; Crombez, G. (2005). Catastrophic thinking about pain is independently associated with pain severity, disability, and somatic complaints in school children and children with chronic pain. Journal of Pediatric Psychology 31:(7), 674-683.
Vlaeyen, J. W.; Crombez, G.; Linton, S. J. (2016). The fear-avoidance model of pain. Pain 157:(8), 1588-1589.
Vlaeyen, J. W. & Linton, S. J. (2000). Fear-avoidance and its consequences in chronic musculoskeletal pain: a state of the art. Pain 85:(3), 317-332.
Vowles, K.E.; Cohen, L.L.; McCracken, L.M.; Eccleston, C. (2010). Disentangling the complex relations among caregiver and adolescent responses to adolescent chronic pain. Pain 151:(3), 680-686.
Walker, L.S.; Williams, S.E.; Smith, C.A.; Garber, J.; Van Slyke, D. A.; Lipani, T. A. (2006). Parent attention versus distraction: impact on symptom complaints by children with and without chronic functional abdominal pain. Pain 122:(1-2), 43-52.
Wilson, A.C.; Lewandowski, A.S.; Palermo, T.M. (2011). Fear-avoidance beliefs and parental responses to pain in adolescents with chronic pain. Pain Research and Management 16:(3), 178-182.

Chapter 27

Parents' Utilization of Technology in Child Care

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INTRODUCTION

People's utilization of technology helps them connect with the World and influences an important part of their life (Tomfohrde & Reinke, 2016). Especially, by increasing accessibility and reducing costs new technologies have become promising in making evidence-based interventions more widespread. (Jones et al., 2013, Self-Brown & Whitaker, 2008; Hall & Bierman, 2015).

In recent years, having Internet access, development of smartphones and the widening of Internet utilization have made it easier to access information regarding health (Hesse *et al*., 2005; DeMartini *et al.,* 2013). Internet and social media use have gradually expanded in queries related to health and been greatly instrumental in gathering information about health conditions and doctors. At the same time, those digital technologies have provided new platforms for improving healthcare and disease management (Chou *et al*., 2009; Lander et al., 2017; DeMartini *et al*., 2013). With the improvement of Facebook and Twitter, online social media use has become more popular.

Social media platforms provide a portal to ask questions about health and instantly share information (Chou *et al*., 2009). Although digital technologies are more readily accessible due to the wide use of all kinds of this technology, the level of technology use amongst people with lower education and socioeconomic status is still small (Hesse *et al*., 2005; DeMartini *et al*., 2013). Even though, Internet use is comparatively similar with reference to race, ethnicity, and gender, it is lower amongst people with lesser education and income (Hesse *et al*., 2005; DeMartini *et al*., 2013). However, reasons for Internet use and whether they differ in different groups are not clear (Claridy *et al*., 2018).

Internet Usage

Mobile platforms such as cell phones and tablets have an important role in influencing the ways health services are presented and health outcomes (Bull *et al*., 2018). And social media is described as a group of applications based on the technological foundations of Web 2.0 that can be accessed by anyone. Social media include various electronic platforms such as Internet blogs, video sharing sites like YouTube, Social Networking Sites (SNS) like Facebook and Twitter and online communication apps (Aichner & Jacob, 2015).

Many web-based social networks are online environments which people can share with their immediate surroundings, acquaintances, or other people. (CDC, 2017).

Although, in previous years printed materials like books, brochures, and educational pamphlets were primarily being used to gather, exchange and spread information, in recent years the usage of Internet has increased. (Wantland et al., 2004). One of the most popular areas of employment for technology is the mailing of intervention materials over the Web; this way they become accessible and can easily be used by parents. (Hall & Bierman, 2015). However, it is necessary to be even more cautious since many issues, such as ensuring the neutrality of web pages, the protection of personal data and establishing trust will be faced with (Usui *et al*., 2011). It may be hard for the caregiver to determine the content quality of these sources, even though they are legitimate and trustworthy (Semere *et al*., 2003). When the data on the use of the Internet is looked at, it is seen that parents' being social media users indirectly affects children's lives (Bartholomew *et al*., 2012). Parents often elicit answers for questions regarding their children's health on the Internet (DeMartini *et al*., 2013).

Although the child with a disease, his or her parents or the caregiver have already been given the necessary information by the doctor who is providing the treatment, parents want to get more information about the condition that has been diagnosed. Families can obtain this information they need through the Internet (Wainstein *et al*., 2006). Parents are increasingly trust on internet sources to guide accessible and trustworthy sites in the healthcare field (Khoo *et al*., 2008; Naftel *et al*., 2013; Taitz *et al*., 2005; DeMartini *et al*., 2013). Ever advancing applications and current studies indicate that technology has an important effect in increasing access by parents of small children to evidence-based interventions. In addition, the majority of current research focuses on different forms of technology-assisted interventions and parental attitudes (Hall & Bierman, 2015).

Tomfhorde and Reinke expressed in a study they conducted in 2016 that mothers took advantage of technology when breastfeeding and 92 % of those who were breastfeeding their babies used Facebook. The use of technology during breastfeeding period also caused mothers not to find a chance to establish eye contact and create a bond with their babies (Tomfohrde & Reinke, 2016). Many technological applications have been developed to establish a bond between parents and their babies in neonatal intensive care units. In a neonatal intensive care unit in Canada, by using separate entrances with fingerprint readers for parents and healthcare professionals the maintenance of the parent and baby bond has been ensured (Banerjee *et al*., 2017).

Social Support Groups

Social support is described as an exchange of verbal and non-verbal communications containing emotions, information or advice in order to reduce uncertainty or stress (Walther & Boyd, 2002). Some of the interventions that are aimed to encourage positive parenting behavior also aim to increase the social support of the parents thereby improving positive parenting attitudes. Discussion groups which are based on technology can also be conducted as face to face interactions and can be as effective. Technology helps parents to interact with each other via chat rooms, discussion blogs or social media and strengthens social support (Hall & Bierman, 2015). Today, in the social media, several opportunities are provided through the Internet and online support groups (Kaplan & Haenlein, 2010).

Online health information helps parents develop a health behavior and take advantage of health care services by increasing their knowledge about health (Van der

Gugten *et al*., 2016). It also provides parents with Internet-based peer support without any geographical or time constraints. Peer support for mothers, fathers or pregnant women can be delivered in public groups open to all Internet users or in closed user groups intended for the party in focus (Niela-Vilén *et al*., 2014).

Parents wish to share their experiences with and receive information from other parents as much as they wish to receive information and advice from professionals. Peer support among parents is an important resource for emotional and informational assistance (Rossman, 2007) and can be helpful for parents to gain a more positive perspective in parenting (Ritchie *et al*., 2000). Among areas in which Internet support is effective are particularly newborns, children with chronic diseases and children with disabilities etc. Since parents demand comprehensive information on newborn care, the course of an illness and the role and the proficiency of parents after leaving hospital, virtual and online support in newborn care will need to gradually increase (Safran, 2003).

In 2013, Paterson *et al*., in their systematic research called Engagement of Parents in Online Social Support Interventions, in which they included 16 studies, found out that many of the parents who had a child with a chronic disease or a disability participated in online social support groups in order to communicate with other parents, receive information and emotional support. (Paterson et al., 2013)

Smart Phone Applications

The smartphone is a new technology which combines mobile communication and computation in a palm-sized device and makes mobile computing easier (Mosa *et al*., 2012). As the number of smartphone users increased, the amount of downloadable software which also particularly include health-related apps have increased (Hamilton *et al*., 2017).

Web-based applications and smartphones are more widely used in healthcare and clinical research settings (Eagleson *et al*., 2017). Medical smartphone apps are used in many areas including patient training, surgical procedure planning and providing adaptation to perioperative care (Mobasheri et al., 2015). In some neonatal intensive care units in the United Kingdom, a secured video messaging system called vCreate is used, which allows healthcare professionals to send short video messages to families. This system contains videos that parents can watch while they are away from the unit and each parent can access it securely with their own password. The videos are deleted when the newborn has been discharged but if the parents wish, they can download them. It is believed that this system can improve baby-parent bonding within the first 24 hours (https://www.vcreate.tv/neonatal; Banerjee *et al*., 2017).

E-Health

Electronic health (eHealth) is described as the employment of digital information and communication technologies in health care for the improvement and provision of health services (Oh *et al*., 2005, Hamilton *et al*., 2017; http://www.who.int/ehealth/about/en/). The term eHealth is widely used by many academic, occupational and financial institutions and people (Oh *et al*., 2005). The employment of technology-assisted communication in order to provide and improve health interventions (eHealth, mHealth) started in around 2000s and rapidly became widespread (Pagliari *et al*., 2005). This fast growth increased participation and the quality of service presentation of

technology (including transmitting Web-based information, online discussion forums, mobile devices and video conferencing) (Jones, 2014). mHealth (mobile health) technologies, in addition to being effective in terms of cost, can provide health information and services by removing barriers in terms of culture, language, geographical location and time (Lustria *et al.,* 2011). For that reason, mHealth is becoming a popular option in regions where cell phone use is widespread, the population is large and services are insufficient (Hamilton *et al*., 2017).

In a study that Eloise and colleagues conducted in 2017, twenty-four mothers were subjected to examination through software developed using eHealth applications and they emphasized that 24/7 accessible software encouraged mothers to feed their babies and that their results were corroborated by the data gathered by healthcare professionals. Additionally, there is a need to increase the use of eHealth tools in neonatal intensive care environments (Rhine, 2016). Hamilton et al., in their study that was conducted in 2017 amongst 171 caregivers in the pediatric surgical patients group in order to assess their position on the use of mHealth technologies, determined that most of the caregivers owned a smartphone and that they were inclined to using smartphone applications for managing their patients' health, but they found out that there were racial and socioeconomic differences in the usage levels of this technology (Hamilton *et al*., 2017).

E-Pulse

E-Pulse is an application provided by the Ministry of Health in Turkey, which helps health professionals and citizens access information gathered from the health institutions. E-Pulse is a personal medical record system and individuals can login using their own passwords and within certain time limits they determined and by certain individuals, they authorized their medical data can be accessed. This application allows access to a person's diagnosed illnesses, medical reports, prescriptions, tests and imaging data. In addition, it lets viewing of additional data previously added by individuals or uploaded from their mobile devices such as blood pressure, pulse, blood sugar. Through E-Pulse, parents can also access the health records of their children who are younger than sixteen years old. For parents to be able to access those records, both parents have to give authorization (https://enabiz.gov.tr/).

Computer Based Training

Computer-based training has the advantage of offering diagnosis and medical procedures to patients and their families at a period in which they are more inclined to grasp. Furthermore, providing information at a time when they are more willing to receive it ensures further parent participation in the decision making process and can improve therapeutic communication as a result (Lysenko *et al*., 2016).

As technology advances further and particularly video technology and interactive learning platforms continue being utilized, some neonatal intensive care units increasingly adopt new electronic health (eHealth) technologies in order to enhance and expand their family-centered care settings (Dol *et al*., 2017).

CONCLUSION

Recently, the speedy advancement and expansion of technology in health care has resulted in the spreading of the information that patients can access over the Internet all around the world quickly (Usui *et al*., 2011; Eagleson *et al*., 2017). Mobile technology

in smartphones and tablets allow health professionals to access clinical information at the point of care. These technologies not only contribute to the thriving of information but also they help patients to receive the best evidence-based care practice (Sondhi & Devgan, 2013). When limitations regarding the contents of information considered, most parents can understand only a part of the information given to them as long as their baby is in the neonatal intensive care unit. eHealth applications provide parents with a platform by which the private information regarding the care of their baby can be accessed at a time and a place of their choosing instead of taking it to a hospital (Dol *et al*., 2017). In spite of existing security concerns, the process of eliminating those concerns while improving and executing mobile-based health interventions has not been properly addressed in the literature (Eagleson *et al*., 2017). Clinical research studies dealing with mobile health interventions usually do not examine data security in detail. In clinical studies, without a standardized procedure to administer Web-based and mobile systems, it is important to ensure transparency about security and to protect patient privacy when conducting these studies (Eagleson *et al*., 2017).

REFERENCES

Aichner, T.; Jacob. F. (2015). Measuring the degree of corporate social media use. International Journal of Market Research 57(2), 257-276.

Bartholomew, M.K.; Schoppe-Sullivan, S.J.; Glassman, M.; Kamp Dush, C.M.; Sullivan, J.M. (2012). New parents' Facebook use at the transition to parenthood. Family relations 61(3), 455-469.

Banerjee, J.; Aloysius, A.; Platonos, K.; Deierl, A. (2017). Innovations: Supporting family integrated care. Journal of Neonatal Nursing 24(1), 48-54.

Bull, S.; Thomas, D.S.; Nyanza, E.C.; Ngallaba, S.E. (2018). Tanzania Health Information Technology (T-HIT) System: Pilot test of a tablet-based system to improve prevention of mother-to-child transmission of HIV. JMIR mHealth and uHealth, 6(1), e16.

Chou, W.Y.S.; Hunt, Y.M., Beckjord, E.B.; Moser, R.P.; Hesse, B.W. (2009). Social media use in the United States: Implications for health communication. Journal of Medical Internet Research 11(4), e48.

Claridy, M.D.; Hudson, M.M.; Caplan, L.; Mitby, P.A.; Leisenring, W.; Smith, S.A., Robison, L.L; Mertens, A.C. (2018). Patterns of internet-based health information seeking in adult survivors of childhood cancer. Pediatric Blood & Cancer 24(1),48-54.

DeMartini, T.L.; Beck, A.F.; Klein, M.D.; Kahn, R.S. (2013). Access to digital technology among families coming to urban pediatric primary care clinics. Pediatrics 132(1), 142-148.

Dol, J.; Delahunty-Pike, A.; Siani, S.A.; Campbell-Yeo, M. (2017). eHealth interventions for parents in neonatal intensive care units: a systematic review. JBI Database of Systematic Reviews and Implementation Reports 15(12), 2981-3005.

Eagleson, R.; Altamirano-Diaz, L.; McInnis, A.; Welisch, E.; De Jesus, S.; Prapavessis, H.; Romberk, M.; Seabrook J.A.; Park, T.; Norozi, K. (2017). Implementation of clinical research trials using web-based and mobile devices: Challenges and solutions. BMC Medical Research Methodology, 17(1), e43.

Hall, C.M.; Bierman, K.L. (2015). Technology-assisted interventions for parents of

young children: Emerging practices, current research, and future directions. Early Childhood Research Quarterly 33, 21-32.
Hamilton, E.C.; Saiyed, F.; Miller III, C.C.; Eguia, A.; Fonseca, A.C.; Baum, G.P.; Tsao, K.; Austin, M.T. (2017). The digital divide in adoption and use of mobile health technology among caregivers of pediatric surgery patients. Journal of Pediatric Surgery, in press.
Hesse, B.W.; Nelson, D.E.; Kreps, G.L.; Croyle, R.T.; Arora, N.K.; Rimer, B.K.; Viswanath, K. (2005). Trust and sources of health information: the impact of the Internet and its implications for health care providers: findings from the first Health Information National Trends Survey. Archives of Internal Medicine 165(22), 2618-2624.
Jones, D.J. (2014). Future directions in the design, development, and investigation of technology as a service delivery vehicle. Journal of Clinical Child & Adolescent Psychology 43(1), 128-142.
Jones, D.J.; Forehand, R.; Cuellar, J.; Kincaid, C.; Parent, J.; Fenton, N.; Goodrum, N. (2013). Harnessing innovative technologies to advance children's mental health: Behavioral parent training as an example. Clinical Psychology Review 33(2), 241-252.
Kaplan, A.M.; Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. Business Horizons 53, 59-68.
Khoo, K.; Bolt, P.; Babl, F.E.; Jury, S.; Goldman, R.D. (2008). Health information seeking by parents in the Internet age. Journal of Paediatrics and Child Health 44(7-8), 419-423.
Lander, S.T.; Sanders, J.O.; Cook, P.C.; O'malley, N.T. (2017). Social media in pediatric orthopaedics. Journal of Pediatric Orthopaedics 37(7), 436-439.
Lustria, M.L.A.; Smith, S.A.; Hinnant, C.C. (2011). Exploring digital divides: an examination of eHealth technology use in health information seeking, communication and personal health information management in the USA. Health Informatics Journal 17(3), 224-243.
Lysenko, M.; Law, P.; Jarvis, J.; Wright, J.G. (2016). Improving education and coping of scoliosis patients undergoing surgery, and their families, using e-health. Journal of Children's Orthopaedics 10(6), 673-683.
Mobasheri, M.H.; Johnston, M.; Syed, U.M.; King, D.; Darzi, A. (2015). The uses of smartphones and tablet devices in surgery: A systematic review of the literature. Surgery 158(5), 1352-1371.
Mosa, A.S.M.; Yoo, I.; Sheets, L. (2012). A systematic review of healthcare applications for smartphones. BMC Medical Informatics and Decision Making 12(1), 67.
Naftel, R.P.; Safiano, N.A.; Falola, M.I., Shannon, C.N.; Wellons III, J.C.; Johnston Jr, J.M. (2013). Technology preferences among caregivers of children with hydrocephalus. Journal of Neurosurgery: Pediatrics 11(1), 26-36.
Niela-Vilén, H.; Axelin, A.; Salanterä, S.; Melender, H.L. (2014). Internet-based peer support for parents: A systematic integrative review. International Journal of Nursing Studies 51(11), 1524-1537.
Oh, H.; Rizo, C.; Enkin, M.; Jadad, A. (2005). What is eHealth (3): a systematic review of published definitions? Journal of Medical Internet Research 7(1), e1.

Pagliari, C.; Sloan, D.; Gregor, P.; Sullivan, F.; Detmer, D.; Kahan, J.P; Oortwijn, W.; MacGillivray, S. (2005). What is eHealth (4): a scoping exercise to map the field. Journal of Medical Internet Research 7(1), e9.

Paterson, B.L.; Brewer, J.; Stamler, L.L. (2013). Engagement of parents in on-line social support interventions. Journal of Pediatric Nursing: Nursing Care of Children and Families 28(2), 114-124.

Rhine, W.D. (2016). Technology–Considerations for the NICU of the future. Newborn and Infant Nursing Reviews 16(4), 208-212.

Ritchie, J.; Stewart, M.; Ellerton, M.L.; Thompson, D.; Meade, D.; Viscount, P.W. (2000). Parents' perceptions of the impact of a telephone support group intervention. Journal of Family Nursing 6(1), 25-45.

Rossman, B. (2007). Breastfeeding peer counselors in the United States: Helping to build a culture and tradition of breastfeeding. Journal of Midwifery & Women's Health 52(6), 631-637.

Safran, C. (2003). The collaborative edge: patient empowerment for vulnerable populations. International Journal of Medical Informatics, 69(2-3), 185-190.

Self-Brown, S.; Whitaker, D.J. (2008). Parent-focused child maltreatment prevention: Improving assessment, intervention, and dissemination with technology. Child Maltreatment 13(4), 400-416.

Semere, W.; Karamanoukian, H.L.; Levitt, M.; Edwards, T.; Murero, M., D'Ancona, G.; Donias, H.W.; Glick, P.L. (2003). A pediatric surgery study: parent usage of the Internet for medical information. Journal of Pediatric Surgery 38(4), 560-564.

Sondhi, V.; Devgan, A. (2013). Translating technology into patient care: Smartphone applications in pediatric health care. Medical Journal Armed Forces India 69(2), 156-161.

Taitz, J.; Wainstein, B.; Brydon, M.; Sterling-levis, K. (2005). Use of the internet by parents of paediatric patients. Journal of Paediatrics and Child Health 41(8), e11.

Tomfohrde, O.J.; Reinke, J.S. (2016). Breastfeeding mothers' use of technology while breastfeeding. Computers in Human Behavior 64, 556-561.

URL 1: Centers for Disease Control and Prevention, CDC (2017).Social Networking. Retrieved from: https://www.cdc.gov/socialmedia/tools/socialnetworking.html. (Accessed: 2017,30 May)

URL 2: vCreate. (2017). https://www.vcreate.tv/neonatal. (Accessed: 2017,30 May)

URL 3: World Health Organization, WHO (2017).

eHealth. Retrieved from: http://www.who.int/ehealth/about/en/ . (Accessed: 2017, 15 March)

URL 4: T. C Sağlık Bakanlığı. e-nabız. (https://enabiz.gov.tr/).

(Accessed: 2017, 15 March)

Usui, N.; Kamiyama, M.; Tani, G.; Kanagawa, T.; Fukuzawa, M. (2011). Use of the medical information on the internet by pregnant patients with a prenatal diagnosis of neonatal disease requiring surgery. Pediatric Surgery International 27(12), 1289-1293.

Van der Gugten, A.C.; de Leeuw, R.J.; Verheij, T.J.; Van der Ent, C.K.; Kars, M.C. (2016). E-health and health care behaviour of parents of young children: a qualitative study. Scandinavian Journal of Primary Health Care 34(2), 135-142.

Wainstein, B.K.; Sterling-Levis, K.; Baker, S.A.; Taitz, J.; Brydon, M. (2006). Use of

the Internet by parents of paediatric patients. Journal of Paediatrics and Child Health 42(9), 528-532.
Walther, J.B.; Boyd, S. (2002). Attraction to computer-mediated social support. Communication Technology and Society: Audience Adoption and Uses 153- 188.
Wantland, D.J.; Portillo, C.J.; Holzemer, W.L.; Slaughter, R.; McGhee, E.M. (2004). The effectiveness of Web-based vs. non-Web-based interventions: a meta-analysis of behavioral change outcomes. Journal of Medical Internet Research 6(4), e40.

Chapter 28

Nursing Approach in Pediatric Epilepsy

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1. Definition

The terms seizure and epilepsy are different terms and should not be used interchangeably. The exact synonym of epilepsy is not "seizure" but can be defined as "seizure disorder" (Dervent, 1998; Er, 2006; Zararsız, 2009). Epileptic seizure is a clinical condition originating from excessive, rapid and synchronous electrical discharges in the brain, in which sudden onset, short-term and transient stereotypic changes are observed in limited clinical consciousness, behavior, emotion, motion or perception functions. Epilepsy is a chart characterized by chronic repetitive, non-provoked seizures, with neurobiological, cognitive, psychological and social consequences (Altındağ, 2015; Fisher *et al.*, 2005).

2. Incidence and Etiology

Epilepsy is a highly widespread neurological disorder. Nearly 4-10% of children have at least one epileptic seizure. The incidence of childhood epilepsy is 1-2% (Marcdante and Kliegman, 2015). The rate of epilepsy has been found between 2 and 18.5 in studies worldwide (Belle and Sander, 2001; Gallitto *et al*., 2005; Giussani *et al*., 2014; Hüseyinoğlu *et al*., 2014; Yeni, 2008). Epilepsy is widespread in infants and during childhood and its frequency diminishes with age. Occurrences fall after 10 to15 years. Epilepsy is the most widespread neurological disorder in childhood and adolescence period and second most widespread disease in adults following cerebrovascular diseases (Bernard, 2013; Öge and Baykan, 2011). According to studies, the frequency of epilepsy in males is higher than it is in females (Efe and İşler, 2013).

Epilepsy is a chronic disease studied with its physical, psychological and social aspects (Valizadeh *et al*., 2013). The fact that it is not predictable when and where epileptic seizures will occur reduces the perception of the child's control of his own life significantly (Fazlıoğlu, 2010).

There are many causes in the etiology of epilepsy. Among the cases causing abnormal electrical discharges in brain cells involve birth traumas, perinatal hypoxia, head trauma, central nervous system infections, cerebrovascular diseases, brain tumors, metabolic disorders (such as hypoglycemia, hypocalcemia, hyponatremia), congenital brain anomalies, poisonings (lead, drugs) and febrile convulsions (Efe, 2013; Marcdante, 2015; Zararsız, 2009).

Conditions such as sleep, insomnia, fatigue, some sounds, and photic (light) drive, dietary changes, hydration status, infection, stress, and skipping prescribed medications are among the factors that trigger epileptic seizures. The patient generally maintains normal life among seizures (Efe, 2013; Pellock, 2017; Zararsız, 2009).

3. Symptoms

Epilepsy is a distinct disorder that is different from other chronic diseases due to its sudden symptoms and unpredictability of these symptoms (Fazlıoğlu, 2010). Seizures and epilepsy syndromes have been classified by International League against Epilepsy - ILAE. Epilepsy syndromes can be categorized according to whether the seizure is localized or generalized, the onset age, EEG findings, and other clinical features (Bernard, 2013).

4. Treatment

Since the cause of epilepsy is not fully understood, treatment aims at preventing seizures rather than eliminating the cause. Treatment methods include drug therapy, diet, and surgery (Karadakovan, 2011; Paolicchi, 2002; Wong, 1996).

5. Nursing Approach

It is important to record a good history in epilepsy. The best alternative is to extract the history from the care taker or parent who has witnessed the seizure. If this can't be done, history should be extracted again following the initial control of seizure activity. It's necessary to identify the causes that trigger the seizure. In fact, it is possible to control seizures. Children who have epilepsy are at increased risk of injury. The risks include drowning, tooth fractures, head trauma, falls, fractures and dislocations, soft tissue injuries, and burns and children should be protected against them (Bernard, 2013; Cavusoglu, 2013; Wong, 1996).

1. Approach to seizures
2. Education of the Child and Parents
3. Ketogenic diet

5.1. Approach To Seizures

A detailed description of the onset of seizures is important in identifying whether the seizure is epileptic. The events before, during and after the seizures must be described (Bernard, 2013). The nurse must report the following;

Before the seizure:

• What triggers the seizure (e.g. fatigue, hunger, bright light)?
• Is there a warning that the seizure will occur?
• Is there a mood change in the child (e.g. excitement, anxiety, unrest)?
• What was the child doing?
• What was the first sign of the seizure?

During the seizure:

• When did the seizure start?
• Were there any sudden movements or twitching?
• Was the seizure localized or generalized?
• What was the body position of the child?
• How was the respiratory pattern of the child?
• How was the skin color of the child?
• Were there changes in eye movements and pupils?
• Was there urinary and stool incontinence?
• Was there a loss of consciousness? If yes, how long did it last?
• How long did the seizure last?

After the seizure:

- Was the child sleepy or lethargic?
- Was the child's speech intelligible?
- Was the child able to move all his extremities?
- Were the reflexes normal?
- Did the child have any complaints about any part of his body?
- Was the child fearful and irritable?
- Were there any changes in life findings?

Airway clearance and adequate oxygenation during an active seizure should be ensured. The prescribed therapy should be administered, cardiorespiratory monitorization should be performed, and possible side effects should be observed. A safe environment must be provided in order to protect the child from trauma. To do this, the sides of the child's bed should be supported with pillows and the child should be given non-pointed toys (Çavuşoğlu, 2013, Karadakovan, 2011).

5.2. Education of the Child and Parents:

It is important that parents understand the child's condition and care methods and the possible effects of this event on the child and family. Education of the child and parents on seizures, epilepsy, and medication has an important part to play in reducing the emotional stress on the family. Table 1 presents the basic trainings for epilepsy.

Table 1: Basic Educational Needs of All People with Epilepsy

Epilepsy	seizure type, syndrome, causes
Treatment and management	options, medications, devices, surgery, dietary modifications, side effects, treatment discontinuation, seizure triggers, risk for suicidal ideation associated with medications, other management strategies
Safety risks	risk assessment, seizure first aid, injury prevention, equipment to prevent injury
Mortality risks	sudden unexpected death in epilepsy, status epilepticus, seizure-related injury, suicide
Healthy lifestyle	general health, sleep, fatigue, physical exercise
Possible comorbidities	mental health (e.g., anxiety, depression, attention problems, behavior problems, psychosis, seizure-like events with a psychological basis)
	cognitive (e.g., memory, information processing problems, learning problems)
	neurological (e.g., stroke, autism spectrum disorders, migraine)
	somatic (e.g., heart disease, bone health)
Social concerns	engaging new friends, seizures in social settings, telling others, family burden, stigma
Emotional response	coping, dealing with fears, stress management
Available informational and community	websites, state and local Epilepsy Foundation affiliates, community agencies, health care providers

resources	
School	managing seizures at school, common learning problems, safety, participation in extracurricular activities

Source: England, 2012

• Parents should be asked to keep a "seizure log".

• Parents should be encouraged to shoot a video of the seizure with a mobile phone camera. They should be told that this can help the doctor to make a correct diagnosis.

• Steps to follow and measures to take during a seizure:

- Children cannot often define the aura. For this reason, monitor the child's behavior at the onset of the seizure. The video pictures of the occurrence are very helpful.

- Stay calm and make sure the child is in a safe environment.

- Do not leave the child alone during the seizure.

- Support the child's head with a soft pillow, cardigan, etc. to protect the child from injury.

- To maintain the airway clearance of the child, turn the head to one side if no condition exist preventing this.

- If the child is wearing tight clothes, loosen them, and take off the eyeglasses if any.

- Do not try to open the child's mouth or put anything in the mouth, or make him/her drink anything.

- The child's breathing may stop for a short time during the seizure but then starts breathing again. Seek for medical help if there is an unusual breathing problem.

- Are there dental fractures or does the child have difficulty breathing? Check it!

- If there is excessive secretion in the mouth, wipe it clean.

- Do not physically restrict the child. Restricting movement can cause muscle strain, fractures and dislocations.

- Watch the child's appearance and movements during and after the seizure (Bernard, 2013; Çavuşoğlu, 2008; Indian Epilepsy Association, 2010; Kutlutürkan and Fesci, 2006; Wong, 1999).

- ✓ What was the child doing when he had the seizure?
- ✓ Was his breathing frequent before falling?
- ✓ What happened in complex details?
- ✓ Did the eyes turn to one side?
- ✓ Did the child become stiff?
- ✓ Was there a full unconsciousness?
- ✓ Did s/he fall sharply or softly?
- ✓ Did the child have clonic movements or jerks or just brief flickering of eyes?
- ✓ How long did the seizure last?
- ✓ Was the child unconscious after that and how long?
- ✓ Did the child experience any weakness of any limbs after the seizure?
- ✓ Did the child pass urine and stool during the episode?
- ✓ Did the child suffer any injury during the seizure?
- ✓ Was there a speech loss during the seizure? (Bernard, 2013; Vasudev, 2017)

- Allow the seizure to complete its normal duration.

- Call the ambulance immediately if the seizure lasts longer than 5 minutes or if the seizure recurs without any improvement in the condition of the child.

- Talk to the child calmly and provide the comfort of the child after the seizure. This helps the child to be reoriented. The child may need to relax or sleep, so be with him.

- If the child has incontinence, take care of this situation and support the child to minimize his/her embarrassment.

- Stay with the child until s/he is fully recovered to provide confidence.

- Provide a necklace or bracelet with information about the child's condition (Bernard, 2013; Çavuşoğlu, 2008; Kutlutürkan, 2006; Wong, 1999)

Training for antiepileptic drugs

- It is important to take the recommended medication in the recommended dose even if the child does not have a seizure.

- Regular use of epilepsy medication is very important. Irregular use or sudden interruption can lead to greater seizures or even status epilepticus.

- The side effects of antiepileptic drugs should be known. Antiepileptic therapy has no significant side effects on mental functions. A severe allergic rash may occur that requires discontinuation of the drug. Due to various antiepileptics, some side effects such as liver toxicity, coagulation disorders, kidney stones, decreased bone density and other systemic side effects may be observed. Sedation is the most common side effect of antiepileptics. Possible side effects: fenotin; gingival hypertrophy, valproate, and gabapentin may cause weight gain, while topiramate, zonisamide, felbamate can cause weight loss.

- It is necessary to consult a doctor if there is any side effect.

- No changes in medication or dose should be made other than the doctor's permission.

- Regular checks should be made as recommended.

- The drugs should be kept away from young children and those who are at risk of suicide (Bernard, 2013; Karadakovan, 2011).

5.3. Ketogenic Diet

In 65% of people with epilepsy, seizures can be controlled with antiepileptic drugs (AED) (Bernard, 2013; Çakır and Saka, 2014). However, seizures continue in 35% of patients despite treatment and these constitute a group of drug-resistant epilepsy (DRE) (Ünalp, 2017). Epilepsy surgery is the best treatment if there is an epileptic focus that can be removed in DRE, but for children who do not have such a chance, the ketogenic diet (KD) may be the best treatment option. The ketogenic diet is a diet rich in fat, low in carbohydrate (CH), and it mimics the effect of hunger on the body (Cakir, 2014; Tatlı *et al*., 2013, Ünalp, 2017). Children who have launched KD should be seen with at least 3 months intervals. Children under 1-year-old may need to be followed up more frequently. Once every 6 month-controls may be suitable after a year. Follow-up of the child receiving KD involves growth development, physical examination, and laboratory tests. KD should be followed in terms of side effects (e.g. kidney stone, dyslipidemia, stagnation in length, vomiting, loss of appetite, constipation, reflux, mineral deficiency, acidosis, cardiomyopathy) (Dessert, 2013; Ünalp, 2017).

6. Common Complementary And Alternative Medicine

General complementary and alternative medicine methods involve prayer, natural products, deep breathing exercises, meditation, chiropractic care, yoga, massage and diet therapies (Pellock *et al*., 2017).

- Some plants may increase the risk of epileptic seizure. They include Bearberry (Arctostaphylos uvaursi), Borage (Borago officinalis), Ephedra (Ephedra sinica), Gingko (Gingko biloba), Ginseng (Panax ginseng), Ma huang (Herba ephedra), Monkshood (Aconitum sp.), Primrose (Oenothera biennis), and Yohimbe (Pausinystalia Yohimbe). Bateman, Chapman, and Simpson (1998) reported that use of herbal products caused side effects in epileptic patients and increased seizure rates. Parents should be informed about these plants.
- Yoga is reported to be effective in the treatment of epilepsy (slowing the production of stress hormones, increasing serotonin levels) (Özışık, 2012).
- Lin (2014) stated that music therapy (Mozart K.448) is effective in children with epilepsy.
- Kumar and Kurup (2003) reported that epileptic seizures of 15 patients with epilepsy decreased after 3-month Reiki practice.

REFERANCES

Altındağ, E. (2015). "Epilepside İlk Nöbet" Çocuk ve Ergende Nörolojik Hastalıklara Yaklaşım Rehber Kitabı 2015. (Ed. Dervent A; Ayta S, Çokar Ö; Uludüz D) Türk Nöroloji Derneği.

Bateman, J.; Chapman R.D.; Simpson, D. (1998). Possible toxicity of herbal remedies. Scott Med J. 43:7-15. https://www.ncbi.nlm.nih.gov/ pubmed/9533252

Bell, G.S.; Sander, J.W. (2001). The epidemiology of epilepsy: Size of the problem. Seizure. 10:306-316.

Bernard, T.; Knupp, K.; Yang, M.L.; Arndt, D.; Levisohn, P.; Moe, P.G. (2013). Nörolojik Hastalıklar ve Kas Hastalıkları, Pediatri Tanı ve Tedavi, (Ed. Hay W.W. Levin M, Sondheimer J.M. Deterding R.R.) (Çev. Sezer T.). Güneş Kitapevleri, 20. Baskı, Ankara

Çakır, R.E.; Saka, M. (2014). Ketojenik Diyetin Antiepileptik Etkisi, DBHAD Uluslararası Hakemli Beslenme Araştırmaları Dergisi, Eylül / Ekim / Kasım / Aralık. 02;01:13-24.

Çavusoglu,ü H. (2008). Çocuk Sağlığı Hemşireliği 1. (8.basım), Sistem Ofset Basımevi, Ankara. ss 330-344.

Dervent, A. (1998). Kavram Olarak Epileptik Nöbet ve Epilepsiler İ.Ü. Cerrahpaşa Tıp Fakültesi Sürekli Tıp Eğitimi Etkinlikleri Epilepsilerde Tanı ve Tedavi Sempozyumu, 9 Ekim 1998, İstanbul, s. 7-21.

Efe, E.; İşler, A. (2013). Çocuklarda Sinir Sistemi Hastalıkları, Yaralanmaları ve Hemşirelik Bakımı, Pediatri Hamşireliği. (Ed. Conk Z, Başbakkal Z, Baş Yılmaz H, Bolışık B). Akademisyen Tıp Kitapevi, Ankara.

England, M.J; Liverman, C.T.; Schultz, A.M., Strawbridge, L.M. (2012). Epilepsy across the Spectrum: Promoting Health and Understanding, Promoting Health and Understanding. National Academies Press (US). p: 334

Er, M. (2006). Çocuk, hastalık, anne-babalar ve kardeşler. Çocuk Sağlığı ve Hastalıkları

Dergisi. 49:155-168.
Fazlıoğlu, K.; Hocaoğlu, Ç.; Sönmez, F.M. (2010). Çocukluk çağı epilepsisinin aileye etkisi. Psikiyatride Güncel Yaklaşımlar. 2(2):190-205.
Fisher, R.S.; van Emde Boas, W.; Blume, W.; Elger, C.; Genton, P.; Lee, P.; Engel, J.Jr. (2005). Epileptic seizures and epilepsy: Definitions proposed by the International League against Epilepsy (ILAE) and the International Bureau for Epilepsy (IBE). Epilepsia. 46(4): 470-472.
Gallitto, G.; Serra, S.; Spina, P.L.; Postorino, P.; Lagan`a, A.; Tripodi, F.; Gangemi, S.; Calabr`o, S.; Savica, R.; Perri, R.D.; Beghi, E.; Musolino, R. (2005). Prevalence and Characteristics of Epilepsy in the Aeolian Islands. Epilepsia, 46(11):1828–1835.
Giussani, G.; Franchi, C.; Messina, P.; Nobili, A.; Beghi, E. (2014). Prevalence and incidence of epilepsy in a well-defined (Balal et al., TJFMPC www.tjfmpc.gen.tr 2017; 11 (1) 27 population of Northern Italy). Epilepsia. 55(10):1526-33.
Hindistan Epilepsi Derneği (Indian Epilepsy Association), Hindistan Epilepsi Tedavi Kılavuzu. Epilepsi 2010;16(2):117-132
Hüseyinoğlu, N.; Palancı, Y.; Güneş, N.; Köse Özlece, H. (2014). Prevalence of Epilepsy in the University Students Representing a Young Adult Population with Normal Intelligence. Epilepsi. 20(2):53-60
Kumar, R.; Kurup, P.A. (2003). Changes in the isoprenoid pathway with transcendental meditation and Reiki healing practices in seizure disorder. Neurol India. 2003; 51:211-4. https://www.ncbi.nlm.nih.gov/ pubmed/14571006
Kutlutürkan, S.; Fesci, H. (2006). Epilepside İlk Yardım Nasıl Olmalı? Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi. 9,3:98-1004.
Lin, L.C.; Lee, M.W.; Wei, R.C.; Mok, H.K.; Yang, R.C. (2014). Mozart K.448 listening decreased seizure recurrence and epileptiform discharges in children with fi rst unprovoked seizures: a randomized controlled study. BMC Complement Altern Med. 14:17. doi.org/10.1186/1472-6882-14-17
Marcdante, K.J.; Kliegman, R.M. (2015). Nelson Essentials of Pediatrics, Eighth edition, Elsevier, Philadelphia. p: 1757
Öge, E.; Baykan, B. (2011). Nöroloji. Nobel Tıp Kitabevleri, İstanbul.
Özışık Karaman, H.I. (2012). Complementary and Alternative Therapies in Epilepsy. Turkiye Klinikleri Journal of Neurology Special Topics. 5(1): 120-32.
Paolicchi, J.M. (2002). Epilepsy in adolescents: Diagnosis and treatment. Adolescent Medicine. 1(3): 443-459.
Pellock, J.M.; Nordli, D.R.; Jr., Sankar, Raman, Wheless, James, Pellock's Pediatric EpilepsyDiagnosis and Therapy. Fourth Edition, 2017 Springer Publishing Company, P: 578
Yeni, S.N. (2008). Epilepsi Epidemiyolojisi, Turkiye Klinikleri J Neurol-Special Topics.1 (2):9-16
Tatlı, B., Cebeci, A.N.; Ekici, B. (2013). Çocukluk çağı epilepsilerinde diyet tedavisi, Türk Ped Arş. 275-80.
Ünalp, A. (2017). Çocukluk çağı epilepsilerinde ketojenik diyet uygulamaları, İzmir Dr. Behçet Uz Çocuk Hast. Dergisi. 7(3):169-177, doi:10.5222/buchd.2017.169
Wong, D.L. (1999). Nursing Care of Infants and Children. (6th ed.), Mosby. pp 1000, 1807.

Chapter 29

Current Situation on Occupational Health Nursing

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INTRODUCTION

Recently, there have been important developments in occupational health and safety. Occupational health and safety services, in which the process is supported on a legal basis, are rendered with an effective team. The role of occupational health nursing should be defined in this team. It is a fact that nurses, who are able to perform any intervention specific to their occupation beside general nursing interventions, are qualified employees of the work places.

OCCUPATIONAL HEALTH AND SAFETY

Occupation which is the time that people spend a significant part of their daily lives is defined as the 'Activity and effort that is made by exerting power to obtain a result and to produce something' (URL1) by the Turkish Language Association. The fact that people face health problems and that there is an increased need for qualified people have led to the need for the protection of people when working, thus the concept of occupational health and safety has been defined. Occupational health and safety (OHS) is defined as the 'Systematic and scientific efforts that are made to be protected from conditions that may harm health by various reasons during the operation of occupation at workplaces' (Tanır, 2016). The World Health Organization and the International Labor Organization have defined the employee health and occupational safety in 1950 as the maximization of the physical, mental and social health and welfare of all employees and maintenance of this situation, the elimination of unsanitary consequences due to workplace conditions, environment and produced goods, the prevention of risk factors to cause injuries and accidents for workers, and the establishment of a work environment suitable for the physical and mental characteristics of employees (Güngörmüş, 2016). In the Global Plan of Action on Workers' Health (2007-2017) adopted by the World Health Assembly in 2007, the titles have included the development and implementation of policies for workers', the protection and support of health in the workplace, the improvement of performance and availability of occupational health services, the procurement and transfer of evidences for the action and implementation, and the inclusion of workers' health in other policies (URL 2).

The International Labor Organization (ILO), the specialized organization of work life in the United Nations, was founded in 1919; Turkey became a member of the International Labor Organization in 1932. 59 of the conventions revealed by ILO that bring 187 member-state governments, employers and employees together in order to determine labor standards, to develop policies, and to develop programs encouraging all women and men for decent work have been signed by Turkey (URL3, URL4).

In Turkey, regulations on occupational health and safety have been accelerated in the adaptation process with the European Union. Turkey's National Programmes for Adoption of the European Union Acquis are given under Social Policy and Employment included in 2001-2003-2008 national programs with items related to occupational health and safety (URL5).

There are many legal baselines including occupational health and safety issues in Turkey. Primarily, there is a statement that 'No one can be employed in an occupation that is not suitable to age, gender and strength', in the Article 50 of the Constitution of Republic of Turkey (URL 6). Protection of workers' health has been involved in Public Health Law of Turkey numbered 1593 legislated in 1930 (URL7). There are many regulations issued based on the Occupational Health and Safety Law (URL8). Some of these regulations are Regulation on Occupational Health and Safety (URL9), Regulation on Occupational Health and Safety Services (URL10), Regulation on Duties, Authorities, Responsibilities, Education of Workplace Physicians and Other Health Personnel (URL11), and Regulation on Procedures and Principles of Occupational Health and Safety Education of Workers (URL12).

Occupational Health and Safety Services

The work life covers a significant part of the country population. According to data of Turkish Statistical Institute (TSI), 47.1% of the population, 28 million 189 thousand people, is employed in Turkey by 2017 (URL13). Considering the fact that about half of people are in work life and that they spend a significant time in workplace, the importance of occupational health and safety services arises.

According to WHO, workers' health is defined as a branch that aims to provide highest level of physical and mental aspects to employees, to maintain this level, to prevent the factors that will damage this level, to employ workers in jobs suitable to their physiological and psychological abilities, and thus to provide mutual adaptation for occupation and individual (Dinç 2016).

The occupational health and safety approach primarily includes the protection and improvement of workers' health. Occupational health implementation guidelines involve appropriate work placement, assessment of environmental factors in workplace, control of health risks, intermittent control examinations, procurement of health service at work, health education and counseling (Tanır, 2016). Employer is obliged to ensure the health and safety of the employees. Occupational health and safety services that employer should provide according to the law covers prevention of occupational risks, taking all measures including education and instruction, procurement of necessary tools and materials, habilitation of health and safety measures with the changing conditions, and improvement of the current situation, monitoring of adaptation with the measures taken, inspection and elimination of unsuitableness, risk assessment, and suitability of employee to work in terms of health and safety (URL8). According to the Regulation on Occupational Health and Safety Services, employer is responsible for the prevention of occupational accidents and occupational diseases, and the implementation of first aid and preventive health and safety services (URL10).

Occupational safety and health services can be provided by the Workplace Health and Safety Unit (ISGB) or the Joint Health and Safety Unit (OSGB) at the workplace. ISGB is the unit established to carry out occupational health and safety services in the

workplace and has the necessary equipment and personnel. On the other hand, OSGB refers to the unit authorized by the Ministry of Health and established by state institutions and organizations, organized industrial zones and companies operating according to the Turkish Commercial Code to provide occupational health and safety services and has the necessary equipment and personnel (URL8, URL10). The Health and Safety Cooperation Protocol was signed in 2013 between the Department of Workers' Health and Safety within the Ministry of Health General Directorate of Public Health and Health and the General Directorate of Occupational Health and Safety within the Ministry of Labor and Social Security and a coordinated process has been initiated (Tanır 2016). Services for workers' health and safety have been included among duties and responsibilities of the community health center in the Regulation on the Community Health Center (TSM) and Affiliated Units published by the Health Transformation Program and TSM ISG (Occupational Health and Safety Unit) has been authorized as the unit to carry out occupational health and safety services by the Ministry of Labor and Social Security (URL14).

Occupational Health Team

According to the report published by the WHO Regional Office for Europe, occupational health nurses, occupational health physicians, industrial hygienists, security engineers, working organization specialists, psychologists, consultants, physiotherapists, ergonomists, health economists, academic researchers and the others are involved in the occupational health team (URL2). In the Occupational Health and Safety Law, occupational safety specialist, workplace physician, workplace nurse and support personnel were defined (URL8).

Physician, nurse and other health personnel are involved in the medical aspect of the occupational health and safety concept, which has both medical and technical fields, and occupational safety specialist is involved in the aspect of occupational safety (Bilir, 2016a).

According to the law, other health personnel are assigned to occupational health and safety services in workplaces that are included in the very dangerous class with an occupational safety specialist, workplace physician and ten or more employees. In workplaces where a full-time workplace physician is employed, it is not compulsory to assign other health personnel (URL8). According to the regulation, at least one workplace physician and at least one occupational safety specialist who has a certificate appropriate to the danger level of the workplace should be assigned to the ISGB and presence of other health personnel depends on the decision of employer, while, employment of at least one workplace physician employed with a full-time contract, occupational safety specialist, and other health personnel is compulsory to establish the OSGB and to provide services (URL10).

According to the Law on Occupational Health and Safety, the workplace nurse is defined as a nurse/health officer who is authorized to perform nursing profession according to Nursing Law numbered 6283, who is authorized by the ministry to be assigned in the field of occupational health and safety and who has workplace nursing certificate (URL8); however, the statement of other health personnel is used in the text. Nevertheless, it has not been specified in the law that who is the other health personnel and the decision has been left to the regulation. The other health personnel defined in

the Regulation on the Duties, Authorities, Responsibilities, and Education include individuals authorized by the ministry who have a nurse, health officer, emergency technician and environmental health technician diploma and individuals who are certified by the ministry with workplace nursing certificate (URL11). In order to be certified, an education program is required. The training, education, and assignment of other health personnel are carried out by the ministry, while, the authority to organize the certification exams is transferred to the Center for Evaluation, Selection and Placement (OSYM). The education programs can be provided in the form of distance training and face-to-face training, and maximum half of the theoretical training can be provided in the form of distance training. The duration of the program should not be less than 90 hours, it is necessary to score at least 60 out of 100 points in the exam conducted by the ministry in order to be successful (URL15; Bilir, 2016b).

The certification procedures carried out by the General Directorate of Occupational Health and Safety according to the 2016 statistics of the Ministry of Labor and Social Security are shown in Table 1.

Table 1. Certification Procedures of Other Health Personnel Carried Out by the General Directorate of Occupational Health and Safety According to Years

Years	Other Health Personnel	Other Health Personnel Trainer Certificate
2013	0	0
2014	3	0
2015	204	13
2016	6633	1

Source: Labour Statistics 2016, Ministry of Labour and Social Security

Considering the ISG-KATIP system of the ministry, it was found that 13.365 people have other health personnel certificate by 2018 throughout Turkey (URL15).

Other Health Personnel

The qualifications, duties, authorities, and responsibilities of other health personnel and the working principles and procedures are specified in the regulation.

Their duties are co-working with a workplace physician in planning, evaluation, monitoring and guidance of occupational health and safety services, collecting data and keeping necessary records, recording health and employment histories of employees in employment/periodic examination form and assisting physician during examination carried out by workplace physician, continuously following-up groups that require a special policy and to ensure necessary health examinations, co-working with workplace physician for the organization and progress of first-aid services, involving in the education of employees, co-working with workplace physician for the inspection and follow-up of the general hygiene conditions of the workplaces and additional buildings, carrying out other occupational health and safety associated tasks given by workplace physician, providing support for the work of the employee representative and support staff at workplace and cooperating with them.

Their authorities are investigating and researching on occupational health and safety in all sections of the workplace, reaching the required information and documents

and interviewing with the employees, cooperating with relevant institutions and organizations in accordance with the internal regulations of the workplace with the instruction of the employer and the workplace physician.

The working time is at least 10 minutes per employee per month in a workplace with 10 to 49 employees included in very dangerous class, at least 15 minutes per employee per month in a workplace with 50 to 249, at least 20 minutes per employee per month in a workplace with 250 employees or more (URL11).

Occupational Health Nursing

Nurse is an important member of the occupational health and safety services that should be provided with a multidisciplinary approach. However, it is obvious that the concept of other health personnel is used in the legal legislation and that health officer, emergency technician, and environmental health technician who are members of professions are included instead of a nurse.

The nurse has the capacity to plan and initiate the necessary interventions by observing the workplace to protect and improve health and can plan and implement necessary interventions in accordance with the property of the work performed besides general nursing functions. Tasks of a nurse can be classified into 8 groups, depending on the type of work being performed. These are an evaluation of employee health, prevention and care of accidents, occupational diseases and occupation-related diseases, prevention and care of non-occupation-related accidents and diseases, counselling, health education, cooperation with other occupations and institutions related to employee's health, observation of work area and keeping records (Güngörmüş, 2016).

Occupational health nursing has been included in the Regulation on the Amendment of the Nursing Regulation published in 2011 as one of the departments of Public Health Nursing and the duties and responsibilities have been defined. The duties, authorities and responsibilities of the occupational health nurse in the Nursing Regulation are defined as follows (URL 16):

- Cooperates with occupational health service team members to identify problems related to work environment and to set priorities
- Identifies risks that threaten employees' health by observing
- Guides workers and their families in solving their health problems and meeting their needs
- Collects and records information about employees' sociodemographic characteristics, self/family history and work life
- Cooperates with the physician in employment and periodic examinations, make recommendations on the precautions to be taken in the health problems caused by work environment, monitors referral and treatment of employees to hospital
- Participates in rehabilitation services, administers the prescribes medication, plans, implements and evaluates nursing interventions related to prevention of occupational diseases, treatment and follow-up
- Organizes programs to protect and develop mental health of employees
- Organizes programs for development of health behaviors such as nutrition, weight control, regular exercise, stress management, smoking cessation
- Establishes and educates first aid group
- Collects samples from potentially harmful substances and works with the team
- Plans nursing initiatives for employees with chronic disease, practices,

evaluates

- Cooperates with relevant departments on occupational health and safety
- Performs health check-ups if there is a children's nursery and kindergarten affiliated to the workplace
- Plans health education on hygiene, nutritional intake and storage for employees working at the workplace
- Participates in meetings as an active member of the workplace safety committees
- Records and reports statistics about the work of health unit
- Monitors pregnant and lactating women working in the workplace and takes measures to protect them from harmful substances
- Plans investigations and reports
- Follows the ethical principles, protects employees' rights
- Supports practice trainings of student nurses who want to be a workplace nurse

It is stated that general health and educational levels of employees in Turkey are low, that most of them do not have occupational training, that they are generally unrelated to health protection and development issues, that there are few employees who regularly exercise, that compliance with regular dietary guidelines is low and that smoking and the use of other tobacco products are quite common (Bilir, 2016a). There are rights to instruction (Art.16) and education of employees in Occupational Health and Safety Law (Art.17). It is written that employees should be informed about health and safety risks, preventive and protective measures, first aid, disaster, fire and unusual situations according to the characteristics of work, and educated before employment, when workplace is changed, when work equipment are changed or when transferred to a new technological application and that they should get additional training about the reasons for the workplace accidents and occupational disease, protection methods, and safe working methods (URL8).

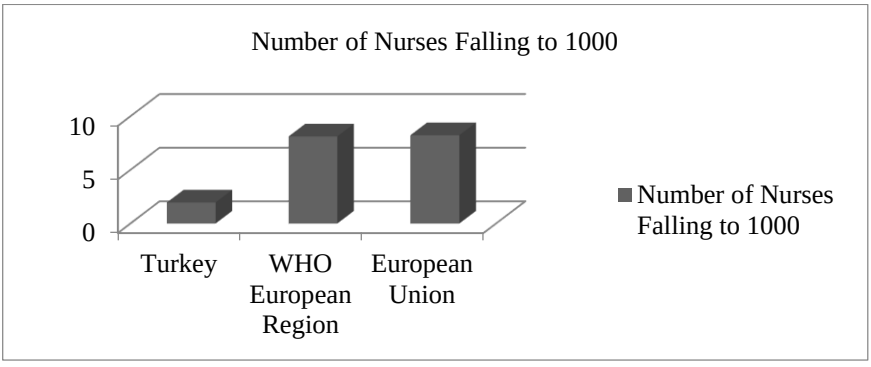

Figure 1. The number of nurses per 1000 individuals in Turkey and Europe
Source: 2023 Health Labor Goals and Health Education, Republic of Turkey. Ministry of Health

In this situation, the services provided by the personnel to be employed in the occupational health services will not only be associated with work issues but will also be related to achievement of healthy living skills in general. In this sense, occupational health nurse has a capacity to implement all interventions to employees working in

work life as indicated in the legislation and to perform duties actively in order to protect and improve health.

According to 2014 data of Turkey, the number of nurses working actively is 152,254 and the number of nurses per 1000 individuals is 1.96. The average of the WHO European Region is 8.12 and the EU average is 8.23. In Turkey, 70.2% of employment of nurses is in the Ministry of Health, 14.3% are in universities and 15.5% are in private sector (Şencan, 2014).

It has been emphasized in the Final Declaration of the 1st Congress on Public Nursing that attempts should be made to prepare models for the political arrangements and care standards according to the conditions of the country in order to provide the employment of public health nurses as workplace nurses in institutions involving numerous individuals (URL 17). Considering the number of current nurses, the reason for workplace nurses' involvement as other health personnel in the legislation and for employment of other occupational members in the same position is understood.

REFERENCES

Bilir, N. (2016a). İş Sağlığı ve Güvenliği, Güneş Tıp Kitapevi, 465 s., Ankara.

Bilir, N. (2016b). İş Sağlığı ve Güvenliği Profili Türkiye, Çalışma ve sosyal Güvenlik Bakanlığı Genel Yayın No: 62, Ankara.

Çalışma Hayatı İstatistikleri 2016. (2107). Çalışma ve Sosyal Güvenlik Bakanlığı Çalışma Genel Müdürlüğü, Genel Yayın No: 68, Ankara.

Dinç, A. (2016). İş Sağlığı ve Güvenliğinin Ekonomik Yönden Analizi, Filizöz, B.; Kocabacak, A. (Ed.), Türkiyede İş Sağlığı ve Güvenliği Uygulamaları, Seçkin Yayıncılık No: 150, 1. Baskı, Ankara, 19-41.

Güngörmüş, N. (2016). İş-Çalışan Sağlığı ve Çalışma Güvenliği, Erci, B. (Ed.), Halk Sağlığı Hemşireliği, Genişletilmiş 2. Baskı, Anadolu Nobel Tıp Kitabevi, Elazığ, 242-262.

Şencan, İ., Ünal, D., Dilsiz, A., Eğin, M.E., Ağaoğlu, S., Kosdak, M., Öz, M., Zaku, A., Alim, F., Avcı, K., Kurt, M., Baloğlu, O., Dağıstan, S., Gündüz, E., Tan, R. (2014). 2023 Yılı Sağlık İş Gücü Hedefleri ve Sağlık Eğitimi, Sağlık Bakanlığı Sağlık Hizmetleri Genel Müdürlüğü, Sağlık Bakanlığı Yayın No: 958, Ankara.

Tanır, F. (2016). İş Sağlığı ve Güvenliği Kavramı, Tarihçesi, İlkeleri, Tanır, F.; Temel İş Sağlığı ve Güvenliği Eğitimi, Akademisyen Kitabevi, Ankara, 1-12.

URL 1: Türk Dil Kurumu, http://www.tdk.gov.tr

URL 2: Workers' health: global plan of action Sixtieth World Health Assembly, WHO, http://www.who.int/occupational_health/WHO_health_assembly_en_web.pdf.

URL 3: Uluslararası Çalışma Öğrsütü-Ankara, http://www.ilo.org/ankara/conventions-ratified-by-turkey/lang--tr/index.htm.

URL 4: Uluslararası Çalışma Örgütü, http://www.ilo.org/global/about-the-ilo/lang--en/index.htm.

URL 5: T.C. Avrupa Birliği Bakanlığı, https://ab.gov.tr/194.html.

URL 6: Türkiye Cumhuriyeti Anayasası, https://www.tbmm.gov.tr/ anayasa/ anayasa 82.htm.

URL 7: 1593 Sayılı Umumi Hıfzısıhha Kanunu, http://www.mevzuat.gov.tr.

URL 8: İş Sağlığı ve Güvenliği Kanunu (6331), http://www.mevzuat.gov.tr/ MevzuatMetin/1.5.6331.pdf .

URL 9: İş Sağlığı ve Güvenliği Yönetmeliği, http://www.mevzuat.gov.tr
URL 10: İş Sağlığı Ve Güvenliği Hizmetleri Yönetmeliği, http://www.mevzuat.gov.tr.
URL 11: İşyeri Hekimi ve Diğer Sağlık Personelinin Görev, Yetki, Sorumluluk ve Eğitimleri Hakkında Yönetmelik, http://www.mevzuat.gov.tr.
URL 12: Çalışanların İş Sağlığı ve Güvenliği Eğitimlerinin Usul ve Esasları Hakkında Yönetmelik, http://www.mevzuat.gov.tr.
URL 13: TÜİK, Nüfusun İşgücü Durumu, www.tuik.gov.tr.
URL 14: Toplum Sağlığı Merkezi ve Bağlı Birimler Yönetmeliği, 2015, http://www.mevzuat.gov.tr.
URL 15: T.C. Çalışma ve Sosyal Güvenlik Bakanlığı - İş Sağlığı Ve Güvenliği Genel Müdürlüğü, İş Sağlığı ve Güvenliği Kayıt, Takip Ve İzleme Programı İsg-Katip V5.15.11.04. https://isgkatip.csgb.gov.tr/Logout.aspx. (Erişim:15.05.2018).
URL 16: Hemşirelik Yönetmeliğinde Değişiklik Yapılmasına Dair Yönetmelik. (2011). http://www.resmigazete.gov.tr.
URL 17: I. Halk Sağlığı Hemşireliği Kongresi Sonuç Bildirgesi 2015, İzmir, http://halkhemder.org.tr.

Chapter 30

An Examination of Transcultural Nursing Care in Graduate Nursing Studies

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INTRODUCTION

Transcultural nursing is an essential aspect of healthcare (Maier-Lorentz, 2008). The global population migration presents nurses with the challenge of delivering care to unprecedented numbers of patients with health care beliefs and practices that may differ from their own (Douglas et al., 2014). Leininger developed concepts of transcultural nursing in the mid-1950s. "Transcultural nursing" has become an accepted phrase, a formal concept, and a field of study extending across cultural lines in search of the "essence of nursing" (Jenko & Moffitt, 2006). Leininger (1991) defines transcultural nursing as a substantive area of study and practice focused on comparative cultural care (caring) values, beliefs, and practices of individuals or groups of similar or different cultures. Transcultural nursing's goal is to provide culture specific and universal nursing care practices for the health and well-being of people or to help them face unfavorable human conditions, illness, or death in culturally meaningful ways. Transcultural Nursing Models are a guide for nurses to become acquainted with and evaluate the cultural structure of the society. The use of a model allows nurses to recognize and evaluate the society for which they care, to approach cultural information in a more systematic way, to develop interventions in transcultural nursing areas, and to explain the data obtained from the patients in a scientific framework. The frequently used models are:

- ✓ Madeleine Leininger; Theory of Culture Care Diversity and Universality (The Sunrise Model)
- ✓ Campinha – Bacote; The Model of Cultural Competence
- ✓ Purnell; The Model for Cultural Competence
- ✓ Giger and Davidhizars; The Transcultural Assessment Model (Giger, 2013).

Leininger emphasizes that people are culturally different and nurses should distinguish patients/individuals' cultural beliefs from their own beliefs. To provide culturally sensitive nursing care, it should be recognized that individuals are unique, and their experiences, beliefs, and values are transmitted from generation to generation (Leininger, 2001). The aim of transcultural nursing is to offer an effective nursing care service that is sensitive to the needs of individuals, families, and groups receiving healthcare. In addition, its purpose is to promote the use of nursing knowledge and practices through cultural conceptualization and integrate the concept of intercultural nursing into nursing education, research, and clinical practices (Leininger, 2001). Equal access to healthcare is an indicator that transcultural nursing is provided (Gerrish &

Papadopoulos, 1999). A culturally competent nurse recognizes that cultural differences occur across all levels of diversity, both primary (age, gender, language, physical ability, and sexual preference) and secondary (socio-economic background, geographical location, education, and religion) (Polaschek, 1998). This nurse will recognize the essential humanity in all persons whatever their cultural background and, therefore, will need to learn how to interact effectively with people to provide quality care despite different social backgrounds, cultures, religions, and lifestyle preferences (Zoucha & Husted, 2000, Gebru and Willman, 2003).

A review of the literature indicates that culturally competent nursing care improves patient care outcomes (Castro & Ruiz, 2009; Hawthorne et al., 2008). Hawthorne et al. (2008) found that health education specifically tailored to the cultural needs of a target minority group for clients with Type 2 Diabetes improved A1C level, health knowledge, and lifestyle. Castro & Ruiz (2009) stated that the provision of culturally competent care leads to negotiation, patient satisfaction, mutual exchange of information, increased compliance, and improved patient-provider communication. In a study looking at Italian nurses' attitudes towards transcultural care, effective communication was the most important aspect of providing cultural care (Festini et al., 2009). Aktaş et al., (2016) investigated the opinions of nurses concerning transcultural nursing care and found that nurses have a high awareness of the impacts of different cultures and cultural structures on health, disease, treatment, and care, and they have difficulties communicating when they provide health care to patients from different cultures. Tavallali et al., (2014) explored how parents with ethnic Swedish backgrounds experience minority ethnic nurses' cultural competence and care provided in a Swedish pediatric care context. This study found the parents attached importance to nurses' perception of different cultures, language skills, and their adaptation to and awareness of Swedish culture. Studies indicate that understanding the concept of culturally sensitive care can help resolve problems in cultural exchanges in the pediatric ward, and specifically, providing cultural facilities and the use of interpreters to communicate with patients increases parents' satisfaction with treatment (Valizadeh et al., 2017). Thibodeaux & Deatrick (2007) found that a family's cultural context directly influences how they define and manage their child's cancer. In addition, studies support that responses of women regarding labor pain are culturally sensitive; therefore, healthcare professionals in maternity services need to consider ways in which culturally sensitive care can be provided to women in labor (Cheung, 2002; Callister et al., 2003; Ibach et al., 2007; Köksal & Duran Taşçı, 2013). These studies indicate that culturally sensitive nursing care has positive effects on patient care outcomes. There was no study in the literature analyzing graduate thesis studies on intercultural nursing care. In this regard, this study aims to analyze intercultural nursing care using Turkish graduate nursing studies searched using the keywords "culture," "intercultural nursing," "transcultural nursing," "culturally competent care," "cultural care," and "culturally appropriate care."

MATERIALS AND METHODS

This study is a descriptive review. Findings were presented by numbers and percentage analysis.

RESULTS

This study analyzed the keywords of "culture" and "intercultural nursing," "transcultural nursing," "culturally competent care," "cultural care," and "culturally appropriate care" in graduate nursing studies in the Higher Education Council between 1998 and 2018 in Turkey. The studies were analyzed according to the departments, designs, years of studies, and measurement tools.

Using these keywords, n=13 graduate studies were found that were published between 1998 and 2018. As five of these graduate theses were on patient safety culture, one was on corporate culture, one was on error reporting culture, one was on cultural characteristics of patients, and another was a culturally specific validity and reliability study, they were excluded from the sample. There were only four studies regarding intercultural nursing care (n=4). Graduate thesis with full texts (n=3) were included in the study (Figure 1).

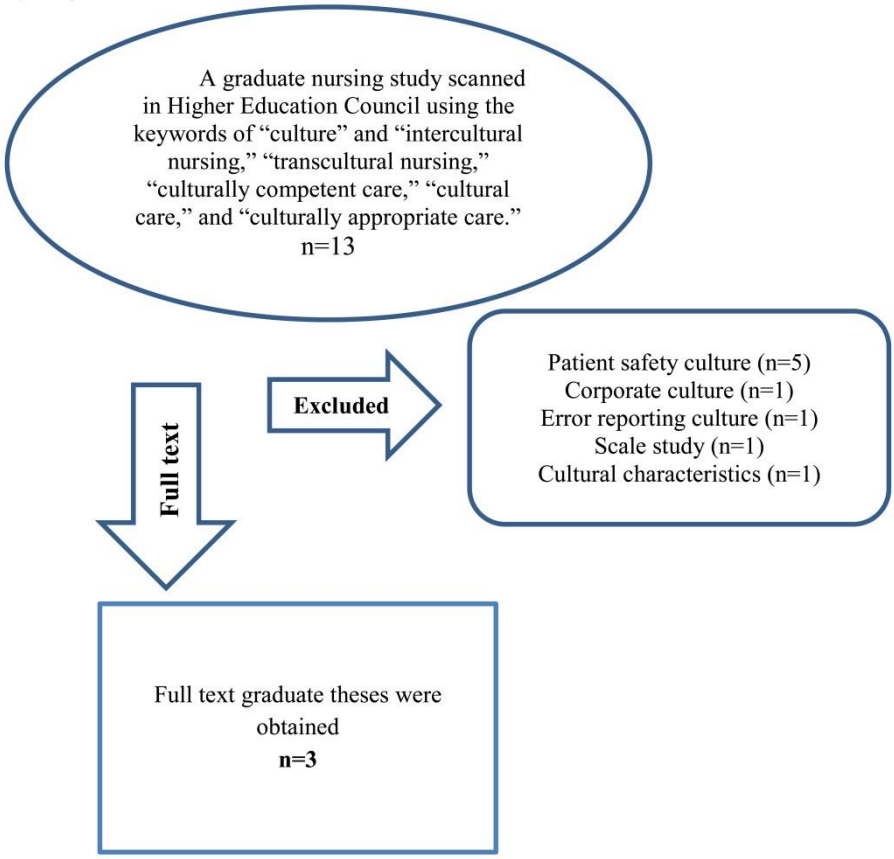

Figure 1: Graduate studies included in the research

Examining the department-based distribution of studies scanned, it was determined that one of the studies was conducted by the department of principles of nursing, two studies were conducted by the department of public health nursing, and one was conducted by the department of psychiatric nursing.

Examining the yearly distribution of these studies, it was determined that following the first study in 2011, this subject has been examined more in the past two years. There was no study regarding this issue in the Higher Education Council between 1998 and 2011. These numbers indicate that the concept of transcultural nursing is not addressed at sufficient levels in Turkish graduate studies. Examining the regional distribution of the thesis participants, individuals living in any of the provinces in the Eastern Anatolia, Southeastern Anatolia, and Marmara regions were included in one of these studies, two studies included individuals who lived in the Marmara region and three studies included individuals who lived in the Aegean Region. Examining the universe and sample groups of graduate studies, the sampling groups constituted the elderly in one study, postpartum women in one study, and nurses in two studies.

The data collection tools of the theses varied; no common measurement tool was used. An Intercultural Awareness Scale, Intercultural Sensitivity Scale, and Intercultural Effectivity Scale (n=1), interview form prepared by researchers (n=1) (Yakar Karabuğa, 2015), survey form grouped according to the Campinha-Bacote Model (n=1) (Akar, 2010), and semi-structured interview form prepared in accordance with Purnell's Cultural Competence Model (n=1) (Gürsoy Yalçın, 2016) were used. As there was no common measurement tool, the comparability of the study outcomes was negatively affected. This data indicates that there are gaps in this area in Turkey. The use of culturally specific, valid, and reliable scales examining the effects of transcultural nursing care should be extended.

Among the theses searched, Akar (2010) examined nurses' intercultural care opinions for mentally ill patients and nurses' knowledge of the word "transcultural". This study found that 26.4% of the participants (n=52) included in this study (n=197) did not know the meaning of transcultural. In addition, 53.3% of the nurses (105) provided care to patients outside of Turkey, but 22.8% (n=45) had communication difficulties while providing care. This study concluded that nurses have a high awareness of different cultures, cultural structure impact health, disease, treatment, and care, and nurses try to provide care with this awareness.

Karabuğa (2015) studied nurses who provide care to an intercultural group (n=204) to determine their intercultural communication competence and found 84% (n=171) wanted to provide care to patients from different cultures, 82% (n=168) wanted to be with patients from different cultures, and 84.5% (n=173) did not receive education on "Transcultural Nursing". Nurses stated they primarily experienced language problems (n=193, 94.6%) when caring for patients from different cultures. They also stated they received information regarding the cultural structures of foreign patients from their previous experiences (n=97, 47.5%) and friends (n=85, 41.7%). In addition, there was no difference in nurses' cultural awareness and sensitivity levels whether or not they received transcultural nursing care. The transcultural awareness and sensitivity levels of nurses did not show any significant differences based on both their willingness to be with patients from different cultures and their knowledge of a foreign language. The mean score of nurses' transcultural effectivity significantly changed due to their willingness to care for patients from different cultures. No significant change was found between the gender, mean age, marital status, number of children, education status, and work years and their transcultural awareness and sensitivity levels (Yakar Karabuğa, 2015).

Tanrıverdi (2017) compared the postpartum care provided to 17 puerperal women with different cultural backgrounds. Although there were cultural differences and similarities between the puerperal women, both groups adopted certain practices that may be considered harmful. In accordance with the findings, it was suggested nurses take into consideration the cultural differences of puerperal women in providing and planning their postpartum care.

DISCUSSION AND CONCLUSIONS

This study analyzed transcultural nursing care through Turkish graduate nursing studies using the keywords "culture," "intercultural nursing," "transcultural nursing," "culturally competent care," "cultural care," and "culturally appropriate care" in the Higher Education Council between 1998 and 2018.

The concepts of transcultural nursing care and culturally appropriate care are not new concepts in Turkey. This subject started to gain importance in 2003 and Turkey was a founding country of the European Transcultural Nurses Association in 2007. The Transcultural Nurses Association was established in 2013 in Turkey. However, this study determined that the concept of transcultural nursing has not been sufficiently examined, particularly in graduate studies, in Turkey. Studies conducted on Transcultural Nursing in Turkey are summarized in Table 1.

Table 1: Studies on Transcultural Nursing in Turkey

Name of Activity	**Organizing Committee**	**Date-Location**
Culture and Nursing Symposium	Erciyes University	4-5 July 2003, Kapadokya
1st European Transcultural Nurses Association (ETNA) International Conference	Dokuz Eylül University ETNA	4-6 June 2008, İzmir
Symposium on Intercultural Perspectives on Nursing and Midwifery	Çanakkale Onsekiz Mart University	9-11 April 2009, Çanakkale
The First National Congress on Intercultural Nursing and Midwifery	Dokuz Eylül University	15-17 September 2011, İzmir
1st Nursing and Culture Workshop	Çanakkale Onsekiz Mart University	May 2013, Çanakkale
2nd National Transcultural Nursing Congress	Akdeniz University	3-5 June 2013, Antalya
Developing and Teaching Intercultural Competence – Capacity Building Seminar	İstanbul Sabahattin Zaim University COHEHRE Academy	1-4 October 2013, İstanbul
The Conference on Culturally Competent Compassion Care	İstanbul Sabahattin Zaim University	18 April 2014, Istanbul
3rd International Transcultural Nursing Congress	Çanakkale Onsekiz Mart University Transcultural Nurses Association	21-23 May 2015, Çanakkale

How Do Nurses Gain Cultural Competence: A Course on Approaches and Suggestions	Special Anadolu Sağlık Johns Hopkins Hospital	14 December 2016, Gebze
The Workshop on Developing Cultural Sensitivity	Çanakkale Onsekiz Mart University	March 2017, Çanakkale
1st International, 4th National Transcultural Nursing Congress	Harran University Transcultural Nurses Association	21-24 October 2017, Şanlıurfa

✓ There were three studies whose full texts could be obtained and only one was a PhD thesis. In addition to those studies, which were mainly descriptive, it is suggested to conduct interventional PhD studies.

✓ There were no studies on this subject conducted in Turkey in previous years. The interest in this subject increased in 2011 and there have been graduate studies on this subject recently (2016-17). To present the importance of this study at the country level, it is recommended to carry out large-scale studies through sample groups from each province.

✓ Except for the PhD thesis, a standard, valid, and reliable measurement tool was not used in the studies. Instead, interview forms prepared by researchers based on the literature were used.

✓ It was determined that all studies including the PhD thesis were either in the qualitative (n=2) or descriptive and methodological research pattern (n=2), and there was no interventional study regarding this subject.

✓ In the graduate studies conducted with nurses, language barriers were the common problem of nurses included in different sampling groups.

To conclude, in order to extend the concept of transcultural nursing in Turkey, the following are recommended:

✓ To examine this subject in graduate studies, particularly in PhD thesis studies,

✓ To conduct interventional studies evaluating the effects of transcultural nursing on care outcomes,

✓ To include a lecture on transcultural nursing for all schools offering an undergraduate program in nursing,

✓ To use a standard, valid, and reliable measurement tool in the studies on transcultural nursing practices,

✓ To identify the individual cultural competence of healthcare professionals through the help of valid and reliable identification tools (Rose, 2011).

REFERENCES

Akar N. (2010). Hemşirelerin Ruh Hastalarına Yönelik Kültürlerarası Hemşirelik Bakımı Konusundaki Görüşleri. Yayınlanmamış yüksek lisans tezi, İzmir.

Callister C.L., Khalaf I., Semenic S., Kartchner R., Julkunen K.V. (2003). The Pain of Childbirth: Perceptions of Culturally Diverse Women. Pain Management Nursing, 4(4), 145-154.

Castro A., Ruiz E. (2009). The Effects of Nurse Practitioner Cultural Competence on Latina Patient Satisfaction. J Am Acad Nurse Pract, 21(5), 278-86.

Cheung N. (2002). The cultural and social meanings of childbearing for Chinese and

Scottish women in Scotland. Midwifery, 18, 279–295.
Douglas M.K., Rosenkoetter M., Pacquiao D.F., Callister L.C., Hattar-Pollarau M., Lauderdale J., Milstead J., et al. (2014). Guidelines for Implementing Culturally Competent Nursing Care. Journal of Transcultural Nursing, 25(2), 109-121.
Festini F., Focardi S., Bisogni S., Mannini C., Neri S. (2009). Profession and Society. Providing Transcultural to Children and Parents: An Exploratory Study from Italy. Journal of Nursing Scholarship, 41 (2), 220–227.
Gebru K., Willman A. (2003). A Research-Based Didactic Model for Education to Promote Culturally Competent Nursing Care in Sweden. Journal of Transcultural Nursing, 14(1), 55-61.
Gerrish K., Papadopoulos I. (1999). Transcultural Competence: The Challenge for Nurse Education. Br J Nurs, 8(21), 1453–7.
Gürsoy Yalçın M. (2016). Çanakkale'de Yaşayan Farklı Kültürlerdeki Yaşlılara Yönelik Şiddetin Karşılaştırılması: Nitel Araştırma. Yayınlanmamış yüksek lisans tezi, Çanakkale.
Hawthorne K., Robles Y., Cannings-John R., Edwards A.G. (2008).Culturally Appropriate Health Education for Type 2 Diabetes Mellitus in Ethnic Minority Groups. Cochrane Database Syst Rev, 16;(3), CD006424.
Ibach F., Dyer R.A., Fawcus S., Dyer S.J. (2007). Knowledge and Expectations of Labour among Primigravid Women in The Public Health Sector. South African Medical Journal, 97(6), 461-464.
Jenko M., Moffitt S.R. (2006). Transcultural Nursing Principles: An Application to Hospice Care. Journal of Hospice & Palliative Nursing, 8(3), 172-180.
Joyce Newman G. (2013). Transcultural Nursing: Assessment & Intervention. (Six Edition). Elsevier/Mosby. USA.
Köksal Ö., Duran Taşçı E. (2013). Doğum Ağrısına Kültürel Yaklaşım. DEUHYO ED, 6 (3), 144-148.
Leininger M. (1991). Transcultural Care Principles, Human Rights, and Ethical Considerations. Journal of Transcultural Nursing, 3(1), 21-3.
Leininger M. (2001). Transcultural nursing care in the community," Community Health Nursing: Caring for the Public's Health. Jones and Barlett Publishers, USA. ISBN-13: 978-1449691493.
Maier-Lorentz M.M. (2008). Transcultural Nursing: Its Importance In Nursing Practice. J Cult Divers, 15(1), 37-43.
Mock V., Ours C.S., Hall S., Bositis A., Tillery M., Belcher A. et al. (2007). Using a Conceptual Model in Nursing Research–Mitigating Fatigue in Cancer Patients. J Adv Nurs, 58(5), 503–12.
Polaschek B.A. (1998). Cultural Safety: A New Concept In Nursing People of Different Ethnicities. Journal of Advanced Nursing, 27, 452–457.
Rose P. R. (2011). Cultural Competency for Health Administration and Public Health, Jones and Barlett Pub. London.
Tavallali A., Kabir Z., Jirwe M. (2014). Ethnic Swedish Parents' Experiences of Minority Ethnic Nurses' Cultural Competence in Swedish Paediatric Care. Scandinavian Journal of Caring Sciences, 28(2), 255-63.
Thibodeaux A.G., Deatrick J.A. (2007). Cultural Influence on Family Management of Children with Cancer. Journal of Pediatric Oncology Nursing, 24, 227–233.
Tulay A., Tanrıverdi G. (2017). Farklı Kültürlerdeki Kadınlarda Lohusalık Bakımının Karşılaştırılması: Nitel Araştırma. Uluslararası Hakemli Kadın Hastalıkları ve Anne Çocuk Sağlığı Dergisi, 9, 1-25.

Valizadeh L., Zamanzadeh V., Ghahramanian A., Aghajari P. (2017). The Exploration of Culturally Sensitive Nursing Care in Pediatric Setting: A Qualitative Study. Int J Pediatr, 5(2), 4329-4341.

Yaman Aktaş Y., Gök Uğur H., Orak O.S. (2016). Hemşirelerin Kültürlerarası Hemşirelik Bakımına İlişkin Görüşlerinin İncelenmesi. Uluslararası Hakemli Hemşirelik Araştırmaları Dergisi, 8, 120-135.

Yakar Karabuğa H. (2015). Farklı Kültürlerden Gelen Hastalara Bakım Veren Hemşirelerin Kültürlerarası İletişim Yeterliliği. Yayınlanmamış doktora tezi, İstanbul.

URL: Yükseköğretim Kurulu Başkanlığı, Tez Merkezi.
https://tez.yok.gov.tr/UlusalTezMerkezi/tezSorguSonucYeni.jsp
(Accessed: July 11 2018).

Zoucha R., Husted G. (2000). The Ethical Dimensions of Delivering Culturally Congruent Nursing and Health Care. Issues in Mental Health Nursing, 21, 325–340.

Chapter 31

Self- Awareness in the Nurse-Patient Relationship

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INTRODUCTION

It is quite difficult that a nurse becomes a professional member. It is because a nurse has to adopt various principles derived from basic and applied sciences, and from all other specialties such as mental health and community health, and apply these principles in practice within at least two, at most five years (Orlando, 1961; cited in Özcan & Platin, 1984). It should also be remembered that nurses should have the ability to be aware of what the particular characteristics of human behavior mean to the patient and how it affects the patient, apart from the information that is theoretically and practically provided regarding the subject of help to the patients (Orlando, 1961; cited in Özcan & Platin, 1984; Özcan, 2012).

Nursing as a health care science, focuses on serving the bio-psychosocial and spiritual needs of people. The application of nursing services requires not only scientific knowledge but also interpersonal, intellectual and technical skills (Kourkouta & Papathanasiou, 2012). This means a combination of meeting the needs of the patient and interpersonal communication and is regarded as the essence of nursing by many people in the nurse-patient relationship (Bramhall, 2014; Gamez Granados, 2009, Kourkouta & Papathanasiou, 2012).

The nurse should know this first of all, when meeting the needs of the patient. Without establishing effective communication with the patient, the nurse cannot clearly identify what the patient's needs or problems are and what they mean. For that reason, the nurse-patient relationship can be defined as a reliance relationship based on mutual trust and respect, belief and nourishment (Feo et al., 2016; Kendey Sheldon, 2009; Orlando, 1961; cited in Özcan & Platin; Shatell, 2004). While primarily accepting the purpose and responsibility of this relationship, the nurse uses a patient-centered approach to meet the needs of the patient and to try to understand the reactions given to the changes in health. This approach is based on the relationship and communication between nurse and patient within the concepts of respect, trust, reality, empathy and confidentiality (Bramhall, 2014; Neal, 2003; Silverstein, 2006; Feo et al., 2016).

Some nurses in the nurse-patient relationship focus on the needs expressed by verbal communication and may overlook the nonverbal expression of the patient's behavior. However, some patients' needs are expressed not in verbal communication but in non-verbal communication with their behavior (Kourkouta, L.; Papathanasiou, 2014; Özcan, 2012). For example, a patient with abdominal pain may show pain symptoms by rubbing the abdomen and biting her lips. They may not respond when the nurse tries to understand and investigate their behavior. In this case, the nurse can express a reaction to the lack of communication with the patient and resolve the obstacle, saying, "Do you

have any reason for not responding to me?" Thus, they can perform effective nursing activities that meet the needs of the patient and help the patient (Orlando, 1961; cited in Özcan & Platin, 1984).

Case Study 1[*]

Ms. D. had a normal birth and her bed was being changed by the nurse while she was still in bed. At that time, the patient was looking into the abdomen of another patient lying on the next bed who was being applied abdominal bandages by another nurse Ms. D. said to the nurse who was changing her bed, pointing to the bandage, "Can I ask for a bandage like that patient's? Ms. D.'s nurse replied as “You do not need a bandage like that. Your surgery is not the same as that of the patient."

Two or three minutes later, a third nurse entered the room. While she was giving the medication to Ms. D., she asked "Could you please wrap bandage around my belly?" The nurse answered, "You had normal birth, you do not need it." At that moment, the nurse who was changing the bed went into the room with clean towels and said, "I told you that you did not need it". Ms. D. bit her lips, bowed her head, and cut off her little finger's and thumb’s nail with her teeth. Both nurses who said she did not need bandages left the room.

The nurse who was applying bandages to the other patient finished her job. When she approached Ms. D.'s bed, she said "I heard you wanted bandages... Can you tell me why you want it? Because unless the patient had a surgery, we usually do not use it."

Patient: "This is my second birth. When my breasts were swollen in my first birth, the nurse tightly wrapped them and it helped with the swelling. I do not like this big stomach after the pregnancy, and I think it will shrink if it is wrapped tight."

The nurse understood what the patient's request meant and what the patient needed. She made the necessary explanation and taught the exercises that could be done after birth.

As seen in the case, all three nurses had heard the patient's request and knew in what cases the abdominal bandage was used. However, the first two nurses responded to the request without contacting the patient and investigating the underlying cause of the request for the bandage, and they could not help the patient. The third nurse, on the other hand, preferred to contact the patient to understand why the patient needed a bandage before refusing the patient's request. Thus, she identified the real reason behind the patient's request and achieved patient satisfaction by planning appropriate nursing activity for her. What is important here is that the relationship established by the communication skills nurses have makes a difference in nursing care.

Case Study 2[*]

At the orthopedic service, there was a 15-year-old male patient injured with a bullet rifle while working. He was waiting for the last 17 days for the pieces to be removed from his leg, and helping the staff meeting patients' needs and distributing the

[*] Case Study 1: Orlando I.J. (1961). The Dynamic nurse-patient relationship. Translation; A, Özcan; N, Platın. Vehbı Koç Vakfı. İstanbul.

[*] Case Study 2: Orlando I.J. (1961). The Dynamic nurse-patient relationship. Translation; A, Özcan; N, Platın. Vehbı Koç Vakfı. İstanbul.

food. He was acting wise and spoiled. I did not like him because the way he behaved annoyed me.

For two days, I was given the responsibility to care for this patient. The patient was staying in the same room with two people. When I entered the room, I introduced myself by saying "good morning" to others first. Because of my personality, I cannot forget the things that make me angry and cannot contact the people I am angry at. That is why I acted tough and cold to my 15-year-old patient.

One of the patients in the same room was bedridden and this 15-year-old patient was carrying the urinary tray for him. I should have prevented this, but I have not. . He told me, "My nurses are great, I love them very much, how would I let them do these things?" On the third day, three patients were given to my responsibility and I was happy. Because the relationship I had with these three patients who shared the same room was advanced. My 15-year-old patient saw me as his sister and the other two as daughters.

In the case study, it is seen that there was a nurse-patient relationship in which the nurse's own feelings and needs were at the forefront. Although the nurse seemed to be aware of her own feelings, she had in fact failed to establish a professional relationship and communication for patient's benefit due to her unmet psychological needs. However, nursing care for the benefit of patients is the most important thing in nurse-patient relationship. To achieve it, the nurses should first be aware of their own good and bad traits, needs, emotions, and they need to know themselves well and have the ability to meet their own needs.

Self- Awareness

The term self-recognition, which includes “self-awareness”, “self-knowledge” or “self-understanding”, is the process of cognitive discovery of one's own thoughts, feelings, beliefs, values, and feedback from others. In this context, the Johari window model is very important because it evaluates one's self-definition, understanding of others and their interpersonal communication (Burge, 2017; Carruthers et al., 2012; Eckroth-Butcher, 2010).

The Johari window model, developed by Joe Luft and Harry Ingham (1982), shows awareness of interpersonal relationships by providing information about the behavior of individuals. In this model, there are two dimensions: the individual's knowledge about himself / herself and the others' information about the individual. When these two dimensions are combined, the following four situations arise (Figure 1). The first case is known as open area and consists of information that can be obtained by both others and individuals themselves. The expansion of this field will increase the level of confidence among individuals or between people. The second is the blind spot where one cannot recognize himself, but others have knowledge of that person. The information that they are not aware of is noticed by the people they are in communication with (the person's relationship style, behaviors, etc.). The third situation is called three hidden area which describes the information that we cannot open to others but we are aware of, such as fears, secrets, manipulative experiences. The fourth situation can be considered as subconscious. This is a dark, unknown field in which the person himself and others do not have knowledge of (Luft, 1982).

The Johari Window Model can be used not only to understand oneself and create self-awareness, but also to understand others and to see differences between individuals.

Consistency of relationships between people and ensuring a healthy communication depends on the extent of the open area. As the person shares his or her thoughts with others, he/she enlarges the open area in the Johari Window vertically. Thus, it is possible for one to show his / her own thoughts to the others and to be perceived by others. On the other hand, the person receives feedback about himself from other individuals, and with these feedback, the open area in the Johari Window expands horizontally. In this feedback process, the person who learns about other people's thoughts about herself understands how she looks from the outside and guesses how she is perceived from the outside (Luft, 1982; Roessler, 2013; Vazire & Wilson, 2012).

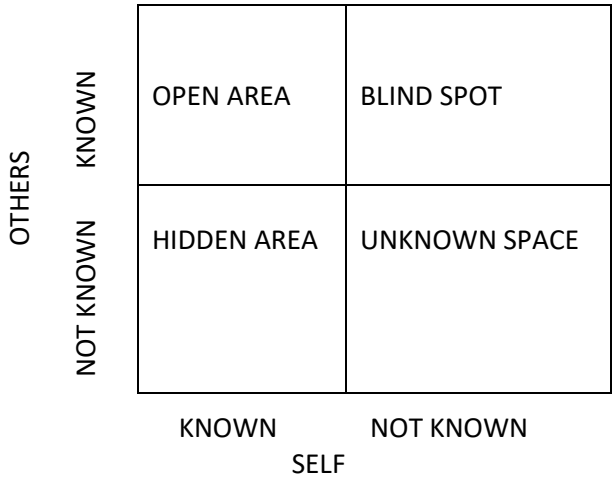

Figure 1: The Johari Window Model: A Graphical Model of Awareness in Interpersonal Relations (Luft, 1982)

Self- awareness is a frequently discussed topic in the nursing literature and is seen as the most basic and most important aspect of professional nursing. It is one of the important components of the nursing-patient relationship in particular and is influential in the nursing staff's use of their own insight and presence to guide the patient with original and authentic behaviors, creating a healing interpersonal environment. Only in this way, the nurse can overcome the difficulties in communication and therapeutic relationships, turn unhealthy behaviors into healthy behaviors and contribute to the healing process (Eckroth-Butcher, 2010; Gessler & Ferron, 2012; Rowe, 1999; Rasheed Parven,, 2015)

Jack and Miller (2008) proposed a three phase framework, "now, transition and reunion", based on the Johari window model for self-recognition and change in nurses. At the “now” phase of the framework, the nurse may need the help of colleagues and develop insight. At transition phase, the nurses move with the awareness that they need to develop themselves more and can find the resources and paths they need. At the final stage of re-union, the feedback from other individuals diminishes the hidden or unknown areas of the nurses and gives them the knowledge of the self. However, it can also be a painful process because one has to be able to understand oneself and others and has to be a professional nurse (Jack & Smith, 2007; Jack & Miller, 2008).

Self and Ego Concepts and Relations in Self- Awareness

The self- awareness of self is manifested by the fact that one has the right knowledge about their own personality and their descent into their essence. This is not an easy task, of course. It is the result of a long search and struggle (Stevens & Warwick-Smith, 2016).

The self is the facts belonging to the person from the time of birth and selects a set of personality features called concealment. In general, it prefers the conditions and events that lead to the development of the chosen concealment during childhood. There is no such thing as coincidence, and if you choose to be intellectual and to be successful in the academic direction, you present yourself with the right conditions for intellectual stimulation (Stevens & Warwick-Smith, 2016).

Personality is the pattern of learned behavior that does not belong to the individual. For the individual, personality is information about one's mental and spiritual characteristics, while for other people it expresses the specific roles and characteristics of the individual within society. The element which shapes and directs the personality is the ego (Yazgan İnanç & Ercüment Yerlikaya, 2017).

The ego can be defined as the self-perception of the individual. It helps recognizing and adapting to the truth, perceiving, selecting, hiding, remembering, thinking, evaluating environmental stimulants, finding solutions to the obstacles encountered, designing for the future, and developing defense mechanisms. Therefore, the more the individual knows about himself and the more realistic he perceives himself, the more positively he advances (Perry, 2017; Yazgan İnanç & Ercüment Yerlikaya, 2017).

Ego At the beginning of the 20th century, W. James mentioned the importance of the "I" concept and divided the concept into two: the known (the me) and the one that knows (the I). The known me is the apparent structure and the environment of the individual. The 'me' that knows, is the conscious or thoughtful side of man. In general, the self consists of self-perceptions, self-evaluations, and self-consciousness of a person, the reflections of the views of others related to the individual on the individual, and self-judgments of the individual, a person's conscious perceptions about themselves. It is like an area that distinguishes what belongs to us and what remains outside us when we interact with other people. When we say "I am a very hardworking person", "I am a good person", "I love nursing", we position ourselves in the community or environment we are in and we create a space for ourselves (Cüceloğlu, 2016; James, 1950; James, 1963).

According to Skinner (1974), people are aware of themselves as part of their environment and surrounding. They are also aware of the external stimuli they observe, as well as the internal stimuli coming from within. Hence, their behaviors are shaped as part of both their inner warnings and the environments. According to Wicklund, a person may focus attention on himself or the surroundings, and differences may arise in behavior depending on the focal point he prefers. Focusing on oneself brings self-consciousness that is being conscious about oneself, knowing themselves (cited in Feist, 1990).

It is the moment when man begins to recognize himself, which they begin to distinguish between self and ego. The relationship between self and ego can be seen like a rider and a horse. The rider is the self, the horse is ego. The rider may ride the horse to

any direction he wants. However, the horse is free to choose where to step. Sometimes the horse will choose a certain path to take a comfortable step, because he knows the best in this regard. So when we compare the horse with the rider, we see that the rider and the horse have to move in harmony. In some cases, the ego is run by fear and harmony is degraded. İf we use horse and rider analogy, fear can sometimes take over the control of the horse. Horse may react to the fearsome event in a way that might harm the rider to save itself, or even can lead the rider to fall. The rider falls down and the horse continues to run alone, the harmony breaks down. In order to keep the harmony stable, the rider should be able to control the possible negative situations and know how to manage them (Stevens & Warwick-Smith, 2016; Vazire & Wilson, 2012).

How does one achieve self- awareness?

The role that the self plays, the goal it wants to achieve, attitude, manners, and negative personal characteristics are the roadmap for a human to be self-aware and get to know others (Stevens & Warwick-Smith, 2016).

Role: The role is a frame that reflects the essence of the person and makes what he or she feels or expresses meaningful.

Every person has one of the seven principal roles of servant, artist, warrior, priest, wise, king, and scholar, although the nature is different in each person. *The essence of the servant* is to work for the well-being of others and to help and relieve their desires and needs; *the essence of the artist* is creativeness and to reveal something that has never been done before; *the essence of the priest* is mercy and to deeply understand the sadness or misfortune of others and to relieve them; *the essence of a wise person* is his/her ability to express and communicate; *the essence of a warrior* is to convince; *the essence of the king* is to dominate, to manage and control everybody to get the best result; *the essence of the scholar* is his/her ability to internalize, analyze and organize information in a useful way (Stevens & Warwick-Smith, 2016).

We can make our life easier when we know our own role and the role of others. Especially, knowing the positive and negative aspects of our own roles, how we relate to other roles, and how to use our role effectively will provide us with more self-awareness (Stevens & Warwick-Smith, 2016).

Aim: It is the aim of the self, what it strives for and the biggest motivator after the role. The self they have will leave them face to face with some situations regarding their goals. If the person does not act in accordance with what he / she is targeting, he / she may be disappointed (Stevens & Warwick-Smith, 2016).

All targets are experienced by the role and the person has the goal of dominating and accepting the role he / she has. People with the goal of domination carry a desire to govern a situation. It is important to be the frontrunner and leader against the people they are in contact with. People aiming acceptance may have difficulty managing the situations they have in connection with other people and may feel uncomfortable in this regard. What is important for them is to accept others as they are (Stevens & Warwick-Smith, 2016).

Behavioral pattern: It is the method that the person uses to reach its goal and has seven modes of behavior, timid, passionate, cautious, strong, persistent, aggressive and observant.

Cautious behavior is a result of fear of doing the wrong thing. In this behavioral pattern, thinking before deciding on something, controlling, being cautious, taking some

personal time, avoiding dangers and risks are evident. *Strong behavior pattern* originates from the feeling of authority. It complements the cautious behavior. People with this form of behavior know what they are talking about and what they know. They have a natural leadership position. *In timid behavioral pattern*, being controlled, restricting your own feelings and behavior, and *in passionate behavioral pattern*, experiencing everything and a raised awareness of everything can be seen. *Persistent behavior* can be mistaken as stubbornness. However while stubbornness originates from fear of losing, persistency is a behavior and stems from fear. In this behavior, persistent effort, endurance and patience, persistence with determination is dominant. People having a*ggressive behavioral pattern* take risks and love danger. Taking risks and self-assertion in events that are encountered are seen. *In observant behavioral pattern*, there is a sense of alertness and awareness about what is happening around (Stevens & Warwick-Smith, 2016).

Attitude: Attitude is how we decide what to do in life. It directs us as to how we will adapt to the events we experience. It affects our perception of every aspect of our life. It shapes ourselves, others and all other perspectives. When a person understands his / her own stance, he / she may feel more comfortable about situations he / she is facing and can easily accept himself / herself. (Stevens & Warwick-Smith, 2016).

Negative personal traits: It is the obstacles we put for ourselves during the situations we encounter. It prevents access to the target and slows the person's personal development. These obstacles are grouped into seven groups: lack of self-worth, arrogance, self-destruction, greed, oppression, impatience and stubbornness.

In self-worthlessness, underestimating one's own value and apologizing before or after saying something; *in arrogance*, being proud about oneself and what is done; *in self-destruction*, sacrifice, submission, giving up on something valuable for something bigger; *in greed*, desiring everything that life can offer and having more; *in oppression*, thinking the best of others rather than oneself; *in impatience*, feelings of anger or tension caused by fear of missing something; *in stubbornness*, uprightness, obscurity are dominant (Stevens & Warwick-Smith, 2016).

The Importance of self-recognition in Nursing Patient Relationship

Peplau, one of the nursing theorists, defines nursing as an interpersonal process and says it is based on the relationship between the nurse and those who need the health care service or patients. In this relationship, a thorough and accurate understanding of the patient's behavior by the nurse may encourage the patient to cooperate, help the patient gain confidence and changes in the patient can be seen in terms of independent movement (Parker, 2005). However, in order to them to be observed and performed on the patient, the nurses must have the ability to be aware of their own characteristics, behaviors, reactions, attitudes and to understand others (Kourkouta & Papathanasiou,, 2014; Rasheed Parven, 2015; Rowe, 1999;

It is important for the nurse to correctly interpret what they perceive in the nurse-patient relationship. Because not only the patient but also the nurses may have needs. Especially like love, admiration, appreciation, respect. If the nurses who know themselves can correctly assess the patient's reflection, they can control their own feelings and resort to appropriate methods to help the patients meet their needs. On the other hand, the nurses who do not know themselves can internalize the patient's reactions and show their psychological fears like not being liked, respected, and act

impulsively towards the patient in nurse-patient relationship (Eckroth-Butcher, 2010; Gamez Granados, 2009; Neal, 2003).

A nurse who does not know herself can have frequent problems with her professional relationships and communication. They may misinterpret the feedback from patients and relatives. They can see themselves as the source of the problem and perceive themselves as unsuccessful. However, a nurse can make it easier for him or her to cope with difficult situations he or she is facing, as well as for others to understand when she/ he is self-aware (Orlando, 1961; cited in Özcan & Platin, 1984; Özcan, 2012).

REFERENCES

Bramhall, E. (2014). Effective communication skills in nursing practice. Nursing Standard 29:(14),53-59.

Burge, T. (2017). Individualism and Self-Knowledge. The Journal of Philosophy 85:(11), 649-663.

Carruthers, P.; Fletcher, L.; Brendan Ritchie, J. (2012). The Evolution of Self Knowledge. Philosophical Topics 40:(2), 13-37.

Cüceloğlu, D. (2016). İnsan ve davranişi**.** Remzi Kitabevi. 28. Baski. İstanbul.

Eckroth-Butcher, M. (2010). Self Awareness: A review and analysis of a basic nursing concept. Advances in Nursing Sciences 33 :(4), 297-309.

Feist, J. (1990). Theories of personality. Holt, Rinehart and Winston.Inc, Chicago.

Feo, R.; Rasmussen, P.; Wiechula, R.; Conroy, T.; Kitson, A. (2016). Developingeffective and caring nurse-patient relationships. Nursing Standard 31:(28),4-63.

Gamez Granados, G. (2009). The nurse-patient relationship as a caring relationship. Nursing Sciences Quarterly 22 :(2), 126-7.

Gessler, R.; Ferron, L. (2012). Making the workplace healthier, one self-aware nurse at time. American Nurse Today 41-43.

Jack, K.; Smith, A. (2007). Promoting self-awareness in nurses to improve nursing practice. Nursing Standard 21 :(32), 47-52.

Jack, K.; Miller, E. (2008). Exploring self-awareness in mental health practice. Mental Health Practice 12:(3),31-35.

James, W. (1950). The principles of psychology. Vol.1, Reprint Edition. Dover Publishing.

James, W. (1963). The varieties of religious experience. University Books. New York.

Kendey Sheldon, L. (2009). Communication for nurses: Talking with patients. Second edition. Jones and Barlett Publishers.

Kourkouta, L.; Papathanasiou, L.V. (2014). Communication in Nursing Practice. Mater Sociomed 26:(1), 65-67.

Luft, J. (1982). The Johari window: A graphic model of awareness in interpersonal relations. NHL Human Relation Training News 5:(1),6-7.

Neal, K. (2003). Nurse-patient relationship. Hincliff S., Norman S., Schober J. (ed). Nursing practice and health care. 4th ed. London.

Orlando I.J. (1961). The Dynamic nurse-patient relationship. Çev. A, Özcan; N, Platin. Vehbi Koç Vakfi. Istanbul.

Özcan, A. (2012). Hemşire Hasta İlişkisi ve İletişim, Sistem Ofset Bas. 3. Basim. Ankara.

Parker, M.E. (2005). Nursing Theories and Nursing Practice. Second edition.F.A. Davis Company. Philadelphia.

Perry, J. (2017). Identity and Self-Knowledge. Philos Theor Pract Biol 9:(5),1-12.

Rasheed Parven, S. (2015). Self-Awreness as a Therapeutic Tool for Nurse/Client Relationship. International Journal of Caring Sciences, 8:(1),211-216.
Roessler, J. (2013). The silence of self-knowledge. Philosophical Explorations 16:(1),1-17.
Rowe, J. (1999). Self-awareness: Improving nurse-client interactions. Nursing Standard 14:(8),37-40.
Shatell, M. (2004). Nurse patient interaction: A review of the literature. Journal of Clinical Nursing 13:714-722.
Silverstein, C.M. (2006). Therapeutic interpersonal interactions: The sacrificial lamb. Perspectives in Psychiatric Care 42:(1), 33-41.
Stevens, J.; Warwick-Smith, S. (2016). The Michael Handbook: A Channeled System for Self Understanding. (Çeviri: Semra Ayanbaşi). Kendini Tanima Rehberi. Üçüncü basim. Avci Ofset. Istanbul.
Thomasson, A.L. (2006).Self-Awareness and Self-Knowledge. 12(2), 1-15. Available at: http://psyche.cs.monash.edu.au/.
Vazire, S.; Wilson, T.D. (2012). Handbook of Self-Knoowledge. 1st. ed. The Guilford Press.
Yazgan İnanç, B.; Ercüment Yerlikaya, E. (2017). Kişilik Kuramlari. Pegem Akademi.13. Baskı, Ankara.

Chapter 32

Pain Management of Patients with Gynecological Cancer

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INTRODUCTION

Gynecological cancers are malign diseases of the female genital organs. Both worldwide and in Turkey, these common gynecological cancers have a significant negative effect on female health. One of the negative effects associated with cancer is pain. In fact, after death, the most feared sensory and emotional experience for gynecological cancer patients is pain (Sarıhan, Kadıoğlu, & Artıran Igde, 2012). This is commonly experienced by patients throughout the period of diagnosis and treatment (Tay, & Ho, 2009) and this reduces their quality of life (Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Uzunoğlu, & Çiçin, 2011; Saw, Chew, & Goh, 2012).

Cancer pain is one of the most difficult symptoms not only for the patient, but also for those close to the patient and for health professionals (Cope & Zhao, 2011). The frequency and severity of the symptome differ among gynecological cancer patients based on the patient's age, general health condition, the location of disease, stage of disease, metastatic capacity of the disease and treatment type being used (i.e., surgery, chemotherapy, radiotherapy) (Esencan, & Merih, 2010; Uzunoğlu, & Çiçin, 2011; Saw, Chew, & Goh, 2012). Therefore, cancer-associated pain has been separated into sub-classifications as follows: acute, chronic and pain unassociated with cancer (Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Esencan, & Merih, 2010). In general, acute pain in cancer develops due to diagnostic and therapeutic procedures, treatment regimens or arising metastases (Eti, 2005). Development of chronic pain is associated with tumor invasion (Kayhan, Gülhaş, Aslan, & Durmuş, 2013). Pain not directly associated with cancer includes those which can develop from pressure ulcer, bone fractures and depression (Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Saw, Chew & Goh, 2012; Eti, 2005). Cancers of the genitourinary system such as cervical or ovarian cancer have been reported to developing of pain in 30-80%. (Sarıhan, Kadıoğlu, & Artıran Igde, 2012; Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Uğur, 2014; Ripamonti et al. 2012). In previous studies, pain associated with cancer was found to be caused by the disease itself in 77% of cases, while cancer treatment caused 19% of pain and 4% was due to causes indirectly associated with cancer (Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Ayvat, Aydın, & Oğurlu, 2011; Rafael et al., 2010; Higashi, Yoshimoto, & Matoba, 2012). It has been reported that pain associated with cancer develops during treatment in 33% of patients, while 67-80% of patients experience pain in later stages (Sarıhan, Kadıoğlu, & Artıran Igde, 2012; Uğur, 2014; Gehdoo, 2006; Ripamonti et al. 2012; Ertaş et al., 2014). In other studies investigating severity of pain in gynecological cancer patients, it is reported that patients typically experience moderate and severe

pain (Higashi, Yoshimoto, & Matoba, 2012; Lynette, Pujol, Daniel, & Monti, 2007; Homsi et al., 2006). Thus, cancer-associated pain is clearly a serious health problem (Saw, Chew, & Goh, 2012; Simone, Vapiwala, Hampshire, & Metz, 2012; Miguel, 2000). In the end of their life stages of cancer patients, treatment and palliative care applications for reducing pain is vital importance. According to the literature, cancer associated pain can be reduced by 70-90% when effective medical (analgesic e.g.) and non-pharmacological interventions (home care e.g.) are utilized. In a study by Kayhan, Gülhaş, Aslan and Durmuş (2013), it was shown that before the start of pain management therapy their pain severity was high and that while patients received pain therapy their severity of pain was significantly reduced. In a study by Ertas et al. (2014), which investigated severity of pain alleviation in late-stage gynecological cancer patients found that prior to treatment severity of pain was high and that at 30-day follow-up after pain therapy the severity of pain was lower. In another study by Koller, Miaskowski, De Geest, Opitz and Spichiger (2013), it was shown that in-home care services had a positive effect on the alleviation of cancer pain; especially for pain developing from therapy, medical problems (i.e., nausea, vomiting, insomnia, constipation) and the psychological condition of the patient. To keep cancer pain under control effectively it is important that the pain first be evaluated in a broad manner, a treatment plan should be made and then quality and continued health services should be given to patients. Also, pain management therapy should actually be started at the same time as the cancer therapy (Eti, 2002; Arslan, Tatlı, & Uyetürk, 2013). It should be remembered that with effective pain management, pain is reduced by 70 to 90% in cancer patients (Kayhan, Gülhaş, Aslan, & Durmuş, 2013; Uğur, 2014; Gehdoo, 2006). However, what captures the attention is that the treatment success rate is only 30-40% (Tay, & Ho, 2009; Eti, 2005; Simone, Vapiwala, Hampshire, & Metz, 2012; Breivik et al., 2009). There are many factors that explain why the treatment success for pain is so low. Among these factors are: healthcare professionals (insufficient knowledge regarding the pathophysiology of pain, treatment methods and analgesics); patient and family (a reluctance to report the pain or to use analgesics); and the healthcare system (a lack of priority given to cancer pain therapy) (Gehdoo, 2006; Ripamonti, Santini, Maranzano, Berti, & Roila 2012; Arslan, Tatlı, & Uyetürk, 2013; Lynette, Pujol, Daniel, & Monti, 2007). These obstacles to treatment of cancer pain may cause severe uncontrolled pain in patients and this increases the need for emergency medical services and aggressive cancer treatments (Sarıhan, Kadıoğlu, & Artıran Igde, 2012). Studies indicate that 80% of cancer patients that experience severe pain do not use opioids (Simone, Vapiwala, Hampshire, & Metz, 2012; Chung et al., 2013). Many studies show that, worldwide, 25% of cancer patients die in severe pain, more than half do not receive sufficient or effective treatment and 50-80% are left alone with their pain especially in the end of life stages before died (Gehdoo, 2006; Ripamonti, Santini, Maranzano, Berti, & Roila 2012; Simone, Vapiwala, Hampshire, & Metz, 2012). Thus, for effective and sufficient treatment of cancer pain, it is very important that the treatment plan be correctly planned based on a clear identification of the characteristics of each patient's pain and their accompanying medical problems and emotional condition (Saw, Chew, & Goh, 2012; Higashi, Yoshimoto, & Matoba, 2012). To evaluate the severity of pain of patients with cancer, methods such as verbal, visual analog scale (VAS) and numerical evaluation scales can be used (Esencan, & Merih,

2010; Chung et al., 2013). Thus, correct evaluation of pain is important from the perspective of avoiding patient suffering and determining treatment steps.

A three-step analgesic treatment "ladder" developed by the World Health Organization (WHO) in 1986 is used for the treatment of patients with cancer pain (Walker, Hoskin, Hanks, & White, 1988). This ladder system for pain management shows which step should be taken in the selection of medicine according to the severity of pain. At the first step in this ladder, for patients with mild pain, non-steroidal anti-inflammatory (NSAIDs) drugs could be used with adjuvant drugs (Uzunoğlu, & Çiçin, 2011; Gehdoo, 2006). At the second step in this ladder, for patients with mild to moderate pain, non-opioid agents, weak opioids and adjuvant analgesics are used (Tay, & Ho, 2009). For the third step in this ladder, for patients with moderate and severe pain, non-opioid agents, more potent opioids and adjuvant drugs are used (Saw, Chew, & Goh, 2012). In many studies, it has been shown that effective pharmacological methods/treatments lead to a significant reduction in pain in cancer patients (Van der Peet et al., 2009; Yıldırım, Cicek, & Uyar, 2009).

The success of treatment of patients with cancer pain is tied, in the majority of cases, to the correct evaluation of the severity of pain, starting treatment in the appropriate step, and providing professional nursing care (Lynette, Pujol, Daniel, & Monti, 2007; Cope, & Zhao, 2011). It is important that the professional nursing care service that is started in the hospital with a multi-disciplinary approach, continue as patient follow-up at home after the discharge. Effective and continued nursing care service may be significantly effective for management of cancer pain. Many studies showed that gynecological cancer patients who receive home care services have significantly fewer physical problems (such as pain and exhaustion) compared to those patients who do not receive home care services (Jocham, Dassen, Widdershoven, Middel, & Halfens, 2009; Chang, Chang, & Chiou, 2002). In another previous studies is reported thatthe pain experienced by gynecological cancer patients is typically localized from the upper portion of the trunk and extends directly to the lower extremities. Also, it is reported that the pain experienced by these patients is moderate to severe (Ertaş et al., 2014; Vissers et al., 2011). During a 30 day at-home follow-up, it was found that patients who used second and third step therapy (non-opioid and opioid analgesics) experienced both a reduction in pain especially in the pelvic region as well as an increase in quality of life (Saw, Chew, & Goh, 2012; Ertaş et al., 2014; Vissers et al., 2011). Also, in other studies it was also shown that at-home care services were very effective in treatment of pain experienced by cancer patients (Chang, Chang, & Chiou, 2002; Bakitas et al., 2009; Koller et al., 2013).

As a result, a multidisciplinary nursing approach as well as continued and effective implementation care is effective for the management of pain in gynecological cancer patients. For effective management of cancer pain, the following are recommended: a multidisciplinary approach, continued and effective at-home follow-up care services, careful pain evaluation, analgesic combinations, psychological support as well as education/counselling. But, despite all these approaches the cancer pain can not be completely eliminated. For the reason, the patient and his family should be informed.

REFERENCES

Arslan, D., Tatlı, A.M., & Uyetürk, U. (2013). Cancer-related pain and treatment. Abant Medical Journal 2: (3), 256-260.

Ayvat, P.Ü., Aydın, O.N., & Ogurlu, M. (2011). Sociodemographic properties and pain prevalence of patients applying to the Algology Department polyclinic of Adnan Menderes University Medical Faculty. Ağrı 23: (1), 28-39.

Bakitas, M., Lyons, K.D., Hegel, M.T., Balan, S., Brokaw, F.C., & Seville, J. (2009). Effects of a palliative care intervention on clinical outcomes in patients with advanced cancer: the Project ENABLE II randomized controlled trial. The Journal of the American Medical Association 302: (7),741-749.

Breivik, H., Cherny, N., de Collet F., Filbet, M., Foubert, A.J., Cohen, R., & Dow, L. (2009). Cancer related pain: apain European survey of prevelance, treatment and patient attitudes. Annals of Oncology 20: (1), 1420-1433.

Chang, M.C., Chang, Y.C., & Chiou, J.F. (2002). Overcoming patient relatent barriers to cancer pain management for home care patients. Cancer Nursing 5: (6), 470-476.

Chung, D., Lee, Y.J., Jo, M.H., Park, H.J., Lim, G.W., Cho, H., & Nam, E.J. (2013). The ON-Q pain management system in elective gynecology oncologic surgery: Management of postoperative surgical site pain compared to intravenous patient-controlled analgesia. Obstetrics & Gynecology Science 56: (2), 93-101.

Cope, D.K., & Zhao, Z. (2011). Interventional management for cancer pain. Current Pain and Headache Reports 15: (1), 237–243.

Ertaş, I.E., Sehirali, S., Ozsezgin Ocek, S., Sancı, M., Arbak, G., & Yıldırım, Y. (2014). The effectiveness of subcutaneously implanted epidural ports for relief ofe severe pain in patients with advanced-stage gynecological cancer: a prospective study. Ağrı 26: (1), 8-14.

Esencan, T.Y., & Merih, Y.D. (2010). Management of symptoms in the chemotherapy. Zeynep Kamil Tıp Bülteni 41: (1), 35-42.

Eti Aslan, F. (2002). The assessment methods of pain. Cumhuriyet Universitesi Hemşirelik Yüksekokulu Dergisi 6(1),9-16.

Eti, Z. (2005). Kanserde ağrı tedavisi. Uroonkoloji Bülteni 2: (1), 16-20.

Gehdoo, R.P. (2006). Cancer pain management. Indian Journal of Anaesthesia, 50(5), 375-390

Higashi, T., Yoshimoto, T., & Matoba, M. (2012). Prevalence of analgesic prescriptions among patients with cancer in Japan: an analysis of health ınsurance claims data. Global Journal of Health Science 4: (6), 197-203.

Homsi, J., Walsh, D., Rivera, N., Rybicki, L.A., Nelson, K.A., & Legrand, S.B. (2006). Symptom valuation in palliative medicine: patient report vs systematic assessment. Support Care Cancer 14:(5), 444-53.

Jocham, H.R., Dassen, T., Widdershoven, G., Middel, B., & Halfens, R. (2009). The effect of palliative care in home care and hospital on quality of life. Journal of Hospice & Palliative Nurse 11: (2), 119-126.

Kayhan, E.G., Gülhaş, N., Aslan, A., & Durmuş, M. (2013). Management of treatment and complications in cancer patients admitted to algology outpatient clinic: a retrospective evaluation. Turgut Özal Tıp Merkezi Dergisi *2*0: (1), 50-54.

Koller, A., Miaskowski, C., De Geest, S., Opitz, O., & Spichiger, E. (2013). Supporting self- management of pain in cancer patients: Methods and lessons learned from a

randomized controlled pilot study. European Journal of Oncology Nursing 17: (1),1-8.
Lynette, A., Pujol, M., Daniel, A., & Monti, M.D. (2007). Managing cancer pain with nonpharmacologic and complementary therapies. The Journal of the American Osteopathic Association 107: (12), 15-21.
Miguel, R. (2000). Interventional treatment of cancer pain: the fourth step in the World Health Organization analgesic ladder? Cancer Control 7: (2), 149-155.
Rafael, J., Ahmedzai, S., Hester, J., Urch, C., Barrie, J., & Williams J. (2010). Cancer pain: part 1: Pathophysiology; oncological, pharmacological, and psychological treatments: a perspective from the British Pain Society endorsed by the UK Association of Palliative Medicine and the Royal College of General Practitioners. Pain Medicine 11: (5), 742-764.
Ripamonti, C.I., Santini, E., Maranzano, M., Berti, M., & Roila F. (2012). Management of cancer pain: ESMO clinical practice guidelines. Annals of Oncology 23: (7), 139-154.
Sarıhan, E., Kadıoğlu, E., & Artıran Igde, F. (2012). Cancer pain and the principles of cancer pain management and world health organizatıon analgesic ladder. Nobel Medicus 8: (1), 5-15.
Saw, C.L., Chew, L., & Goh, C. (2012). Recent non-interventional advances in cancer pain among Singapore patients. Annals of the Academy of Medicine Singapore 41: (9), 407-416.
Simone, C.B., Vapiwala, N., Hampshire, M.K., & Metz, J.M. (2012). Cancer patient attitudes towards analgesic utilization and pain intervention. *Clinical Journal of Pain*, 28(2), 157–162.
Tay, W., & Ho, K.Y. (2009). The role of ınterventional therapies in cancer pain management. Annals of the Academy **of** Medicine Singapore 38: (11), 989-997.
Uğur, O. (2014). Symptom management of cancer patients. Türk Onkoloji Dergisi 29(3), 125-135.
Uzunoğlu, S., & Çiçin, I. (2011). Kanser hastalarında ağrıya yaklaşım. Klinik Gelişim 24(1), 14-20.
Van der Peet, E.H., van den Beuken-van Everdingen, M.H., Patijn, J., Schouten, H.C., Van Kleef, M., & Courtens,
A.M. (2009). Randomized clinical trial of an intensive nursing-based pain education program for cancer outpatients suffering from pain. Support Care Cancer 17: (8), 1089-1099.
Vissers, K.C., Besse, K., Wagemans M., Zuurmond, W., Giezeman, M.J., & Lataster, A. (2011). Pain in patients with cancer. Pain Practice 11: (5), 453-475.
Walker, V.A., Hoskin, P.J., Hanks, G.W., & White, I.D. (1988). Evaluation of WHO analgesic guidelines for cancer pain in a hospital-based palliative care unit. Journal of Pain Symptom Manage 3: (1), 145-149.
Yıldırım, Y.K., Cicek, F., & Uyar, M. (2009). Effects of pain education program on pain intensity, pain treatment satisfaction, and barriers in Turkish cancer patients. Pain Management Nursing 10: (4), 220-228.

Chapter 33

Determining the Viewpoint of Adult Individuals on Ageism and the Affecting Factors

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INTRODUCTION

The rate of the elderly varies based on countries and aging of the population is a global phenomenon. Turkey has a significant rate of 8.2% in terms of elderly population and this rate is estimated to increase up to 27.7% in 2075 (1). Reasons like economic growth, increase of innovations, generation differences and individualization of families that are brought along with globalization affect the viewpoint on the elderly (2). Aging is perceived as a pathological condition corresponding to a destruction and disturbance required to be avoided (4). In addition, factors like decrease in the elderly functionality, increase of chronic diseases and decrease of independence also affect society's viewpoint on the elderly (3, 5).

Because a person's beliefs reflect on her or his behaviors, a negative attitude will decrease an elderly's quality of life (6). On the other hand, it is stated that positive attitudes towards aging will cause the elderly to feel less burden, experience less stress and depressive symptoms, and have a higher well-being and life satisfaction (7). In a study conducted in Taiwan, while negative attitudes towards the elderly were associated with depressive symptoms, positive attitudes towards the elderly were associated with happiness and well-being (8)

For many people in the world, aging is scary and signifies weakness and indigence (9). Ageism, on the other hand, is a type of discrimination against the elderly individuals and is ideological just like racial discrimination, gender discrimination, and sectarian discrimination (5). Ageism is a phenomenon that gets into act with prejudices, attitudes, approaches and behaviors against advanced aged individuals (10). In all other discriminations, if a person is not involved in a certain group, she or he knows that she or he will not be exposed to discrimination; however, this is not the case in old age. The person sees that aging is an inevitable cycle and shows resistance to that condition as much as possible (11). This resistance arises from the system's elderly discrimination (12). Stereotypes like "an elderly individual is ugly, genderless, clumsy, awkward, sick and mentally inadequate" reinforce ageism (5, 11). Ageism is explicitly encountered in the workplace, healthcare system, social system, and relationships (11, 12). In the workplace, elderly individuals are not as flexible and sufficient as young individuals; in

the healthcare service, the elderly are dependent because they have chronic diseases; in the social system, the elderly are consumers; and in relationships, the elderly are insensitive, far from technology and have no sense of getting dressed and talking. All these stereotypes constitute some of the reasons of elderly discrimination (5, 10, 11, 12). Thus, ageism means that a person gets exposed to different attitudes, behaviors and even institutional arrangements due to old age (11, 12).

Studies on ageism not only contribute to the literature, but also may make this problem visible and guide policy makers in transforming old age into a productive period. The aim of this study is to determine the viewpoint of adult individuals on ageism and the affecting factors. It is thought that determining the viewpoint on the elderly in a region in the eastern Turkey may allow to make comparison with other regions and countries possible and may be a factor for the development of preventive services.

MATERIAL AND METHOD

The descriptive study was conducted in Çöşnük Family Health Center (FHC) in the city center of Malatya, Turkey between February and May 2014. The population of the study consisted of individuals aged between 18-59 years. Without using any sampling method, the sample consisted of individuals aged between 18-59 years who came to the FHC on weekdays and agreed to participate in the study and the study was completed with 250 individuals.

In the study, an information questionnaire with 8 questions that was prepared by the researchers in the light of the relevant literature and Ageism Attitude Scale consisting of 23 questions were used as data collection tool. The data were collected by the researchers conducting face-to-face interviews with individuals and it took averagely 15-20 minutes.

Information Questionnaire: It consists of a total of 8 questions including descriptive characteristics of individuals (age, gender, marital status, educational level, occupation, presence of an elderly in the family, living with an elderly at home and duration of living with an elderly).

Ageism Attitude Scale (AAS): The scale whose validity and reliability were conducted by Vefikuluçay et al. (2011) consists of a total of 23 items and 3 subscales. It is a 5-point likert scale consisting of options 'Strongly Disagree', 'Disagree', 'Undecided', 'Agree' and 'Strongly Agree'. The highest and lowest scores to be obtained from the scale are '115' and '23', respectively. As the score obtained from the scale increases, positive attitude towards ageism also increases. The subscale of restricting life of elderly consists of the items 1, 5, 12, 14, 17, 19, 21, 22, and 23.; the subscale of positive ageism consists of the items 2,4, 6, 7, 8, 9, 13, and 20.; and the subscale of negative ageism consists of the items 3, 10, 11, 15, 16, and 18. The Cronbach's alpha coefficient of the scale was found as 0.80 (13). In this study, on the other hand, the Cronbach's alpha coefficient was found as 0.70.

The data were evaluated in the IBM SPSS 22 software using number, percentage, and mean. Analysis of variance (ANOVA), independent samples t-test, and correlation were used to determine the correlation between independent variables. In the study, the significance level was accepted as $p<0.05$.

Table 1. Comparing the Socio-Demographic Characteristics of Adult Individuals and Mean Scores of Ageism Attitude Scale and Its Subscales (S=250)

	S	(%)	Ageism Attitude Scale Restricting life X±SD		Positive ageism X±SD		Negative ageism X±SD		Total X±SD	p
Gender										
Female	143	57.2	35.76±4.14		30.61±5.33		17.02±3.72		83.41±8.11	
Male	107	42.8	34.95±5.62	**0.18***	30.95±6.79	**0.66***	17.58±3.76	**0.24***	83.49±10.62	**0.94***
Marital status										
Married	133	53.2	34.73±4.85		30.72±6.26		17.36±3.73		82.83±8.56	
Single	117	46.8	36.19±4.73	**0.017***	30.79±5.69	**0.93***	17.15±3.77	**0.65***	84.14±9.97	**0.26***
Educational level										
Primary school	26	10.4	31.73±5.34		30.38±6.64		17.00±4.55		79.11±8.04	
Secondary education	13	5.2	35.61±6.14		29.30±8.23		17.00±6.06		81.92±7.39	
High school	56	22.4	35.35±5.08	**0.008****	30.05±6.74	**0.96**	**17.51±3.60	**0.77****	82.92±9.85	**0.15****
Bachelor	155	62.0	36.04±4.28		31.20±5.36		17.24±3.43		84.49±9.19	
Employment status										
Working	122	48.8	35.08±5.03		30.76±6.43		17.95±3.62		83.79±9.74	
Not working	128	51.2	35.74±4.64	**0.28***	30.75±5.56	**0.99***	16.61±3.76	**0.005***	83.11±8.78	**0.56***
Elderly in their family										
Has	167	66.8	35.49±4.75		30.49±6.10		17.70±3.91		83.68±9.22	
Has not	83	33.2	35.27±5.03	**0.74***	31.30±5.75	**0.31***	16.39±3.24	**0.009***	82.97±9.36	**0.57***
Lived with an elderly										
Yes	164	65.6	35.54±4.76		30.85±6.31		17.66±3.58		84.07±9.28	
No	86	34.4	35.16±4.99	**0.54***	30.58±5.33	**0.73***	16.51±3.94	**0.021***	82.25±9.12	**0.14***
Staying with elderly										
1-5 years	66	40.2	35.81±4.27		30.80±5.80		17.19±2.89		83.81±7.89	
6-10 years	36	22.0	35.61±5.76		32.47±4.74		17.22±3.38		85.30±10.91	
11 and over	62	37.8	35.01±4.79	**0.63*****	29.87±7.40	**0.14*****	18.19±4.11	**0.21*****	83.08±9.57	**0.51*****
Age	**X±SD** 31.54±11.18						***t test **Krusskal-wallis, ***ANOVA**			

RESULTS

It was determined that adult individuals had an age average of 31.54±11.18 and 52.7% of them were female, 53.22% were married, 62% had a bachelor's degree, 51.2% did not work, 66.8% had an elderly in their family, 65.6% lived with an elderly at home, and 40.2% lived with an elderly at home for 1-5 years (Table 1).

When comparing the descriptive characteristics of adult individuals and mean scores of ageism, it was determined that there was no statistically significant difference between gender and the mean scores and subscales of ageism attitude and the men had higher mean scores of ageism than women (Table 1). It was determined that there was no statistically significant difference between the total scores and other subscale scores of single individuals except for the subscale of restricting life of elderly and they had higher mean scores of ageism than married individuals (Table 1). It was determined that there was no statistically significant difference between the total scores and other subscale scores of those having a bachelor's degree except for the subscale of restricting life of elderly and they had higher mean scores of ageism than other groups (Table 1). It was determined that there was no statistically significant difference between the total scores and other subscale scores of working individuals except for the subscale of negative discrimination and they had higher mean scores of ageism than unemployed individuals (Table 1). It was determined that individuals who had an elderly in the family had higher mean scores of ageism than individuals who did not and the subscale of negative discrimination was statistically significant (Table 1). It was determined that individuals who lived with an elderly at home had higher mean scores of ageism than individuals who did not and there was no statistically significant difference between the total scores and other subscale scores except for the subscale of negative discrimination (Table 1). It was determined that individuals who lived with an elderly at home for 1-5 years had higher mean scores of ageism than the other groups; however, there was no statistically significant difference between the total scores and all subscale scores (Table 1).

Table 2. Mean scores of Ageism Attitude Scale and Its Subscales

	X ± SD	**Min**	**Max**
Restricting life of elderly	35.42±4.84	12	44
Positive ageism	30.76±5.98	9	40
Negative ageism	17.26±3.74	8	30
Total	83.44±9.25	39	107

It was determined that mean score obtained by the adult individuals from Ageism Attitude Scale was 83.44±9.25, the mean score of the subscale of restricting life of elderly was 35.42±4.84, the mean score of the subscale of positive ageism was 30.76±5.98, and the mean score of the subscale of negative ageism was 17.26±3.74 (Table 2).

Table 3. The correlation between Average Age and AAS and Its Subscales

	Restricting life	**Positive ageism**	**Negative ageism**	**Total**
Average age 31.54±11.18	r: -.214** p: .001	r: -.067 p: .292	r: .172** p: .006	r: -.085 p: .179

**p<0.01

In the study, it was determined that there were a negative correlation between average age and the subscale of restricting life of elderly and a positive correlation between average age and the subscale of negative discrimination (Table 3).

DISCUSSION

The results of the study conducted for the purpose of determining the viewpoint of adult individuals on ageism and the affecting factors were discussed with the relevant literature.

In the study, it was determined that men obtained higher scores from overall AAS and all subscales than women; however, the difference between them was not statistically significant. According to this result, it was determined that men had more positive attitudes towards the elderly than women (Table 1). In the study by Holroyd et al., it was determined that men had more positive attitudes towards the elderly than women (14). Because elderly care is usually conducted by women, it is thought that men display more positive attitudes towards the elderly than women due to burnout.

It was determined that single individuals had higher mean scores of ageism than married individuals, the difference between total scores and other subscale scores was not statistically significant except for the subscale of restricting life of elderly and single individuals displayed more positive attitudes towards the elderly than married individuals (Table 1). In the study by Bulut and Çilingir (2016), it was determined that married individuals displayed more positive attitudes towards the elderly than single individuals (15). The study shows a difference from the result of the study. It was thought that single individuals displayed more positive attitudes towards the elderly because married individuals had more responsibilities (like housework, cooking and child care).

As a result of the study, it was determined that as the educational level increased, positive attitudes towards the elderly increased, individuals with university and higher education had the highest mean scores compared to the other groups; however, the difference between them was not significant except for the subscale of restricting life of elderly (Table 1). In the study by Karlin et al. (2006) and Lambrinou et al. (2009) it was determined that as the educational level increased, positive attitudes towards the elderly increased (16, 17). It was thought that positive attitudes increased because increase of the educational level increased the experience with the elderly.

It was determined that working individuals displayed more positive attitudes towards the elderly than unemployed individuals and the difference in all subscale scores and in total score was statistically insignificant except for the subscale of negative ageism (Table 1). In the study report by Godfrey et al., it was reported that unemployed individuals had higher rates of ageism than working individuals (18). It was thought that working individuals display positive attitudes towards the elderly because they were more positive in all areas than unemployed individuals due to their economic freedom.

In the study, it was determined that individuals who had an elderly in the family displayed more positive attitudes towards the elderly than individuals who did not and there was no statistically significant difference in all other subscale scores and in total except for the subscale of negative ageism (Table 1). It was thought that presence of an elderly in the family increased positive attitudes towards the elderly because it may

increase the level of empathy towards them.

It was determined that individuals who lived with an elderly at home had higher mean scores of ageism than individuals who did not; however, the difference between them was not statistically significant (Table 1). In the study by Duru Aşiret et al., it was determined that individuals who lived with an elderly at home had higher mean scores of ageism than individuals who did not (19). It was thought that individuals who lived with an elderly at home displayed more positive attitudes towards the elderly because they had characteristics of showing empathy towards the elderly.

In the study, it was determined that mean scores of ageism were higher and adult individuals had positive attitudes towards the elderly (Table 2). In the study by Bulut and Çilingir (2016), it was determined that there was a positive attitude towards the elderly (15). It is thought that positive attitudes are displayed towards the elderly because the Turkish society respects and protects the elderly by the nature of their traditional structure.

In the study, it was determined that as the age increased, restricting life of elderly decreased and negative ageism increased (Table 3). In the study by Dinçer et al. (2016) it was determined that there were a negative correlation between average age and the subscale of restricting life of elderly and a positive correlation between average age and the subscale of negative ageism (13). It was thought that there was a negative correlation between age group and the subscale of restricting life of elderly because the needs of the elderly such as housework and shopping are met by their relatives due to respect in the Turkish culture, which restricts their social life.

CONCLUSION

Adult individuals have positive attitudes towards ageism and independent variables are not effective in ageism. In order to decrease ageism and increase sensitivity; it is recommended to strengthen family systems and increase common sharing areas with the elderly and preventive health services. In the study, it was tried to address ageism with the social dimension and it is recommended to examine ageism in providing employment and delivery of healthcare services.

REFERENCES

Alamri B.H., Xiao L.D. (2017). Health professionals' knowledge and attitudes toward older people in primary care in Saudi Arabia. Saudi Medical Journal. 38 (3): 229.

Al-Shammari S.A., Al Mazrou Y., Jarallah J.S., Al Ansary L., Ali M.E.S., Bamgboye E.A. (2000). Appraisal of clinical, psychosocial, and environmental health of elderly in Saudi Arabia: a household survey. The International Journal of Aging and Human Development. 50: 43-60.

Aşiret D.G., Kaymaz T.T., Canbolat Ö., Kapucu S. (2015). Attitudes of nurses towards older people. Turkish Journal of Research Development in Nursing. 17(1).

Bulut E., Cilingir D. (2016). Attitudes of Surgical Nurses towards the Elderly. Turkish Journal of Geriatrics. 19(4). Çilingiroğlu N., Demirel S. (2004). Yaşlılık ve yaşlı ayrımcılığı. Türk Geriatri Dergisi. 7 (4): 225-230.

De Boer M.J. (2010). Discrimination of the elderly: how guilty are you?. Netherlands Heart Journal. 18(5): 227-227.

Dinçer Y., Usta E., Bulduk S. (2016). How University Students Perceived Old Age?. Yaşlı Sorunları Araştırma Dergisi. 9 (1): 26-38.

Glasman L.R., Albarracín D. (2006). Forming attitudes that predict future behavior: a meta analysis of the attitude behavior relation. Psychological Bulletin. 132 (5): 778.
Godfrey A., Lord S., Galna B., Mathers J.C., Burn D.J., Rochester L. (2013). The association between retirement and age on physical activity in older adults. Age and ageing. 43 (3): 386-393.
Holroyd A., Dahlke S., Fehr C., Jung P., Hunter A. (2009). Attitudes toward aging: implications for a caring profession. Journal of Nursing Education. 48 (7): 374–380.
Karlin N.J., Emick J., Mehls E.E., Murry F.R. (2006). Comparison of efficacy and age discrimination between psychology and nursing students. Gerontol and Geriatr Education. 26(2): 81-96.
Laditka S.B., Fisher M., Laditka J.N., Segal D.R. (2004). Attitudes about aging and gender among young, middle age, and older college-based students. Educational Gerontology. 30: 403–421.
Lambrinou E., Sourtzi P., Kalokerinzou A., Lemonidou C. (2009). Attitudes and knowledge of the Greek nursing students towards older people. Nurse Education Today. 29 (6):617-22.
Lu, L., Kao S.H., Hsieh, Y.H. (2010). Positive attitudes toward older people and well-being among Chinese community older adults. Journal of Applied Gerontology. 29: 622–639.
Luchesi B.M., Da Silva Alexandre T., de Oliveira N.A., Brigola A.G., Kusumota L., Pavarini S.C.I., Marques S. (2016). Factors associated with attitudes toward the elderly in a sample of elderly caregivers. International psychogeriatrics. 28(12): 2079-2089.
Palmore, E. B., Branch, L. and Harris, D. (2016). Encyclopedia of ageism. Routledge. Plonczynski D.J., Ehrlich-Jones L., Robertson J.F. (2017). Ensuring a knowledgeable and committed gerontological nursing workforce. Nurse Education Today. 27: 113-121.
Turkey Statistical Institute. General population census results, 1935-2000 and adrese based population registry system results, 2007-2016. http://www.tuik.gov.tr/UstMenu.do?metod=temelist=1. Access date: 28.08.2017.
Weiss D. (2016). On the inevitability of aging: Essentialist beliefs moderate the impact of negative age stereotypes on older adults' memory performance and physiological reactivity. J Gerontol B Psychol. 00: 1–9

Chapter 34

Ethical Dilemmas and Ethical Decision-Making Process in Nursing Practices

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INTRODUCTION

Today, the point where health technology reaches is increasing the need for the concept of ethics in diagnosis, treatment and care (Tepe, 2000). For this reason, the concept of ethics especially in health services is getting more and more able to be a topic in discussion day by day (Cerit, 2010). Because, the concept of ethics guides the adoption of the principles and morals that are necessary for scientific development to be used for the benefit of the individual and society (Elçigil et al., 2011).

ETHICS

Ethics that originates from the Latin word is used synonymously with the principle and morality. As one of the basic and oldest areas of philosophy, ethics aims to explain what is good and what is right in terms of behavior (Yıldırım & Kadıoğlu, 2007; Karadağlı, 2016). Ethics, which is an applied science, has the principle of providing benefit to the individual in its center (Tosun, 2005).

Ethics is the whole set of behaviors that must be avoided or acted by the parties in various professional disciplines (TDK, 2018). It is also described as a chain of behaviors, rules/principles which are accepted by human or community (Erdem, 2012; Esenlik & Bolat, 2010). Although the concepts of ethics and morals are closely related, ethics is a discipline that generally includes moral issues (Tosun, 2005).

Ethical science is important for nursing, which has a center on human and community services and it also teaches distinguishing between right and wrong, right thinking and acting in this frame. It plays an important role in determining the goals and rules of the professions, especially those involved in health services. Ethics is a field of science that helps us to find answers to questions such as "What should I do?", "How should I do it?", "What is the right thing?" (Woods, 1999; Milton, 2004).

Ethics is also related to the behaviors/actions that people make and their consequences affect others, and the thinking processes that shape them (Yıldırım & Kadıoğlu, 2007). But nowadays ethics includes human action as well as all people, future generations, all living beings and environment by effect of globalization. (Ülman, 2010).

Ethics in nursing constitutes an important part of morality with a holistic approach to human. A profession without ethical foundations and principles can’t protect its

reputation and autonomy. For this reason, ethic is also crucial to emphasize that nurses' contribution on health care (Tosun, 2005).

Ethical Codes in Nursing

The existence of own ethical codes of a profession is important on development of control mechanism of profession and community about behaviors of the discipline members (Yıldırım & Kadıoğlu, 2007). In 1953, the ICN announced ethical codes for nurses in accordance with contemporary nursing practice. It was published in its last form in 2005 after various regulations (Dinç, 2009). The ethical codes of the ICN are identified under four main headings; nurses and people; nurses and practice; nurses and profession; nurses and their colleagues (Öztürk, 2010).

In Nurses and People title; subtitles are important such as meeting the needs of the individual's care, respecting the individual and family morals, habits and belief systems, and keeping the information confidential. It is also pointed out that moral actions must be maintained in absolute terms while the care requirement is met. In nurses and practice title; nurses should take individual responsibility during their practice and fulfill the requirements for their own development. Especially participation in training and information meetings is extremely important. In nurses and profession title include the adoption and implementation of ethical principles brought by professional ethics, and in nurses and their colleagues title; there is basically the providing of strong and professional team communication (Öztürk, 2010; Tosun, 2005; Milton, 2004).

The aim of a professional discipline is making connection between the content of scientific knowledge and its application. Nursing which has multifaceted responsibility towards the individual and the community has focused on the determining its role in health and disease in the process from birth to death (Tosun, 2005). In order to achieve this aim, ethical codes in nursing have been developed with the aim of being aware of the moral direction of the profession of nurses but guiding them to have a sensitivity and care practices (Dinç, 2009). Nurses need some justification and basis for deciding the right thing for the individual in the solution of the ethical problems during nursing practice. At this point, ethical principles and values are guides (Göriş et al., 2014).

Ethical Principles

In philosophy, principle is the necessary beginning of all causes. For an opinion or practice to be defensible, it must be based on principle. Together with guiding ethical decisions, they should not be seen as certain and exact units of measurement. They have extremely important functions in solving problems or dilemmas. Basic ethical principles are respect for autonomy, non-harming/benefiting, justice, and truth (Karadağlı, 2016; Garick, 2008; Sullivan, 2001).

The principle of respect for autonomy; the most basic meaning of this principle, which is also expressed as autonomy, is that man determines his own rules as a unique being. There are two conditions for the individual (Chadwıck, 2016). These; the individual should be old adequate and competent enough to give his/her decision about himself/herself. This situation must be supported by the law. Respect for autonomy in the decision-making process allows each individual to make choices according to their own perspectives. For this reason, in the health care system, the individual should be respected in her/his decision. The principle of respect for autonomy begins with the process of "informed consent" and includes the provision of clear information about the

individual situation, treatment and care. As a result of the information provided, the patient has the right to accept or reject treatment/practice (Chadwıck, 2016; Tosun, 2005).

And with the approach of each individual being is private and valuable; respect for individuality, telling truth, protection of information and support for individual/family in making the right decision are also within the principle of respect for autonomy (Chadwıck, 2016). At this point, protecting the personal information as well as the physical privacy is a very important universal right (Chadwick, 2016; İzgi, 2014).

The principle of not harming-benefiting; No harm is, of course, in parallel with providing benefits. Both approaches balance each other. The aim is to ensure that the benefit is at the highest level, and harm is equal zero or under control in minimum conditions. In healthcare applications, besides beneficial actions, unwanted harmful consequences can arise. For this reason, the adoption of a balancing principle between these two emerges as an ethical obligation. The principles contained in this title are; to avoid damage, to prevent damage, to remove existing damage, and to provide utmost benefit (Chadwıck, 2016).

Justice principle; the concept of justice makes it necessary to remove inequalities and to ensure equality. Equal and fair treatment to individuals is the keystone of this principle. Because of the lack of justice and equality in reaching health care causes ethical problems (Reutter & Kushner, 2010). The right to health is the pioneer of innate human rights. It is not transferable and can't be postponed (Akdur, 2000). For this reason, it is essential that the right to health must be offered equally and equitably to all individuals in society (Tosun, 2005). Along with the increasing population, the need for health care is gaining importance every day and causing inequalities. Team work is also crucial at eliminating inequalities in health care and ensuring equal rights for each individual (Demirel, 2014).

Accuracy principle; this is the principle which advocates that the truth must be told to individual. It obliges telling the truth and actual situation. Because the individual should know about his/her life because of his/her right to life. It accepts mistakes that occur in sudden and quick decisions that need to be taken, but it also believes in the necessity of doing the right thing as soon as possible (Öztürk, 2010).

Nursing Care and Encountered Ethical Dilemmas

The nurse experiences an ethical dilemma in the case of existence of two or more unsuitable options in any situation (Tosun, 2005). This situation is also defined as a conflict of principle and ethical morals (Bunch, 2001). Ethical dilemma; the conflict between the moral and expectations of the nurse and the moral and expectations of the patient and his/her family (Yıldırım & Kadıoğlu, 2007). The nurse who is constantly in communication with the patient is expected to identify an ethical problem that may arise. Choosing a single solution to a dilemma should not mean that the other solutions are wrong. In health care delivery, nurses with different responsibilities experience ethical dilemmas primarily in the care and treatment of the individual. Especially in healthcare service, the fair distribution of resources, the informed consent, terminal period patient care, problems with their colleagues and other health discipline members are at the top of the ethical dilemmas faced by nurses. Despite different values and expectations, nursing care is an important step in preventing conflicts caused by perceptual differences (Sucu et al., 2012; Milton, 2004).

Undoubtedly, one of the most important responsibilities of the nurse in solving this problem is; to act in line with ethical principles while making the right decisions to manage the care of the patient. Thus, the right clinical decision can be made in nursing care (Sucu et al., 2012). In addition to ethical principles, patient rights guide nurses in the resolution of ethical dilemmas and problems (Öztürk, 2010).

Within the holistic understanding of care; with the cognitive, affective and psychomotor skills, each individual is unique and has unique characteristics (Dinç, 2009). Therefore, the physical, emotional, social, and spiritual characteristics of the patient should not be overlooked (Doly et al., 2001). Nursing care is a service that every individual in society needs at any stage of his/her life (Dinç, 2009). The quality of the care provided in the general health service, together with being a necessary result of the service, is the primary responsibility of the nurse. For this reason, in addition to the knowledge and skills necessary for nurses to provide quality care, they are expected to be humanistic and morally sensitive and to provide appropriate services by constantly providing their professional competence (Dinç, 2009).

In addition to scientific knowledge in nursing services, the adoption of the principles of giving harmless/beneficial and fair service are indispensable as humanity and patient rights by respecting human dignity.

Morals That Provide Ethical Behavior When Ethical Dilemmas Occur

Moral; It is a concept that is hardly defined but is quite common in everyday life. The life morals of the individual start with the beginning of the birth and they are shaped by family/society which they live in, their beliefs, their education process and their experiences. It is also defined as principles guiding the life of the individual. (Kaya, 2012). Morals reflect the individual's responsibilities and direct their behavior (Göriş et al., 2014). Moral is a key in the choices and preferences of the individual. For this reason, it is very effective in the decision process.

The first step in the ethical decision-making process is the individual's knowledge of his/her own moral. Morals affect health care in line with ethical principles in every stage and form of service in the care system (Tosun, 2005). Professional morals are also determinants of implementation (Göriş et al., 2014).

Priority morals in health care; human honor, equality, justice, altruism, realism, freedom, aesthetic (Ersoy, 2009; Tosun, 2005). If a professional nurse with these values is asked for being explained with a triangle, one side will be nursing knowledge, the other side will be nursing art and triangle base will be the nursing spirit (Milton, 2004; Tosun, 2005).

Ethical Decision Making

In order to apply the appropriate decision-making process in the process of facing with ethical dilemma, the problem must be identified ethical perspective. In this process, it is necessary to start the decision-making process by determining the appropriate ethical principle for the problem which is experienced with the individual in the direction of the morals and expectations of the patient (Chadwıck, 2016; Tosun, 2005).

Ethics that has theoretical and practical discipline guide duties, responsibilities and morals. Because the most important goal of ethic is to be able to make the right decision. For this, the necessary steps should be taken in the direction of ethical

principles by analyzing the existing information well (Ülman, 2010). Besides, another factor that is effective in the ethical decision-making process is the sensitivity of the nurse (Öztürk 2010).

Ethical decision making is defined as a logical process involving systematic thinking and moral and ethical decision-making in the process of facing with non-overlapping options (Kurt et al., 2013). Ethical decision-making ability is also a sign and determinant of quality of care (Öztürk, 2010). In addition, ethical decision-making is choosing better option for the patient benefit (Yıldırım & Kadıoğlu 2007). Ethical decision-making depends on the development of sensitivity and the ability to think ethically. Knowledge and experience are extremely important in the development of this process (Tosun, 2005).

Ethical decision making is a realistic process and it consists of identifying the problem, examining the problem in terms of ethics, identifying and evaluating the solutions that may exist in the solution of the problem. Ethical decision-making, along cognition, should make it possible to be ethically defensible in the process (Kurt et al., 2013; Garick, 2008). With the different models which are used in the ethical decision-making process, the stages in common viewpoint are mentioned below.

Ethical Decision-Making Process Steps;

- Enquire about the facts of the case/situation
- Think through the options available to those involved
- Hear the views of those involved
- Identify relevant principles and virtues
- Clarify the meaning of the key principles and values
- Select a course of action, present ethical arguments and review (Chadwick, 2016).

The ethical decision-making process is influenced by the nurses' critical thinking skills, professional knowledge and experience, sensitivity and moral development level to solve the problem, selected professional/ethical principles, individual characteristics of the patient being served, preferences, value system as well as institutional/social cultural structure (Sucu et al., 2012). One of the most important points in ethical deciding is that the nurse can find the opportunity to use her own autonomy. Because autonomy is one of the most important factors affecting the level of ethical decision-making. In this case, the institutional cultures' supportive approach to nurse is one of the determinants of ethical decision (Cerit, 2010).

CONCLUSION

Nursing, as a theoretical and practical discipline, is a profession which is based on individuals. While exhibiting this approach, it has a responsibility to act in the direction of ethical principles without ignoring individual characteristics. Nurses should act with their critical perspective and experiences in the line of patient's decisions by accepting professional ethical principles as a guide. Using the ethical decision-making process to follow a systematic path to the solution of the problem will be great benefit in terms of being objective and making the right decision for the patient.

REFERENCES

Akdur, R. (2000). Sağlık Hizmetleri Ve Sınırlı Kaynakların Dağıtımı. Tıp Etiği Dergisi 8 (1), 38-45.

Cerit, B. (2010). Hemşirelik Etik İkilem Testinin Geçerlik-Güvenirlik Çalışması ve Hemşirelerin Etik Karar Verebilme Düzeyi. Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Dergisi 47-67.

Bunch, E,H. (2001). Hidden and Emerging Drama in a Norwegian Critical Care Unit: Ethical Dilemmas in The Context of Ambiguity.Nursing Ethics 8:(1), 57-67.

Chadwıck, R.; Tadd, W.& Gallagher, A. (2016). Ethıcs and Nursing. Second Edition. p.5- 14, Macmillian Education.

Demirel, T.; Akın, B. (2014) Sağlıkla İlişkili Olarak Sosyal Adalet, Eşitlik ve Hemşirelik. DEUHYO ED 7 (3), 238-245.

Dinç, L. (2009). Hemşirelik Hizmetlerinde Etik Yükümlülükler. Hacettepe Tıp Dergisi. 40 (2), 113-119.

Doly, B.; Conndly, E.; Drought. T.; Fowler, M.; Murphy. P.; Olson, L.; Poi, K.; Ramsey, G.; Silva, M.C.; Scanlon, C.; Sullivan, M.; Twoney, J. (2001). Code of Ethics for Nurses with Interpretive Statements. ISBN 13: 978-1-55810-293-4 (e book).12 pp., Nursesbooks.org.

Elçigil, A.; Bahar, Z.; Beşer, A.; Mızrak, B.; Bahçelioğlu, D.; Demirtaş, D.; Özdemir, D.; Özgür E, Yavuz, H. (2011). Hemşirelerin Karşılaştıkları Etik İkilemlerin İncelenmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 14 (2), 52-60.

Erdem, A.R. (2012). Bilim İnsanı Yetiştirmede Etik Eğitimi. Yükseköğretim ve Bilim Dergisi 2 (1), 25-32.

Esenlik, E.; Bolat, E. (2010). Klinik Ve Bilimsel Araştırmalarda Etik Kurallar. Süleyman Demirel Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi 1 (2), 125-133.

Ersoy, N. (2009). Onkoloji Hemşireliğinde Etik. Türk Onkoloji Dergisi 24(4), 191-197

Garick, S. (2008). Legal and Ethical Knowledge for Nurses. Patronis Jones RA, (eds.) Nursing Leadership and Management: Theories, Processes and Practice. p.57-68, Philadelphia: F.A. Davis Company.

Göriş, S.; Kılıç, Z.; Ceyhan, Ö.; Şentürk, A. (2014). Hemşirelerin Profesyonel Değerleri ve Etkileyen Faktörler. Journal of Psychiatric Nursing 5:(3), 137-142.

İzgi, C. (2014). Mahremiyet Kavramı Bağlamında Kişisel Sağlık Verileri. Türkiye Biyoetik Dergisi 1(1), 25-37.

Karadağlı, F. (2016). Profesyonel Hemşirelikte Etik. Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi 6 (3), 197-200.

Kaya, H.; Işık, B.; Şenyuva, E.; Kaya, N. (2012). Hemşirelik Öğrencilerinin Bireysel ve ProfesyoneL Değerleri. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi 15 (1), 18-26.

Milton, C. (2004). Ethics Content in Nursing Education: Pondering with the Possible. Nursing Science Quarterly 17(4): 308-311.

Öztürk H (2010) Yoğun Bakım Hemşirelik Hizmetlerinde Etik Turkiye Klinikleri J Med Ethics; 18 (3) 183-191.

Reutter, L.; Kushner, K. E. (2010). Health Equity through Action on the Social Determinants of Health: Taking Up the Challenge İn Nursing. Nursing Inquiry, 17:(3), 269–280.

Sucu, G.; Dicle, A.; Saka, O. (2012). Hemşirelikte Klinik Karar Verme, Etkileyen Etmenler ve Karar Verme Modelleri. Hemşirelikte Eğitim ve Araştırma Dergisi 9 (1), 52-60.

Sullivan, M.; Twoney, J. (2001). Code of Ethics for Nurses with Interpretive Statements. ISBN 13:978-1-55810-293-4 (e book).12 pp., Nursesbooks.org.

Tepe, H. (2000). Etik ve Meslek Etikleri-Tıp, Çevre, İş, Basın, Hukuk ve Siyaset. Türkiye Felsefe Kurumu, 1-2s., Ankara.

Tosun, H. (2005). Sağlık Bakımı Uygulamalarında Deneyimlenen Etik İkilemlere Karşı Hekim Ve Hemşirelerin Duyarlılıklarının Belirlenmesi. İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü, Doktora Tezi.

Ülman, Y.I. (2010). Etik, Biyoetik, Hukuk: Temel Kavramlar ve Yaklaşımlar. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi 1(1), 1-4.

Yıldırım, G.; Kadıoğlu, K. (2007). Etik ve Tıp Etiği Temel Kavramları. Cumhuriyet Üniversitesi Tıp Fakültesi Dergisi 29 (2), 7-12.

Kurt Yılmaz, F.; Atay, S.; Arıkan, D. (2013). Hemşirelik Öğrencilerinin Etik Karar Verebilme Düzeyi. Turkiye Klinikleri J Med Ethics 21(2):79-87.

Woods, M. (1999). Nursing Ethihcs.the Moral Voıce of Experienced Nurses. Nursing thics. 6:(5), 423-433.

URL: TDK (2018). http://www.tdk.gov.tr/index.php?option=com_gts&arama=gts&guid= TDK.GTS.5b01667f031ac7.53738322 (Accessed: 20 May 2018).

Chapter 35

Preoperative Preparation According To Age Characteristics of Children

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Surgical experience can be complex and stressful for children and family members (Vakili et al., 2015; Panella, 2016). They can be a traumatic situation for children who have difficulty understanding what will happen to them during surgery (Hockenberry & Wilson, 2013; Leack, 2013; Bolışık & Özalp Gerçeker, 2015). This trauma occurs due to exposure to unusual and non-routine life activities, different environments and clothes, different sounds, lights and equipment, unfamiliar people, painful interventions, and experience of symptoms such as pain and vomiting. Other factors making this situation traumatic include separation from a relaxing home environment, family members, friends and relatives, loss of control, risk of deterioration or actual deterioration of body integrity, activity limitation, communication difficulties due to insufficient language development, darkness, and he presence of other children crying (Cimete et al., 2013; Hockenberry & Wilson, 2013; Panella, 2016). Children's responses to illness, hospitalization, and surgical procedures may vary according to age group. However, taking into account age-specific characteristics and parental concerns, it is necessary to establish various educational initiatives that can enhance and support surgical experiences of children and their families (Panella, 2016). Preparing children physically, psychologically, and socially before surgery is one of the main purposes of nursing care. Before surgery, nurses should receive the medical history of child patients and their parents, obtain difficult peripheral intravenous access, follow up vital signs, set positioning for children, assure skin care of children, carry out surgical site preparation, and conduct thermoregulation management, as well as preparing children and parents psychosocially for surgery. Nurses should be meticulous at this stage. They should assess the concerns of children and parents and address their questions (Derieg, 2016). The success of a surgical operation in children depends on both applying technical knowledge and skills properly and meeting preoperative preparation and care requirements. The role of nurses in this process is to establish a relationship of trust with children and parents and to facilitate the process for them. Nurses are responsible for determining the needs of children and their parents and for planning and implementing initiatives to address and meet these needs (Cimete et al., 2013; Hockenberry & Wilson, 2013; Leack, 2013; Bolışık & Özalp Gerçeker, 2015).

Infants (0–1 year of age)

In cases where the experience of pain and suffering due to sickness,

hospitalization, and surgical procedures overcomes infants' happiness, their basic sense of confidence deteriorates or does not improve. The basic sense of confidence sets the stage for the acquisition of subsequent developmental period features. Talking gently and softly, singing, hugging, gently swinging, massage, and loose swaddling helps babies to relax by relieving tension and improving their sense of confidence. Babies' stress ca also be reduced by giving them brightly colored soft toys, showing them pictures, showing them their reflection in the mirror, and playing them music (Cimete et al., 2013; Hockenberry & Wilson, 2013). In addition, addressing parents' fears and anxieties and listening to them supportively can also help reduce their stress (Panella, 2016).

Nurses may contact parents/caregivers before the day of surgery and remind them to bring comforting items for their babies (a blanket that smells like home, a toy, etc.). Parents should be encouraged to stay with their children because separation from caregivers is a major source of stress in this age group. Informing parents about anesthesia, the surgical process, postoperative dressings, and other relevant procedures may help to reduce some of their anxiety, thus making it possible to create a calm environment for the baby (Cihangir Altay, 2008; Cimete et al., 2013).

Toddlers (1–3 years of age)

Children's ability to move and express themselves increases and their autonomy develops in this period, so they become self-centered. While trying to be independent, they also need to be protected and guarded. They become stubborn and show negative reactions when they are interrupted and their demands are not met. Illness and hospitalization can impact their development of self-confidence. Children may not be able to divert attention to the needs they have previously mastered, such as self-feeding and control of urination and defecation. Therefore, it is useful to provide them with options at every possible opportunity and to make them participate in decision-making process. They may be asked which foods they want to eat at first and which drugs they want to take first. Since children tend to be stubborn, they should not be asked questions they will answer with "No." As in the infancy period, it is important to continue an approach which they are used to, meeting their needs such as eating, sleeping, play, and hygiene (Cimete et al., 2013; Hockenberry & Wilson, 2013). Separation, loss of control, bodily injury, and imagining possible threats are among the fears of this age group (Leack, 2013; Bolışık & Özalp Gerçeker, 2015). The defense mechanism of regression is activated as a coping strategy in children who suffer pain due illness, hospitalization, and surgical procedures and separation from caregivers, and in children whose social entrepreneurship is hindered, whose routines are broken, and whose speech is not understood. They may tend to revert back to the characteristics of the previous developmental period, such as asking to be fed or bottle-fed and soiling themselves. Providing children with comforting items such as their pillows, toys, blankets, or their mother's scarf helps them to relax. Surgical procedures can be explained to children of this age group by simply demonstrating them on their toys. Being accompanied by individuals they trust, such as parents, caregivers, or nurses has a relaxing effect on children, especially during painful procedures. Children in this age group may tolerate being separated from their parents and remaining under the supervision of primary nurse for a short time. However, parents should be warned not to lie to their children or leave them when they are asleep (Cihangir Altay, 2008; Cimete et al., 2013;

Hockenberry & Wilson, 2013). Since the concept of time is not fully developed in this age group, it is appropriate to start preoperative preparations 1–2 days before the surgery. Children should be allowed to continue to have a normal relationship with their parents in the preoperative period. They should be provided with one of their favorite objects (a toy, item, or photo), given options regarding medical procedures, and should participate in possible care processes to improve autonomy over their bodies. It may be effective to explain the preparations to be carried out before the surgery with therapeutic games (Leack, 2013; Bolışık & Özalp Gerçeker, 2015; Panella, 2016).

Preschoolers (3–6 years of age)

Children aged 3–6 years who have not developed abstract thinking and the ability to establish cause-and-effect relationships cannot explain how factors cause illnesses. It is sufficient for children of this age group to be prepared 3–5 days before the surgery. When they learn that they are to undergo surgery, they are confused and want to know what will happen to them. They should be told about relevant medical processes using simple terms that they can understand. Physicians and nurses are punitive individuals in the eyes of children of this age group. These children may also blame their parents, who are unable to protect them from illness and allow healthcare personnel to perform medical procedures on their bodies. They may therefore perceive hospitalization or surgical procedures as punishment for their bad behaviors. At the same time, children worry about losing bodily integrity in this age period. The immediate closure of areas such as needle injection wounds and surgical injuries, may help to reduce children's anxiety. Changes in routine, forced dependence, and obstacles lead to loss of control in children. Children's anxiety and fear levels and their sense of being guilty and losing control can be reduced in the preoperative period by introducing them to medical and surgical environments, staff, and other child patients, explaining relevant procedures in an understandable way, asking for their cooperation, assigning them minor duties, reading them picture books about the surgery, and understanding their emotions and experiences through therapeutic games. Puppets and real medical supplies can be used to describe relevant medical and surgical procedures before the operation (Cihangir Altay, 2008; Williams 2012; Cimete et al., 2013; Hockenberry & Wilson, 2013; Panella, 2016).

School-age children (6–12 years of age)

Children aged 6–12 years want to know the effects of conditions such as illnesses on bodily functions. They can understand these effects when they are explained using plain language and visual materials, and they are eager to cooperate with healthcare personnel in order to recover. Informing children and allowing them to participate in the decision-making process as much as possible will reduce their sense of losing control and encourage their collaboration (Williams et al., 2012; Cimete et al., 2013). Informing children about procedures in the preoperative period is one of the most effective methods of reducing the levels of pain and fear experienced during invasive and surgical procedures, and enhancing children's sense of control. Both physical and cognitive-behavioral approaches are necessary to provide a comfortable environment for children. Informing them about pharmacological and non-pharmacological interventions and relevant medical and surgical procedures, taking their needs into account, should be an important part of pediatric pain management (Wente, 2013).

Excessive stress, fear, and pain can affect children's physical and physiological health, hindering their capability to cope with medical interventions, and causing changes in their behaviors. Therefore, there is a need for clinical researchers to develop, implement, and evaluate interventions that improve children's ability to control stress arising from hospitalization and medical treatment and thus reduce their anxiety levels (Silva et al., 2016). Preoperative preparations for the school-age group should be started 1–2 weeks before the surgery. Children of this age group are concerned about their body image. At the same time, they wonder whether they will be awake during the operation. Changes in their physical appearance or bodily functions due to disease or treatment affect their body image and increase the risk of losing friendships or friends' appreciation. Children want to know the details of surgical operations, such as how long the surgery will take, when they will get better and recover, and how they will look different after the operation. Factors such as mandatory bed rest, isolation, use of a bed pan, lack of privacy, and stretcher or wheelchair transport affect children's sense of safety and self-confidence. Children should be treated honestly. The steps of their operation should be explained on a model or using visual tools (video, poster, brochure). Reading books, keeping journals, drawing pictures, playing computer games, listening to music, watching TV, doing joint activities with other children in the clinic, and talking about their emotions and experiences are among the most effective coping techniques in children; it is also important for them to be informed and appreciated (Cihangir Altay, 2008; Cimete et al., 2013; Hockenberry & Wilson, 2013).

Adolescents (12–18 years of age)

Since adolescents have already developed abstract thinking and understood cause-and-effect relationships, they understand that diseases can be physical or emotional and that physical problems can also lead to emotional problems. Illness, hospitalization, and surgical procedures may hinder adolescents' independence, self-realization, and sense of control (Cimete et al., 2013; Hockenberry & Wilson, 2013). Factors such as constraints on physical activity, changes in physical appearance, loss of bodily control, and inability to participate in decisions affect adolescents' coping capacity and can trigger situational crisis. Preoperative preparations for operations on adolescents should be started after a certain time than the decision to operate. Adolescents can hide their fears and worries because they want to look mature. This may cause them to be unsupported and to experience difficulty in coping (Cihangir Altay, 2008; Cimete et al., 2013; Hockenberry & Wilson, 2013; Panella, 2016).

Adolescents' responses to illness and hospitalization may manifest in the form of a dismissive, negative attitude, uncooperative behavior, withdrawal, introversion, and a depressive tendency. Family members and healthcare personnel may struggle to understand adolescents' reactions during this process. Adolescent patients may choose to be isolated until they have regained similar characteristics to their healthy peers. This may result in a decrease in peer support and exacerbation of the crisis picture. Adolescent inpatients may adapt to medical and surgical environments, procedures, and processes if they are introduced to their peers; their privacy is respected; they are provided furniture such as mirrors, computers, telephones, TVs, refrigerators and closets, and allowed to manage their own space; and also if the environment is regulated to meet their needs. It is very important for adolescents to be listened to and understood. They notice who is really interested in them, who understands them, and who tries to

help. They cooperate with respectful, honest, caring people, freely share their feelings and thoughts with them, and benefit from their support. Nurses may encourage adolescents who do not ask questions about their health condition but whose curiosity and anxiety about their illness can be understood from their behaviors. They should be provided with realistic and honest explanations. Relevant procedures can be illustrated on a model or children's own bodies (Cihangir Altay, 2008; Cimete et al., 2013; Hockenberry & Wilson, 2013).

Nurses' role and responsibilities

Nurses have a primary role in the preoperative preparation of children and parents. They plan and implement preoperative preparation training for both parties. They have access to the medical history of child patients and their parents, and should evaluate general information about child patients and their parents as well as their fears, concerns, understanding of the disease/surgery, support systems, coping strategies, previous hospital/surgery experiences, intra-family communication, and health-related beliefs and practices. Fortier et al. determined that preventing preoperative anxiety or fear in children may help reduction some outcomes after surgery, such as negative behavioral changes and postoperative pain. According to the literature review, it is important to prepare children preoperative by age group and developmental characteristics in order to reduce anxiety (Table 1). Nurses should determine the behavioral method(s) to be used in preoperative preparation for each child. Fincher et al. according to the role of sedative premedication is firmly established while behavioral techniques are gaining wider acceptance in pediatric patient. They should determine the duration and time of the training to be offered to children and prepare relevant training materials in advance. Nurses should use appropriate, clear, and understandable expressions while speaking with child patients. No threatening or alarming expressions should be used while communicating with them. Nurses should assess child patients and their parents in terms of their preparedness and post-operative performance. They should provide missing information and correct misunderstandings (Cimete et al., 2013; Hockenberry & Wilson, 2013; Panella, 2016).

Table.1 Preoperative studies

Author	Type of study	Age	Sampling	Intervention	Effect
Vaezzadeh et al. (2011).	randomized controlled trial	7-12 years	122	preoperative preparation program (therapeutic play, operation room tour & demonstration of procedures on the mannequins)	It was decreased childrens' anxiety.
Lee et al. (2012).	randomized controlled trial	3-7 years	130	Animated cartoon and favorite toys	Animated cartoon was verry effective in anxiety reduction and easy preaparatin for nurses in the pediatric surgical population.
Ghabeli et al. (2014)	quasi-experimental trial	3-8 years	60	the use of toys and preoperative visit	It was reduced the preoperative anxiety in children. (both of them)
Noronha &Shanthi (2015).	Quasi experimental pre-test post-test control group	6-7 years	30	picture book	It was effective in reducing the preoperative anxiety among children.
Kim et al. (2015).	clinical trial	2-7 years	117	video distraction and parental presence	It was effective in minimizing preoperative anxiety of children. (both of them)

CONCLUSION

The purpose of nursing management in preoperative preparation of child patients and their parents is to ensure the minimization of the adverse effects of the illness and hospitalization, and also to optimize the experience. If preoperative nursing interventions are carried out taking into consideration children's age, developmental period characteristics, and the individual characteristics of both children and their parents, then children are provided with care appropriate to their emotional, social, and physical development. Anxiety in both children and their parents and postoperative complications are thus reduced, the recovery period is shortened, and adverse effects of the experience of hospitalization and surgery on both children and parents are reduced (Cimete et al., 2013; Hockenberry & Wilson, 2013; Leack, 2013; Bolışık & Özalp Gerçeker, 2015; Panella, 2016).

REFERENCES

Bolışık, B. & Özalp Gerçeker, G. (2015). Çocuk ve ailenin ameliyat öncesi hazırlığı. İçinde: Bolışık B, Yardımcı F, Akçay Didişen. (eds). *Pediatrik cerrahi hastasının hemşirelik bakımı.* 3. Basımdan çeviri. Nobel Akademik Yayıncılık; *3*-16.

Cihangir Altay, N. (2008). Çocuklarda ameliyat öncesi hazırlık. Sağlık Bilimleri Fakültesi Hemşirelik Dergisi,; 68-76.

Cimete, G., Kuğuoğlu, S. & Dede Çınar F. (2013). Çocuk, hastalık ve hastane ortamı. Cimete, Z., Başbakkal, Z., Yılmaz, H.B. & Bolışık, B. (eds.) İçinde: *Pediatri hemşireliği.* Akademisyen Tıp Kitabevi.

Derieg, S. (2016). An overview of perioperative car efor pediatric patients. AORN Journal, 104:4-10.

Fincher, W., Shaw, J. & Ramelet, A.S. (2012). The effectiveness of a standardised preoperative preparation in reducing child and parent anxiety: a single-blind randomised controlled trial. J Clin Nurs. 21(7-8):946-955.

Fortier, M,A., Del Rosario, A.M., Martin, S.R. & Kain, Z.N. (2010). Perioperative anxiety in children. Paediatr Anaesth. 20(4):318-322.Hockenberry, M. & Wilson, D. (2013). Wong's Essentials of Pediatric Nursing. Mosby Inc.,

Ghabeli, F., Moheb, N. & Hosseini Nasab, S.D. (2014). Effect of toys and preoperative visit on reducing children's anxiety and their parents before surgery and satisfaction with the treatment process. J Caring Sci. 3:21-28.

Kim, H., Jung, S.M., Yu, H. & Park, S.J. (2015). Video distraction and parental presence for the management of preoperative anxiety and postoperative behavioral disturbance in children: A randomized controlled trial. Anesth Analg. 121:778-784.

Leack, K.M. (2013). Perioperative preparation of the child and family. In: Tkacz Browne, N., Flanigan L.M., McComiskey C.A., Pieper P. & Zerpa J.A. (eds.) Nursing care of the pediatric surgical patient3rd ed. Burlington, MA: Jones& Bartlett Learning; 3-16.

Lee, J., Lee, J., Lim, H., Son, J.S., Lee, J.R., Kim, D.C. & et al. (2012). Cartoon distraction alleviates anxiety in children during induction of anesthesia. Anesth Analg. 115:1168-73.

Noronha, J.R. & Shanthi, S. (2015).Effectiveness of picture book on preoperative anxiety among children (6-12 years) in selected hospitals at Mangalore. Asian J

Nurs Educ Res.5:523-525.
Panella, J.J., (2016). Preoperative care of children: strategies from a child life perspective. AORN Journal, 104(1): 11-22.
Silva, R.D.M., Austregesilo, S.C, Ithamar, L., Lima, L.S. (2016). Theraputic play to prepare children for invasive procedures: a systematic review. J Pediatr (Rio J), 144:1-11.
Vaezzadeh, N., Douki, Z.E., Hadipour, A., Osia, S., Shahmohammadi, S. & Sadeghi, R. (2011). The effect of performing preoperative preparation program on school age children's anxiety. Iran JPediatr 21:461-466.
Vakili, R., Abbasi, M.A., Ghazizadeh Hashemi, S.A., Khademi, G. & Saeidi, M. (2015). Preparation a child for surgery and hospitalization. Int J Pediatr, 3(3):593-599.
Wente, S.J.K. (2013). Nonpharmacologic pediatric pain management in emergency departments: a systematic review of the literature. J Emerg Nurs, 39:140-50.
Williams, K., Thomson, D., Seto, I., et al. (2012). Standard 6: Age groups for pediatric trials. Pediatrics, 129(3): 153-160.

Chapter 36

The Thoughts of the Migrant Women about the Future

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INTRODUCTION

Immigration is the geographical shift that people make in order to spend some or all of their future experiences, either for a temporary or temporary period (Mutluer, 2003, Demir, 1996, IOM, 2009). Immigration, which is a very important social phenomenon throughout history, is regarded as one of the basic elements that directly affect the social, cultural, economic and political forms of societies. This situation also makes immigration which is as old as human history and started as a lifestyle millions of years ago, important even today it is such an important issue all over the world. (Erten et al., 2014)

The recent events of war have caused irreparable damage to the lives of the people in the region of war. This has led to the evacuation of many villages and tombs in these regions. Sometimes, while these places were evacuated by the state in order to protect the civilian population in the struggle, sometimes the people had to leave the places they lived because of the intensified pressures and the security of life and property (Yılmaz, 2005).

For example, it is estimated that only about 40 thousand Afghans have migrated in Hatay. According to Van Governor, since 1994, about 200-250 thousand people have migrated to Van city center. However, it is estimated that the figures are much higher since no records were recorded before this date (Bozkurt, 2000). Only these two examples show how much the number of immigrants is high. Besides these cities, migrations took place in many places of the country (Deniz et al., 2016). These immigrants, which have been forced, cause the population of immigrated settlements to increase rapidly, and they have brought many problems together. For example, unplanned settlement in migrated areas caused new neighborhoods to come out of the cities. The lack of municipal services in these places makes the quality of life very low for those living there (Yılmaz, 2005).

Migration events bring various changes and problems with it. The leadings of them are expectation of harmony and future. Migration; although it is a difficult experience in the integration process, it also means a better future, hope and security for many people and the group at the same time. The future; a part of life which always lead people forward, the desire to live in the direction of the wishes of the individuals and a source of motivation. But the effects of migration on the individual can also cause the

individual to see the future as desperate (Apak, 2014, Tuzcu & Bademli 2014).

For immigrants who take refuge in any country of the world, the time to adapt to migration and the expectation of the future are important. This is also valid for Turkey as it is in all countries. That Turkey's geographical position, located on the transport or migration route of Africa, Asia, Europe and Middle East countries, is very important for migration. Internal conflicts, wars, conflicts, confusions and political events, especially in the Middle East countries, cause tens of thousands of people to migrate from their countries every year. Beyond any doubt, for this leaves Turkey is of great importance in terms of being the host countries and transit countries (Tuzcu & Bademli, 2014). Incoming immigrants are given status of residence by the state. It is thought that both the given status and what happens to their own consequences will be influential on future expectations of migrants. This study was conducted to determine their thoughts about the future of women who migrated to Turkey for various reasons.

MATERIALS AND METHODS

This descriptive study was conducted between January 2015 and June 2015. The women who migrated from their countries to Erzincan for various reasons like health and war have created the universe of work. The sample consists of all of the women between the ages of 15-49 living in the container city which is a total of 52 containers constructed at the Erzincan Geçit Site. By going to the container city the feelings and thoughts about the future of the 46 women between the ages of 15 and 49 who were able to communicate with the interpreter and accept to participate in the work were questioned. A questionnaire prepared by researchers was used to question women's feelings and thoughts. The data were collected by face-to-face interview method. The data were evaluated in the SPSS program. Percentages are used in evaluating the data.

RESULTS

It is seen in Table 1 that 52.2% of the women included in the study were not illiterate, 30.4% were literate, 10.9% were primary school graduates and only 6.5% were university graduates. Similarly, Table 1 shows that 91.3% of women are married, 8.7% are single, 93.5% are children, 6.5% are not children, and only 10.9% have a profession.

When women's economic status in Turkey is studied, the very bad economic level of 15.2%, in bad economic level of 26.1%, it was found to be of moderate economic level of 41.3% and 17.4% good-very good economic level. When the economic status of women in their own countries is studied, it is found that 19.6% is in very poor economic level, 30.4% in poor economic level, 37.0% in medium economic level and 13.0% in good-to-good economic level (Table 1).

Table 1: Distribution of Descriptive Characteristics of Women

Descriptive Characteristics	**N**	**%**
Education level		
Not literate	24	52.2
Literate	14	30.4
Primary school	5	10.9
University	3	6.5
Marital status		

Married	42	91.3
Single	4	8.7
Child		
Exist	43	93.5
Non-exist	3	6.5
Profession		
Exist	5	10.9
Non-exist	41	89.1
Current economic situation		
Very bad	7	15.2
Bad	12	26.1
Medium	19	41.3
Good-Very good	8	17.4
Economic situation in own country		
Very bad	9	19.6
Bad	14	30.4
Medium	17	37.0
Good-Very good	6	13.0

In Table 2 it is seen that 52.2% of women emigrated from Afghanistan, 47.8% emigrated from Iran to Turkey and 43.5% of these people emigrated because of life safety (war). While 10.9% of women with migration, poverty and disease, 21.7% of women stated that they immigrated to Turkey because of education of their children as well as life safety. And 23.9% cited all reasons such as war, education, health, and lack of money as reasons for migration (Table 2). When the Women's examine the reasons to prefer Turkey to emigrate, it is stated that 32.6% of them immigrated Turkey just because of tangible reasons, 26.1% is because of considering Turkey secure, 19.6% is because of job opportunities and its geographic closeness to their own country, 10.9% is because of moving to another country via Turkey, 32.6% is because of their economic situations. All of them, as well as 10.9% of women stated that they prefer to Turkey due to all these reasons (Table 2).

65.2% of the women expressed that they missed the house and 34.8% did not miss it. 78.3% of women expressed that they were satisfied to live in Turkey, while 21.7% are not satisfied with being here. It is determined that of 43.5%, which is almost half of the women who participated in the study, wanted to stay constantly in Turkey and 37.0% of women wanted to return home if the conditions got normal (Table 2).

Table 2: Distribution of Related Features of Reasons for Migration and Turkey

	N	%
Where they emigrated to Turkey		
Iran	22	47.8
Afghanistan	24	52.2
The reason for immigration from their country		
Life Safety(War)	20	43.5
Lack of money and illness	5	10.9
For safety and child education	10	21.7

Marked more than one option	11	23.9
The reasons for preferring Turkey		
It's safety	12	26.1
Business facilities and closeness to my country	9	19.6
I am going to go to another country via Turkey	5	10.9
My money is enough for Turkey	15	32.6
Marked more than one option	5	10.9
Do you miss your home?		
Yes	30	65.2
No	16	34.8
Are you happy to live here?		
Yes	36	78.3
No	10	21.7
How much do you expect to stay in Turkey at the moment?		
I'll be right back if the conditions normalize	17	37.0
I want to stay forever	20	43.5
I do not know / not clear	9	19.6

It is seen in Table 3 that 60.9% of the women had worries and fears about the future, 39.1% were not worried and fear about the future. While 69.6% of women included in the study answered the question' what do you expect for the future?' as 'Turkey's acceptance of us to citizenship', 10.9% of them sorted some wishes such as health, education, shelter and 13.0% answered as 'it is enough for me to live.' (Table 3). When the future related fears, worries of women examined, it was found that 26.1% had various fears, 32.6% were mostly worried about the future of children, 19.6% had fear of uncertainty, 15.2% had fear of dying and %6.5 are afraid to be removed from Turkey. When the question 'where do you live if the conditions are okey?' only 17.4% of women stated that they wanted to live in their own country, % 21.7 were willing to live in Turkey and 52.2% stated to want to live in a more developed country (Table 3).
58.7% of the women said that future would be better while only 8.7% said that future would be worse. It was found that 76.1% of the women looked with hope at the future and 23.9% were hopeless for the future. Likewise, 53.5% of women are not uncomfortable to carry their children here while 46.5% stated that they are uncomfortable for carrying their children in Turkey.

Table 3: Distribution of Women's thoughts about future

	N	%
Fear, concern for the future of herself or his family		
Yes	28	60.9
No	18	39.1
Future expectation		
Turkey's acceptance of us to citizenship	3	6.5
Health education and shelter	5	10.9
Enough to live	6	13.0
Marked more than one option	32	69.6

The greatest fear of the future		
I am afraid of being removed from the country	3	6.5
I'm afraid to die	7	15.2
I fear my children's future	15	32.6
I'm afraid of uncertainty	9	19.6
Marked more than one option	12	26.1
Where to live in the future if circumstances permit		
In my own country	8	17.4
In Turkey	10	21.7
In a more developed country	24	52.2
undecided	4	8.7
How she sees the future		
It will be good	27	58.7
It will be bad	4	8.7
I do not know	15	32.6
Are you looking forward to the future?		
Yes	35	76.1
No	11	23.9
Does it worry you that your child's growth in Turkey?		
Yes	20	46.5
No	23	53.5

DISCUSSION AND CONCLUSIONS

As a bridge between Asia and Europe, Turkey is an indispensable stop for those wishing to emigrate illegally from North Africa, the Middle East and nearby Asian countries to the EU countries also, is a country where immigrants settle. In other words while a part of irregular migrants use Turkey as a transit country, the other part use Turkey as destination country where they can work as illegal workers. As a result of this, since the mid-20th century as a country its own citizens immigrating abroad Turkey started to become a country which other countries' citizens immigrate and work (Deniz, 2014).

Families who migrate to improve their economic situation and live better conditions often cannot reach the life they want. In the literature, it has been stated that living conditions are more difficult for immigrant individuals due to reasons such as unemployment, increase of expenses after migration even if the income level after immigration seems to increase (İlk Karacan & ilk Karacan, 1998). In the current work done it is found that women's financial situation in Turkey is worse than that of in their own country but there is no significant difference (Table 1). In the study conducted by Yilmaz and Mustafa (2014), the most important problem faced by immigrant individuals is that they cannot perform their occupations for a variety of reasons (job problem: 54%). In the present study, that the participants were in a man-dependent society caused the level of education to be severely low (Table 1). For this reason, a small proportion of women have occupations, and none of the women who live in the container city are doing their jobs. It is known that from time to time they do work like cleaning jobs that don't require features. On the other hand, women migrating from a

low-income country to a high-income country, even though they are more likely to benefit from healthcare and health screening programs, are not able to make enough use of these opportunities because they cannot speak the language of that country. Especially women who are dependent on men and who do not have health insurance and do not know the language of the country they live in are having serious problems in accessing health services (Adanu & Jonhson 2009).

Especially since the last quarter of the 20th Century, the issue of international migration has begun to decline from the agenda. There are many people who flee because of various reasons such as political instability, human rights violations, repressive regimes, civil wars, and ethnic conflicts, lack of labor demand, economic strains, inadequate geographical conditions and fear of life safety. These people are heading for western countries that need cheap labor, at least by earning more money than they can live more humanly - paying their debts in the country - to give financial aid to their families and to have better living conditions (Danış, 2004). The main local, regional and global developments that uncover these causes; such as the globalization process, the Iranian Revolution, the Iran-Iraq War, the dissolution of the Soviet Union and the Yugoslavia, the Afghanistan War, the Gulf War, the Arab Awakening, and the Syrian Civil War (Deniz, 2014). In the present study, the reasons for migrating families were found to be consistent with the literature, especially the safety of life (Table 2). According to another study that has been done before, uncertainty about the future and concern for future are leading reasons for migration. Besides, pressures, livelihoods and cultural differences are among the reasons for migration (Yılmaz & Mustafa, 2014). In current work, the participating women's future expectation is the most sensitive point in terms of the circumstances. The vast majority of migrant women participating in the survey (58.7%) think that their future will be better. Although turmoil continues in countries and a development of solution does not appear in the horizon, the high expectation of the future is noteworthy (Table 3).

Immigrants living in Turkey as they are in the world are physically, socially and psychologically influencing all immigrants regardless of their cause (Çalım et al., 2012). Especially in children and adolescents, the effects of immigration can vary. For this reason, nearly half of the women stated that they are uncomfortable about growing their children in a different culture (Table 3).

Although about half of the participants to imagine living in a more developed country is 52.2%, nearly half again stated that she wished to remain permanently in Turkey with 43.5%. Living in Erzincan container city, poor life conditions make think that they both want to leave Turkey and they wanted to stay in Turkey which is better than their owns. When the literature examined, as in the present study number of immigrants who want to stay in Turkey is substantial (Yıldız, 2013).

Migration which is a universal problem, affects all the immigrants in the health, social and psychological direction. Especially women; are more disadvantaged due to the characteristics of being a migrant individual and being "women" and may require more psychological support (Şen & Vural, 2014). On one hand their own needs, on the other hand, the responsibility of raising their children, increases the burden of women in patriarchal societies. In this case, the concerns of the future anxious women reflect their thoughts about the future. Psychological support may be recommended for women who are most concerned about their children's future.

REFERENCES

Adanu R.M.K. and Johnson, T.R.B. (2009). Migration and Women's Health. International Journal of Gynecology and Obstetrics. 106, 179–181.

Apak H. (2014). Suriyeli Göçmenlerin Uyumu ve Gelecek Beklentileri: Mardin Örneği. Mardin Artuklu Üniversitesi Sosyal Bilimler Enstitüsü Sosyoloji Anabilim Dalı. Yüksek Lisans Tezi. Mardin.

Bischoff A., Bovier P.A., Isah R., Francoise A., Ariel E. and Louis, L. (2003). Language Barriers between Nurses and Asylum Seekers: Their İmpact On Symptom Reporting and Referral. Social Science & Medicine. 57, 503–512.

Bozkurt N. (2000). Denizi Kurutmak, Dünden Bugüne Zorunlu Göç ve İskan Politikası, Belge Yayınları, İstanbul, ISBN: 9789753442350

Çalım S.İ., Kavlak O. and Sevil Ü. (2012). Evrensel Bir Sorun: Göç Eden Kadınların Sağlığı ve Sağlık Hizmetlerinde Yaşanan Dil Engeli. Sağlık ve Toplum Dergisi, Mayıs-Ağustos.

Danış A.D. (2004). Yeni Göç Hareketleri ve Türkiye, Birikim, No:184–185, ss. 216–224, Agustos-Eylül 2004

Demir G. (1996). Göç Nedenleri ve Göç Edenlerin Beklentilerindeki Gerçekleşme Durumu. II. Ulusal Sosyoloji Kongresi. 20-22 Kasım 1996 Ankara, ss. 85-93.

Deniz A.Ç., Hülür A.B. and Ekinci Y. (2016). Göç, Strateji ve Taktik: Suriyeli Sığınmacıların Gündelik Hayat Deneyimleri. Uluslararası Sosyal Araştırmalar Dergisi, 9(42).

Deniz T. (2014). Uluslar Arası Göç Sorunu Perspektifinde Türkiye, TSA, ss.175-204.

Erten K.Z., Zincir H., Özen B., Dinç S., Sevig Ü. and Özkan F. (2014). Göçle Gelen Ailelerin Sağlıkla İlgili Bazı Davranış ve Görüşlerinin Saptanması. Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi, ss.35–46.

IOM. (2009). Göç Terimleri Sözlüğü. Çiçekli, B. (ed.), Uluslararası Göç Örgütü, Cenevre, İsviçre.

İlk Karacan P. and İlk Karacan İ. (1998). 1990'lar Türkiye'sinde Kadın ve Göç. Bilanço 98: 75 Yılda Köylerden Şehirlere, İstanbul: Tarih Vakfı Yayınları, 305-322.

Mutluer M. (2003). Uluslararası Göçler ve Türkiye. İstanbul. Çantay Kitabevi, 9-34

Şen A,B. and Vural C. (2014). Suriye İç Savaşında Göç ve Kadın. Yaratıcı Drama Dergisi. Cilt: 9, Sayı: 17.

Tuzcu A. and Bademli K. (2014). Göçün Psikososyal Boyutu. Psikiyatride Güncel Yaklaşımlar, 6(1):56-66.

Yıldız Ö. (2013). Türkiye Kamplarında Suriyeli Sığınmacılar: Sorunlar, Beklentiler, Türkiye ve Gelecek Algısı. Sosyoloji Araştırmaları Dergisi, 16(1).

Yılmaz A. and Mustafa R. (2014). 1992 Sonrası Türkiye'ye Göçen Ahıska Türklerinin Göç, İskân ve Uyum Sorunlarına İlişkin Bir Araştırma, Bursa Örneği, Studies of The Ottoman Domain, 4(6).

Yılmaz T.T. (2005). Göç'ün Kadın Yaşamı Üzerindeki Etkileri. Yüzüncü Yıl Üniversitesi Sosyal Bilimler Enstitüsü Sosyoloji Ana Bilim Dalı, Yüksek Lisans Tezi, Van.

Chapter 37

Determination of the Relationship between Physical Activity Level and Sleep Quality in Spry Elderly 65 and Over Years Old Living in Nursing Homes*

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INTRODUCTION

The ratio of the elderly population has been increasing in the total population in both all around the world and Turkey (Altay et al., 2016). According to the data from Turkish Statistical Institute, the ratio of the elderly population (65 years old or over) to total population in Turkey is 8.5% (61.6% in 65-74 age group, 29.7% in 75-84 age group and 8.6% in 85 and over age group, in total 6 million 895 thousand 385 people) in 2017. However, this ratio is expected to go up to 10.2% in 2023 (TUIK, 2017). This increase in the elderly population causes the world and Turkey to get into demographical aging period gradually. Therefore, it has become one the most significant aims in health care field to enhance the quality of life in this increasing elderly population (Xavier et al., 2003).

It is also expected that the possibility of the elderly's living in nursing homes should get higher as a reflection of the increase in the elderly population, socioeconomic conditions changing swiftly in the society and the difficulties of the urban life (Pakdil, 2001). In accordance with the data regarding 2016 in Turkey, the number of the elderly living in nursing homes is 19 thousand 818 (Trthaber, 2017). The notion of nursing home generally has similar meanings in western countries and in Turkey and every kind of daily needs of the elderly, self-care, room cleaning, food service etc. are met in these establishments in addition to all opportunities such as social recreational, health (control) and treatment. In this sense, a nursing home turns into an institutional establishment where an elderly maintains his/her daily life after family life s/he is accustomed to for years. This change of environment is perceived as a socialization opportunity for some elderly and impacts quality of life in a positive manner while some elderly perceive this as an isolation and exclusion from the society,

* This study was presented at the 1st Internatıonal Health Science and Life Congress (IHSLC 2018) held in Burdur/Turkey on May 2-5, 2018

which results in negative life quality (Pakdil, 2001). For this reason, nursing homes can give important hints about the life quality in terms of improving and evaluating the service quality provided to the elderly. The aim of the services provided to the elderly is to protect their life quality and help them persist an active life (Lee et al., 2006).

Life quality means "self-satisfaction" and is influenced by a person's body health, psychological condition/wellness, social interactions, functionality, adaptation capability, world view, personal beliefs in a complicated way (Şimşek, 2006). The World Health Organization depicts life quality as individuals' way of perception of their lives, value systems, aims, standards and interests in their cultural contexts (Perim, 2007). Therefore, life quality is a multidimensional notion and covers many fields such as physical health, psychological condition, independence level, social relations, environmental features and spiritual (concerns about spirituality) characteristics which affect an individual's life (Işıkhan, 2000). Physical activity and sleep quality are also stated to be among the situations impacting life quality (Lai et al., 2005; Koçak & Özkan, 2010).

Physical activity is described as voluntary actions which result in consumption of increased energy, and produced by skeleton muscles, and include the activities carried out as a part of daily life. Physical activity is reported as a modifiable behavioural risk factor regarding life quality and health for the elderly (Soyuer, 2008). Hence, the level of physical activity of the individuals and life quality were found to decrease by aging. (Karan, 2006; Altuğ et al., 2009). It is stated in the literature that inactivity of the elderly varies between 30% and 80%, generally at a high level, even in developed countries (Goggin & Morrow, 2001; Van Der Bij et al., 2002). In a study, it is mentioned that physiological changes that appear by aging are delayed or encountered in a lower severity in the people living an active life (İnal et al., 2003). Regular physical activity contributes to the decrease of mortality and morbidity, increase in life quality, a person's being more productive in socio-economical terms, protection of cognitive functions and ensuring its continuity (Bonnefoy, 2001; Rejeski & Brawley, 2006).

One of the most significant problems influencing life quality is sleep disorders. Difficulty in falling asleep and sleep-maintenance insomnia, waking up early and excessive daytime sleepiness are considered among typical symptoms of sleep problems in the elderly (Fadıloğlu et al., 2006). Sleep disorders in the elderly are associated with inactive life styles such as carrying out daily routines repeated regularly, decreased exercise and bad sleep habits (Rejeski & Brawley, 2006). The number of studies examining the relationship between physical activity and sleep quality are a few in the literature. In a restricted number of studies, it is seen that physical activity and exercise are associated with a better sleep and less sleep disorders in healthy adults (Çalık, 2011; Yang et al., 2012; Wu et al., 2015). In addition, upon the examination of the studies performed, it is encountered that sleep quality appears as a factor which affects both life quality and is influenced by the level of physical activity (Aktaş et al., 2015; Onat et al., 2013).

This research has been performed in order to determine the relationship between the life quality and physical activity level and sleep quality in the spry elderly 65 and over years old living in nursing homes.

MATERIALS AND METHODS

Design and Sample

This descriptive research was carried out in 5 public and 2 private nursing homes affiliated to Provincial Directorate of Family and Social Policies located in provincial borders of Aydın/Turkey. Because Aydın is a city where individuals with the longest life span in Turkey live, which is striking, the ratio of the population of the elderly consisting of people 65 years old and over in the city to the total population is 12.4% in 2017. It is the 21st city where the elderly population is highest with 133 thousand 537 old people (Sokeekspres, 2017). Total number of the elderly living in the nursing home is stated as 614 (Aydinyenihaber, 2018). Target population of the study is composed of 433 old people living in these nursing homes and possessing spry elderly characteristics (Spry elderly means old people whose strength and health condition is well, lively, and spry, not in need of nursing care).

All population is included in the study. The number of the elderly who agrees to participate in the research is 265 (participation ratio is 63%). [G power analysis was performed in order to determine the power of the population before the study. In G Power analysis, the relationship between two averages was grounded and sampling was calculated. In the calculation, "bilateral correlation, type 1 error rate (α)= 0.05, power of the study (1-β) 0.80" was given. At the end of the analysis, the number of population was calculated as 82 persons. Two hundred sixty five participants are more than the sampling determined via power analysis and it is considered that it has positive contributions to the increase of research power].

Data Collection Instruments

The data of the research were collected through face to face interviews after written permission of the establishments where the research was performed between September 2017-May 2018 and verbal approval of the participants. Before collection of the data, the old people compatible with spry elderly criteria were detected by negotiating with the relevant nursing homes and an appointment for a suitable time to reach the elderly was made before the application.

“Personal Data Form” developed by the researchers, “International Physical Activity Questionnaire (IPAQ)”, “SF-36 Life Quality Survey”, “Pittsburg Sleep Quality Index (PSQI)” questionnaire forms were used as data collection tool.

There are 15 questions (age, gender, body-mass index, education, marital status, number of children, social security, monthly income, use of cigarettes and alcohol, tea and coffee consumption, perception of elderliness, interfamily relations) in accordance with demographical information of the elderly in Personal Data Form.

International Physical Activity Questionnaire (IPAQ) was used in order to determine the physical activity levels of the participants (Craig et al. 2003). Validity and reliability of IPAQ short form were made by Öztürk in 2005. IPAQ short form provides repeatable and comparable data (for short form r=0.69). IPAQ short form provides information about the time spent in sitting, walking, medium-level activities and severe activities. The calculation of total score of the short form includes the sum of period (minutes) of walking, medium-level activity and severe activity and frequency (days) (IPAQ, 2006). The point for sitting (sedentary behaviour level) is calculated separately. The criterion in evaluation of all activities is that each activity must be

performed for minimum 10 minutes at one time (Savcı et al., 2006). A score is obtained from these calculations as 'MET-minute/week'. MET means metabolic equivalent. A MET equals to nearly 3.5ml oxygen consumption per kg of the body. While performing calculations for IPAQ short form, minute, day and MET value (multiples of the consumption of oxygen during resting) are multiplied and a score as 'MET-minute/week' is obtained (Savcı et al., 2006). The following values were used for analysis of IPAQ data:

Walking=3.3 MET

Medium level physical activity =4.0 MET

Severe physical activity =8.0 MET

For example, walking MET-min/week score of a person walking for 30 minutes 3 days a week is calculated as 3.3x30x3=297 MET-min/week. Categorized scoring is performed with categorized digital data obtained with continuous scoring (Öztürk, 2005). In accordance with MET calculation grounded in accordance with personal statement, the participants are classified in low, medium and high activity level and frequency of the physical activity (Cengiz, 2007). The low group (sedentary, inactive) is the group which states they participate in exercise less than 600 MET-min/week. Medium level physical activity group is the group which states they participate in exercise in the range of 601-3000 MET-min/week. Physically active group is the group which states they participate in exercise more than 3000 MET-min/week (Cengiz, 2007).

SF-36 Survey is an assessment tool which is used highly often and in evaluation of life quality in Turkey and whose reliability and validity was performed by Koçyiğit et al. (1999). Cronbach alpha value was found varying from 0.70 to 0.96. It is not specific to any age, disease or treatment. SF-36 is appropriate for personal assessment and used on computer or face to face through a trained personnel or phone conversation for people at the age of 14 and over. It is composed of 36 items and makes the evaluation considering the last four weeks. SF-36 survey consists of the following parts: physical functionality (PF, restriction in physical activity due to health problems), physical role (PR, restriction in daily life activities due to health problems), physical pain (PP), general health (GH, evaluation of a person's general mental health), liveliness (CA), general mental health (GMH), social functionality (SF) and emotional role (ER, restriction in daily life activities due to mental health problems). In SF-36 survey, it is graded over 100 points and the points obtained vary from 0 to 100 for each component. While high points indicate a well health condition, low points show deterioration of the health condition in this survey.

Pittsburg Sleep Quality Index (PSQI) is a survey giving information about sleep quality and type and severity of sleep disorder in the last one month. In this assessment, a person's sleep quality, sleep latency, sleep duration, customary sleep activity, sleep disorder, the use of sleeping pills and daytime dysfunction are evaluated. The index consists of 24 questions in total. Each of the questions is given a point between 0 and 3. The sum of these points yields the point of the index. Total point is between 0 and 21. If the total point acquired from the index is below 5, it is interpreted as "good sleep quality" and if it is 5 and over, it is interpreted as "bad sleep quality". Diagnostic sensitivity is 89.6% and its specificity is 86.5%. Reliability and validity of the index in Turkish was performed by Ağargün et al. (1996).

Data Analysis

The data obtained from the research was analysed in SPSS for Windows 21.0 statistical package program and number and percentage distributions were determined and the evaluation of the data which does not show normal distribution in accordance with Kolmogorov-Smirnov test result was analysed through Mann Whitney U and Kruskal Wallis analysis. The relationship between physical activity level and sleep quality and life quality was determined through Pearson Correlation analysis.

RESULTS

Age average of the elderly participating in the research was found as 75.90±8.03. In accordance with research findings, it was determined that 64.5% of the elderly are male, 39.2% of them are primary school graduates, 49% of them are widowed, 54.7% of them has ≤500 lira-monthly-income and 39.6% of them (n=152) has body mass index which is ≥25. On examining the participants' habits, it is seen that 70.2% of them do not smoke and 92.8% of them do not use alcohol, 38.2% of them drink 5 or more cups of tea a day while 39% of them do not have the habit of drinking coffee. Upon examining the participants' elderliness/perception of their age and interfamily relations, 57.7% of them consider elderliness as a part of life and 35.8% of them see themselves middle-aged, and 40.4 of them state their interfamily relations are bad (Table 1).

Table 1. Socio-demographical Characteristics of The Participants (n=265)

Gender	**n**	**%**
Female	94	35.5
Male	171	64.5
Education		
Illiterate	57	21.5
Literate	36	13.6
Primary School	104	39.2
Middle School	12	4.5
High School	26	9.8
Associate Degree or Bachelor's Degree	30	11.3
Marital Status		
Married	99	37.4
Single	36	13.6
Widowed	130	49.0
Social Security		
SSK*	80	30.2
Bagkur**	53	20.0
State Retirement Fund	106	40.0
Health Card For Uninsured People in Turkey	26	9.8
Number of Children		
None	51	19.2
1	58	21.9
2	75	28.3
3	40	15.1
4 and above	**41**	**15.5**
Monthly Income		
≤500 liras	145	54.7
501-1000	25	9.4
1001-1500	57	12.5
1501 and above	38	14.3
BMI* (kg/m²)(n=152)**		
<25	47	17.8
≥25	105	39.6

Smoke	**n**	**%**
Yes	79	29.8
No	186	70.2
Alcohol		
Yes	19	7.2
No	246	92.8
Tea Consumption (cup/day)		
I Don't Drink	15	5.7
1	17	6.4
2	32	12.0
3	56	21.1
4	44	16.6
5 and above	101	38.2
Coffee Consumption (cup/day)		
I Don't Drink	104	39.3
1	83	31.3
2	59	22.3
3	16	6.0
4 and above	3	1.1
Perception of Elderliness		
A Bad Situation	44	16.6
Uselessness	22	8.3
Disturbance	46	17.4
A Part of Life	153	57.7
Interfamily Relations	**n**	**%**
Bad	107	40.4
Medium	79	29.8
Good	45	17.0
Very Good	34	12.8
Perception of His/Her Age		
I Don't Find Myself Old	69	26.0
Old	59	22.3
Medium-aged	95	35.8
Very Old	42	15.8

* Social Security Organization for the Workers

**Social Security Organization for the Artisans and the Self-employed

***BMI: Body Mass Index

Among the sub-dimensions of SF 36 life quality, physical function, physical role, pain, general health, vitality, social function, mental role, mental health point averages are found as 59.47±33.79, 45.84±45.86, 62.23±27.49, 47.81±10.48, 59.77±25.97, 52.26±16.19, 45.91±46.43, 74.85±17.93, respectively. Upon examining the relationship between the participants' life quality and socio-demographical characteristics, it was found that life quality point in all aspects apart from general health perception was significantly low in women compared to the man and in the widowed compared to the married ones, and life quality of the elderly with associate degree/bachelor's degree is high, similarly, all points of life quality of the elderly who consider elderliness as part of life and state that they do not find themselves old are significantly high, points of life quality of the elderly with bad interfamily relations are low in all fields apart from general health and social function ($p<0.05$), (Table 2). However, it is detected that the elderly's number of children, monthly income levels, body mass index, tea/coffee and alcohol/cigarette use habits do not have a significant change over life quality ($p>0.05$).

Table 2. The Relationship Between The Elderly's Life Quality and Socio-demographical Characteristics (n=265)

Variables			Sub-dimension of Life Quality							
			Physical Function	Physical Role	Pain	General Health Perception	Vitality	Social Function	Mental Role	Mental Health
Gender	**n**	**%**								
Female	94	35.5	48.56±34.27	35.90±44.98	55.37±29.06	46.34±10.81	53.13±27.98	54.78±19.05	32.97±42.75	73.27±19.00
Male	171	64.5	65.46±32.07	51.31±45.55	66.00±25.91	48.62±10.24	63.42±24.11	50.87±14.25	53.02±46.95	75.71±17.31
p			**0.000**	**0.006**	**0.003**	0.217	**0.004**	**0.026**	**0.001**	0.406
Marital Status										
Married	99	37.4	67.77±31.41	54.79±46.65	65.60±26.05	48.88±11.06	62.27±27.22	51.01±13.90	55.55±47.14	76.68±19.20
Single	36	13.6	65.27±31.37	55.55±45.55	69.61±26.83	49.08±11.17	65.83±22.81	48.61±10.68	59.25±45.15	78.77±18.38
Widowed	130	49.0	51.53±34.56	36.34±43.70	57.61±28.11	46.64±9.77	56.19±25.46	54.23±18.71	34.87±43.89	72.36±16.53
p			**0.001**	**0.006**	**0.019**	0.362	**0.048**	**0.051**	**0.001**	**0.015**
Education										
Illiterate	57	21.5	41.49±33.77	39.38±43.33	47.66±29.41	46.54±10.89	46.84±29.65	58.99±15.80	29.23±41.81	71.57±18.26
Literate	36	13.6	49.30±35.41	33.33±40.97	51.88±26.63	47.58±11.02	45.69±21.97	54.86±16.71	36.10±41.68	68.55±15.12
Primary School	104	39.2	67.54±27.55	50.24±46.28	68.11±23.61	48.61±10.63	64.37±21.69	49.03±15.54	49.67±46.90	75.00±16.97
Middle School	12	4.5	70.83±32.53	58.33±46.87	68.66±27.22	51.91±5.10	69.58±27.75	47.91±2.87	61.11±48.89	80.00±21.77
High School	26	9.8	64.42±35.16	49.03±46.08	69.26±26.05	46.84±10.30	70.19±21.18	46.15±14.47	48.71±49.19	78.76±20.16
Associate Degree or Bachelor's Degree	30	11.3	69.00±36.70	69.16±42.38	73.23±25.42	46.93±10.39	72.33±23.62	54.58±16.89	67.77±45.04	82.66±17.20
p			**0.000**	**0.002**	**0.000**	0.607	**0.000**	**0.000**	**0.004**	**0.002**
Perception of Elderliness										
A Bad Situation	44	16.6	39.65±34.25	26.13±41.74	46.79±31.08	45.59±10.87	42.27±22.52	57.95±17.69	26.51±39.75	65.00±18.90
Uselessness	22	8.3	40.90±31.34	22.72±39.27	45.72±27.52	40.00±11.40	43.63±21.77	55.68±14.80	25.75±42.32	65.63±15.40
Disturbance	46	17.4	53.91±32.48	33.69±40.21	52.91±23.72	49.56±9.17	47.82±23.77	55.97±16.81	35.50±41.21	73.47±13.83
A Part of Life	153	57.7	69.50±30.47	58.49±45.53	71.84±23.24	49.05±10.09	70.71±22.47	49.01±15.07	57.51±47.02	79.42±17.49
p			**0.000**	**0.000**	**0.000**	**0.003**	**0.000**	**0.001**	**0.000**	**0.000**

Table 2 continued

Interfamily Relations	n	%	Physical Function	Physical Role	Pain	General Health Perception	Vitality	Social Function	Mental Role	Mental Health
Bad	107	40.4	51.16±33.81	35.28±44.50	53.96±30.60	46.69±10.91	51.68±28.53	53.27±15.67	34.26±44.73	70.31±20.11
Medium	79	29.8	62.91±33.23	46.83±45.70	61.08±22.15	48.92±10.03	60.12±23.07	50.79±14.89	48.94±46.17	76.55±14.63
Good	45	17.0	69.77±30.82	58.88±44.32	76.86±21.27	46.31±10.56	67.66±20.98	51.94±17.86	56.29±46.50	75.64±16.08
Very Good	34	12.8	63.97±34.19	59.55±46.06	71.52±25.86	50.76±9.56	73.97±20.73	52.94±18.73	61.76±45.04	84.11±16.13
p			**0.008**	**0.005**	**0.000**	0.148	**0.000**	0.729	**0.004**	**0.001**
Perception of His/Her Age										
I Don't Find Myself Old	69	26.0	77.60±30.82	76.08±38.69	76.53±21.87	49.44±9.21	77.89±20.55	47.46±12.78	76.81±39.31	83.13±16.10
Old	59	22.3	55.76±29.63	37.28±45.09	60.91±25.28	49.50±11.57	55.76±26.32	49.15±18.83	37.28±45.52	73.15±17.14
Medium-aged	95	35.8	66.84±27.00	47.89±44.01	66.12±23.39	49.16±9.04	57.10±23.05	51.31±14.64	47.01±44.95	74.56±16.94
Very Old	42	15.8	18.21±20.47	3.57±16.16	31.76±24.11	39.69±10.48	41.66±22.59	66.66±12.55	4.76±17.37	64.58±18.24
F			43.286	30.131	32.813	11.152	23.650	16.352	28.785	11.082
p			**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**	**0.000**

Upon examination of the elderly's physical activity level, it is determined that 47.2% of them are physically inactive, 43.7% of them are active at medium level and only 9.1% are highly active (Table 3), men's walking duration and medium-level and total activity durations are significantly higher than women's and women's sitting durations are significantly higher than men's ($p<0.05$), (Table 4).

Table 3. The Elderly's Physical Activity Level (n=265)

Activity Level*	n	%	Physical Activity Points MET min/week (Average± Standard Error)
Inactive	125	47.2	168.71±16.34
Medium-level Active	116	43.7	1466.23±61.53
Very Active	24	9.1	4368.04±273.33

* <600 MET- min/week=inactive,
601-3000 MET-min/week= Medium-level (minimal) active,
>3000 MET- min/week=very active (Adequate, useful for health)

Table 4. Men's and Women's Physical Activity and Sitting Duration Values (n=265)

Gender	Gender Sitting (min/day)	Walking (min/week)	Medium-Level Physical Activity (min/week)	Severe Physical Activity (min/week)	Total Physical Activity (MET-min/week)
Female	658.08±193.06	728.00±1077.75	88.72±349.05	22.97±179.70	821.83±1270.07
Male	596.47±200.05	1119.16±1189.75	144.67±685.79	9.82±46.69	1271.15±1472.00
p	**0.006**	**0.001**	**0.020**	0.317	**0.001**

Considering life quality points according to physical activity level, it is determined that all life quality points are significantly lower except for inactive elderly's social function, and social function points are significantly higher compared to active individuals ($p<0.05$), (Table 5).

Table 5. Life Quality Points according to the Elderly's Physical Activity Levels (n=265)

Physical Activity Level			Sub-dimension of Life Quality							
			Physical Function	Physical Role	Pain	General Health Perception	Vitality	Social Function	Mental Role	Mental Health
	n	%								
Inactive	125	47.2	45.00±34.74	30.40±41.10	54.84±28.17	45.92±11.11	53.88±23.70	57.00±16.68	26.93±39.64	72.44±15.43
Medium-level Active	116	43.7	69.91±26.34	53.01±45.82	66.10±25.89	49.92±10.14	61.63±27.09	49.56±13.48	56.89±46.31	75.37±19.81
Very Active	24	9.1	84.37±28.18	91.66±28.23	82.00±16.18	47.50±6.35	81.45±18.56	40.62±17.38	91.66±28.23	84.83±17.57
p			**0.000**	**0.000**	**0.000**	**0.021**	**0.000**	**0.000**	**0.000**	**0.001**

Upon examination of the relationship between life quality and physical activity level, it is determined after pearson correlation that there is a positive correlation between total physical activity duration and physical function ($r=0.415$, $p=0.000$), physical role ($r=0.400$, $p=0.000$), pain ($r=0.293$, $p=0.000$), liveliness ($r=0.299$, $p=0.000$), mental role ($r=0.432$, $p=0.000$), mental health ($r=0.171$, $p=0.005$) and a negative correlation between total physical social activity and social function ($r=0.323$, $p=0.000$). It is also found that there is a negative correlation between sitting duration and physical function ($r=0.358$, $p=0.000$), physical role ($r=0.351$, $p=0.000$), pain ($r=0.321$, $p=0.000$), liveliness ($r=0.287$, $p=0.000$), social function ($r=0.123$, $p=0.045$), mental role ($r=0.368$, $p=0.000$), mental health ($r=0.246$, $p=0.000$).

When examining sleep quality of the elderly living in the nursing home, PSQI total point average is 9.83±4.61. On evaluation of the relationship between life quality and sleep quality, after pearson correlation, a negative correlation is found between total sleep quality point and physical function (r=0.522, p=0.000), physical role (r=0.506, p=0.000), pain (r=0.632, p=0.000), general health perception (r=151, p=0.014), liveliness (r=0.618, p=0.000), social function (r=0.328, p=0.000), mental role (r=0.490, p=0.000), mental health (r=0.435, p=0.000).

Upon examination of the relationship between physical activity level and sleep quality, after pearson correlation, a positive correlation is found between total sleep quality point and sitting duration (r=0.330, p=0.000), and a negative correlation between total sleep quality and walking period (r=0.376, p=0.000), medium level physical activity duration (r=0.144, p=0.019), severe physical activity duration (r=0.182, p=0.003) and total physical activity duration (r=0.374, p=0.000).

DISCUSSION

Elderliness is one of the phenomenon that determines life quality in both personal and social terms (Arpacı, 2008). Life quality regarding health is a complex notion influenced by many variables and whose evaluation includes numerous dimensions (Eser et al., 2010; Çalıştır, 2006). In our study, demographical characteristics of the elderly are compared with fundamental fields of SF 36 life quality questionnaire, it is seen that the elderly's life quality is affected by the variables such as gender, education status, marital status, age/elderliness perception and interfamily relations. Accordingly, it is detected that women's life quality is significantly lower than the men. Similar results were also obtained in the studies (Aydın & Karaoğlu, 2012; Sucaklı et al., 2013; Şahin & Emiroğlu, 2014). Education status is one of the important factors that affect access to and benefiting from health services (Aydın, 2009). It is detected in our study and similarly in the literature that life quality point averages increase as the education level goes up (Aydın, 2009; Aydın & Karaoğlu, 2012). As literature studies indicate, the elderly's past life evaluation level and being hopeful about the future are affected by the marital status (Graham et al., 2007; Aydın, 2009). Approximately half of the elderly in our study (36%) are single and total life quality points of the married ones are significantly high compared to the single ones. The literature similarly shows that being married enhances life quality (Altay et al., 2016; Ünalan et al., 2015; Arpacı et al., 2015; Bilgili & Arpacı, 2014). Positive effect of being married over life quality can be associated with the fact that living with a partner establishes a good support system emotionally and socially. In Aydın and Karaoğlu's (2012) study at which age average is 73.5, more than half of the women and men evaluate themselves as "old". Aydın (2009), in his study, state that although only 6.4% of the elderly are very old, 31.2% of them report that they feel very old and in this group feeling very old, life quality is significantly found low. In our study, while majority of the elderly (35.8%) consider themselves as medium-aged, life quality of the elderly that state they do not find themselves old is significantly high. Aydın (2009), in his study, state that 35.8% of the elderly consider elderliness as a bad situation, 38.6% of them as uselessness and 25.6% of them as a good situation. Similarly, Aydın and Karaoğlu (2012) and Altay et al., (2016) in their studies, report that the elderly evaluate elderliness as "uselessness". In our study, while most of the elderly (57.7%) consider elderliness as part of life, life

quality in this group is found significantly high. It is known that family and social relations have an important effect in determining life quality (Günaydın, 2010). In a study, it is reported that 14.7% of the elderly meet their children, 10.3% of them never meet their kin, and 33.1% of them rarely meet their kin (Şahin & Emiroğlu, 2014). It is found that life quality of the elderly with good family relations is higher (Tseng & Wang, 2001; Hjaltadottir & Gustafsdottir, 2007). In our study, while nearly half of the elderly (40.4%) consider their interfamily relation as bad, life quality points in the domains apart from the sub-dimensions which are general health perception and social function are find significantly low. It is remarkable that social function domain of life quality is not found significant and this finding may give rise to the thought that the elderly consider the residents and workers in the nursing home as their family and ignore their own families in their social roles related to living in nursing homes.

Inactive life style has an important place among the elements affecting life quality adversely (Genç et al., 2011). In our study, it is found that nearly half (47.2%) of the elderly has an inactive lifestyle. In the literature, it is suggested that high physical activity/increased mobility level increases functional independence of the elderly and improve life quality (Soyuer & Soyuer, 2008; Altuğ et al., 2009; Çalık, 2011). Koçak and Özkan (2010), Vatansever et al., (2015), in their studies, observe that life quality points of the individuals with high physical activity level are better in terms of physical function, energy/exhaustion and general health domains. Hence, it is concluded in our study, similarly in the literature, as the elderly's physical activity level decreases, life quality deteriorates. The lowest point among sub-dimensions of SF 36 life quality (45.84±45.86) seems to belong to the physical role. It is considered this result stems from the fact that personal affairs such as room cleaning, preparing food of the elderly living in the nursing home are managed by the establishment. Hence, in the literature, it is suggested that household jobs such as home cleaning, preparing food increase the level of physical activity significantly and the elderly's physical activity level is proportionate to household activities (Chad et al., 2005). In addition, it is considered the reason why the number of inactive individuals is high is the fact that body mass index of one of the thirds (n=152) of the elderly participating in our study is ≥25. Moreover, it is striking in our study that the men live a more active life than the women. Many studies carried out support this conclusion (Vural et al., 2010; Genç et al., 2011; Şahin & Emiroğlu 2013; Vatansever et al., 2015). This situation may stem from the fact that women live a more house-dependent life compared to the men due to the roles our society lays on women. Furthermore, in our study, it is found that there is a positive relationship between total physical activity duration and physical function, pain, vitality, mental role, mental health life quality points. This finding is similar to the ones in the literature (Heesch et al., 2015; Husson et al., 2015; Vatansever et al., 2015) and unlike the literature, in our study, a negative relationship is detected between social function life quality point and physical activity duration. Social functionality means performing the roles expected from a person in social environment and being satisfied with this. While living in a nursing home and increase in social sharing result in decrease in physical activity level in addition to physical restriction the elderliness cause, it may cause the increase in the elderly's social functionality.

Aging process causes many changes on sleep. The elderly's sleep depth and night's sleep duration decrease and sleep need and order, which means sleep quality, are

affected adversely (Ceyhan et al., 2018). The findings of our study indicate that sleep quality of a great majority of the elderly living in nursing homes (83.3%) is bad (PSQI total point average is 9.83±4.61). Malakouti et al. (2009) determines that 82.6% of the elderly has bad sleep quality while Ceyhan et al. (2018) in Turkey finds 83.5% of the elderly has bad sleep quality. It is reported that sleep disorder of the elderly increase cognitive disorder risk and affects the elderly's life quality adversely (Gündüz et al., 2015; Johar et al., 2016). However, sleep problems are a risk factor in terms of mortality in the elderly due to bad life quality (de Castro Toledo Guimaraes, 2008; Çalık, 2011). In our study, similarly to the literature, a positive but weak relationship is found between life quality and sleep quality. Uzunkulaoğlu et al. (2013) found in his study that there is a statistically meaningfulness between sleep and only mental health point among life quality sub-dimensions in geriatric individuals.

It is indicated that high physical activity level in the elderly is associated with a more quality sleep. It is reported in the studies that it may affect sleep quality negatively or positively based on the time when the exercise is performed and its duration (Yang et al., 2012; Vegar & Ejaz Hussain, 2012; Wu et al., 2015). Güneş (2015), in her study, suggests that exercise increases physical activity level, sleep quality and, therefore, life quality. Wu et al. (2012), reports, similarly, physical activity impacts sleep positively. Godes et al., (2013) finds life quality of the active exercise group is significantly higher than the sedentary group in his studies he performed with the elderly over 60 years old. In our study, a positive correlation is found between physical activity and sleep quality. However, Aktaş et al. (2015) and Çalık (2011) have not found a significant relationship between physical activity and sleep in their studies. This difference in the results may result from the data regarding sleep is not subjective

CONCLUSIONS

As a conclusion, findings of this study indicate that physical activity level and sleep quality are low in the spry elderly who are 65 and over years old and live in nursing home and as physical activity level and sleep quality decrease, life quality deteriorates.

In line with these results, it is recommended that physical activity level should be increased in order to enhance both sleep quality and life quality in nursing homes, appropriate activity areas should be established, the elderly should be motivated fort he exercises in scope of physical activity suggested for old people, sportive, entertaining/relaxing activities and physical exercises which are appropriate for old people should be planned and implemented by professional people in these establishments.

REFERENCES

Ağargün M.Y., Kara H., Anlar O. (1996). Pittsburgh Uyku Kalitesi İndeksi'nin Geçerliği ve Güvenirliği. Türk Psikiyatri Dergisi, 7, 107-11.

Aksoydan E., Çakır N. (2011). Adölesanların Beslenme Alışkanlıkları, Fiziksel Aktivite Düzeyleri ve Vücut Kitle İndekslerinin Değerlendirilmesi. Gülhane Tıp Dergisi, 53, 264-70.

Aktaş H., Şaşmaz C.T., Kılınçer A., Mert E., Gülbol S., Külekçioğlu D., Kılar S., Yüce Y.R., İbik Y, Uğuz E, Demirtaş, A. (2015). Yetişkinlerde Fiziksel Aktivite Düzeyi ve

Uyku Kalitesi ile İlişkili Faktörlerin Araştırılması. Mersin Üniversitesi Sağlık Bilimleri Dergisi, 8(2), 60-70.
Altay B., Çavuşoğlu F., & Çal A. (2016). Yaşlıların Sağlık Algısı, Yaşam Kalitesi Ve Sağlıkla İlgili Yaşam Kalitesini Etkileyen Faktörler. TSK Koruyucu Hekimlik Bülteni, 15(3), 181-89.
Altuğ F., Yağcı N., Kitiş A., Büker N., Cavlak, U. (2009). Evde Yaşayan Yaşlılarda Yaşam Kalitesini Etkileyen Faktörlerin İncelenmesi. Yaşlı Sorunları Araştırma Dergisi, 2(1), 48-60.
Arpacı F. (2008). Ankara'da Huzurevlerinde Yaşayan Yaşlıların Yaşam Kalitesinin İncelenmesi. Yaşlı Sorunları Araştırma Dergisi, 1(1), 1-13.
Arpacı F., Tokyürek, Ş., Bilgili N. (2015). Huzurevinde Yaşayan Yaşlı Bireylerde Yaşam Kalitesi. Yaşlı Sorunları Araştırma Dergisi, 8(1), 1-11.
Aydın S, Karaoğlu L. (2012). Gaziantep İl Merkezinde Yaşayan Yaşlıların Yaşam Kalitesi Düzeyi ve Etkileyen Faktörler. Turkish Journal of Geriatrics, 15(4), 424-33.
Aydın S. (2009). Gaziantep İli Şehitkâmil ve Şahinbey Merkez İlçelerinde Yaşayan 65 Yaş Üstü Populasyonda Yaşam Kalitesi Düzeyi ve Etkileyen Faktörler. İnönü Üniversitesi Sağlık Bilimleri Enstitüsü, Halk Sağlığı ABD, Yüksek Lisans Tezi, Malatya.
Bilgili N, Arpacı F. (2014). Quality of Life of Older Adults in Turkey. Archives of Gerontology and Geriatrics, 59, 415-21.
Bonnefoy M., Normand S., Pachiaudi C., Lacour J.R., Laville M., Kostka T. (2001). Simultaneous Validation of Ten Physical Activity Questionnaires in Older Men: A Doubly Labeled Water Study. J. Am. Geriatr. Soc., 49, 1, 28-35.
Cengiz C. (2007). Orta Doğu Teknik Üniversitesi Öğrencilerinin Fiziksel Aktivite Düzeyleri ve Egzersiz Davranışının Değişim Basamakları. Orta Doğu Teknik Üniversitesi, Sosyal Bilimleri Enstitüsü, Beden Eğitimi ve Spor Anabilim Dalı, Yüksek Lisans Tezi, Ankara.
Chad K.E., Reeder B.A., Harrison E.L., Ashworth N.L., Sheppard S.M., Schultz S.L., Bruner B.G., Fisher K.L., Lawson J.A. (2005). Profile of Physical Activity Levels in Community-Dwelling Older Adults. Med Sci Sports Exerc, 37, 1774-84.
Craig C.L., Mashall A.L., Sjöström M., Bauman, A.E., Booth M.L., Ainsworth B.E., Pratt M, Ekelund U., Yngve A.S., James F, Oja, P. (2003). International Physical Activity Questionnaire: 12-Country Reliability and Validity. Med Sci Sports Exerc, 35, 1381-95.
Çalık İ. (2011). Yaşlılarda Fiziksel Aktivite İle Uyku Kalitesi Arasındaki İlişki. Dokuz Eylül Üniversitesi Sağlık Bilimleri Enstitüsü, Muskuloskeletal Rehabilitasyon, Yüksek Lisans Tezi, İzmir.
Çalıştır B, Dereli F, Ayan H, Cantürk A. (2006). Muğla İl Merkezinde Yasayan Yaslı Bireylerin Yasam Kalitelerinin İncelenmesi. Türk Geriatri Dergisi, 9(1), 30-33.
Ceyhan Ö., Göriş S., Zincir H. (2018). Yaşlı Bireylerde Uykuyu Etkileyen Önemli Bir Problem: İnkontinans. Sağlık Bilimleri Dergisi, 27(1), 29-35.
de Castro Toledo Guimaraes L.H, de Carvalho L.B.C, Yanaguibashi G, do Prado G.F. (2008). Physically Active Elderly Women Sleep More and Better Than Sedentary Women. Sleep Medicine, 9(5), 488-93.
Eser S., Saatli G., Eser E., Baydur H, Fidaner C. (2010). Yaşlılar İçin Dünya Sağlık Örgütü Yaşam Kalitesi Modülü WHOQOL-OLD: Türkiye Alan Çalışması Türkçe Sürüm Geçerlilik Ve Güvenirlilik Sonuçları. Türk Psikiyatri Dergisi, 21(1), 37-48.
Fadıloğlu Ç, İlkbay Y, Kuzeyliyıldırım Y. (2006). Huzurevinde Kalan Yaşlılarda Uyku Kalitesi. Turk J Geriatrics., 9(3), 165-69.
Genç A, Şener Ü, Karabacak H, Üçok K. (2011). Kadın ve Erkek Genç Erişkinler Arasında Fiziksel Aktivite ve Yaşam Kalitesi Farklılıklarının Araştırılması. Kocatepe Tıp Dergisi, 12, 145-50.

Godes J.F., Balic M.G., Sanromà J.C. (2013). Health-Related Quality of Life Measures for Physically Active Elderly in Community Exercise Programs in Catalonia: Comparative Analysis with Sedentary People. Current Gerontology and Geriatrics Research, 1- 6.
Goggin N.L, Morrow J.R. (2001). Physical Activity Behaviors of Older Adults. Journal of Aging and Physical Activity, 9, 58-66.
Graham J.E., Stoebner-May D.G., Ostir G.V., Al Snih S., Peek M.K., Markides K., & Ottenbacher K.J. (2007). Health Related Quality of Life in Older Mexican Americans With Diabetes: A Cross-Sectional Study. Health and Quality of Life Outcomes, 5(1), 39.
Günaydın R. (2010). Yaşlılarda Yaşam Kalitesinin Değerlendirilmesi. Turkish Journal of Geriatrics, 13(4), 278-84.
Gündüz E., Eskin F., Gündüz M., Bentli R., Selçuk E.B., Zengin Y., (2015). Türk Geriatrik Popülasyonda Uyku Kalitesi, Gelir Durumu ve Komorbiditenin Yaşam Kalitesine Etkisi: Çok Merkezli Çalışma. Türk Geriatri Dergisi, 18(2), 136-42.
Güneş G.Y. (2015). Yaşlılarda Egzersizin Fiziksel Aktivite, Hareket Korkusu, Yorgunluk ve Uyku Kalitesine Etkisi. Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, Fizik Tedavi Ve Rehabilitasyon Programı, Yüksek Lisans Tezi, Ankara.
Heesch K.C., van Gellecum Y.R., Burton N.W., van Uffelen J.G., & Brown W.J. (2015). Physical Activity, Walking, and Quality of Life in Women With Depressive Symptoms. American Journal of Preventive Medicine, 48(3), 281-91.
Hjaltadottir I. and Gustafsdottir M. (2007). Quality of Life in Nursing Homes: Perception of Physically Frail Elderly Residents. Scand J Caring Science, 21, 48–55.
Husson O., Mols F., Ezendam N.P., Schep G., & van de Poll-Franse L.V. (2015). Health-related Quality of Life is Associated With Physical Activity Levels Among Colorectal Cancer Survivors: A Longitudinal, 3-year Study of the PROFILES Registry. Journal of Cancer Survivorship, 9(3), 472-80.
Isıkhan V. (2000). Yaşlıların Yaşam Kalitesi. Antropoloji ve Yaşlılık, (Ed. Gönül Erkan ve Vedat Isıkhan), Hacettepe Üniversitesi Sosyal Hizmetler Yüksekokulu, Yayın No: 6, Ankara.
İnal S, Subaşı F., Mungan-Ay S, Uzun S, Alpkaya U, Hayran O, Akarcay V. (2003). Yaşlıların Fiziksel Kapasitelerinin ve Yaşam Kalitelerinin Değerlendirilmesi. Türk Geriatri Dergisi, 6(3), 95-99.
Johar H., Kawan R., Emeny R.T., Ladwig K.H. (2016). Impaired Sleep Predicts Cognitive Decline in Old People: Findings from the Prospective KORA Age Study. Sleep, 39(1), 217-26.
Karan A. (2006). Yaşlılıkta Egzersiz ve Spor. Türk Fiz Tıp Rehab Derg (Özel Ek A), 53-6.
Koçak F.Ü., Özkan F. (2010). Yaşlılarda Fiziksel Aktivite Düzeyi ve Yaşam Kalitesi. Turkiye Klinikleri J Sports Sci., 2: 46.
Koçyiğit H, Aydemir Ö, Fişek G, Ölmez N, Memiş A. (1999). Kısa Form- 36'nın Türkçe Versiyonunun Güvenilirligi ve Geçerliligi. İlaç ve Tedavi Dergisi, 12, 102–106.
Lai K.L., Tzeng R.J., Wang B.L., Lee H.S., Amidon R.L., Kao S. (2005). Health-Related Quality of Life and Health Utility for The Institutional Elderly in Taiwan. Quality of Life Research, 14(4), 1169-80.
Lee W.T, Ko S, Lee K.J. (2006). Health Promotion Behaviors and Quality of Life among Community-Dwelling Elderly in Korea: A Cross-Sectional Survey. International Journal of Nursing Studies, 43, 293-300.
Malakouti S.K, Foroughan M, Nojomi M, Ghalebandi M. (2009). Sleep Pattern, Sleep Disturbances and Sleepiness in the Retired Iranian Elderly. European Psychiatry, 24(1), 1228.

Onat Ş., Delialioğlu S., Biçer S., Özel S. (2013). Osteoporotik Hastalarda Uyku Kalitesinin Yaşam Kalitesine Etkisi. Türk Osteoporoz Dergisi, 19, 32-7.
Öztürk M. (2005). Üniversitelerde Eğitim-Öğretim Gören Öğrencilerde Uluslararası Fiziksel Aktivite Anketinin Geçerliliği ve Güvenirliği ve Fiziksel Aktivite Düzeylerinin Belirlenmesi. Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü, Yüksek Lisans Tezi, Ankara.
Pakdil F.A. (2001). Yaşlılar İçin Mekan ve Huzurevi Tasarımı. Paper presented at the 1st National Aging Congress, October 10-11, Ankara, Proceedings p.41-48.
Perim A. (2007). Trakya Üniversitesi Eğitim, Araştırma ve Uygulama Hastanesi'nde Çalışan Hemşirelerin Kaliteli Yaşam Algısının Belirlenmesi. Trakya Üniversitesi Tıp Fakültesi Sağlık Bilimleri Enstitüsü Halk Sağlığı Anabilim Dalı Yüksek Lisans Programı, Edirne.
Rejeski W.J., Brawley L.R. (2006). Functional Health: İnnovations in Research on Physical Activity with Older Adults. Medicine and Science in Sports and Exercise, 38(1), 93-99.
Savcı S, Öztürk M, Arıkan H, İnce D.İ., Tokgözoğlu L. (2006).Üniversite Öğrencilerinin Fiziksel Aktivite Düzeyleri. Türk Kardiyol Dern Arş, 34, 166-72.
Soyuer F, Soyuer A. (2008). Yaşlılık ve Fiziksel Aktivite. İnönü Üniversitesi Tıp Fakültesi Dergisi, 15(3), 219-24.
Soyuer F., Ünalan D., Elmalı F. (2010). Normal Ağırlıklı ve Obez Üniversite Öğrencilerinde Fiziksel Aktivite. Uluslararası İnsan Bilimleri Dergisi, 2, 862-72.
Sucaklı H.M., Bakan B, Çelik M. (2013). Huzurevinde Yaşayan Yaşlıların Yaşam Kaliteleri ve Etkileyen Faktörler. Türk Aile Hek Derg, 17(3), 96-100.
Şahin N.E., Emiroğlu O.N. (2014). Huzurevinde Yaşayan Yaşlıların Yaşam Kalitesi ve Yaşam Kalitesini Etkileyen Faktörler. Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi, 1(1), 57-66.
Şimşek D. (2006). Şizofreni Hastalarında Yaşam Kalitesinin Değerlendirilmesi. Süleyman Demirel Üniversitesi Tıp Fakültesi Sağlık Bilimleri Enstitüsü Psikiyatri Anabilim Dalı, Uzmanlık Tezi, Isparta.
Tseng Z.S., Wang R.H. (2001). Quality of Life and Releated Factors Among Elderly Nursing Home Residents in Southern Taiwan. Public Health Nursing, 18(5), 304-11.
URL: IPAQ (2005). http://www.ipaq.ki.se, Research Committee Guidelines for Data Processing and Analysis of International Physical Activity Questionnaire. (Accessed: 13 March 2018).
URL: TUİK (2017). http://www.tuik.gov.tr/İstatistiklerle_Yaşlılar_15.03.2018.pdf (Accessed: 15 June 2018).
URL: Aydınyenihaber. (2018). http://www.aydinyenihaber.com/aydin/aydinda-614-yasli-huzur-evinde/3845. (Erişim Tarihi: 15 Haziran 2018).
URL: Sokeekspres. (2017).http://www.sokeekspres.com/Haber/22737-istatistiklerle-yaslilar-2017.aspx. (Erişim Tarihi:15 Haziran 2018).
URL: Trthaber. (2017). http://www.trthaber.com/haber/turkiye/iste-huzurevlerinde-kalan-kisi-sayisi-293983.html. (Erişim Tarihi:15 Şubat 2018).
Uzunkulaoğlu, A., Çetin, N., Yemişçi, O.Ü., Saraçgil Coşar, S.N., İkbali Afşar S. (2016). Factors Associated with Sleep Disorders in Geriatric Patients and Their Effect on Quality of Life: A Rehabilitation Unit Experience. Journal of Physical Medicine & Rehabilitation Sciences, 19(1), 7-13.
Ünalan D, Göçer S, Baştürk M, Baydur H, Öztürk A. (2015). Coincidence of Low Social Support and High Depressive Score on Quality of Life in Elderly. European Geriatric Medicine, 6, 319–24.

Van Der Bij A.K., Laurant M.G., Wensing M. (2002). Effectiveness of Physical Activity İnterventions for Older Adults: A Review. American Journal of Preventive Medicine, 22(2), 120-33.

Vatansever Ş., Ölçücü B., Özcan G., Çelik A. (2015). Orta Yaşlılarda Fiziksel Aktivite Düzeyi ve Yaşam Kalitesi İlişkisi. Uluslararası Eğitim Bilimleri Dergisi, 2(2), 63-73.

Veqar Z, Ejaz Hussain M. (2012). Sleep Quality İmprovement and Exercise: A Review. International Journal of Scientific and Research Publications, 8, 1-8.

Vural Ö, Eller S, Atalay-Güzel N. (2010). Masa Başı Çalışanlarda Fiziksel Aktivite Düzeyi ve Yaşam Kalitesi İlişkisi. Spormetre Beden Eğitimi ve Spor Bilimleri Dergisi, 8(2), 69-75.

Wu C.Y., Su T.P., Fang, C.L., Chang, M.Y. (2012). Sleep Quality among Community-Dwelling Elderly People and Its Demographic, Mental, and Physical Correlates. Journal of the Chinese Medical Association, 75, 75-80.

Wu X., Tao S., Zhang Y., Zhang S., & Tao F. (2015). Low Physical Activity and High Screen Time Can İncrease The Risks of Mental Health Problems and Poor Sleep Quality Among Chinese College Students. PloS one, 10(3), e0119607

Xavier F.M., Ferraz M., Marc N., Escosteguy N.U., Moriguchi E.H. (2003). Elderly People's Definition of Quality of Life. Revista Brasileira de Psiquiatria, 25(1), 31-39.

Yang P, Ho K, Chen H, Chien M. (2012). Exercise Training İmproves Sleep Quality in Middle-aged and Older Adults with Sleep Problems: A Systematic Review. Journal of Physiotherapy, 58, 157-63.

Chapter 38

Determining the Factors Affecting the School Life of Children with Cancer

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INTRODUCTION

Cancer changes the life of a school child. Children with cancer undergo problems related with the disease and the treatment. School is seen as a part of daily life. For a sick child, going back to school is regarded as a sign for going back to normal (Kim and Yoo, 2010). In fact "he can go to school" message mean for the child and the parents that "the child has a future". On the other hand, going to school may turn into a fear for the child and the family. Back to school after the cancer diagnosis; is a returning process that causes a frequent and long-term absence after the diagnosis and treatment of cancer (Moore *et al.,* 2009).

Physical, psychosocial and cognitive problems related with the diagnosis and treatment of cancer may affect the child's school life negatively (Stuber, 2010; Li *et al.,* 2011). Physical symptoms like nausea, vomiting, anorexia, fatigue and pain that are seen in children resulting from the disease and treatment affect child's keeping up with the daily activities, going to school and academic achievement negatively (Harding, 2011; Li *et al.,* 2011).

Diagnosis of cancer can cause not only physical but also psychosocial problems in children. Due to the changes occurring in child's appearance like alopecia and weight loss caused by the disease and its treatment, the child does not want to meet his friends and has lesser number of friends because he is shy about their reaction and they might make fun of him (Bonneau, 2011). Besides, child's ill-suited health condition (fatigue, infection risk etc.) and friends not knowing how to communicate with the child for they do not have enough information on their friend's disease also cause a decrease in the number of friends (Bonneau, 2011; Li *et al.,* 2011). Decrease in self-respect, introversion, social isolation may be seen when the child cannot go to school or when there is a complete lack of communication with her friends at school (Bonneau, 2011; Çavuşoğlu and Sağlam, 2015). Additionally there have been some cognitive problems related with the treatment in children with cancer (Hardy *et al.,* 2011; Çavuşoğlu and Sağlam, 2015). Children with ALL have problems such as learning disability, dysmnesia, not being able to speak, decrease in academic achievement and decrease in sight and motor functions (Çavuşoğlu and Sağlam, 2015). It is stated in literature that nearly 50% of the children, who are treated with high dosage cranial radiotherapy

against central nervous system tumor (MSS), need special education (Hardy *et al.*, 2011)

The child might not want to go to school for the above mentioned physical, psychosocial and cognitive problems. Also, because saving the child's life is families' priority, they might not think taking the child back to school as a priority. Thinking what might become of child's school situation or informing the school might occur to families many months later (Moore *et al.,* 2009).

When the health condition and treatment allow it, the child can go back to school. Planning the child's going back to school and having a positive school life necessitate a good team work. To accomplish this, the sick child, his family, the school board, teachers, friends and health personnel need to work together and keep in touch at all times. The nurse shall provide the information exchange between school, parents and hospital. In solving the problems of the children with cancer about their school life, nurses have an important role. As part of the cooperation between the school and the health professionals that take part in child's treatment and care, the nurse should inform the teachers and school board about child's health condition, visible physical and psychosocial problems and on what to be done. The nurse should be always in contact with the parents, encourage and help them to carry on the communication going with the school. By informing the other children and their parents on childhood cancer, different and undesired attitudes towards children with cancer can be prevented (Moore *et al.,* 2009; French *et al.,* 2013; Yilmaz *et al.,* 2014).

Parents have an important role in managing child's treatment and child's going back to school. The family should be informed on how the cancer treatment affects the academic performance. Health personnel and school personnel should support the family throughout the treatment and going back to school process (Moore *et al.,* 2009). Parents must encourage their children into going back to school when they pass the shock period and are without any health problem that can prevent them from going back to school. In order to do this, first of all, views and concerns of the child and the parents must be learned on child's going back to school (Moore *et al.,* 2009; Hardy *et al.,* 2011).

Right to education for children should be provided in appropriate and least restrictive environment. In this context, Turkey, the Ministry of National Education the 27th relevant law article in the "education home and the hospital" is specified can be given. First family to inform, support and education to individuals receiving home visiting special education on the basis that the task is continued by teachers. Primary school students are registered to the nearest primary school. For those students who school attendance is not required, evaluating success in rights school is continuing process as the other students. Student success and development of the school is reported; class pass and graduates procedures are carried out by the school where they are registered. Home education programs as well as by the Ministry of education of children hospitalized for the establishment of hospitals, schools and educational services are continuing in hospitals. Nurses child's with chronic disease education should know the methods and guide to families in this regard should. However in Turkey, there are only few studies on school lives of children with cancer (Yılmaz *et al.,* 2013). To understand the factors that affect the school lives of children with cancer better can help the planning of rehabilitation and preventive attempts which are

necessary to help them to become productive individuals. The nurse can give counseling to parents and child on responsibilities in arranging school life and how to accomplish them in accordance with the outcome results of this study.

The Purpose of Study

The study is planned on the purpose of determining the factors that affect the school life of a child with cancer.

MATERIALS AND METHODS

Population and Sample

The research was conducted on the children with cancer, who applied to one training-research hospital oncology clinic and polyclinic and one university hospital pediatric oncology clinic and polyclinic in the June-October period of 2013.

Sampling was not done in the research and all of the children with cancer applying to the research in June-October 2013 were included. Inclusion criteria of the research; children with cancer aged between 7-18, going to school before the disease, recovering from the first three months crisis, whose parents gave consent and who are willing to participate in the research will be included to the research.

Procedure

First of all, the researcher got the written and oral consent of the parents by giving information on the purpose of the research. Interviews are conducted by bearing in mind the available time and privacy of the child and parents. The child and the parents are asked to fill out "Child Information Questioner" and "Child and Parent Interview Questioner". The researcher was with the children and parents during the filling out process.

Data Collection Tools

Child Information Questioner: "Child Information Questioner", which was developed on the basis of literature, consists of 12 questions about the children's socio-demographic characteristics, the diagnosis, and the stage of the disease, received treatments, first diagnosis age, working, education and economic status of the parents. First six questions are acquired from the patient files and the other 6 questions are taken from the parents (Harding, 2011; Arland *et al.*, 2013).

Child and Parent Interview Questioner: It is prepared by the researcher, who benefited from the interview questioner literature that was developed to determine the factors affecting the school life of the child with cancer (Moore *et al.*, 2009; Bonneau, 2011; Harding, 2011). The questioner consists of a total of 20 questions on determining the factors that affect the school life of a child, 15 of which are close-ended and 5 of which are open-ended. Seven specialists from Department of pediatric Nursing and 3 specialists from Department of Oncology Nursing, thus 10 specialists in all, expressed their views for the form. The form was provided to associates who were asked to assess the questions with scores of 1 to 4 (1: There must be various changes; 4: quite convenient). The scores of these 10 specialists were evaluated by the Kendall test, and the consistency between the scores was determined as .89. The scores of the specialists were internally consistent. The draft of the form that was prepared based on the opinions of the specialists was first presented to 10 children and their parents. Because

there was no negative feedback, it was decided that the form to be applied to all children and their parents. Children within the pre-implementation are not included to the research.

Statistical Analyses

Number and percentage distributions, which are given on the basis of the socio-demographic characteristics of children, are performed. Four-way chi squared test and multiple chi squared test are used in the analysis of the data.

Ethical Consideration

Ethics Committee Approval with protocol number 1044-GOA was taken in 27 June 2013. Institutional permissions necessary for the research's realization were taken. Written and oral consents of the children and parents, who are informed by the researcher on the study and agreed to participate in the study, were taken.

RESULTS

The children within the research consist of ages between 7-12 by 61.7% and between 13-18 age groups by 38.3%. 44.2% of the children are girls whereas the boys are 55.8%. When the education levels of the children are considered 48.3% of them are graduates of elementary, 29.2% are graduates of middle school and 22.5% are graduates of high school. 35% of the children are newly diagnosed, 53.3% of them are in remission and 11.7% of them are in relapse phase; and 64.2% of these children are diagnosed with hematologic malignancy and 35.8% of them are diagnosed with oncologic malignancy. It is determined that 35.8% of the mothers are elementary and 35% of the fathers are high school graduates. While the 90% of the mothers do not work, it is seen that 86.7% of the fathers are working. It is established that in terms of economic condition 54.2% of the families have less income than expenditure.

Table 1. Distribution of the Data on School Attendance by Children with Cancer

	n	**%**
School attendance		
Not attending the school	105	87.5
Attending the school	15	12.5
Reasons for Absence (n=105)		
Reasons Related to Physical Symptoms	6	5.7
Reasons Related to theTreatment	50	47.6
Physical Reasons and Reasons Related to the Treatment	38	36.2
Reasons Related to the Disease	5	4.8
Personal and Familial Reasons	6	5.7
Number of days being absent (n=105)		
Less than 21 days	15	12.5
More than 21 days	90	75
Grade Repetition		
Yes	7	5.8
No	113	94.2

It is determined in this study that 87.5% of the children do not attend the school. When the reasons for absence are considered it is found that 47.6% of them were absent due to reasons based the treatment (chemotherapy, surgical treatment, bone marrow transplantation). It is determined that children being absent more than 21 days have the rate of 75% and the grade repetition rate is 5.8%.

When the children with cancer benefit from the program situation are considered it is found that 36.7% of the children benefit from the home education service of the Ministry of Education and 55.8% of the children take additional courses in the hospital. It is determined that 26.6% of the children's home to know the program can not benefit from education and training services.

Table 2. Distribution of the Data on Problems that Children with Cancer Encounter During the Learning Process

	n	**%**
Having a problem during the learning process		
Yes	37	0.8
No	83	9.2
Problems encountered on the learning process (n=37)		
Hindsight	3	2.5
Having difficulty in reading comprehension	21	7.5
Forgetting what is learned	8	6.7
Not being able to see due to the disease	3	2.5
Other	2	1.6

It is found that 30.8% of the children have problems on learning process and 17.5% of them have difficulty in reading comprehension.

Table 3. Comparison of the Attendance Among Children with Cancer Based on Their Diagnosis

	Number of Days Being Absent					
	Less than 21 days		**More than 21 days**			
	n	**%**	**n**	**%**	x^{2yates}	**p**
Diagnosis						
Hematologic malignancies (leukemia and lymphoma)	10	66.7	58	64.4	.000	1.00
Oncologic malignancies (oncologic tumors)	5	33.3	32	35.6		
Total	15	100	90	100		

It is determined in the study that 64.4% of the children with hematologic malignancy and 35.6% of the children with oncologic malignancy diagnosis were absent for more than 21 days. According to the diagnosis, a meaningful statistical difference between the absence days among children was not confirmed (p=1.00).

Table 4. Comparison of the Application Situations of the Children with Cancer According to their Age Groups to the Home Ministry of Education's Education Services Program for Individuals with Special Education Needs

	Application Situations for the Ministry of Education's Education Services Program for Individuals with Special Education Needs				**$x2_{Yates}$**	**p**
	Yes		**No**			
	n	**%**	**n**	**%**		
Age					7.158	.007
Age 7-12	3477.3		40	52.6		
Age 13-18	1022.7		36	47.4		
Total	44 100		76	100		

It is determined in this study that 77.3% of the children in the age group of 7-12 and 22.7% of the children in the age group of 13-18 applied to the program. A statistically meaningful difference is spotted among the children's application situations to the Ministry of Education's Education Services Program for Individuals with Special Education Needs according to their age group (p=.007).

DISCUSSION

Factors that affect the school life of children with cancer are discussed in this chapter. Cancer changes the life of a school child. Children with cancer undergo problems related with the disease and the treatment.

In this study it is seen that children with cancer have a high rates of absence. The rate of children with more than 21 days of absence is 75%. When the reasons for absence are considered it is determined that 41.7% of them were due to reasons related with the treatment (surgical treatment, bone marrow transplantation etc.). When the literature is analyzed it is stated that children with cancer have much higher rates of absence compared with the healthy children and children with other chronic diseases (Boman *et al.,* 2010). In the study of French *et al.* (2013) however, the absence of the children that survived cancer are spotted as 11 days. Physical symptoms such as nausea, vomiting, anorexia, diarrhea, constipation, fatigue and pain are seen in children due to the disease and treatment. It is stated that these physical symptoms negatively affect child's maintenance of her daily activities, going to school and academic success (Harding, 2011). Child's days of absence increase due to examinations during diagnosis and long term treatments after the diagnosis. Children stay at the hospital due to treatments like chemotherapy, radiotherapy and surgical treatment and symptoms as a result of these treatments (nausea-vomiting, pain, neutropenia etc.) and this situation causes them to be absent from the school. Besides, parents think that they are protecting their children by keeping them away from the society. Cancer is still considered as a deadly disease by the society and it is thought that parents do not send their children to school because they might get sad upon the things that they might hear.

It is determined in this study that 63.3% of the children do not benefit from Ministry of Education's home education service and 26.6% of these children did not

apply to the service because they did not know about the program. When the literature is analyzed, it is suggested to increase the school success by individual and group special education support, to increase social adaptation with cognitive behavioral therapy techniques and to provide studies that can ensure self value and socialization with occupational therapy (Boman *et al.,* 2010). It is important to popularize Ministry of Education's program on that note. Incomplete knowledge of the health and school personnel on Ministry of Education's program is thought to decrease the informing and application of the children and their parents.

In this study 31.7% of the children have problem with the learning process and 17.5% of them have difficulty in reading comprehension. It is found that 55.8% of the children participating in the research have additional courses in the hospital. In the studies it is determined that children that received radiotherapy during ALL treatment have cognitive disorders in areas such as intelligence, learning and memory, attention, cognitive speed, academic success and visual-motor functions (Hardy *et al.,* 2011; Li *et al.,* 2011). A decrease in the success level of a kid can be observed due to negative impacts of cancer treatment on child's cognitive process. The majority of our study's sample is made up of hematologic malignancies (64.2%). It is thought that radiotherapy and intrathecal treatments applied to this diagnosis group may have affected the cognitive process of the child.

It is determined in the study that 64.4% of the children with hematologic malignancy diagnosis and 35.6% of the children with oncologic malignancy diagnosis were absent for more than 21 days. According to the diagnosis, a statistically meaningful difference could not be determined between the numbers of absence among children (p=1.00). The rate of absence among children who survived brain tumor is higher than the children who survived solid tumor, leukemia and lymphoma (French *et al.,* 2013). It is determined that the high intrathecal methotrexate dose is related with the absence due to physical failure (Ness *et al.,* 2012). Children that are diagnosed with cancer have physical incapacities due to examinations, and intense and long-term treatments after the diagnosis; therefore it is thought that they cannot attend the school regularly.

In this study it is determined that 77.3% of the children aged between 7-12 and 22.7% of the children aged between 13-18 applied to the Ministry of Education's Education Program for Individuals with Special Education Needs. A statistically meaningful difference is spotted among the children's application situations to the Ministry of Education's Education Services Program for Individuals with Special Education Needs according to their age group (p=.007). The 57.6% of the children aged between 7-12 stated that they did not know about the program, and 66.7% of them stated that they did not want to join it and thus neither group applied to the program. It is found that 100% of the children aged 13-18, did not apply the program for they were high school students. Ministry of Education's Education Services Program for Individuals with Special Education Needs are given to individuals of elementary school that need special education and to those who cannot directly benefit from the mainstream schools due to their health problems, therefore not all the high school children with cancer could apply for the program. Besides, health professionals' lack of knowledge on the program and not informing the children and parents about it is thought to decrease the application rate to the program.

CONCLUSION

At the end of the study it is found that majority of the children with cancer do not attend the school due to symptoms they undergo or treatments they receive.

Child and the parents must be encouraged for the continuation of school life, school attendance of the children during controls must be questioned and problems related with school must be determined and solutions must be offered. Also, in-service training programs for the health personnel towards regulating school lives of children with cancer must be arranged and Ministry of Education's program content must be included to this training program. It is suggested to inform the parents of the children with cancer by the health personnel on that matter.

As a result, children that are diagnosed with cancer must be encouraged to go back to their normal school and social experiences prior to the disease immediately and as far as the medicine allows. It is important to inform the parents that have a child with cancer to keep their communication (continuing the communication with teachers and visiting friends) with the school. When the services to be given to children with cancer in school life is considered, it is thought to be important to also consider the variables such as age and phase of the disease and to inform them about the possible problems in school life after the treatment, so that continuing and developing the school lives of children with cancer can be possible.

REFERENCES

Arland, L. C.,Hendricks-Ferguson, V. L., Pearson, J., Foreman, N. K., Madden, J. R. (2013). Development of an in-Home StandardizedEnd-of-Life Treatment Program forPediatricPatientsDying of Brain Tumors. Journal for Specialists in PediatricNursing 18(2), 144-157.doi: 10.1111/jspn.12024.

Boman, K. K., Lindblad, F., Hjern, A. (2010). Long-termOutcomes of ChildhoodCancerSurvivors in Sweden: A Population-BasedStudy of Education, Employment, andİncome. Cancer 116(5), 1385-1391. doi: 10.1002/cncr.24840.

Bonneau, J., Lebreton, J., Taque, S., Chappe, C., Bayart, S., Edan, C., Gandemer, V. (2011). School Performance of Childhood Cancer Survivors: Mind the Teenagers!. The Journal of Pediatrics, 158(1), 135-141. doi:10.1016/j.jpeds.2010.07.008.

Çavuşoğlu, H., Sağlam, H. (2015). Examining the Perceived Socia lSupport and Psychologica Symptoms among Adolescents with Leukemia. Journal for Specialists in Pediatric Nursing 20(1), 76-85. doi: 10.1111/jspn.12101.

French, A., Tsangaris, E., Barrera, M. (2013).School Attendance in Childhood Cancer Survivors and Their Siblings. The Journal of Pediatrics 162(1), 160-165. doi:10.1016/j.jpeds.2012.06.066.

Hardy, K. K.,Willard, V. W., Bonner, M. J. (2011). Computerized Cognitive Training in Survivors of Childhood Cancer A Pilot Study. Journal of Pediatric Oncology Nursing 28(1), 27-33. doi: 10.1177/1043454210377178.

Harding, R., Selman, L., Agupio, G., Dinat, N., Downing, J., Gwyther, L., & Higginson, I. J. (2011). The Prevalence and Burden of Symptoms amongst Cancer Patients Attending Palliative Care in Two African Countries. European Journal of Cancer 47(1), 51-56. doi:10.1016/j.ejca.2010.08.003.

Kim, D. H., Yoo, I. Y. (2010). Factors Associated with Resilience of School Age Children with Cancer. Journal of Paediatrics and Child Health 46(7-8), 431-436. doi: 10.1111/j.1440-1754.2010.01749.x.

Li, W. H., Chung, J. O., Ho, E. K., Chiu, S. Y. (2011). Effectiveness and Feasibility of Using the Computerized İnteractive Virtual Space İn Reducing Depressive Symptoms of Hong Kong Chinese Children Hospitalized with Cancer. Journal for Specialists in Pediatric Nursing 16(3), 190-198.doi: 10.1111/j.1744-6155.2011.00288.x.

Moore, J. B., Kaffenberger, C., Goldberg, P., Oh, K. M., Hudspeth, R. (2009). School Reentry for Children with Cancer: Perceptions of Nurses, School Personnel, and Parents. Journal of Pediatric Oncology Nursing 26(2), 86-99.doi: 10.1177/1043454208328765.

Ness, K. K., Hudson, M. M., Pui, C. H., Green, D. M., Krull, K. R., Huang, T. T., & Morris, E. B. (2012). Neuromuscular Impairments in Adult Survivors of Childhood Acute Lymphoblastic Leukemia. Cancer 118(3), 828-838.doi: 10.1002/cncr.26337.

Stuber, M. L.,Meeske, K. A., Krull, K. R., Leisenring, W., Stratton, K., Kazak, A. E., ... &Robison, L. L. (2010). Prevalence and Predictors of Posttraumatic Stress Disorder in Adult Survivors of Childhood Cancer. Pediatrics 125(5), 1124-1134. doi: 10.1542/peds.2009-2308.

Yilmaz, M. C., Sari, H. Y., Cetingul, N., Kantar, M., Erermis, S., & Aksoylar, S. (2014). Determination of School-Related Problems in Children Treated for Cancer. The Journal of School Nursing 30(5), 376-384. doi: 10.1177/1059840513506942.

Chapter 39

The Importance of Therapeutic Touch in Surgical Nursing

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INTRODUCTION

Complementary and alternative therapies have been used since the beginning of mankind and have become increasingly widespread in recent years. Although they have been used for a long time, these methods have been utilized more commonly, especially since the 1990s. Many of the treatments outside the modern and scientific treatments are defined as complementary and alternative therapies by the World Health Organization (WHO, 2018). The National Center for Complementary and Integrative Health (NCCIH) in the United States recognizes complementary and alternative therapies as products, practices, and healthcare systems that are not considered part of traditional medicine (NCCIH, 2018). The National Center for Complementary and Integrative Health classifies complementary and alternative therapies in three different categories (NCCIH, 2018).

1. Naturel products: Herbs, vitamin, minerals and probiotics
2. Mind and body practices: Therapeutic touch, yoga, acupuncture, meditation, relaxation techniques, gi gong, tai chi and hypnotherapy
3. Other complementary health approaches: Ayurvedic medicine, traditional Chinese medicine, homeopathy and naturopathy

The energy therapies discussed in mind and body practices group has been widely used for eliminating many symptoms in chronic illnesses and providing relief as healing methods that have survived since ancient times. NCCIH has reported several evidence-based studies supporting the efficiency of energy therapies in many health problems such as hypertension, asthma, cancer, arthritis, fatigue, acute pain, chronic pain, immune system disorders, wound healing, depression, stress, and anxiety (NCCIH, 2018). According to the philosophy of energy therapies, all materials and people are regarded as consisting of energy and vibration. In this philosophy, there is the understanding that the human organism has secret energy systems that are self-interacting with each other. Pathological symptoms may occur physically, spiritually, and mentally when the balance of these energy systems are disrupted (Erdoğan & Çınar, 2011; Monroe, 2009).

Therapeutic touch (TT), reiki, reflexology and bioelectromagnetics treatments are considered currently known energy therapy methods (Somer & Vatanoğlu, 2017). Therapeutic touch is defined as a holistic approach to regulating, enhancing, balancing, and protecting energy by affecting the energy fields with hands in order to heal disease or symptoms resulting from the imbalance in energy fields. The main purpose of therapeutic touch is to deepen awareness and balance the energy. Therapeutic touch is a non-pharmacological, noninvasive, easy, cheap, and safe method in which the

practitioner transfers energy to the patient through his/her hands. Therapeutic touch is known to complement other therapies and medical interventions (Turan, 2015; Mathuna & Ashford, 2014; Cookley & Duffy, 2010; Cox & Hayes, 1997).

Therapeutic touch was developed in the 1970s by two nurses Dolores Krieger and Dora Kunz, who were influenced by Rogers' theory and worked at the University of New York. Applied with hands and requiring special training, TT was taught to other nurses and healthcare professionals by Krieger and Kunz. Krieger reported that TT was taught in many schools and health institutions in North America. Currently, nurses in some universities receive education on TT at post-graduate level and thus they can use energy therapies in routine nursing care applications (Alp & Yücel, 2016; Turan, 2015; Mathuna & Ashford, 2014; Krieger, 1997). In the United States, the TT certification program has been approved by the American Holistic Nurses Association (AHNA) (AHNA, 2018). Today, the Therapeutic Touch International Association (TTIA) organizes training programs and continues educational activities in many countries (TTIA, 2018).

THE IMPLEMENTATION OF THERAPEUTIC TOUCH

Although the name of the technique is "Therapeutic Touch", the practitioner does not touch the patient's physical body; instead, contacts the energy fields, not the physical body of the patient (Fazzino, 2010; Monroe, 2009). Therapeutic Touch can be applied to the dressed patient in lying or sitting position. The patient is expected to feel the nurse's hands in his/her whole body starting from the shoulders and to identify this feeling on his/her feet at the end of the session. The patient is expected to experience the flow of energy during the application and to maintain it during the application. In therapeutic touch, the practitioner tries to reveal the existing energy and bring the energy of the individual back with his/her fingers. The application can take 15-20 minutes based on the status of the patient (TTIA, 2018; Alp & Yücel, 2016; Turan, 2015).

Therapeutic touch is applied in five phases including centering, diagnosis, treatment, balancing, and assessment (TTIA, 2018; Alp and Yücel, 2016; Bilge et al., 2016).

1. Centering phase is the stage where tranquility and concentration are achieved. A relaxing environment should be prepared by the practitioner.
2. During the diagnostic phase, the practitioner moves his/her open hands 2-4 cm above the patient's body. The aim of this phase is to investigate any imbalances in energy fields. The practitioner may feel temperature, coolness, intensity, pressure, stinging or tingling. These are considered as clues to energy blockages or irregularities.
3. The treatment phase aims to restore the energy balance of the problematic areas felt by the practitioner. In this phase, the goal is to relieve the static blockage or accumulated tension. The rhythmic flow of the energy is facilitated by means of the hands so that the existing energy can be balanced.
4. In the balancing phase, the energy flow is maintained until the balance is established. It's the stage where the balance in the energy zone is reestablished according to the needs of the patient.

5. Assessment phase is the evaluation of the individual's energy field through a complete re-diagnosis of it. The process is terminated upon achieving the control of energy balance.

STUDIES CONDUCTED ON THE EFFECTS OF THERAPEUTIC TOUCH

Studies on the effect of therapeutic touch are limited. However, with the increasing interest in TT by nurses, the number of studies supporting TT has increased steadily since Krieger (Cookley & Duffy, 2010). The first study on therapeutic touch was done by Krieger and TT was found to increase the level of hemoglobin (Krieger, 1993). In most studies conducted so far, TT has been reported to be a method that reduces pain and anxiety by creating relaxation and relief in individuals and which can be used in patients with chronic pain (Bilge et al., 2016; Özveren, 2011; Jackson et al., 2008). As a result of the studies carried out at different times, Meehan found that TT could be effective in reducing post-operative pain, the time for analgesic need was longer, and that TT reduced analgesic requirement (Meehan, 1998; Meehan, 1985). Other studies conducted on pain showed that TT reduced and relieved stress-related headaches (Keller & Bzdek, 1986), reduced headaches and post-operative pain in open-heart surgery patients, thereby increasing the comfort level of the patient (Green, 1998; Cox & Hayes, 1997). Other studies found that TT reduced osteoarthritis pain and improved functional recovery and general health in patients with degenerative osteoarthritis (Gordon et al., 1998; Peck, 1997), and reduced pain and improved quality of life in patients with fibromyalgia syndrome (Denison, 2004; Barbara, 2004). Cai & Zhang (2015) reported that TT triggered enkephalin and endogenous hormone release and that it alleviated pain by behaving in a morphine-like manner. On the other hand, Monroe (2009) stated that there were no drawbacks to the administration of TT to patients, it could be recommended despite limitations of the current research, and that it could be implemented in nursing interventions for pain control.

The anxiety experienced by the patients mainly arises from hospitalization and treatment. There are studies showing that TT has a positive effect on anxiety, too (Mathuna, 2000; Gagne & Toye, 1994). TT is recommended as a method that has the potential to elicit physiological relaxation in patients (Cox & Hayes, 1997). It was reported in a study by Heidt (1981) on inpatients in cardiology clinics and in another study by Olson and Sneed (1995) on nurses that the anxiety at high levels decreased significantly after the administration of TT.

There are also studies on the effects of TT on vital signs. In a study conducted to determine the effect of therapeutic touch on anxiety and patient satisfaction during cataract surgery, it was determined that TT reduced anxiety, affected systolic, diastolic blood pressure and respiration of the patient positively, and increased patient satisfaction (Yılmaz et al., 2016). Positive results were obtained in another study investigating the effect of TT on women's anxiety levels, vital signs, and cardiac dysrhythmia during cardiac catheterization (Zolfaghari et al., 2012). In a study conducted by Busch et al. (2012) on patients with burn injuries, it was reported that the anxiety levels and the rate of anesthesia use reduced. In another study on patients with burn injuries, it was found that there was a significant decrease in pain and anxiety levels, but the results were not significant for the use of painkillers (Turner et al., 1998). In a study on elderly patients, it was found that the pain level decreased, the level of

anxiety did not change, and that salivary cortisol level decreased slightly (Lin & Taylor, 1998). In a study comparing vascular surgery patients who were administered TT and those who were not, it was found that there was a decrease in pain and cortisol levels and an increase in the level of defensive cells in patients who were administered TT (Cookley & Duffy, 2010). In a study investigating the effects of therapeutic touch on DNA synthesis and mineralization of human osteoblasts in culture, TT was shown to increase DNA synthesis, differentiation, and mineralization in human osteoblasts, and reduce differentiation and mineralization in osteosarcoma-derived cell lines (Jhaveri et al., 2008). There are studies reporting that therapeutic touch is frequently preferred in cases such as post-mastectomy pain, skin cancer, arthritis and advanced asthma (Erdoğan & Çınar, 2011; Cox & Hayes, 1997). It has also been reported that TT may be used as an alternative method to reduce the nausea of breast cancer patients receiving chemotherapy (Vanaki et al., 2016). Studies conducted on elderly people with dementia found that TT reduced agitation and discomfort seen in dementia significantly. Therefore, it has been suggested by researchers that TT is a complimentary, safe, and well tolerable complementary therapy that can relieve demented patients (Senderovich et al., 2016; Woods et al., 2005).

As can be seen, the findings obtained from these studies generally support the use of TT. Therapeutic touch has particularly been shown to yield positive outcomes in terms of providing relaxation, reducing pain and anxiety, relieving agitation symptoms, accelerating wound healing and bone development, strengthening the immune system, and reducing the need for pharmacological agents in the perioperative period (TTIA, 2018). In addition to these effects, TT has been reported to regulate blood sugar, blood pressure, and heart rhythm, have positive effects on perception and cognitive abilities, and reduce the feelings of loneliness and hopelessness (Cai & Zhang, 2015; Zare et al., 2010; Moeini et al., 2008; Mollaoğlu, 2001). However, it has also been reported that more studies having high levels of evidence are needed. On the other hand, it is emphasized in the literature that studies on TT should be supported and that more research into the action mechanism of TT should be carried out (TTIA, 2018; Cookley & Duffy, 2010; Krieger, 1997).

THE ROLE OF SURGICAL NURSE IN THERAPEUTIC TOUCH

The use of energy therapies is not a new phenomenon in nursing care. The energy therapies established in nursing practices during the time of Florence Nightingale were reconsidered by modern nurse leaders such as Marta Rogers and Jean Watson and its conceptual structure was created. These theoreticians stated that the individual was constantly in interaction with his/her environment and environmental energy fields, the energies and energy environments of individuals should be included during their care, and that the nursing practice should consider the patient as a whole with his/her environment (Alp & Yücel, 2016; Taşçı, 2015; Aghabati et al., 2010).

Many of the complementary and alternative therapies have similar characteristics to nursing, which elaborates on individual's mind-body-spirit basis and adopts a holistic approach to patient care practices in terms of focusing on the concept of holism (Khorshid & Yapucu, 2005). Nowadays, while nurses are giving care, they have started to frequently use energy therapies such as TT by handling an individual with holistic approaches that include emotional, mental and spiritual wellbeing as well as the physical health of the person who is in an energy interaction. TT has taken its place in

nursing interventions with increased significance and utilization since Krieger, and it has been increasingly used by many hospitals for providing comfort and relief, reducing anxiety and blood pressure, and relieving pain (Mathuna & Ashford, 2014; Fazzino, 2010; Fenton, 2003).

In the literature, TT is shown among the independent functions of nurses and it is emphasized the nurses need special education in order to apply TT (Vanaki et al., 2016; Alp & Yücel, 2016; Turan, 2015; Turan et al., 2010). In addition to its being a nursing intervention that does not require technology, it is stated that TT is not a treatment but a kind of intervention (Cookley & Duffy, 2010). The North American Nursing Diagnosis Association (NANDA) has accepted TT as a nursing intervention that is used in the diagnosis of "energy field disturbance", which is one of the nursing diagnostics (Carpenito, 1995).

Considering the positive effects of the therapeutic touch on the patient, its administration, especially on inpatients in surgery clinics, can be said to be beneficial. Surgical intervention is a stress factor that affects the physical, mental and spiritual aspects of the organism. Invasive procedures, such as surgery, can cause pain as well as increasing the stress response of the body. Patients can experience fears such as fear of death, fear of loss of control, fear of suffering pain, fear of unknown, and fear of being crippled due to surgical interventions. In addition to these, there is a growing concern about the risk of life in surgical patients, surgery, invasive interventions, frequent painful manipulations, limitation of movement, being bedridden, impaired sleep, unfamiliar environment and persons, longing for family members and relatives, feeling of dependence on devices and intensive care unit, and receiving inadequate information about treatment and practices. Pain, anxiety, and stress caused by surgical intervention are known to affect patient compliance and healing negatively. For these reasons, the nurses must take care of the factors that increase pain, anxiety, and stress in the care of the patient. In the care of patients undergoing surgery, nurses can communicate messages to the patients such as intimacy, courage, interest, sincerity, trust, empathy, warmth, support, respect, acceptance, understanding and willingness to provide help by means of therapeutic touch. Thus, nurses can prevent feelings such as loneliness, hopelessness, fear, anxiety, and loss of control in the perioperative period and can contribute to reducing pain, and providing relaxation and relief (Mollaoğlu, 2001; Wardell & Engebretson, 2001).

In conclusion, studies conducted so far have shown that the therapeutic touch contributes to the physical, mental, and spiritual well-being of patients and can be implemented by surgical nurses in the care of patients in pre- and postoperative periods. It seems important for surgical nurses to use therapeutic touch in patient care in a conscious, planned, and purposeful way. For this reason, it is recommended that TT should be placed in the nursing education curriculum and postgraduate training programs in order to increase the knowledge and skills of nurses about TT. Also, it is suggested that more evidence-based studies should be carried out. Thus, it is thought that the development of knowledge and practices in TT by surgical nurses will improve the quality of care in surgical patients.

REFERENCES

Aghabati, N.; Mohammadi, E.; Esmaiel, Z.P. (2010). The Effect of Therapeutic Touch on Pain and Fatigue of Cancer Patients Undergoing Chemotherapy. eCAM 7:375-381

Alp, F.Y. & Yücel, Ş.Ç. (2016). Hemşirelikte Terapötik Dokunmanın Önemi. Spatula DD 6: (1), 33-38

Barbara, D. (2004). Touch the Pain Away. New Research on Therapeutic Touch and Persons with Fibromyalgia Syndrome. Holist Nurs Pract. 18: (3), 142–151

Bilge, A.; Demirkol, H.; Uğurluyol, M. (2016). Sağlık Hizmetlerinde Birinci Basamaktan Üçüncü Basamağa Terapötik Dokunma 6: 207-219

Busch, M.; Visser, A.; Eybrechts, M.; Van Komen, R.; Oen, I.; Olff, M.; Dokter, J.; Boxma, H. (2012). The İmplementation and Evaluation of Therapeutic Touch in Burn Patients: An Instructive Experience of Conducting a Scientific Study Within a Non-Academic Nursing Setting. Patient Education and Counseling 89:(3), 439–446

Cai, F.F. & Zhang, H. (2015). Effect of Therapeutic Touch on Agitated Behavior in Elderly Patients with Dementia: A Review. İnternational Journal of Nursing Sciences 2: 324-328

Carpenito, L.J. (1995). Nursing Diagnosis: Application To Clinical Practice. 6th Edition. Philadelphia. Lippincott.

Coakley, A.B. & Duffy, M.E. (2010). The Effect of Therapeutic Touch on Postoperative Patients. J Holist Nurs. 28:(3), 193-200

Cox, C.L. & Hayes, J.A. (1997). Reducing Anxiety the Employment of Therapeutic Touch as a Nursing Intervention. Complementary Therapies in Nursing and Midwifery 3:163-167

Denison, B. (2004). Touch The Pain Away. Holistic Nursing Practice 18: 142-151

Erdoğan, Z. & Çınar, S. (2011). Reiki: Eski Bir İyileştirme Sanatı Modern Hemşirelik Uygulaması. Kafkas J Med Sci. 1:(2), 86–91

Fazzino, D.L.; Quinn Griffin, M.T.; Fitzpatrick, J.J.; McNulty, S.R. (2010). Energy Healing and Pain. Holist Nurs Pract. 24:(2), 79–88

Fenton, M. (2003). Therapeutic Touch: A Nursing Practise. Alternative Therapies Health Med. 9:(1), 34-36

Gagne, D. & Toye, R. (1994). The Effects of Therapeutic Touch and Relaxation Therapy in Reducing Anxiety. Archives of Psychiatric Nursing 8:184-89.

Gordon, A.; Merenstein, J.H.; D'Amico, F.; Hudgens, D. (1998). The Effects of Therapeutic Touch on Patients with Osteoarthritis of the Knee. The Journal of Family Practice 47:(4), 271- 277

Green, C.A. (1998). Reflection of a Therapeutic Touch Experience: Case study 2. Complementary Therapies in Nursing and Midwifery 4:17-21

Heidt, P. (1981). Effect of Therapeutic Touch on Anxiety Level of Hospitalised Patients. Nursing Research 30:32-7

Jackson, E.; Kelley, M.; McNeil, P.; Meyer, E.; Schlegel, L.; Eaton, M. (2008). Does Therapeutic Touch Help Reduce Pain and Anxiety in Patients With Cancer? Clin J Oncol Nurs. 12:(1), 113-20

Jhaveri, A.; Walsh, S.J.; Wang, Y.; McCarthy, M.; Gronowicz, G. (2008). Therapeutic Touch Affects DNA Synthesis and Mineralization of Human Osteoblasts in Culture. J Orthop Res. 26:(11), 1541–1546

Keller, E. & Bzdek, V.M. (1986). Effects of Therapeutic Touch on Tension Headache Pain. Nursing Research 35:101-6

Khorshid, L. & Yapucu, Ü. (2005). Tamamlayıcı Tedavilerde Hemşirenin Rolü. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi 8:(2), 124-130

Krieger, D. (1997). Therapeutic Touch Inner Workbook. Ventures in Transpersonal Healing Santa Fe, NM, Bear & Company, p.38-44, USA.

Krieger, D. (1993). Accepting Your Power to Heal: The Personal Practice of Therapeutic Touch, Santa Fe, NM: Bear & Company, p.11-45, USA.

Lin, Y. & Taylor, A. G. (1998). Effects of Therapeutic Touch in Reducing Pain and Anxiety in an Elderly Population. Integrative Medicine 1:(4), 155–162

Mathuna, D.P.; Ashford, R.L. (2014). Therapeutic Touch for Healing Acute Wounds. Cochrane Database of Systematic Reviews, Issue 7. Published by John Wiley & Sons, Ltd.

Mathuna, D.P. (2000). Evidence-Based Practice and Reviews of Therapeutic Touch. Journal of Nursing Scholarship 32:(3), 279-285

Meehan, T.C. (1998). Therapeutic Touch as a Nursing Intervention Journal of Advanced Nursing 28:117-125

Meehan, T. C. (1985). The Effect of Therapeutic Touch on the Experiences of Acute Pain in Postoperative Patients. Dissertation Abstracts International, 46, 795B. (UMI No. 8510765)

Moeini, M.; Zare, Z.; Hazrati, M.; Saghaei, M. (2008). Effect of Therapeutic Touch on Patients' Anxiety Before Coronary Artery Bypass Graft Surgery IJNMR 13:(2), 47-51

Mollaoğlu, M. (2001). Yoğun Bakım Ünitelerinde Dokunmanın Önemi. Yoğun Bakım Hemşireleri Dergisi 5:34-40.

Monroe, C. M. (2009). The Effect of Therapeutic Touch on Pain. Journal of Holistic Nursing 27: (2) 2

Olson, M. & Sneed, N. (1995). Anxiety and Therapeutic Touch. Issues in Mental Health Nursing 16: 97-108

Özveren, H. (2011). Ağrı Kontrolünde Farmakolojik Olmayan Yöntemler. Hacettepe üniversitesi Sağlık Bilimleri Fakültesi Hemşirelik Dergisi, 83-92

Peck, S. D. E. (1997). The effectiveness of Therapeutic Touch for Decreasing Pain in Elders with Degenerative Arthritis. Journal of Holistic Nursing 15:176-198

Senderovich, H.; Ip, M.L.; Berall, A.; Karuza, J.; Gordon, M.; Binns, M.; Wignarajah, S.; Grossman, D.; Dunal, L. (2016). Therapeutic Touch in a Geriatric Palliative Care Unit - A retrospective Review. Complementary Therapies in Clinical Practice 24: 134-138

Somer, P. & Vatanoğlu-Lutz, E.E. (2017). Geleneksel ve Tamamlayıcı Tıp Uygulamaları Yönetmeliği'nin Hukuki ve Etik Açıdan Değerlendirilmesi. Anatolian Clinic 2: (22), 1

Taşcı, S. (2015). Hemşirelik Eğitiminde İntegratif Anlayış Geliştirme. Integr Tıp Derg. 3:(2),50-54.

Turan, N. (2015). Yoğun Bakım Ünitesinde Terapotik Dokunmanın Önemi. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi 6:(3), 134-139

Turan, N.; Öztürk, A.; Kaya, N. (2010). Hemşirelikte Yeni Bir Sorumluluk Alanı: Tamamlayıcı Terapi. Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi 3:(1), 93-98

Turner, J.G.; Clark, A.J.; Gauthier, D.K.; Williams, M. (1998). The Effect of Therapeutic Touch on Pain and Anxiety in Burn Patients. J Adv Nurs. 28:(1), 10-20

URL: AHNA (2018). http://www.ahna.org/ (Accessed:15 May 2018)

URL: NCCIH (2018). https://nccih.nih.gov/health/integrative-health (Accessed: 25 May 2018)

URL: TTIA (2018). http://therapeutictouch. org/ (Accessed: 15 May 2018)

URL: WHO (2018). http://www.who.int/traditional-complementary-integrative-medicine/ about/ en/ (Accessed: 22 June 2018)

Vanaki, Z.; Matourypour, P.; Gholami, R.; Zare, Z.; Mehrzad, V.; Dehghan, M. (2016). Therapeutic Touch for Nausea in Breast Cancer Patients Receiving Chemotherapy: Composing a Treatment. Complementary Therapies Clinical Practice 22: 64-72

Wardel, D.W. & Engebretson, J. (2001). Biological Correlates of Reiki Touchhealing. Journal of Advanced Nursing 33:(4), 439-445

Woods, D.L.; Craven, R.F.; Whitney, J. (2005). The effect of Therapeutic Touch on Behavioral Symptoms of Persons with Dementia. Alternative Therapies in Health and Medicine 11:(1), 66-74

Yılmaz, E.; Birer, Z.; Baydur, H. (2016). The Effect of Therapeutic Touch Performed During Cataract Surgery on Anxiety and Patient Satisfaction. Journal of Clinical and Experimental Investigations 7: (1), 52-62

Zare, Z.; Shahsavari, H.; Moeini, M. (2010). Effects of Therapeutic Touch on the Vital Signs of Patients before Coronary Artery Bypass Graft Surgery. IJNMR 15: (1) 37-42

Zolfaghari, M.; Eybpoosh, S.; Hazrati M. (2012). Effects of Therapeutic Touch on Anxiety, Vital Signs, and Cardiac Dysrhythmia in a Sample of Iranian Women Undergoing Cardiac Catheterization: A Quasi-Experimental Study. Journal of Holistic Nursing 30:(4), 225-234

Chapter 40

Elderly's Disability and Nursing Care Requirements

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INTRODUCTION

It is estimated that by 2050 the number of people over the age of 60 will be doubled, and one of 5 people will be over 60 years old. It is stated that, this, in turn, will lead to radical social changes in world society. Decreasing mortality in childhood and younger ages and decreasing old-age mortality in high-income countries lead to an increase in life expectancy, due to the prevention of infectious diseases and the prevention of birth-related complications in countries with low and middle-income levels. Compared to data of 50 years ago, life expectancy in the world has increased by an average of 20 years (WHO, 2015; WHO, 2017).

With decreasing fertility, there will be significant changes in population structure towards aging in all countries. These demographic changes will have profound implications for individuals and societies. The decline in physical and mental capacities at a later age can have negative effects on people and societies. Longitudinal studies show that disability problems in developing countries are more prevalent than in more developed countries. The elderly people's being able to make a positive contribution to the family and the society they live in depends mostly on them being healthy. Inadequate health services should not limit elderly people's competences. For this reason, any social planning needs to be made considering that the demographic structure will change towards the elderly population in the next 50 years.

The quality of life of people who experience a decline in their capacity can be increased through appropriate health care and environmental regulation.

Increasing the elderly's competencies, supporting them with supportive environments and integrated care systems, provide that they sustain a dignified life and maintain their personal development. Unfortunately, many older people nowadays live in rather poor health environments. The health problems faced by the elderly are often related to their health behaviours or chronic diseases with deferred treatments that they have in life. When diagnosed and treated early, chronic diseases can be prevented before causing significant impairments.

In the last 20 years important steps have been taken to protect and develop the rights of the elderly. Many international human rights conventions emphasize that elderly people and the disabled have the right to protection from discrimination, to health, to social security and adequate living standards, and to protection from exploitation, violence and abuse.

The health-related items featured in the international action plan published at the 2nd Aging Conference in Madrid in 2002: to promote health and well-being throughout life; providing universal and equal access to health services; providing services suitable

for aged people with HIV or AIDS; provide training services; meeting their physical and mental health needs; provide appropriate services for disabled elderly people (in relation to health priority); providing care and support for carers; and protecting older people against neglect, abuse and violence (WHO, 2015). World report on aging and health has re-addressed outstanding headlines in the 2002 Madrid report. As it is understood from these materials, it is emphasized that elderly individuals with disabilities due to various reasons and the care needs of the elderly who have difficulties in maintaining their lives independently are emphasized. The World Health Organization (WHO) policy framework identifies six key determinants of active ageing: economic, behavioural, personal, social, health and social services, and the physical environment. It recommends four components necessary for a health policy response:

- prevent and reduce the burden of excess disabilities, chronic disease and premature mortality;
- reduce risk factors associated with major diseases and increase factors that protect health throughout the life course;
- develop a continuum of affordable, accessible, high-quality and age-friendly health and social services that address the needs and rights of people as they age; (WHO, 2015).

Since the 1990s, the World Health Organization has been issuing a call for the subject that the countries with a drawn attention to the aging population to take measures to meet the health needs of this population and to increase their quality of life. In the last 2 decades, active and healthy aging and elderly friendly health care have been emphasized. In October 2015, in the World Report on Ageing and Health that WHO released, it is emphasized that every health professional and expert should have knowledge about aging and related issues. In the health system-related chapter of the report, issues related to inadequate compliance of increasing demand with handicaps and services, and issues related to the management of financial and human resources required for long-term elderly care were analyzed. This report provides examples of health services accessible to the elderly (Dey, 2017).

DEFICIENCY

Deficiency is a part of being human. Almost everyone has difficulties in fulfilling their survival skills temporarily or permanently at some point in their life. On the other hand, in most of the families there are individuals with disability or there are individuals who have taken over the responsibility of caring for the persons with disability. Societies have always had to deal with ethical and political issues such as caring for the disabled individuals and integrating them into daily life. People face more disability in later life. Studies show that as the demographics of societies change, and the proportion of elderly population increases, the problem of disability will become more acute (WHO, 2011).

Disability is a complex, multidimensional experience with various difficulties in measurement. Approaches to measuring or assessing disability differ from country to country. Operational disability data differs according to the purpose and implementation of data, on the concept of disability, on the aspects of disability examined, on functional limitations, on participation restrictions, on relevant health conditions, environmental

factors, definitions, question design, reporting sources, data collection methods and process expectations.

While disability types are often defined with one aspect of disability (e.g. physical, mental, emotional, intellectual disability), environmental and health conditions are also associated with disability. On the other hand, even if it is in this classification, people with the same inadequacy may have very different experiences, disabilities and needs. People with the same impairment can experience disability in very different types and at different restriction levels. The data about all aspects of disability and related factors are important to create a complete picture of disability and functionality. It is difficult to determine the extent of disability without knowing how certain health conditions interacting with environmental obstacles and facilitators affect people's daily lives (WHO, 2011).

Defining disability is difficult and controversial. Disability is an umbrella term that describes the limitations of physical and cognitive dysfunctions in participation in social environmental activities. Disability is a condition with psychological and social aspect as well as a health aspect and defines conditions that cause biopsychosocial limitation of the individual. Often it is assessed by the person himself or herself notifying the basic daily life activities (movement, self-care) and the instruments used in everyday life (instrumental life activities such as preparing meals, shopping, making phone calls, making monetary transactions, taking medicines) (Yiğitbaş & Deveci, 2016) .

The ICF (İnternational *Classification of Functioning, Disability and Health*) adopted as the conceptual framework for this *World report on disability*, understands functioning and disability as a dynamic interaction between health conditions and contextual factors, both personal and environmental (WHO, 2011).

In ICF, human functioning problems are categorized into three interconnected areas:

- Impairments - problems with body function or problems such as related to disorders in the body structure – e.g. paralysis or blindness;
- Activity limitations, difficulties during the execution of activities – e.g., walking or eating
- Participation limitations are problems related to being involved in any social aspect of life - for example, discrimination in employment or transport.

The disability experience resulting from the interaction of health conditions, personal factors and environmental factors varies greatly. Impairment may result due to congenital disability of vision or hearing, a later-lost organ or function disorder, a chronic disease or dementia due to old age. There is a dynamic relationship between personal and environmental factors, the health status of the individual and the independence and disability associated with it. Deficiency depends on the individual and environmental characteristics of the person with a role in the individual's participation in active life, as well as the characteristics of the bodily functions and structural losses when a health problem occurs.

In the 1980s, the WHO has assessed the disability as a part of the process of measuring the effects of permanent and chronic diseases on the body. The *International Classification of Impairments, Disabilities and Handicaps* (ICIDH), developed in the 1970s, was issued by the World Health Organization in 1980 as a tool for the classification of the consequences of disease (as well as of injuries and other disorders)

and of their implications for the lives of individuals. The listing of the classification items has allowed a better description and facilitated the assessment of people with disabilities and of their situation within a given physical and social environment.

In 1980, The WHO explained the effects of diseases roughly within the context of disease-impairment-disability-handicap relations. In this context, three stages have been mentioned to evaluate the effects of permanent and chronic diseases.

1. Impairment: Occurrence of impairment and abnormality in psychological, physiological and anatomical integrity at the level of systems in the body.

2. Disability: Status of not being able to execute a function regarded as normal for a human being due to functional limitations that occur at the bodily level

3. Handicap: Reflects the inadequacy and maladaptation of the individual with his/her environment he/she lives in and his/her social roles due to impairment and disability (WHO, 1980; Yiğitbaş & Deveci, 2016).

"Disability Process Model" was developed by Verbrugge et al. (1994) on the basis of disability process, the diagram in International Classifications Impairment, Dissemination and Health (ICIDH) developed by WHO (1980) and this notion.

The relationship between the concepts of illness, discomfort, disability and deformity has been shown only in the ICIDH diagram. In Disability Process Model, it is seen that daily life activities in case of an acute and chronic disease, basic physical and mental movements, also, inadequacies in the realization of the related body system roles and social roles, personal and environmental factors accelerating or slowing down the disability process are included.

Several conceptual models have been proposed for understanding and explaining disability and functioning. One of them is the "medical model" and the other is the "social model". The medical model describes disability as a problem that requires professional medical care, which is caused by direct illness, trauma or other health condition. In this model, disability management aims medical treatment, or individual's adaptation and behaviour change. Restructuring health care policies in medical care and in providing this care is seen as a fundamental problem. On the other hand, the social model of disability sees the issue as mainly a socially created problem and a total of complex situations of which many were created by social environments. For this reason, management of the problem requires societal action and it is the collective responsibility of the community to make necessary environmental changes so that disabled people can participate in all spheres of social life (WHO, 1980; Yiğitbaş & Deveci, 2016; Oliver, 2013).

ICIDH-2 is a "biopsychosocial" approach based on the integration of these two opposing models in the assessment of disability (WHO, 2001).

DISABILITY IN OLD AGE

Old age is a life period that requires long-term care support due to many physiological motor and psychic regressions.

The elderly person needs to acquire knowledge and skills related to loss and illnesses in order to accept the changes that take place in the lifestyle and to fulfil self-care needs.

Aging is a process in which one experiences complex changes that affect the entire organism. This process causes some physiological, anatomical changes in the person.

At the biological level, the formation of a wide range of molecular and cellular damage causes a gradual decrease in physiological reserves, increased risk for many diseases, and a decline in overall capacity. Depending on these changes in old age, the risk of getting diseases is high. The number of elderly people who are exposed to more than one chronic illness and who need health care and help due to these diseases increase. Chronic diseases increase the dependency of older people in their daily life activities and affect their quality of life negatively. As the cognitive functions of elderly patients are impaired, their daily life activities regress, their nutrition is impaired and the capacity of doing independent work is negatively affected. In addition to their biological losses, older people are also faced with the problem of changing social roles and positions**.**

While some elderly people experience difficulty in adaptation to these changes, some elderly people show a psychosocial development related to a new point of view and social understanding. Strategies should be developed to strengthen integration and psychosocial adjustment while developing public health strategies related to aging (Akça *et al.*, 2014; Özbek Yazıcı & Kalaycı, 2015; WHO, 2017**).**

In our country, it was determined that 90% of the elderly people aged 65 and over has a chronic disease and 35% of them has 2, 23% of them has 3 and 14% has 4 and more diseases exist together.

1. Capacity of fulfilling the Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL) are significant criteria in determining the disability level of the old individual. ADL are the skills related to physical ability of walking, moving, nutrition, being able to meet toilet and bathing needs and being able to change position in the bed or while sitting. IADL are the activities expressing the level of individual's ability to manage his/her money, to drive or provide transport, to clean and care for the house, to cook, to use the right medication, to use communication tools and requiring complex cognitive adequacy of the individual for being able to live in the society. Difficulties with ADLs and IADLs often correspond to how much help, supervision, and hands-on care an older person needs. While IADL performance is sensitive to cognitive decline, ADLs do not occur unless dementia occurs.
2. In general, older adults should be able to manage ADLs and IADLs so that they can live independently without the help of another person (Karnisan, 2017; (Mlinac & Feng, 20016).
3. The individual may be able to fulfil the ADL with a small reminder or he may require full support of others to complete the activity. If a person is not completely independent in their daily living activities, the amount of help required needs to be assessed. Problems with ADLs and IADLs usually reflect problems related to physical health and/or cognitive health. Defining functional challenges can help us diagnose and manage important health problems.

The comprehensive determination of deficiency status in daily living activities (ADL) and instrumental daily living activities (IADL) will contribute to the planning of the health services that the individual should receive. Increased age is related to disability and dependence on individual base, advancing age is related to disability and dependence in ADL. Dependence and disability lead to deterioration of quality of life, increase of health expenditure and mortality rate. Disability determinants vary according to the individual and the environment. Ensuring independence in ADL and

IADL is of great importance in the elderly. The increasing rate of elderly population suggests that individuals with ADL and IADL disability will also increase. The rate of dependency will increase. ADL/IADL ranges from 11% to 49%. Appropriate health care and the use of some auxiliary devices can reduce people's dependence and disabilities. Identification of specific factors that affect disability reduces the risk or experience of loss of function of individuals (Connolly *et al*., 2017).

In another study, it was found that 6.3% of the elderly were fully dependent in ADL and 8.4% in IADL, and 15.7% were semi-dependent in ADL and 25.3% in IADL (DPT, 2007; Şahbaz &Tel, 2006).

Chronic diseases most affecting elderly population in the world are; hypertension, stroke, diabetes mellitus, cancer, chronic obstructive pulmonary disease, musculoskeletal diseases such as arthritis and osteoporosis, cognitive and mental health problems such as dementia and depression (WHO, 2008). In the studies, the number of chronic diseases increases with age. In the author's study, it was determined that 36% of the elderly has a chronic disease, 28,4% has more than one chronic disease, 19,6% uses 5 and more daily medications. It was seen that 28,4% of the elderly are fully dependent in going to toilet, 26,5% are fully dependent in bathing, 36,3% are semi-dependent in bathing, 28,4% are semi-dependent in personal care, in auxiliary daily activities, with the highest rate of 41,2% are fully dependent in cleaning. It was seen that dependence increased in females and in elderly people over 75 years old **(**Özbek Yazıcı & Kalaycı.2015).

In Olgun's study, it was determined that 61% of the elderly has one than one chronic disease such as diabetes, heart disease, 63% were operated on at least once, 84% has drugs used constantly, 71% experiences walking problems associated with muscle weakness and other musculoskeletal problems, 59% experiences more than one neurological problem particularly acedia, headache, dizziness, 65,6% experiences more than one cardiovascular system problems particularly oedema, nocturia and fatigue.

In a study conducted in India, the health problems most common among elderly are found to be 8,3% visual disability, 29% cataract, 63,1% hearing disability, 52% depression, 49,6% anaemia, 44,7% arthritis, 30,7% hypertension, 32,6% dental problems, 1,5% Parkinson's disease. In the study sample, 3.19% had an episode of paralytic attack, 7.6% of the elderly population reported Ischemic Heart Disease stroke (Thakur *et al*., 2013). In another study, disability and depressive symptom scores were high in the elderly with chronic diseases. It has also been found that depressive symptoms are increased in addicts, women, those with poor economic status, those who live alone and those with increased age (Tel *et al*., 2014).

Malnutrition, sarcopenia and falls are situations that cause disability in old age. Malnutrition may cause decreased muscle strength, deteriorated joint mobility, decreased bone density, susceptibility to infections, decreased maximal ventilation strength, decreased cardiac pulse volume by affecting the cardiovascular system and decreased cognitive functions by affecting the nervous system with B12 vitamin deficiency.

Falls are the leading cause and result of disability in old age. More than 1/3 of the elderly fall every year, and in half of them, falls are repeated. Muscle weakness, fall history, walking problems, balance problems, auxiliary device use, arthritis, depression, orthostatic hypotension, cognitive disorders, visual problems, deterioration in daily

living activities and polypharmacy are the factors causing fall. In particular, serotonin reuptake inhibitors, tricyclic antidepressants, neuroleptic agents, benzodiazepines, anticonvulsants, antiarrhythmic agents, digoxin, alfa blockers and diuretics are the agents associated with fall. Especially diuretics and alfa blockers increase risk of fall by causing orthostatic hypotension. Major complications such as fractures and intracranial haemorrhage may develop as a result of fall. Even if these complications do not develop, movement restriction and depression may occur due to fear of falling.

Sarcopenia has been described as a loss of muscle strength and function with a widespread and progressive decrease in skeletal muscle mass. Some anatomic and histological changes in the muscles in old age lead to the development of sarcopenia. The frequency of sarcopenia increases with aging. It has been associated with such muscle loss, fragility, increased tendency to fall, loss of independence, decrease in respiratory functions, decrease in immunity functions, deterioration in quality of life and increased risk of death (Keskinler *et al*., 2018).

CARE REQUIREMENT IN ELDERLY WITH DISABILITY

Risk factors for elderly disability are divided into those that cannot be changed and those that can be changed. Factors such as age, gender, and genetics are factors that cannot be changed. The factors that can be changed are classified as individual factors (age-related diseases, disorders, limitations, weak coping strategies, immobility, harmful habits) and environmental factors (such as social support systems). In addition to all these factors, the quality and quantity of social support systems in disability are also important (Yiğitbaş & Deveci, 2016).

Elderly and disabled individuals are entitled to benefit equally from and access to health care. According to the study that is being conducted since 2010 in the United Kingdom on health inequality, it was found that older people living in areas with higher economic levels lived on average 6 years longer than those living in poorer areas, and handicap-free life expectancy were found to be higher. Although people living in poor neighborhoods have the risk of experiencing more disability in spite of their lesser life periods, they do not have the resources and facilities to remove or reduce their limitations. While the expected age is 77 years for those who live in places with good facilities, the life limit expectancy of the elderly living in places with insufficient facilities is 68. Health policies that support elderly according to chronological age limits will cause people who need it earlier to suffer (WHO,2015).

Among the important obstacles that elderly individuals face is accessibility of their health needs. Despite the increasing health problems and risks in old age, many elderly individuals are unable to access health services at adequate levels and quality. In addition to the lack of specialist health personnel, the fact that the elderly is inadequate in economic and mobility opportunities is the reason why elderly is unable to receive adequate health care. Due to problems such as Alzheimer's, dementia, depression and negligent and prejudiced attitudes of health workers towards the elderly, the health problems and disability of the elderly cannot be diagnosed early, they cannot get treatment, care and support (UN, 2018).

For example, in 2015 it was estimated that in one of France’s biggest hospitals, 20% of all patients older than 70 were significantly less able to perform the basic tasks necessary for daily living at the time of discharge than they were when they entered the

hospital. Yet the presenting condition accounted for this fall in ability in less than half of these cases. In the others, the decline in functional ability related to limitations in the care that patients had received. In 80%, the problem was preventable, usually through the use of easy and affordable alternative care models, such as encouraging mobilization or by better managing incontinence (WHO, 2015).

There is a need to integrate elderly care into the universal health care system to solve complex health problems that arise in old age. Elderly people need long-term care at home or in the hospital. Long-term care for elderly with decreasing family support should be a challenge for health systems. Countries are expected to develop best practices within their economic and cultural characteristics. In this context Resolution of the Second UN General Assembly on Ageing, or Madrid Declaration and Madrid International Plan of Action on Ageing made an emphasis on society for all ages. The WHO has popularized the concept of age friendly environment starting with the concept of age-friendly healthcare. Several cities in the world have declared themselves as age friendly cities (Dey, 2017). Nurses have the function of providing independence of patients. In ADL/IADL, in order to increase the independence of the fully or semi-dependent elderly, nurses may consult and support the care of elderly. According to Orem, nursing is to help individuals with disability in participating the medical care and meeting their self-care needs and that need help in meeting their own needs or to teach an individual providing care or needing care how to provide care (Çelik, *et al*., 2016).

As discussed above, age progression, increase in the number of chronic diseases and the number of medications used, depression and inadequate environmental arrangements cause an increase in disability in the elderly. Nurses may be involved in the evaluation, monitoring, care, rehabilitation and counselling of elderly people who are either treated or cared for in an institution, or who receive care are at home or who receive the support of a carer and who experience disability (Yıldırım *et al*., 2012; Yiğitbaş & Deveci, 2016).

CONCLUSION

In order to reduce the disability of the elderly and increase their quality of life, it is important to detect and eliminate diseases or illnesses early and to take precautions against accidents in places where they live. The elderly, carer or family should be assisted in the treatments continuing at home, in use of drugs and supportive devices, in balanced nutrition, in meeting their daily care requirements. Health and social support professionals need to work in coordination and cooperation in order to provide contact with helping social and health care providers when needed.

REFERENCES

Connolly, D.; Garvey, J. & McKee, G. (2017).Factors associated with ADL/IADL disability community dwelling older adults in the Irish longitudinal study on ageing (TILDA). Disability and Rehabilitation 39(8), 809–816 https://doi.org/10.3109/09638288.2016.1161848

Çelik, A. &Yıldırım. (2016).Orem Öz Bakım Eksikliği Hemşirelik Kuramı'na Göre Vazovagal Senkop'u Olan Hastanın Hemşirelik Bakımı: Olgu Sununu. Journal of Cardiovascular Nursing (14), 182-186

Dey, A. B. (2017).World report on ageing and health, Indian J Med Res.145(1), 150–151. doi: 10.4103/0971-5916.207249 PMCID: PMC5460566

Keskinler, M. V; Tufan, F. & Oğuz, A. (2013).Geriatrik Sendromlar Okmeydanı Tıp Dergisi 29 (Ek sayı 2), 41-48, 2013 doi:10.5222/otd.supp2. 2013.041 https://www.researchgate.net/publication/272995630_Geriatric_Syndromes

Olgun, N.; Eti Aslan, F.; Yücel N.; Kan Öntürk, Z., Laçin, Z. (2013).Yaşlıların Sağlık Durumlarının Değerlendirilmesi .Acıbadem Universitesi Sağlık Bilimleri Dergisi 4(2), 72-78

Oliver, M. (2013).The social model of disability: thirty years on. Journal Disability & Society 28(7), 1024–1026 https://www.tandfonline.com/doi/full/10.1080/09687599.2013.818773

Özbek Yazıcı, S. & Kalaycı I. (2015). Yaşlı Hastaların Günlük Yaşam Aktivitelerinin Değerlendirilmesi. Süleyman Demirel Üniversitesi Mühendislik Bilimleri ve Tasarım Dergisi. ÖS: Ergonomi 3(3), 385-390, 2015.ISSN: 1308-6693

Thakur, RP.; Banerjee, A. and Nikumb, V.B. (2013).Health Problems among the Elderly: A Cross-Sectional Study. Ann Jan-Mar 3(1), 19–25. doi: 10.4103/2141-9248.109466 PMCID: PMC3634218 PMID: 23634324

Tel, H.; Tay, B. N.; Canbay, M., Akaya, İ. (2014), Yalçınkaya S. Kronik Fiziksel Hastalıklı Yaşlılarda Yeti Yitimi ve Depresyon. F.N. Hem. Dergisi 22(2), 69-75, ISSN 2147-4923

Yiğitbaş, Ç. & Deveci, E.S. (2016).Halk Sağlığı Açısından Yaşlılarda Yeti Yitimi.Bakırköy Tıp Dergisi/ Medical Journal of Bakırköy 12(2), 57-63

Yıldırım, B.; Özkahraman, Ş., Ersoy, S. (2012). Yaşlılıkta Görülen Fizyolojik Değişiklikler Ve Hemşirelik Bakımı. Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi 2(2),19-23 ISSN: 2146-443x

World Health Organızatıon (1980).Geneva. International Classification of Impairments, Disabilities, and Handicaps. A Manual Of Classification Relating To The Consequences of Disease Http://Apps.Who.İnt/İris/Bitstream/Handle/10665/41003/9241541261_Eng.Pdf Jsessionid=C9e1c760b0288702207c70b6a9ff3319?Sequence=1

World Health Organization (2015). World report on ageing and health: Geneva, Switzerland. 246. Not mentioned. ISBN 978-92-4-1565042.

World Health Organization (2017) Global strategy and action plan on ageing and health http://www.who.int/ageing/WHO-GSAP-2017.pdf?ua=1).

World Health Organization (2011) .World report on disability 2011.http://www.who.int/disabilities/world_report/2011/report.pdf

World Health Organization (2001).İnternational Classification of Functioning, Disability and Health Classification, Assessment, Surveys and Terminology Team .FINAL DRAFT Full Version World Health Organization Geneva, Switzerland https://unstats.un.org/unsd/disability/pdfs/ac.81-b4.pdf)

UN (2018).Department of Economic and Social Affairs programme on ageing Health Inequalities in Old Age https://www.un.org/development/desa/ageing/wp-content/uploads/sites/24/2018/04/Health-Inequalities-in-Old-Age.pdf

DPT (2007). Türkiye'de Yaşlıların Durumu Ve Yaşlanma Ulusal Eylem Planı Sosyal Sektörler ve Koordinasyon Genel Müdürlüğü 2007 Yayın NO DPT: 2741 http://eyh.aile.gov.tr/data/544f6b29369dc328a057d006/yaslanma_ulusal_eylem_plani.pf

Chapter 41

A Baby Friendly Approach to Complementary Nutrition

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INTRODUCTION

Healthy nutrition, which is important in every phase of life, starts in the womb for children. In the first two years of life, when growth and development is very fast, it gains even more importance. The period of life from birth to the second birthday is a critical period when growth and development is rapid and a healthy lifestyle is first established. Nutrition in this period forms the basis not only for growth but also protection from diseases, psychosocial, motor, and cognitive development. When there is a flaw in any of those processes, problems in the nutritional process of the baby develop. In the development of eating disorders, the inappropriate presentation of present foodstuff to children is as responsible as the lack of foodstuff. The basis of nutrition in the first years of life is breastfeeding for the first 6 months. In babies of 6-24 months of age, the basis of nutrition shifts to complementary nutrition as an addition to breastfeeding.

Complementary Nutrition

In the first two years of life, named the critical period, family, environment, and nutrition carry great importance for the baby. A healthy baby should be breastfed for the first half of the first year and then start to take complementary foodstuff. Complementary foodstuff should not replace but complement breastfeeding. In the nutrition of babies in the first two years of life, the term "Complementary Feeding" was accepted by the World Health Organization (WHO) instead of the term "weaning". The weaning period was stressed to be the period when breastfeeding is gradually abandoned to be replaced by complementary feeding. However, the continuity of breastfeeding for the first two years of life was supported and the complementary foodstuff was supported as complements. For this reason, the term weaning left its place to the term complementary feeding, which was accepted by the WHO. In complementary feeding, complementary foodstuffs are additions to breastfeeding.

Since 2001, the WHO has introduced recommendation on complementary foods at the sixth month of life. Although the WHO recommendation addresses all countries, advisory bodies in industrialized countries continue to recommend an age range for introduction of complementary foods. The European Society of Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) support sex clusive or full breast-feeding for about 6 months as a desirable goal and recommends that complementary feeding (i.e. solid foods and liquids other than breastmilk or infant formula and follow-on formula) should not be introduced before 17 weeks and not later than 26 weeks. The American Academy of Pediatrics recommends that solid foods

should not be introduced before 4 to 6 months of age.

The complementary feeding period is a critical period with regard to optimal health (micronutrient lack, childhood group diseases), optimal growth, and behavior development. In child and adult age groups, minimal disease risk and spectrum is also closely related to optimal feeding. According to data from UNICEF (2015), the rate of yearly deaths under the age of 5 is 5.9 million, with 16 thousand children dying a day, with 83% of those deaths being closely related to infections, neonatal reasons, and nutritional conditions. Thus, in the prevention of nutrition related deaths, the provision of appropriate and timely feeding and the improvement of feeding conditions come forefront. The WHO has formed the principles of optimal feeding for 0-24 month children as follows:

- Breastfeeding within the first hour after birth
- Efficient breastfeeding for the first 6 months
- From 6 months to 24 months and beyond, continued breastfeeding and appropriate and sufficient complementary feeding transition

The complementary feeding process is a process started when breastfeeding won't be sufficient to meet the nutritional needs of the child alone for long where other food and beverages are presented alongside breastfeeding. These foodstuffs should contain more nutrients than breast milk alone can offer. Appropriate complementary feeding is ensured with timely, high quality, and correct feeding safely and with joy (Figure 1).

Appropriate timing in Complementary Feeding

Although the most appropriate time suggested for transition to complementary feeding for babies being breastfed is the 6th month (180 days), when there is need for more energy and nutrients than breast milk can provide, the time when the energy and food insufficiency needs to be overcome is the most appropriate time for transition. Breast milk alone is sufficient until the 6th month to stimulate growth and development. After 6 months, breast milk alone can't provide the necessary energy and nutrients. Complementary feeding is started after the 6th month, after there is an energy and nutrient insufficiency, and after the baby is ready for other foods.

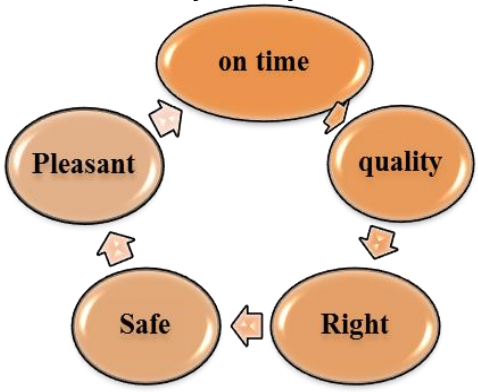

Figure 1. The effective feeding cycle in complementary feeding

If the baby has started holding objects and mouthing and chewing on everything, if the baby's teeth have stemmed, and his/her inclination to push away solid objects is

decreased, the baby can be considered ready for transition. In complementary feeding, which is started when the baby is ready, locally found and easily home prepared foods should be presented to the baby timely and according to the baby's development phases. The term waning should be avoided in complementary feeding. Some families see the complementary feeding transition phase as the phase of cutting the baby off from breastfeeding.

According to the WHO and other organizations, there are differences between the reported appropriate times for transition to complementary feeding. According to the WHO, the most appropriate time is the 6th month while according to the ESPGHAN it is around the 6th month, not before the 17th week and not after the 26th week, and according to some developed countries, it is between the 4th and 6th months. The smart move in complementary feeding is waiting for the 6th month if growth is sufficient with breast milk alone. The main reason for waiting until the 6th month for transition to complementary feeding is GIS maturation (digestion-absorption is insufficient before 4 months, programmed to breast milk, inclination for allergies to other foodstuff), Renal maturation (protein final products, mineral elimination, power), and neurological maturation (sitting straight, head control, tongue control, chewing).

When complementary feeding is started before the 17th week, problems such as increased renal solute load, increased risk of obesity, malnutrition, infection predilection, and increased risk of allergies can be encountered. Alongside this, when complementary feeding is started after the 26th week, problems such as slowed growth, malnutrition, lack of vitamins/minerals, problems getting used to different tastes, and delays in chewing skills may be encountered.

Frequently made erroneous approaches to transition to complementary feeding at the appropriate time

The greatest mistake made in transition to complementary feeding is the mother thinking that the baby goes hungry and that breast milk alone is not sufficient. In cases such as the baby reaching for food and starting to grow teeth, the mother may think that the baby is going hungry and that the transition to complementary foodstuffs should start. Some families want to give complementary foodstuffs before the 6th month to accustom the baby to different tastes. When foodstuff is presented early, it was often seen that the desire of the baby to eat that certain food later in life disappeared and the baby rejected the food.

In babies that wake up at night often or don't fall to day sleep right after breastfeeding and go to play, some parents may prefer to start complementary feeding early with the thought that breast milk is insufficient. In the presence of problems in sleep transition, the family should review approaches to sleep transition.

Appropriate quality and correct nutrition in complementary feeding

Feeding at an appropriate quality occurs with foodstuffs given alongside and not instead of breast milk. Complementary foodstuffs at the appropriate quality should be prepared at the right composition and soft, and be foodstuffs that are easy to digest, easy to locally find, with nutritional ingredients that the family can culturally accept, easy to prepare at home, and diverse.

The first foodstuffs to be given in complementary feeding should be, appropriate to the developmental age of the baby, easy to digest and high in nutritional value. The

first foodstuffs should be started with small amounts and should be increased according to the needs appropriate for the age of the baby. The amount of foodstuffs to be used in complementary feeding should meet the daily energy requirement of the baby, and should be an amount appropriate for the stomach capacity of the baby. The stomach capacity of babies are approximately 30cc (2 dinner spoons) at birth, 180cc (1 tea cup) at 6 months, 240cc (1 cup) at age 1, and 960cc (1 jug) in adults. Generally, stomach volume is accepted to be 30cc/kg. The small stomach capacity should be taken into consideration and instead of feeding profusely with what was prepared, attention should be given to preparing the foodstuffs correctly and high quality.

The main goal in complementary foodstuffs being easily reached and prepared is to ensure the sustainability of complementary feeding. In order to make complementary feeding sustainable, it is important to prefer easily found foodstuffs that can be prepared at home and avoid instant baby food as much as possible.

The food groups that should be present in foodstuffs that are prepared to ensure the feeding of the baby at generally the highest quality are wheat, legumes, fruits and vegetables, fruit juice, animal products, and dairies. Since they inhibit iron absorption, tea and coffee should be avoided. Since they have no nutritional value, sodas should be avoided, and since they may cause loss of appetite, high sugar beverages should be avoided as well.

In ensuring the variety of nutrients in the food groups presented, especially in the first months, the "meal balance" should be taken into consideration. Meal balance means each food group being represented at each main meal. Instead of giving from different food groups in the day, different food groups should be added foods prepared for a single meal.

In transition to complementary foods, another factor as important as transition time and food content is the rate of breast milk to complementary foods. In the 6^{th} to 8^{th} months, the daily nutrition of the baby should be 2/3 breast milk and 1/3 solid foods, with the total amount of daily solid food not exceeding 2 tea cups. In the 9^{th} to 12^{th} months, the daily nutrition of the baby should be 1/2 breast milk and 1/2 solid foods, with the total amount of daily solid food not exceeding 3 tea cups .

The texture of the complementary foods at appropriate quality should be selected according to the age of the baby. Mushed foods should be given at 6 months, chunky at 7, finger foods at 9months, and family foods at 12. A blender should not be used in the preparation of the foods and knobby foods should not be given until the 10^{th} month. The texture of the foods not being appropriate for the developmental age can create eating disorders. Chunky foods at 6-8 months pave the way for insufficient nutrition and mushes after the 10^{th} month lead to obesity.

The nutrition of babies and children should be evaluated as a whole in any given 24 hours. The frequency, texture, and nutritional value of foods given within a day should be considered. The facts that taking too many calories in a meal can cause loss of appetite in others and that consuming much of a food group (cow milk, juice, fats) can decrease the consumption of others should be taken into consideration.

Safe Feeding in Complementary Feeding

In transition to complementary feeding, the safe and hygienic preparation of foods is as important as the other elements of complementary feeding. Safe feeding does not only mean washing foodstuff well. During the preparation of foods, the hand hygiene

and the cleanness of the utensils used is very important. For babies not fully developed, unsafe feeding may cause widespread health problems such as diarrhea. In developing countries, it has been demonstrated that the contaminations stem from complementary foods instead of drinking water, with foods being a greater source for the spreading of diarrhea. Diarrhea is frequently seen in children 6 to 12 months old, and is easily prevented by preventing microbial contamination during the preparation of foods.

Through the cleanness of prepared foods, their clean storage, and the cleanness of the utensils used, infection and possible disease risks can be removed. The use of feeders that haven't been completely cleaned is not recommended even for liquid feeding. There are many studies confirming increased risk of infection by feeder use. Because of non hygienic feeding, compromises from nutrition, risk of contagious diseases (especially diarrhea), and loss of parent self confidence in such a way to prevent delays in complementary feeding may occur.

In many cultures, hand eating is prevalent. With the feeding method named feeding with finger foods, children can be given solid foods they might hold with their hands and chew. Since foodstuffs with shells have a risk of aspiration and suffocation, they shouldn't be given. Taking into consideration that children may put into their mouths what they can grasp, environmental cleanness should be ensured.

Beside microbiological contamination from feeding, the chemical contamination of foodstuffs is also possible. In order to avoid or minimize chemical contamination, it is important to eat fruit and vegetables in season and avoid packaged goods. For this reason, it is suggested to prepare every complementary foodstuff to be given to children at home (such as yogurt, fruit juice, soups). The five factors in food safety stressed by the WHO are: keep clean, separater awand cooked, cook thoroughly, keep food at safe temperatures, use safe water and raw materials.

Sensitive and Joyful Feeding in Complementary Feeding

Transition to complementary feeding is an important step for the baby, who is meeting foodstuffs for the first time, and psychosocial problems encountered in this period can affect the growth and health of the child later. For this reason, in feeding the child's emotions should be taken into consideration and feeding habits should be given slowly, with patience, without forcing, and by trying different tastes. In order to achieve this, sensitive and joyful feeding should be accomplished.

Sensitive feeding has been defined as a feeding style formed together with the child and either parent or the caregiver. When the child is left alone to eat, he/she should be encouraged to eat alone. In small children that don't eat enough themselves, food intake can be increased. UNICEF has defined sensitive feeding as the active presentation of complementary foodstuffs. The principles of sensitive feeding according to the WHO have been given in table 1.

With sensitive feeding, babies are fed in environments they can control and in which they are supported. The type, amount, content, and timing of the foodstuffs that the baby will eat are selected with the cooperation of the mother and the child from among the healthy foods that are suggested or can be reached. During feeding, the baby is in communication with the caregiver, and this ensures that feeding time develops as a joyful occasion. Joyful feeding is provided by catching clues for hunger and fullness, encouraging feeding, ensuring participation in feeding, and giving responses that are emotionally supportive and developmentally appropriate. In order to ensure this,

feeding should be encouraged by trying with different food/taste/texture combinations in case of food refusal, decreasing environmental stimuli if attention is quickly lost, and speaking eye to eye by teaching that meals are a time for love and learning. Joyful feeding is important with regard to obesity prevention and health implications.

Table 1. Sensitive nutrition in Complementary Feeding

Responsive feding Feed infants directly and asisst older children when they feed themselves. Feed slowly and patiently, and encourage children to eat, but do not force them.
If children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement.
Minimize distractions during meals if the child loses interesteasily. Remember that feding times are periods of learning and love-talk to children during feeding, with eye-to-eye contact.

From an obesity prevention perspective, it is ensured by a comfortable sitting position, face to face messaging, with healthy and developmentally appropriate foods, and by planning for hunger. With a health perspective, joyful eating is ensured by helping elders and feeding younger ones, being slow and patient, and by encouraging and not forcing. The main issue in joyful feeding is encouraging feeding with the initiative of the baby and thus providing correct and effective nutrition.

Feeding with the Initiative of the Baby in Complementary Feeding: BLW (baby led weaning)

This is defined as, contrary to traditional feeding, an alternative feeding style that encourages the baby and the mother for feeding and ensures that the baby takes pleasure from feeding. Baby led weaning (BLW) is a baby friendly alternative feeding style where instead of mushed spoon foods presented at the transition to complementary feeding, babies feed themselves with pieces of, preferably, family food. The foodstuff presented with BLW consist of food pieces that babies can hold and would not have difficulty eating themselves.

Even though the effectiveness of BLW has been mentioned in studies, many health experts mention its disadvantages including suffocation, iron deficiency, and insufficient energy intake. Since there is not enough evidence on the advantages and limitations of BLW, there are concerns. Increased risks of iron and micronutrient deficiency and aspiration, as well as slowed growth are among its concurred disadvantages. Despite those, BLW has increasingly become preferred for advantages such as decreased risk of obesity, better food quality, positive effects on the eating behavior of the family, and support for motor development.

Traditionally, parents start to feed their babies mushed food approximately around the 6^{th} month. At 12 months, they start the transition to family foods. In BLW, the six months after birth are considered the preparation phase for feeding. The process after the 6^{th} month is named the BLW starting phase. In the starting phase, the baby is fed with only breast milk, but is encouraged to discover foods. First, as a result of the baby learning self feeding skills, food is presented as “held” finger foods. Then, transition

between foods is performed according to the preferences of the baby. In this phase, a slow transition to weaning starts.

The key features of BLW are:

- ✓ Milk feeding – the infant will ideally be exclusively breastfed until 6 months of age, although it is acknowledged that so me infants will be formula fed. When complementary feedings tarts (once the infant is ready, at around 6 months of age) the infant continue storeceive milk feeds (breast milk or infant formula) on demand.
- ✓ Baby-led – the infant self-feeds from the beginning of the complementary feding period. Generally speaking puréed food sare not eaten because they need to be spoon-fed and therefore fed by someone other than the infant. Some families may offer the child utensils so that they can feed themselves purées or foods with a thin consistency (e.g.,yoghurt and custard) but this is unlikely in the first few months for developmental reasons.
- ✓ Family foods – the infant is offered the same foods as the family but as finger food that is large enough for them to pick up. The sepieces can get smaller with increasing developmental age.
- ✓ Meal times – the family eats together at meal times.

The mother's involvement in BLW is more passive. The participation of the mother in feeding occurs not as forcing the foods to the baby but as presenting them to the baby. Through joyful feeding, food refusals and psychosocial problems related to feeding occur less. Since feeding is left to the initiative of the baby and the baby's participation is encouraged, meal time is a pleasurable time for the baby.

As a result, the first two years after birth constitute an important period for optimal growth and development. Insufficient nutrition in this period is an important cause for mortalities and morbidities. The baby should only be breastfed for the first 6 months, and after the 6th month, breastfeeding should continue until the end of the 2nd year alongside starting complementary feeding at an appropriate time. Appropriate and timely complementary feeding should be presented to babies correctly, sufficiently, safely, and at high quality. Sensitive feeding should be performed, and meal times should be pleasurable for the baby and the mother.

REFERENCES

Agostoni, C., Braegger, C., Decsi, T., Kolacek, S., Koletzko, B., Michaelsen, K. F., ... & Szajewska, H. (2009). Breast-feeding: A commentary by the ESPGHAN Committee on Nutrition. *Journal of pediatric gastroenterology and nutrition*, *49*(1), 112-125.

Akcaboy, M., Oğuz, M. M., Zorlu, P., & Şenel, S. (2017). Bir Olgu ile Tamamlayıcı Beslenmede Yeni Akım: Bebek Liderliğinde Beslenme. *Gazi Medical Journal*, *28*(2).

Arden, M. A., & Abbott, R. L. (2015). Experiences of baby-led weaning: trust, control and renegotiation. *Maternal & child nutrition*, *11*(4), 829-844.

Bhandari, N., Mazumder, S., Bahl, R., Martines, J., Black, R. E., Bhan, M. K., & Infant Feeding Study Group. (2004). An educational intervention to promote appropriate complementary feeding practices and physical growth in infants and young children in rural Haryana, India. *The Journal of nutrition*, *134*(9), 2342-2348.

Black, R. E., Allen, L. H., Bhutta, Z. A., Caulfield, L. E., De Onis, M., Ezzati, M., ... & Maternal and Child Undernutrition Study Group. (2008). Maternal and child undernutrition: global and regional exposures and health consequences. *The*

lancet, *371*(9608), 243-260.
Black, R. E., Victora, C. G., Walker, S. P., Bhutta, Z. A., Christian, P., De Onis, M., ... & Uauy, R. (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *The lancet*, *382*(9890), 427-451.
Brown, A., & Lee, M. (2011). A descriptive study investigating the use and nature of baby-led weaning in a UK sample of mothers. *Maternal & child nutrition*, *7*(1), 34-47.
Brown, A., & Lee, M. D. (2015). Early influences on child satiety-responsiveness: the role of weaning style. *Pediatric obesity*, *10*(1), 57-66.
Brown, A., Jones, S. W., & Rowan, H. (2017). Baby-Led Weaning: The Evidence to Date. *Current Nutrition Reports*, *6*(2), 148-156.
Carothers, C., & Gribble, K. (2014). Infant and young child feeding in emergencies. *Journal of Human Lactation*, *30*(3), 272-275.
Daniels, L., Heath, A. L. M., Williams, S. M., Cameron, S. L., Fleming, E. A., Taylor, B. J., & Taylor, R. W. (2015). Baby-Led Introduction to SolidS (BLISS) study: a randomised controlled trial of a baby-led approach to complementary feeding. *BMC pediatrics*, *15*(1), 179.
Fewtrell, M., Wilson, D. C., Booth, I., & Lucas, A. (2011). Six months of exclusive breast feeding: how good is the evidence?. *BMJ: British medical journal*, *342*.
Greer, F. R., Sicherer, S. H., & Burks, A. W. (2008). Effects of early nutritional interventions on the development of atopic disease in infants and children: the role of maternal dietary restriction, breastfeeding, timing of introduction of complementary foods, and hydrolyzed formulas. *Pediatrics*, *121*(1), 183-191.
Kaya, Z., Yiğit, Ö., Erol, M., & Gayret, Ö. B. (2016). Altı-Yirmi Dört Ay Arası Yaş Grubunda Beslenmeyle İlgili Anne ve Babaların Bilgi ve Deneyimlerinin Değerlendirilmesi. *Medical Bulletin of Haseki/Haseki Tip Bulteni*, *54*(2).
Köksal, E., Yalçin, S. S., Pekcan, G., Özbas, S., Tezel, B., & Köse, M. R. (2015). Complementary Feeding Practices of Children Aged 12-23 Months in Turkey. *Central European journal of public health*, *23*(2), 149.
Morison, B. J., Taylor, R. W., Haszard, J. J., Schramm, C. J., Erickson, L. W., Fangupo, L. J., ... & Heath, A. L. M. (2016). How different are baby-led weaning and conventional complementary feeding? A cross-sectional study of infants aged 6–8 months. *BMJ open*, *6*(5), e010665.
Rapley, G. (2015). Baby-led weaning: the theory and evidence behind the approach. *Journal of Health Visiting*, *3*(3), 144-151.
Schiess, S., Grote, V., Scaglioni, S., Luque, V., Martin, F., Stolarczyk, A. & Koletzko, B. (2010). Introduction of complementary feeding in 5 European countries. *Journal of pediatric gastroenterology and nutrition*, *50*(1), 92-98.
Sultana, S., Hoque, A., & Saleh, F. (2014). Infant and young child-feeding practices and their nutritional status in a National Nutritional Programme area in Bangladesh: A cross-sectional study. *J Hum Nutr Food Sci*, *2*, 1028.
Tiwari, S., Bharadva, K., Yadav, B., Malik, S., Gangal, P., Banapurmath, C. R., ... & Agrawal, R. K. (2016). Infant and young child feeding guidelines, 2016. *Indian pediatrics*, *53*(8), 703-713.
Topal, S., Çınar, N., & Altınkaynak, S. (2016). Süt çocukluğu döneminde beslenme. *Düzce Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi*, *6*(1), 63-70.
Unicef. (2011). Türkiye'de çocukların durumu raporu 2011. *Ankara: UNICEF*.
World Health Organization (WHO). (2008). Indicators for assessing infant and young child feeding practices: conclusions of a consensus meeting held 6-8 November 2007 in Washington DC, USA. World Health Organization (WHO).

World Health Organization. (2003). Complementary feeding: report of the global consultation, and summary of guiding principles for complementary feeding of the breastfed child.

World Health Organization. (2005). Guiding principles for feeding non-breastfed children 6-24 months of age.

World Health Organization. (2009). Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals. Infant and young child feeding: model chapter for textbooks for medical students and allied health professionals.

Yalçin, S. S., Tezel, B., Yurdakök, K., Pekcan, G., Özbas, S., Köksal, E., & Buzgan, T. (2013). A community-based iron supplementation program," Iron-like Turkey", and the following prevalence of anemia among infants aged 12-23 months. *The Turkish journal of pediatrics*, *55*(1), 16.

Chapter 42

Malnutrition in Cerebrovascular Dıseases

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Introduction

Cerebrovascular disease (CVD); is a clinical syndrome including all diseases where a region of the brain is temporarily or permanently affected by ischemia or hemorrhage and/or the direct attack to veins feeding the brain by a pathological process, that eventually cause severe individual and socioeconomic loss. World Health Organization (WHO) defines Cerebrovascular disease as a clinical condition that lasts 24 hours or more, or results in death, without apparent cause other than vascular issues, leading sudden onset of focal or global cerebral dysfunction (Truelsen et al., 2000; Koyu et al., 2016). When the stroke happens; rupture or emboli in the veins that carry oxygen and nutrients to the brain can cause oxygen-free environment in the brain which subsequently resulting with death of brain cells that are unable to be fed and lack oxygen (Gund, et al., 2013). In many European countries, CVD is the third most common cause of death among coronary heart diseases and cancers, second most common cause of death in the world, and the most common disease in terms of disability (Karakurt and Kaşıkçı, 2008, World Health Organization 2012).

According to the American Heart Association (AHA), stroke prevalence was reported to be 3.22% in 2012 and this rate was expected to be 3.88% in 2030. In the same report, it was predicted that stroke prevalence will increase by 20.50% between 2010 and 2030 (Ovbiagale, et al., 2013). Approximately 795 thousands of people have a stroke attack each year (Benjamin et al., 2017). Every 40 seconds, one person has stroke and every 4 minutes one person dies due to stroke (Benjamin et al., 2017; Mozaffarian et al., 2016).

In our country, the most comprehensive data on epidemiology and risk factors of cerebrovascular disease can be found in the Turkey Burden of Disease Study that was conducted by the Ministry of Health and Institute of Hygiene between 2002-2004. According to the findings of this study; Cerebrovascular diseases was the second most common cause of death (15% of total deaths) following ischemic heart diseases and third most common cause of burden of disease. Death ratios of cerebrovascular disease were reported to be 14.5% in males and 15.7% in females (UHY-MEC, 2004). According to another study that was based on a social security institution data, it was shown that 400,000 people died and approximately 1.5 million people were suffered due to Cerebrovasculer event (CVE) and the prevalence of CVE was stated to be 2.2% between 2008 and 2013 (Öztürk, 2015). In a different study named "Chronic Diseases and Risk Factors in Turkey Fertility Study" that was conducted by Ünal et. al. (2013),

the frequency of cerebrovascular disease was found to be 1.8% and 2.2% in males and in females, respectively (Ünal et al., 2013).

Among the medical diagnoses of patients admitted to neurology clinics, stroke takes the lead. Ischemic stroke, which constitutes about 80-85% of the stroke, is the most common type of stroke and the most common cause of death (Lisabet at., 2006; Yilmaz et al., 2010). Fifty percent of the stroke patients in the neurology clinic are discharged, 20% of them die in the hospital and one third of the alive patients are required long-term home care or institutional care (Karakurt and Kaşıkçı, 2008).

During care, due to the physical ability loss of the patients, the need for care is further enchanced and numerous problems arise. One of these problems is malnutrition (Demirel and Bahçecioğlu, 2010).

European Society for Clinical Nutrition and Metabolism Association (ESPEN) identifies malnutrion as *"nutritional impairment leading to adverse outcomes for patients, including high infection and complication rates, resulting in increased muscle loss in patients, deterioration in wound healing, prolongation of hospital stay, and increased morbidity and mortality rates"* (Cederholm et al., 2016).

More than 60% of patients suffering from neurological disease have Body Mass Index (BMI) less than 20 kg/m2 (Arvanitakis, et al., 2007). In patients with cerebrovascular disease, malnutrition occurs through reduced intake, absorption and body use, loss of nutritions from the body, and elevated need for nutrients (Bouziana and Tziomalos, 2011).

It is estimated that 6.1% to 62% of stroke patients are inadequately fed (Foley et al., 2009). The prevalence and risk of malnutrition in acute stroke patients is increasing rapidly, especially in the first 10 days of the disease (from 9% to 65%) (Mosselman et al., 2013;). For this reason, it is extremely important to assess the nutritional status of the patients and to provide the required nutritional support during this period (Mosselman et al., 2013).

In patients with cerebrovascular disease depending on the malnutirion status, changes in the thermoregulatory system, immunological system, respiratory system, muscle system, cardiovascular system, renal system, digestive system, endocrine system and neurological system may appear.

Termoregular System: Hunger and weight loss increase the tendency to hypothermia. When the malnutrition reaches advanced stages, vasoconstriction and thermogenic reaction against cold deteriorate (Selçuk, 2012; Gündoğdu, 2010). About 1-2°C fall in the body temperature causes deterioration in cognitive function, especially in the elderly, leading to impaired coordination, confusion and muscle weakness (Gündoğdu, 2010). Due to diet-dependend thermogenesis enchancement, the need for gas change eventually triggers the dyspnoea and reduces the feeding rate. As a consequence, the immunological resistance falls and the risk of catch an infection rises. Unfortunately, infection is the most common cause of death in neurological patients (Selçuk, 2012; Saka et al., 2010; Planas, 2007).

Immune system: Together with starvation, changes in T lymphocytes and the complement system begin. When the malnutrition develops, the lymphocytes in the thymus become damaged and the thymus atrophy takes place (Selçuk, 2012; Gündoğdu, 2010). Lymphatic tissue becomes atrophy, cellular immunity worsens and bactericidal leukocyte activity drops (Gündoğdu, 2010). If malnutrition leads to hypoalbuminemia,

cytokine metabolism is affected through protein synthesis. Therefore, IL-1 activity is suppressed. This suppression in activity leads to a decline in the lymphocyte production rate. Affected complement system destroys fuctions of phagocytosis, chemotaxis and intracellular destruction of bacteria. Lastly, the early phase of wound healing is delayed (Selçuk, 2012; Gündoğdu, 2010).

Respiratory System: Loss of protein biomass triggers atrophy in respiratory muscles, disturbing the total structure and function of respiratory muscles, especially diaphragm (Selçuk, 2012). A decrease of inspiratory force, vital capacity, functional residual capacity and oxygenation is observed in the malnutrition patient (Gündoğdu, 2010). The response to hypoxia and hypercapnia is disturbed due to alterations in the pulmonary parenchyma tissue (Selçuk, 2012). Weakness observed in respiratory muscles and insufficiency of airway reflexes may distress aspiration and respiratorion (Selçuk, 2012; Sakarya, 2005).

Muscle System: Loss of protein biomass triggers atrophy. Weakness in the extremity muscles may progress into balance problems and trauma (Selçuk, 2012). Micronutrient insufficiency may result in decubitus ulcers (Selçuk, 2012).

Cardiovascular System: Cardiac output falls with the loss of heart muscle and tendency towards bradycardia, hypotension and arrhythmia inclines (Selçuk, 2012). Increase in oxidative stress and formation of atheromatous plaques, cardiac arrhythmia induced by electrolyte imbalance and heart failure, and lastly hyperhomocysteinemia due to inadequate folic acid and vitamin A, B, C, D and E intake may be observed in patients (Bouziana and Tziomalos, 2011, Gündoğdu, 2010).

Renal System: Renal plasma flow shrinks following reduced cardiac flux and glomeruler filtration rate decreases (Selçuk, 2012).

Digestive System: In patients with severe malnutrition, mucosaltrophy develops with decrease in villus size, crypt number and size. Absorption (of lipids, disaccharides and glucose) along with the secretion is impaired. Malabsorption and frequent diarrhea advances while gastric, pancreatic, biliary pressures diminish (Selçuk, 2012; Gündoğdu, 2010). Muscle weakness caused by deterioration of muscular function and swallowing difficulty (dysphagia) eventually result in micronutrient deficiency (Selçuk, 2012). Moreover, swallowing difficulty may also occur associated with vertabral artery occusion (Şahan et al., 2010).

Endocrine System: Immotility may echance insulin resistance. As a consequence, glucose-dependent energy metabolism is affected and insulin-induced anabolic stimulation is reduced (Bouzianave Tziomalos, 2011). Insufficient vitamin D intake may elevate secondary hyperparathyroidism and insulin resistance (Bouziana and Tziomalos, 2011).

Neurological System: Tendency towards anxiety and depression rise. Disturbtions in vitamin B1 and B12, calcium, magnesium and phosphate levels negatively affect neurological functions (Selçuk, 2012; Gündoğdu, 2010).

Malnutrition worsens the prognosis of the patient, delay wound healing, prolong hospital stay, raise treatment costs, and lastly grow complication rates and mortality further (Uzuner et al., 2016, Arsava et al., 2016, Umay et al., 2010, Gündoğdu, 2010). For this reason, evaluation of nutritional status and good planning of nutritional support should be considered as vital component of patient treatment during the patient's hospitalization period (Demirel and Bahcecioğlu, 2010, Atli and Varlı, 2016). The loss

of vision and speech functions of patient's complicate understanding the patient's food needs and preferences (Bouziana and Tziomalos, 2011). Patients suffering malnourishment or high-risk or malnourishment should be identified and provided with appropriate nutritional support beginning right after 24 hours of recoginition of the patient's status, which would eventually help to reduce mortality and morbidity while increasing quality of life. For the nutritional support of the patient, always the first choice should be enteral nutrition (Demirel and Bahçecioğlu, 2010; Topçuoğlu, 2014). However, if enteral feeding support is not available, parenteral nutrition support should be initiated without delay. In this process, nurses take responsibilities such as monitoring the nutritional status, following the weight, supporting the patients who can not meet the self-nutritional needs, helping the patient to feed themselves with suitable way and technique (Topçuoğlu, 2014).

Feeding methods for patients suffering CVD may vary from normal meal to mash, formulized concentrated liquids to nasogastric (NG) tubing or percutaneous endoscopic gastrostomy (PEG) feeding (Planas 2007; Güler et. al., 2015; Uzuner et. al., 2016). It is recommended to start feeding as early as possible in patients diagnosed with CVD (Işıkay, 2003). On the other hand, before starting oral medication, giving water and nutrients, evaluation of swallowing functions seems to be extremely important when considered that the 40-50% of the patients with CVD under risk of dysphagia and 40% of them under risk of aspiration, (Sakarya, 2005; Umay et. al., 2010; Boyraz, 2015). The patient's swallowing reflex should be monitored and patients who do not have swallowing reflex absolutely should not be fed by mouth (Isikay, 2003, Uzuner et al., 2016, Mısırlıoğlu, 2016; Umay et al., 2010). Stroke patients who cannot be fed orally with solid food or fluids should have implanted with NG or PEG. Oral feeding should not be attempted until the patient displays ability to swallow the water and voluntarily cough (Uzuner et al., 2016). The NG tube may leave attached to patient until 2-3 weeks after implantation (Uzuner et al., 2016). Patients who can not be fed orally and who are at risk of aspiration should be fed with NG tube (Isikay, 2003; Uzuner et al., 2016). During enteral feeding the patient's head should be kept 45 degrees upright (Işıkay, 2003). In the early period (within the first 48 hours), NG tube feeding reduces the risk of mortality and when compared to PEG outcome is better (Planas 2007; Güler et al., 2015). Via NG, the maximum nutritional level of 20-30 ml/hr is achieved in 3-5 days of feeding. Since standard enteral nutritional products are intended to meet the deficit of basal levels of electrolyte, mineral and trace elements or in order to meet all daily needs, monitoring may be required to provide additional supply (Selçuk, 2012). Starting feeding of the CVD patients as early as possible contributes to the prevention of pressure (decubitus) ulcers (Isikay, 2003).

RESULT

Malnutrition is a common condition in individuals with cerebrovascular diseases. Nevertheless, it should be noted that malnutrition is a preventable condition. Therefore, the inpatient should be evaluated for malnutrition following admission, and also the nutritional status should be clearly revealed. After patient's nutritional status is assessed, the most appropriate nutritional method should be chosen and diet should be maintained. It is conceived to be highly crucial that the nurses working with individuals

suffering cerebrovascular disease should be trained for raising the awareness about this issue at regular intervals.

References

Arsava E.M., Ozçağlı, T.G., Berktaş, M., et al. (2016). Real World Data Estimation: Management and Cost-analysis of Stroke in Tertiary Hospitals in Turkey and the Impact of Co-morbid Malnutrition. Journal of Neurological Sciences, 33:(3): 443-458.

Arvanitakis, M., Beck, A, Coppens, P., De Man, F., Elia, M., Hebuterne, X., Henry, S., Kohl O., Lesourd, B., Lochs, H., Pepersack, T., Pichard, C., Planas, M., Schindler, K., Schols, J., Sobotka, L., Van Gossum, A. (2008). Nutrition in care homes and home care: how to implement adequate strategies (report of the Brussels Forum (22-23 November 2007)). Clinical Nutrition. 27: 481-488.

Atmış, V., Varlı, M. (2016). İnmeli Hastalarda Beslenme Sorunları ve Tedavisi. Turkiye Klinikleri J Geriatr., 2(1):91-8

Benjamin, E. J., Blaha, F.M. J., Chiuve, S. E., et al. (2017). Heart Disease and Stroke Statistics—2017 Update A Report from the American Heart Association. Circulation. 2017;135: 1-59.

Bouziana, SD., Tziomalos, K. (2011). Malnutrition in Patients with Acute Stroke. Journal of Nutrition and Metabolism, 1-7.

Boyraz, S. (2015). İnmeli Bireylerde Yutma ve Beslenme. Turkiye Klinikleri J Intern Med, 1(1):48-53

Cederholm, T., Barazzoni, R., Austin, P., Ballmer, P., Biolo, G., Bischoff, S.C., Compher, C., Correia, I., Higashiguchi, T., Holst, M., Jensen, G.L, Malone, A., Muscaritoli, M., Nyulasi, I., Pirlich, M., Rothenberg, E., Schindler, K., Schneider, S.M., De van der Schueren, M.A.E., Sieber, C., Valentini, L., Yu, J.C., Van Gossum, A., Singer, P. (2016). ESPEN guidelines on definitions and terminology of clinical nutrition. Clinical Nutrition, 30:1-16.

Demirci, S., Yalçıner, B. Z., Bakaç, G., Dayan, C., Aysal, F., Baybaş, S. (2010). İnmelerde tekrarlayıcılığı etkileyen risk faktörleri. Düşünen Adam Psikiyatri ve Nörolojik Bilimler Dergisi, 23: 38-43.

Demirel, U., Bahçecioğlu, İ. H. (2010). Enteral ve parenteral beslenmeye klinik yaklaşım. Güncel Gastroenteroloji, 149: 14-3.

Elisabeth, L. D., Smith, M. A., Brown, D. L., Moyé, L. A., Risser, J. M., Morgenstern, L. B. (2006). Ethnic differences in stroke recurrence. Annals of neurology, 60(4): 469-475.

Foley, N.C., Salter, K.L., Robertson, J., Teasell, R.W., Woodbury, M.G. (2009). Which reported estimate of the prevalence of malnutrition after stroke is valid? *Stroke*. 40(3):66-74.

Gündoğdu H. (2010). Malnutrisyon. İç Hastalıkları Dergisi, 17:189-202.

Gund, B.M., Jagtap, P.N., Ingale, V.B., Patil, R.Y. (2013). Stroke: A Brain Attack. IOSR Journal of Pharmacy, 3(8):1-23.

Güler, A., Turgut N., Topaktaş S., Topçuoğlu M.A., Şirin, H., Kocaman, A.S., Kutluk, K., Uzuner, N. (2015). Komplikasyonların Tedavisi ve Yoğun Bakım. Türk Beyin Damar Hastalıkları Derneği İnme Tanı Ve Tedavi Kılavuzu.

Işıkay C.T. (2003). Akut inmeye yaklaşım. Yoğun Bakım Derneği Dergisi, 3(4): 225-235.

Karadakovan, A., Aslan, F. (2014). Dahili ve Cerrahi Hastalıklarda Bakım (3.Baskı). Akademisyen Kitabevi, İstanbul.

Karakurt, P., Kaşıkçı, M. (2008). İnmeli bir olgunun yaşam modeline göre incelenmesi. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi, 11(1): 76-84.

Mısırlıoğlu T.Ö., Taşkıran, Ö.Ö. (2016). İnmede Disfaji ve Nutrisyonel Sorunlar. Türkiye Klinikleri J, 9(1):24-34.
Mosselman M.J, Kruitwagen CL, Schuurmans MJ, Hafsteinsdóttir TB. (2013). Malnutrition and risk of malnutrition in patients with stroke: prevalence during hospital stay. J Neurosci Nurs., 45(4):194-204.
Mozaffarian, D., Benjamin, E.J., Go, A.S., et al. (2016). Heart Disease and Stroke Statistics-2016 Update: A Report from the American Heart Association. Circulation, 133: 38-60.
Ovbiagele, B., Goldstein, L.B., Higashida, R.T., Howard, V.J., Johnston, S.C., Khavjou, O.A., Lackland, D.T., Lichtman, J.H., Mohl, S., Sacco, R.L., Saver, J.L., Trogdon, J.G.(2013). Forecasting the Future of Stroke in the United States A Policy Statement From the American Heart Association and American Stroke Association. *Stroke*, 44:1-16.
Ozturk, Y., Demir, C., Gursoy, K., Koselerli, R. (2015). What factors ınfluence survival ın stroke: Turkey Case. Value Health. 18: 401-402.
Saka, B., Kaya, O., Öztürk, G.B., Erten, N., Karan, M.A. (2010). Malnutrıtıon ın elderly and its relationship with other geriatric syndromes. Clinical Nutrition. 29:745-748.
Sakarya M. (2005). Nörolojik hastalarda beslenme. Yoğun Bakım Derneği Dergisi, 3(1): 39-47.
Selçuk, H. (2012). Malnütrisyon ve önemi. Güncel Gastroenteroloji, 16(2): 158-62.
Şahan, M., Satar, S., Koç, A.F., Sebe A. (2010). İskemik İnme ve Akut Faz Reaktanları. Arşiv Kaynak Tarama Dergisi, 19(2):85-140.
Truelsen, T., Begg, S., Mathers, C. (2000). The global burden of cerebrovascular disease. World Health Organization. Geneva
Ulusal Hastalık Yükü ve Maliyet Etkililik Çalışması. (2004). Hastalık Yükü Final Raporu. Ankara, s. 138-152.
Uzuner N, Kutluk K, Balkan S, ve ark. (2016). İnme Tanı ve Tedavi Klavuzu. (Eds. N. Uzuner, K. Kutluk, S. Balkan). Türk Beyin Damar Hastalıkları Derneği, İstanbul.
Umay, E.K., Gürçay E., Ünlü, E., Ekşioğlu E., Çakcı, A. (2010). Erken Dönem İnmeli Hastalarda Disfajinin Fonksiyonel ve Nutrisyonel Etkisi. Turkiye Klinikleri J Med Sci, 30(3):925-31
Ünal B, Ergör G, Horasan Gd, Kalaça S, Sözmen K. (2013). Türkiye Kronik Hastalıklar Ve Risk Faktörleri Sıklığı Çalışması (Eds. B.Ünal, G.Ergör). Anıl Matbaa Ltd. Şti., Ankara.s.190.
WHO. Preventing chronic diseases: a vital investment: WHO global report. Geneva, 2005.
WHO. Global status report on noncommunicable diseases 2010. Geneva, 2011.
WHO, The top 10 causes of death 2012, Updated May 2014. Erişim: http://who.int/mediacentre/factsheets/fs310/en/ Erişim Tarihi: 25.05. 2017.
Woodward, S. ve Mestecky A. (2014). Nörolojik Bilimler Hemşireliği Kanıta Dayalı Uygulamalar. (Çev.Ed. M.A. Topçuoğlu., Z. Durna., A. Karadakovan.). Nobel Tıp Kitabevleri Tic.Ltd.Şti., İstanbul.
Yılmaz, F., Demircan, A., Bildik, F. (2010). İskemik serebrovasküler hastalıkta homosisteinin rolü. Journal of Academic Emergency Medicine, 9(3):134-142.

Nutrition and Dietetics

Chapter 43

Alternative Treatments in Menopausal Period

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INTRODUCTION

Women's exposure to menopause is universal. For this reason, both traditional and modern methods have been utilized to help women cope with this critical period, and their impacts have been assessed (Del Campo, 2012). Long-term hormone therapy has been reported to prevent cardiovascular diseases and osteoporosis and increase cognitive capacity developing with age; however, in addition to its positive effects, hormone replacement has also been determined to pose a risk for breast and uterine cancer, and blockage in the brain vessels in individuals (Dietel, 2010; Glasier, 2006; Osmers & Kraft, 2004). To eliminate the climacteric complaints, many plants with phytoestrogenic characteristics such as hops (*Humulus lupulus*), chaste-tree/berry (*Vitex agnus-castus*), yams root (*Dioscoreavillosa*), flaxseed (*Linum usitatissimum*), maritime pine (*Pinus pinaster*), black cohosh (*Cimicifuga racemosa*), dong quai (*Angelica sinensis*), St. John's wort (*Hypericum perforatum*), red clover (*Trifolium pratense*), and primrose (*Oenothera biennis*) have been studied (Bai *et al*., 2007; Farzaneh *et al*., 2013; Gün & Demirci, 2015).

Effects of Treatments with Plant and Plant Extracts on Menopause

Named *Humulus lupulus*-HL in Latin, hops plant contains 8-prenylnaringenin (8-PN), which is known to be the most potent phytoestrogen to date. This structure has been reported to be the type of phytoestrogen that can bind to both estrogen receptors in human body and have eight times more powerful impact than other herbal estrogens (Abdi *et al*., 2016). The origin of HL is Central Europe, and it is also grown in Australia, South Africa and South America (Chadwick et *al.*, 2006). Exhibiting estrogenic, sedative, hypnotic, antipyretic, anti-inflammatory and antiseptic effects due to its active phytoestrogenic compounds and humulene, tanin, β-myrcene, pectin, potassium and flavonoid contents, HL has been widely used in medical and industrial applications (Depypere & Comhaire, 2014; Van Cleemput *et al*., 2009).

A randomized-controlled study was conducted on 40–60 year-old 120 postmenopausal (no menstrual bleeding for at least 12 months and 5 years at most) and premenopausal women (less than 12 menstrual bleedings for the last 12 months). The subjects, who were randomly divided into 2 groups, were given HL and placebo tablets for 12 weeks. At the fourth, eighth and twelfth weeks, the frequency of hot-flushes ($p<0.001$) and vasomotor, psychiatric (anxiety and depression) and physical symptom

scores in the intervention group decreased significantly compared to that of the placebo group ($p<0.001$). This study was reported to be the first study in which HL was used in tablet form, and the study concluded that HL could be recommended due to its features such as easy to use, lack of side effects, and improving quality of life and efficacy during postmenopausal period (Aghamiri *et al*., 2016). Heyerick *et al*. (2006) investigated the efficacy of hop extract (HL extract) enriched with 8-prenylnaringenin in relieving menopausal symptoms, and the results indicated that the daily intake of hop extract had positive effects on vasomotor symptoms.

HL has also been found to reduce menopause-related physical, psychological, and genitourinary symptoms (vaginal dryness, etc.) in other studies (Morali *et al*., 2006; Rosic *et al*., 2013). At the same time, while this plant extract has been reported to reduce the anxiety problems when it is taken 250 mg twice or three times a day orally (Balch, *et al*., 2011), it has been found that allergic reactions, coughing, and bronchial inflammations can be observed in susceptible individuals exposed to its dust working in production areas (Skorska *et al*., 2003). On the other hand, no side effects were observed in the study carried out by Aghamiri *et al*. (2016). In a review related to the topic, it was concluded that studies with larger sampling and longer term were needed to reach definite results (Abdik *et al*., 2016).

Named *Vitex agnus castus*-VAC in Latin, chaste-tree/berry has been used widely in women for problems caused by special circumstances since the 17th century (Lucks *et al*., 2002). Several clinical studies, particularly in Germany, carried out to validate the pharmacological activity and investigate the mode of action have documented the usefulness of VAC extracts in the treatment of menstrual anomalies in clinical trials (Batchelder & Scalzo, 1995; Neumann-Kuhnelt *et al.*, 1993).

In a study in which the essential VAC oil distilled in two different ways (berry seed and leaf extracts) was used (5 mL / day), it was found that as a result of intake of these extracts by premenopausal women (n=33) for 3 months, depression and mood changes, hot flushes and night sweats, vaginal thinning and dryness and sexual intercourse pain, insomnia, and severe and long haemorrhages improved 80.0%, 64.0%, 83.0%, 56.0%, and 50% respectively in women using oil distilled from leaf extracts. On the other hand, particularly hot flushes and night sweats were determined to decrease 75.0% when the form distilled from berry seeds was used (Batchelder & Scalzo, 1995).

In a study conducted with 52 pre- and postmenopausal women aged between 38 and 73 that using VAC distilled from fruit and leaf extract as a 5 to 7 day a week (2.5 mL) lotion / cream for 3 months alleviated menopausal symptoms by 33.0%, but it was emphasized that the dose would be uncertain if these extracts were taken orally (Chopin Lucks, 2003). Apart from its positive effect on menopausal individuals, this plant extract has been reported to reduce symptoms by 50.0% (Schellenberg, 2001) and compensate for progesterone deficiency with its dopamine agonist properties as it suppresses prolactin levels in women with premenstrual syndrome (Caron *et al.*, 1986; Jarry *et al*., 1991; Meyer, 1993). In a study of ovariectomized rats weighing between 180 and 229 g, it was found that oral administration of 8-80 mg/kg VAC extract enhanced memory and learning, and that this might have occurred through increased transcription of hippocampal estrogen receptor α (ERα) (Allahtavakoli *et al*., 2015). It has been reported that the toxicity of this plant is very low or does not exist at all (McQuade C.A., 2006) but no information on toxic dose in humans has been found.

Yams root (*Dioscoreavillosa*-DV) is a wild plant species found in the US. North American Indians used this wild plant to relieve birth pain and cramping. In the following years, DV has been discovered to have diosgenin content, known to be the raw material used in the production of saponin, the precursor of progesterone and especially natural oral contraceptive agents. Although human body is not capable of converting diosgenin to progesterone, this plant can reduce menopausal symptoms with estrogen-like effects when taken orally (Mayo, 1999). In a study conducted by Komesaroff et *al*. (2001), 23 menopausal women with a mean age of 53.3 ± 1.1 were observed to have decreased scores for night sweats and hot flushes when administered wild DV cream for 3 months, but no statistically significant difference was observed compared to the placebo group. Short-term treatment with topical wild DV extract in menopausal women was reported to have no side effects, but that it had little effect on menopausal symptoms.

Flaxseed (*Linum usitatissimum*-LU) is a source of nutrients rich in omega-3 fatty acids (ALA) and lignan content that has phytoestrogenic characteristics (Moree & Rajesha, 2011). LU with rich diet lignans is stated to be a potentially effective treatment for hot flushes (Pruthi *et al.*, 2012). In a study, the effect of flaxseed, soybean and white flour muffin consumption (placebo group) on life quality of menopausal women (n= 86) was assessed using the menopause specific quality of life scale (MENQOL) for 16 weeks. At the end of the sixteenth week, women consuming muffin with 25 g/day ground flaxseed (50 g/day lignan) were found to have lower scores on hot flushes compared to those consuming muffin with 25 g/day soy (42 mg isoflavone) or white flour. However, there was no significant difference between the groups ($p>0.97$) (Lewis *et al*., 2006). In a study assessing the effectiveness of flaxseeds in reducing the effects of hot flushes on postmenopausal women (n=188), participants were made to consume a flaxseed bar containing 410 mg of lignans for 6 weeks, and this quantity was found to have no effect on hot flushes (Pruthi *et al.,* 2012). In another study using wheat (placebo) and flaxseed, according to the average bad life scores, hot flushes and night sweats in groups consuming wheat and flaxseed for 12 months decreased significantly compared to the first months ($p<0.0001$, $p<0.0001$); however, no statistically significant correlation was found between hot flushes and night sweats, and average bad life score in wheat (placebo) and flaxseed groups ($p=0.635$; $p=0.473$) (Dodin *et al*., 2005).

Maritime pine (*Pinus pinaster*- PP) is a plant that protects human skin from UV radiation, regulates the skin pigmentation, is rich in antioxidant biflavonoids, catechin, procyanidin and phenolic acids, protects skin integrity, and is generally taken orally as PP bark extract (Pycnogenol). In a study conducted with postmenopausal women, PP was reported to have a positive effect on skin elasticity and skin hydration, promote hyaluronic acid synthesis, and provide the up-regulation of genes involved in collagen synthesis when administered orally to 20 healthy women 3x25 mg/day for 12 weeks (Grether-Beck *et al*., 2015). In another study, when taken 100 mg/day for 8 weeks during transition to menopause period, pycnogenol supplements were found to reduce such symptoms as hot flushes, night sweats, irregular periods, loss of libido, and vaginal dryness improve life quality (Errichi *et al.*, 2011). In a study with a larger sample (n=170) on premenopausal women, 30 mg pycnogenol supplement twice a day for 3 months was determined to reduce the premenopausal symptom scores by 56.0% compared to the placebo group, and low dose intake was found to have an effect on

climacteric symptoms (Kohama & Negami, 2013). On the other hand, in a study conducted by Yang *et al.* (2007), it was stated that this alternative treatment method could be applied to relieve the climacteric symptoms in premenopausal women, and safe pycnogenol dose was reported to be 50-450 mg/day (6 months).

Black cohosh (*Cimicifuga racemosa*-CR) is a popular herbal medicine for women's health problems such as premenstrual syndrome (PMS), menstrual problems, and menopausal symptoms. This plant, which originally comes from North America, was used in the 19th century to treat women's diseases such as PMS, menstrual disorders, and general gynecological complaints (Winterhoff *et al*., 2003). CR extract, which contains many active chemical compounds such as flavonoids, aromatic acids, tannins, alkaloids and oleic, palmitic and formic acids, is reported to have a binding effect on estrogen receptors in rat uterus and in pituitary glands in ovariectomized rats and a suppressive effect on luteinizing hormone (LH), and reduce hot flushes (Düker *et al.*, 1991; Winterhoff *et al*., 2003).

The effect of CR extract on sleep disorders in early postmenopausal women was investigated in a recent study, and the sleep efficiency of women (n=20) using a 20 mg isopropanolic CR tablet (2.5 mg CR extract) yielded an increase compared to that of the beginning of the treatment ($p<0.05$) and placebo group (n=22) ($p<0.05$) (Jiang *et al*., 2015). Conversely, another study investigating the effect of 40 mg/day CR extract intake in menopausal women (n=54) in Thai on menopausal symptoms and quality of life revealed that this extract had no positive effects on moderate and severe menopausal symptoms or quality of life (Tanmahasamut *et al*., 2015). The use range of this plant extract has been determined to be 300-3000 mg/day for conventional treatment methods and 40-200 mg/day for modern treatment methods (Mahady *et al*., 2008) and the recommended dosage for eliminating menopausal symptoms has been stated to be 40 mg/day (Blumenthal *et al*., 1998). It has been emphasized that it might cause gastrointestinal, hepatic, cardiovascular disorders and seizures, and that it should be used with caution for these reasons (Fugate & Church, 2004; Mahady *et al.*, 2008).

Known as Dong quai in China, *Angelica sinensis* (AS) is one of the most important conventional drugs, and it is used in the treatment of menstrual disorders (disamenore, amenore, irregular menstruation) and menopausal symptoms (Circosta *et al*., 2006; Fang *et al*., 2012). The action mechanism of AS is not fully known. In a randomized placebo-controlled study by Hirata *et al*. (1997), postmenopausal women (n=71) with a mean age of 52.4 ± 6 who were observed to have FSH hormone level of >30 ng/mL and hot flushes were given 4.5 g of AS root for 24 weeks and no significant difference was observed in vasomotor symptoms between the placebo and the experimental group. In another study, combined extracts prepared with AS and *Matricaria chamomilla* were determined to be effective in reducing menopausal symptoms (Kupfersztain *et al*., 2002). Although research on the topic is limited, the dosage of AS extract in humans is reported to be 6-12 g/day (Cheng *et al*., 2015).

St. John's wort (*Hypericum perforatum* - HP) can be found everywhere in the world though it comes from Europe, North Africa and West Asia (Laakmann *et al.*, 2012). HP exhibits antioxidant effect and this property is thought to come from its serotonergic, dopaminergic, and neuro-lordergic activation (Calapai *et al.*, 2001). In a study on premenopausal women (n=47) aged between 40 and 60, the effects of HP on hot flushes and quality of life were examined, and 900 mg of HP extract was given to

the experimental group for 3 months. No significant difference was observed between the intervention group and the control group as a result of the treatment in terms of frequency and scores of hot flushes respectively (p=0.11, p=0.10). However, it was found that the quality of life was higher (p = 0.01) and sleep disorders were less in the intervention group (p=0.05) (Al-Akoum *et al.,* 2009). Although studies with HP are generally on combined treatments, two or three combinations of CR, HP and VAC plants have been used in these studies (Laakmann *et al*., 2012; Van Die *et al*., 2009). While combined HP and VAC therapy was found to have no mitigating effect in climacteric complaints (Van Die *et al.,* 2009), the combined treatment of CR and HP were determined to have a positive effect in eliminating climacteric complaints (Laakmann *et al.,* 2012).

Red clover (*Trifolium pretense*-TP), known as a source of isoflavone, is used as a therapeutic agent for menopausal symptoms and many diseases. In addition to isoflavones, this plant contains coumarin derivatives and cyanogenic glycosides which can reduce blood clotting (Del Giorno *et al*., 2010). As a result of an investigation of a systematic review and meta-analysis of 17 clinical trials studying the correlation between TP consumption and hot flushes in menopausal women, the incidence of hot flushes was found lower in the intervention group (40-82 mg/day) than in the placebo group (weighted mean difference 1.5 times hot flushes/day; $p< 0.05$). Although it has a preventive effect on hot flushes, the side effects of short-term use are unknown, and there is insufficient data on the safety of long-term use (Coon *et al*., 2007). Del Giorna *et al*. (2010) found in their study that the use of 40 mg/day TP for 12 months positively affected the index scores for hot flushes after 4 months in menopausal women compared to the beginning of the treatment, but that there was no statistically significant difference between the groups. On the other hand, Shakeri *et al*. (2015) found that menopausal symptoms in postmenopausal women using capsules containing 40 mg/day dry TP leaves for 12 weeks decreased significantly compared to that of the placebo group ($p<0.001$). In the meta-analyses conducted on the topic, it was found that the use of 80 mg / day TP isoflavone extract had a positive effect on the symptoms of hot flushes (Myers & Vigar, 2017) and that, in addition to its positive effect on hot flushes, it reduced the symptoms of vaginal dryness and vaginal atrophy in pre / postmenopausal women (Ghazanfarpour *et al.,* 2016).

Primrose (*Oenothera biennis* - OB) comes from the US and blooms twice a year. Chemical analyses have shown that it is rich in omega-6 essential fatty acids. The oil obtained from this plant is used for hot flushes, which are symptoms of PMS, chest pain, endometriosis and menopause in women, as well as skin and bone diseases (Stonovska & Kitanovska, 2013). Although its action mechanism is not fully known, it has been reported that its mitigating effect on vasomotor symptoms stems from γ-linoleic acid (Chenoy *et al*., 1994; Stonovska & Kitanovska, 2013). Research on this topic is limited, and a recent study is associated with hot flushes during menopause period. In this study on 56 menopausal women aged between 45 and 59, participants were given placebo or 500 mg OB oil capsules twice daily for 6 weeks. As a result of the study, it was determined that the incidence of hot flushes in women using OB capsule was 39.0%, severity was 42.0%, and that duration was less than 19.0% compared to that of those who did not use OB capsule (Farzaneh *et al.,* 2013). Menopausal women can widely use around 1-16 capsules per day, and each capsule

(500 mg) contains 72.0% (365 mg) linoleic acid, and 14.0% (45 mg) gama linoleic acid, and the rest is oleic, palmitic and stearic acid (Fugate & Church, 2004).

Conclusion and Evaluation

There are a number of plant species that are used as alternative treatment methods in relieving menopausal symptoms. Although studies conducted in Turkey are limited, it has been observed in international studies that plants used in alternative treatments are not used widely except for the countries where they are grown, safe doses of some extracts are not specified, and that they have different effects on menopausal symptoms. More studies are needed on these plant species that are frequently used in alternative treatment methods.

REFERENCES

Abdi, F.; Kazemi, F.; Tehrani, F. R.; Roozbeh, N. (2016). Protocol for Systematic Review and Meta-Analysis: Hop (Humulus Lupulus L.) for Menopausal Vasomotor Symptoms. BMJ Open *6*: (4), e010734

Abdik, F.; Mobedi, H.; Roozbeh, N. (2016). Hops for Menopausal Vasomotor Symptoms: Mechanisms of Action. Journal of Menopausal Medicine 22: (2), 62-64.

Aghamiri, V.; Mirghafourvand, M.; Mohammad-Alizadeh-Charandabi, S.; Nazemiyeh, H. (2016). The Effect of Hop (Humulus Lupulus L.) on Early Menopausal Symptoms and Hot Flashes: A Randomized Placebo-Controlled Trial. Complementary Therapies in Clinical Practice 23: 130-135

Al-Akoum, M.; Maunsell, E.; Verreault, R.; Provencher, L.; Otis, H., Dodin, S. (2009). Effects of Hypericum Perforatum (St. John's Wort) on Hot Flashes and Quality of Life in Perimenopausal Women: A Randomized Pilot Trial. Menopause 16: (2), 307-314

Allahtavakoli, M.; Honari, N.; Pourabolli, I.; Arababadi, M. K.; Ghafarian, H.; Roohbakhsh, A.; Nadimi, A. E., Shamsizadeh, A. (2015). Vitex Agnus Castus Extract Improves Learning and Memory and Increases The Transcription of Estrogen Receptor a in Hippocampus of Ovariectomized Rats. Basic and Clinical Neuroscience 6: (3), 185.

Bai, W.; Henneicke-von Zepelin, H.H.; Wang, S.; Zheng, S.; Liu, J.; Zhang, Z.; Geng, L. Hu, L., Chunfeng, J.; Liske, E. (2007). Efficacy and Tolerability of a Medicinal Product Containing an Isopropanolic Black Cohosh Extract in Chinese Women With Menopausal Symptoms: A Randomized, Double Blind, Parallel-Controlled Study Versus Tibolone. Maturitas 58: (1), 31-41

Balch, J. F.; Stengler, M.; & Young-Balch, R. (2011). AARP Menopause Drug Alternatives pp.1-20. Hoboken: John Wiley & Sons. Canada, New Jersey.

Batchelder, H. & Scalzo, R. (1995). Naturopathic Specific Condition Review: Dysmenorrhea. The Protocol Journal of Botanical Medicine 1: (1), 76-92

Blumenthal, M.; Busse, W.; Goldberg, A.; Hall, T.; Riggins, C. (1998). German Comission Monographs: Therapeutic Monographs on Medicinal Plants for Human Use. Med Health Education 5: (1), 3-8

Calapai, G.; Crupi, A.; Firenzuoli, F., Inferrera, G., Squadrito, F.; Parisi, A., De Sarro, G.; Caputi, A. (2001). Serotonin, Norepinephrine and Dopamine Involvement in the Antidepressant Action of Hypericum Perforatum. Pharmacopsychiatry 34: (2), 45-49

Caron, M.; Amlaiky, N.; Kilpatrick, B. (1986). D2-Dopamine Receptor: Biochemical Characterization. Frontiers in Neuroendocrinology 9: 205-223

Chadwick, L.; Pauli, G.; Farnsworth, N. (2006). The Pharmacognosy of Humulus Lupulus L. (Hops) With an Emphasis on Estrogenic Properties. Phytomedicine 13: (1), 119-131

Cheng, K.F.; Wong, E. L., Leung, P.C. (2015). The Efficacy Evoluation of Danggui Buxue Tang (DBT) on Menopausal Symptoms: Clinical Trial Protocol Desing and Condsiderations. Journal of Community Medicine and Health Education 5: (1), 3-8.

Chenoy, R.; Hussain, S.; Tayob, Y.; O'brien, P.; Moss, M.; Morse, P. (1994). Effect of Oral Gamolenic Acid from Evening Primrose Oil on Menopausal Flushing. BMJ 308: (6927), 501-503

Chopin Lucks, B. (2003). Vitex Agnus Castus Essential Oil and Menopausal Balance: A Research Update [Complementary Therapies in Nursing and Midwifery 8 (2003) 148-154]. Complement Ther Nurs Midwifery 9: (3), 157-160

Circosta, C.; Pasquale, R. D.; Palumbo, D. R.; Samperi, S.; Occhiuto, F. (2006). Estrogenic Activity of Standardized Extract of Angelica Sinensis. Phytotherapy Research 20: (8), 665-669

Coon, J. T.; Pittler, M. H.; Ernst, E. (2007). Trifolium Pratense Isoflavones in the Treatment of Menopausal Hot Flushes: A Systematic Review and Meta-Analysis. Phytomedicine 14: (2), 153-159

Del Campo, S. A. (2012). Fitoterapia En La Menopausia. Reduca 4: (10), 110

Del Giorno, C.; Da Fonseca, A.; Bagnoli, V.; de Assis, J.; Soares Jr, J.; Baracat, E. C. (2010). Effects of Trifolium Pratense on the Climacteric and Sexual Symptoms in Postmenopausal Women. Rev Assoc Med Bras 56: (5), 558-562

Depypere, H. T., & Comhaire, F. H. (2014). Herbal Preparations for the Menopause: Beyond Isoflavones and Black Cohosh. Maturitas 77: (2), 191-194

Dietel, M. (2010). Hormone Replacement Therapy (HRT), Breast Cancer and Tumor Pathology. Maturitas 65: (3), 183-189

Dodin, S.; Lemay, A.; Jacques, H.; Légaré, F.; Forest, J. C.; Mâsse, B. (2005). The Effects of Flaxseed Dietary Supplement on Lipid Profile, Bone Mineral Density, and Symptoms in Menopausal Women: A Randomized, Double-Blind, Wheat Germ Placebo-Controlled Clinical Trial. The Journal of Clinical Endocrinology & Metabolism 90: (3), 1390-1397

Düker, E.M.; Kopanski, L.; Jarry, H.; Wuttke, W. (1991). Effects of Extracts from Cimicifuga Racemosa on Gonadotropin Release in Menopausal Women and Ovariectomized Rats. Planta Medica 57: (5), 420-424

Errichi, S.; Bottari, A., Belcaro, G., Cesarone, M. R., Hosoi, M., Cornelli, U.; Dugall, M. Ledda, A.; Feragalli, B. (2011). Supplementation with Pycnogenol(R) Improves Signs and Symptoms of Menopausal Transition. Panminerva Med 53: (3 Suppl 1), 65-70

Fang L., Xiao, X., Liu, C., Xin, H. (2012). Recent Advance in Studies on *Angelica sinensis*. Chinese Herbal Medicines 4: (1), 12-25

Farzaneh, F.; Fatehi, S.; Sohrabi, M.R.; Alizadeh, K. (2013). The Effect of Oral Evening Primrose Oil on Menopausal Hot Flashes: A Randomized Clinical Trial. Archives of Gynecology and Obstetrics 288: (5), 1075-1079

Fugate, S. E., & Church, C. O. (2004). Nonestrogen Treatment Modalities for Vasomotor Symptoms Associated with Menopause. Annals of Pharmacotherapy 38: (9), 1482-1499

Ghazanfarpour, M.; Sadeghi, R.; Roudsari, R. L.; Khorsand, I.; Khadivzadeh, T.; Muoio, B. (2016). Red Clover for Treatment of Hot Flashes and Menopausal Symptoms: A Systematic Review and Meta-Analysis. Journal of Obstetrics and Gynaecology 36: (3), 301-311

Glasier, A. (2006). HRT and Breast Cancer. Women's Health Medicine 3: (1), 15-17

Grether-Beck, S.; Marini, A., Jaenicke, T.; Krutmann, J. (2015). French Maritime Pine Bark Extract (Pycnogenol®) Effects on Human Skin: Clinical and Molecular Evidence. Skin Pharmacology and Physiology 29: (1), 13-17

Gün, Ç., & Demirci, N. (2015). Menopozda Bitkisel Tedavi Kullanımı. Arşiv Kaynak

Tarama Dergisi 24: (4), 520-530
Heyerick, A.; Vervarcke, S.; Depypere, H.; Bracke, M.; De Keukeleire, D. (2006). A First Prospective, Randomized, Double-Blind, Placebo-Controlled Study on the Use of a Standardized Hop Extract to Alleviate Menopausal Discomforts. Maturitas 54: (2), 164-175
Hirata, J. D.; Swiersz, L. M.; Zell, B.; Small, R.; Ettinger, B. (1997). Does Dong Quai Have Estrogenic Effects in Postmenopausal Women? A Double-Blind, Placebo-Controlled Trial. Fertility and Sterility 68: (6), 981-986
Jarry, H.; Leonhardt, S.; Wuttke, W.; Behr, D.; Gorkow, C. (1991). Agnus Castus Als Dopaminerges Wirkprinzip in Mastodynon. Zeitschrift für Phytotherapie 12: 77-82
Jiang, K.; Jin, Y.; Huang, L.; Feng, S.; Hou, X.; Du, B.; Zheng J.; Li, L. (2015). Black Cohosh Improves Objective Sleep in Postmenopausal Women with Sleep Disturbance. Climacteric, 18:(4), 559-567
Kohama, T., & Negami, M. (2013). Effect of Low-Dose French Maritime Pine Bark Extract on Climacteric Syndrome in 170 Perimenopausal Women. Journal of Reproductive Medicine 58: 39-46
Komesaroff, P. A.; Black, C. V.; Cable, V.; Sudhir, K. (2001). Effects of Wild Yam Extract on Menopausal Symptoms, Lipids and Sex Hormones in Healthy Menopausal Women. Climacteric 4: (2), 144-150
Kupfersztain, C.; Rotem, C.; Fagot, R.; Kaplan, B. (2002). The Immediate Effect of Natural Plant Extract, Angelica Sinensis and Matricaria Chamomilla (Climex) for the Treatment of Hot Flushes during Menopause. A Preliminary Report. Clinical And Experimental Obstetrics & Gynecology 30: (4), 203-206
Laakmann, E.; Grajecki, D.; Doege, K., Zu Eulenburg, C.; Buhling, K. J. (2012). Efficacy of Cimicifuga Racemosa, Hypericum Perforatum and Agnus Castus in the Treatment of Climacteric Complaints: A Systematic Review. Gynecological Endocrinology 28: (9), 703-709
Lewis, J. E.; Nickell, L. A.; Thompson, L. U.; Szalai, J. P.; Kiss, A.; Hilditch, J. R. (2006). A Randomized Controlled Trial of the Effect of Dietary Soy and Flaxseed Muffins on Quality of Life and Hot Flashes during Menopause. Menopause, 13: (4), 631-642
Lucks, B. C.; Sørensen, J., Veal, L. (2002). Vitex Agnus-Castus Essential Oil and Menopausal Balance: A Self-Care Survey. Complementary Therapies in Nursing and Midwifery 8: (3), 148-154
Mahady, G. B.; Dog, T. L.; Barrett, M. L., Chavez, M. L., Gardiner, P.; Ko, R., Marles, R.J., Pellicore, L. S., Giancaspro, G. I..; Sarma, D. N. (2008). United States Pharmacopeia Review of the Black Cohosh Case Reports of Hepatotoxicity. Menopause 15: (4), 628-638
Mayo, J. L. (1999). A Natural Approach to Menopause. Applied Nutritional Science Reports. 5: (7), 1-8
McQuade, C.A. (2006). Herbal Therapies: East Meets West. In: Tagliaferri, M (Ed.), Cohen I, Tripathy, D. The New Menopause Book: Chapter 3. p.45-76, A member of Penguin Group (USA), New York
Meyer, E. (1993). Monkspepper: Mönchspfeffer: Im Mittelalter Beliebt, Jetzt Erforscht. Pharmazie 26: (138), 24-26
Morali, G.; Polatti, F., Metelitsa, E. N., Mascarucci, P., Magnani, P., Marre, G. B. (2006). Open, Non-Controlled Clinical Studies to Assess the Efficacy and Safety of a Medical Device in Form of Gel Topically and Intravaginally Used in Postmenopausal Women with Genital Atrophy. Arzneimittelforschung 56: (3), 230-238
Moree, S.S., & Rajesha, J. (2011). Secoisolariciresinol Diglucoside: A Potent Multifarious

Bioactive Phytoestrogen of Flaxseed. Research and Reviews in Biomedicine and Biotechnology 2: (3), 1-24
Myers, S., & Vigar, V. (2017). Effects of a Standardised Extract of Trifolium Pratense (Promensil) at a Dosage of 80 mg in the Treatment of Menopausal Hot Flushes: A Systematic Review and Meta-Analysis. Phytomedicine 24: 141-147
Neumann-Kuhnelt, B.; Stief, G., Schmiady, H., Kentenich, H. (1993). Investigations on Possible Effects of the Phytotherapeutic Agent Agnus-Castus on the Follicular and Corpus Luteum Phases. Human Reproduction 8: (Suppl 1), 110
Osmers, R., & Kraft, K. (2004). Phytotherapy for Menopausal Complaints. Pharmazie in Unserer Zeit 33: (5), 384-391
Pruthi, S.; Qin, R.; Terstreip, S.A.; Liu, H.; Loprinzi, C. L.; Shah, T. R.; Tucker, K. F.; Dakhil,S.R.; Bury, M. J.; Carolla, R. L. (2012). A Phase III, Randomized, Placebo-Controlled, Double-Blind Trial of Flaxseed for the Treatment of Hot Flashes: NCCTG N08C7. Menopause 19: (1), 48
Rosic, S.; Kendic, S., Rosic, M. (2013). Phytoestrogens Impact on Menopausal Symptomatology. Materia Socio-Medica 25: (2), 98-100.
Schellenberg, R. (2001). Treatment for the Premenstrual Syndrome with Agnus Castus Fruit Extract: Prospective, Randomised, Placebo Controlled Study. BMJ 322: (7279), 134-137
Shakeri, F., Taavoni, S.; Goushegir, A.; Haghani, H. (2015). Effectiveness of Red Clover in Alleviating Menopausal Symptoms: A 12-Week Randomized, Controlled Trial. Climacteric, 18: (4), 568-573
Skorska, C.; Mackiewicz, B.; Gora, A.; Golec, M., Dutkiewicz, J. (2003). Health Effects of Inhalation Exposure to Organic Dust in Hops Farmers. Ann Univ Mariae Curie Sklodowska Med 58: (1), 459-465
Stonovska, L.& Kitanovska, V. (2013) The Effect of Complemantary and Alternative Therapy at Menapouse: Trick or Treat? In: Dvornyk, V. (Ed.) Current Topics in Menopause. Chapter 13, p.385-413, Bentham Science Publishers: School of Biomedical Science University of Hong Kong, Pokfulam Hong Kong SAR PR China.
Tanmahasamut, P., Vichinsartvichai, P., Rattanachaiyanont, M., Techatraisak, K.; Dangrat, C.; Sardod, P. (2015). Cimicifuga Racemosa Extract for Relieving Menopausal Symptoms: A Randomized Controlled Trial. Climacteric, 18: (1), 79-85
Van Cleemput, M.; Cattoor, K.; De Bosscher, K.; Haegeman, G.; De Keukeleire, D.; Heyerick, A. (2009). Hop (Humulus Lupulus)-Derived Bitter Acids as Multipotent Bioactive Compounds. Journal of Natural Products 72: (6), 1220-1230
Van Die, M. D.; Burger, H. G.; Bone, K. M.; Cohen, M. M.; Teede, H. J. (2009). Hypericum Perforatum with Vitex Agnus-Castus in Menopausal Symptoms: A Randomized, Controlled Trial. Menopause 16: (1), 156-163
Winterhoff, H.; Spengler, B.; Christoffel, V., Butterweck, V., Löhning, A. (2003). Cimicifuga extract BNO 1055: Reduction of Hot Flushes and Hints on Antidepressant Activity. Maturitas 44: 51-58
Yang, H.-M., Liao, M.F.; Zhu, S.Y., Liao, M.N., Rohdewald, P. (2007). A Randomised, Double-Blind, Placebo-Controlled Trial on the Effect of Pycnogenol on the Climacteric Syndrome in Peri-Menopausal Women. Acta Obstetricia Et Gynecologica Scandinavica 86: (8), 978-985.

Chapter 44

Evidence-Based Applications for the Nutrition of Patients with Diabetes Mellitus

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INTRODUCTION

Medical nutrition therapy (MNT) in diabetes plays a critical role in both types of diabetes management in reducing the potential complications associated with increasing quality of life, the control of lipid and blood pressure, and low glycemia. Providing evidence-based MNT for diabetic patients is necessary to supply optimal diabetes care (MacLeod *et al.*, 2017).

The objective of MNT is to keep blood glucose within normal limits to provide metabolic control (Barrett *et al.,* 2002). MNT is an integral part of diabetes care and diabetes self-management education (Aslander-van Vliet *et al.,* 2007; Smart *et al.,* 2009; Franz, 2014). The most challenging part of the treatment plan for the majority of diabetic individuals is deciding what to eat and pursuing a meal plan (American Diabetes Association, 2018a).

It has been shown that having a different food list and MNT for each individual with DM is effective. MNT should be scheduled by a dietitian considering the preference of the individuals (age, tradition, culture, religion, health beliefs, economy), their ability to follow, willingness, participation and lifestyle (Smart *et al.,* 2009; Franz, 2014; American Diabetes Association, 2018a).

The nutrition of children and adolescents with type 1 diabetes mellitus (T1DM) is similar to that of their non-diabetic peers (Çavuşoğlu, 2013). However, the carbohydrate and fat composition of MNT in diabetic individuals should be arranged according to individual's physical characteristics, BMI, activity level, laboratory findings, lifestyle, nutritional habits, economic status, metabolic control, and the medical treatment applied (Özer, 2003; Anonymous, 2017). The diabetes nurse provides training services for diabetic groups (adolescents, mother-to-be, ethnic groups, etc.) who have special needs. It is the individual responsibility of the diabetes nurse to actively participate in the decision-making process in the management of diabetes services (Oktay *et al.,* 2011).

MNT consists of four basic application steps.

1. General Evaluation

For the recommendations to be made to diabetic individuals, parameters such as anthropometric measurements, social life and food consumption history, and medical treatment should be evaluated individually. After evaluating the nutrition status and

other parameters of the individual based on his/her food consumption history, the treatment is launched following the determination of nutrition diagnosis and a suitable energy and macronutrient requirement for the individual (Anonymous, 2017).

2. Training

It includes interviews with the diabetic individual to provide a basic and then a detailed training. Following diagnosis of diabetes, patients should be referred to a diabetes center and should be involved in training programs provided by the physician, nurse and nutritionist once the glycemic control is achieved (Guide for diabetes mellitus and its complications, diagnosis, treatment and follow-up, 2017).

The diabetes nurse who is in the health team to provide the training is a member of the profession who has advanced knowledge and skills in diabetes management, is a practitioner, trainer, consultant, manager, researcher, coordinator, innovator and responsible for professional activities (Oktay *et al.,* 2011; Anonymous 2017). For this reason, diabetes nurse should provide training for diabetic individuals and their families. The nurse teaches the diabetic individual how to live actively and healthily and manage diabetes. S/he acts as a reference for the diabetic individual (Oktay *et al.,* 2011).

3. Target detection

The diabetic individual and the dietitian determine the attainable goals and applicable specific behaviors together (Anonymous, 2017).

4. Evaluation of the treatment

It is necessary to evaluate applications, compliance, and clinical outcomes and focus on identifying and resolving existing problems. The results of food consumption and fasting and postprandial blood glucose monitoring are evaluated together at this stage. According to the changes in medical treatment, the meal time and meal content are, if necessary, planned again (Anonymous, 2017).

Evidence-Based Applications

Evidence-based applications are defined as combining appropriate resources in areas where healthcare is provided, patient preferences, clinical expert opinions, and evidence from scientific research to provide the best care for sick people (Yılmaz, 2005). These applications aim at reducing the health problems of diabetic patients in the light of evidence-based information and current international consensus (Anonymous, 2017). In evidence-based nursing, it is possible to improve the quality and outcomes of care, make a difference in clinical practice and patient care outcomes, standardize the care and improve patient satisfaction (Yurtsever & Altıok, 2006).

The American Diabetes Association's (ADA's) Standards of Medical Care in Diabetes are published each year in a supplement to the January issue of Diabetes Care. The ADA's Professional Practice Committee develops the Standards and updates them annually, or more frequently online should it determine that new evidence or regulatory changes (e.g., drug approvals, label changes) merit immediate incorporation. The Standards include the most current evidence-based recommendations for diagnosing and treating adults and children with diabetes. ADA's grading system uses **A**, **B**, **C**, or **E** to show the evidence level that supports each recommendation.

A: Clear evidence from well-conducted, generalizable randomized controlled trials that are adequately powered

B: Supportive evidence from well-conducted cohort studies

C: Supportive evidence from poorly controlled or uncontrolled studies

E: Expert consensus or clinical experience

This is an abridged version of the Standards containing the evidence-based recommendations most pertinent to primary care (American Diabetes Association, 2018b).

Recommendations for the Effectiveness of MNT

Individuals with diabetes and their family members should be given diabetes training to enhance their knowledge and skills in diabetes self-management while and post-diagnosis when needed (Anonymous, 2017).

Recommendations	**Evidence rating**
An individualized MNT program, preferably provided by a registered dietitian, is recommended for all people with type 1 or type 2 diabetes or gestational diabetes mellitus.	A
A simple and effective approach to glycemia and weight management emphasizing portion control and healthy food choices may be considered for those with type 2 diabetes who are not taking insulin, who have limited health literacy or numeracy, or who are older and prone to hypoglycemia.	B
Because diabetes nutrition therapy can result in cost savings B and improved outcomes (e.g., A1C reduction) A, MNT should be adequately reimbursed by insurance and other payers. E	B, A, E

(Source: American Diabetes Association, 2018a).

The American Dietetic Association recommends that the individuals with type 1 and type 2 diabetes should be referred to a dietitian who is a member of the diabetes team within the first month following the diagnosis. The administration of MNT covers 3-4 visits, each of which lasts for 45-90 minutes, all of which are completed within 3-6 months at the beginning and continues with at least one annual interview to support lifestyle changes and assess the treatment (Anonymous, 2017).

MNT training should be given to reduce A1C in diabetic individuals. MNT should be given as customized for diabetes or prediabetes. Nutrition training should be given by an expert dietitian who is experienced in diabetes (B) (Franz *et al.*, 2010; American Diabetes Association, 2013; Dyson *et al.*, 2011).

MNT delivered by a registered dietitian is associated with A1C decreases for people with type 1 diabetes (Franz *et al.*, 2017; Rossi et al., 2010; Scavone *et al.*, 2010) and for people with type 2 diabetes (Franz *et al.*, 2017; Coppell *et al.*, 2010). Scheduled and quantified intake of carbohydrates in diabetic individuals receiving mixed insulin therapy can lead to improved glycemic control and reduced hypoglycemia risk (B) (Guide for diabetes mellitus and its complications, diagnosis, treatment and follow-up, 2017; Evert *et al.*, 2014).

T1DM individuals who use fast-acting insulin with an injection or insulin pump

should adjust the dose of insulin to be taken during mealtimes and between meals according to the CH content of meals and snacks (A) (Anonymous, 2017; Evert *et al.*, 2014).

Methods Used In Meal Planning

Diabetic individuals are taught how to make meal planning in nutrition training. To do this, the dietitian can use various methods and training tools such as exchange lists, the diet pyramid, the plate model, or level 1 of carbohydrate (CH) counting considering the lifestyle, education level, and application skills of the individual. The plate model is a method that is used visually in describing the principles of healthy nutrition and limiting the intake of CH, and which provides information in a short time. This method is preferable in diabetic individuals who often eat out, have difficulty applying other methods, have low education level, are found to have excess protein and CH intake, and have recently been diagnosed with diabetes (Anonymous, 2017; Evert *et al.*, 2014).

In a randomized controlled trial investigating the effect of carbohydrate counting in T1DM children and adolescents on metabolic control, body measurements, and serum lipid levels, Gökşen *et al.*, (2014) found a significant decrease in mean A1c levels in the carbohydrate-counting group in 2 years. The mean daily blood glucose levels in T1DM children with a low age-average (5.0 ± 1.2 years) were found to fall from 185 ± 46 mg / dl to159 ± 40 mg / dl as a result of a family-based feeding regime (Patton *et al.*, 2014). In a randomized controlled study on adolescents with diabetes mellitus, Gandolfo *et al.*, (2014) found a significant difference in carbohydrate counting values in the photographic training group compared to the exchange lists group.

Macronutrients in Diabetes MNT

Evidence suggests that there is not an ideal percentage of calories from carbohydrate, protein, and fat for all people with diabetes. It is not right to make suggestions based on a standard distribution. Therefore, macronutrient distribution should be based on an individualized assessment of current eating patterns, preferences, and metabolic goal (American Diabetes Association 2018a; Anonymous, 2017).

In A Mediterranean type eating habits study, A1c was found to decrease by 1.2% in 1 year. In "AHEAD-Action for Health in Diabetes" study, A1c fell by 0.64% through lifestyle change (Esposito *et al.*, 2009; Annuzzi *et al.*, 2014).

A variety of eating patterns are acceptable for the management of diabetes (MacLeod *et al.*, 2017; Schwingshackl *et al.*, 2017). The Mediterranean (Esposito *et al.*, 2009), and plant-based diets (Rinaldi *et al.*, 2016) are all examples of healthful eating patterns that have shown positive results in research, but individualized meal planning should focus on personal preferences, needs, and goals. Studies indicate that vegetarian diets can be universally used in type 2 diabetes prevention and as tools to improve blood glucose management (Pawlak, 2017).

Recommendations	Evidence rating
There is no single ideal dietary distribution of calories among carbohydrates, fats, and proteins for people with diabetes; therefore, macronutrient distribution should be individualized while keeping total calorie and metabolic goals in mind.	E
A variety of eating patterns are acceptable for the management of type 2 diabetes and prediabetes	B

(Source: American Diabetes Association 2018a).

Carbohydrates

Evidence for the amount of carbohydrate consumption that is ideal for diabetic individuals is insufficient. In diabetes treatment, low CH diets, which keep daily intake below 130 g, are not recommended (Anonymous, 2017; Evert *et al.,* 2014).

In diabetics using insulin, intake of CH should be distributed to meals and snacks, should not change from day to day, and should be in similar amounts. Type 1 and type 2 diabetics that adjust meal-time insulin by themselves or use insulin pump should do the dose adjustment according to CH intake (carbohydrate/insulin: CH/I ratio). Taking the glycemic index and glycemic burden of CHs as well as the daily total amount of CH intake into account can provide additional benefits in glycemic control (Anonymous, 2017; Evert *et al.,* 2014).

Monitoring of CH intake by means of CH counting, exchange lists or trial-based calculation is a key to providing glycemic control (TEMD Diabetes Mellitus ve Komplikasyonlarının Tanı, Tedavi ve İzlem Klavuzu, 2017; Evert *et al.,* 2014). Individuals with T1DM who use fast-acting insulin with injection or an insulin pump should adjust the amount of insulin at meals and snacks according to the CH content of these meals (Anonymous, 2017).

In a study investigating the long-term effects of low-glycemic index diet on quality of life and metabolic control in T1DM children, the A1c levels of children on low-glycemic index diet was found to be significantly better (Gilbertson *et al.,* 2001). The rates of hyperglycemia were found significantly lower. The quality of life was found to be better in both children and parents on low GI diet. It was also determined that flexible diet training based on low GI diets and food pyramid reduced A1c levels without increasing hyperglycemia risk, and increased the quality of life in children with DM.

Low glycemic index foods should be recommended for individuals with type 1 and type 2 diabetes who have insufficient glycemic control (Brand-Miller *et al.,* 2003). Opperman *et al.,* (2004) found significant decreases in A1c and total cholesterol as a result of a low glycemic index diet. Wheeler *et al.,* (2016) determined significantly lower glycemic control in their study investigating the relationship between intuitive eating and glycemic control in T1DM adolescents.

Recommendations	Evidence rating
Carbohydrate intake from vegetables, fruits, legumes, whole grains, and dairy products, with an emphasis on foods higher in fiber and lower in glycemic load, is preferred over other sources, especially those containing added sugars.	B
For people with type 1 diabetes and those with type 2 diabetes who are prescribed a flexible insulin therapy program, education on how to use carbohydrate counting and in some cases fat and protein gram estimation to determine mealtime insulin dosing is recommended to improve glycemic control.	A
For individuals whose daily insulin dosing is fixed, a consistent pattern of carbohydrate intakewith respect to time and amountmay be recommended to improve glycemic control and reduce the risk of hypoglycemia.	B
Peoplewith diabetes and those at risk should avoid sugar-sweetened beverages in order to control weight and reduce their risk for CVD and fatty liver B and should minimize the consumption of foods with added sugar that have the capacity to displace healthier, more nutrient-dense food choices. A	B, A

(Source: American Diabetes Association 2018a).

Foods containing sucrose can substitute food equivalent to the amount of CH in the meal plan. If they are added to the meal plan without a substitution, insulin dose must be adjusted. It should also be remembered that excessive energy intake should be avoided (Anonymous, 2017). Pulp consumption should be supported; however, the amounts given to individuals with diabetes should be the same as the amount recommended for the general population (14 g/1000 kcal/day, 7 to 13 g soluble pulp) and it should be obtained from whole grains (Evert *et al.*, 2014).

The addition of dietary fiber into diabetic diet has been shown to reduce postprandial hyperglycemia. It has been shown that dietary fiber increases the rate of passage of other foods through the intestines and thus resulting in less glucose absorption (Çavuşoğlu, 2013). A randomized controlled systematic meta-analysis study was conducted to investigate the effect of probiotics on glycemic control (Ruan *et al.*, 2015). A significant level of decrease was found in fasting glucose and plasma insulin levels when prebiotic consumption was compared to placebo. Probiotic consumption can improve glycemic control in average. Probiotic use may be a method for the prevention and control of hyperglycaemia in clinical practice

In studies to clarify the effect of fructose on glycemic control in diabetic individuals, it has been determined that fructose consumption does not significantly affect glucose or fasting insulin (Cozma *et al.*, 2012). A randomized clinical trial (Nansel *et al.*, 2015) which investigated the effect of problem solving, active learning, motivational interviewing, and family-based behavioral intervention on the main outcomes of glycemic control and diabetes mellitus in adolescents with type 1 diabetes, the dietary quality in adolescents was found to increase, but no influence was determined on glycemic control.

In a study examining the effect of exchanging plant and animal-derived proteins on

glycemic control in diabetic individuals, Viguiliouk *et al.,* (2015) determined that exchanging plant and animal-derived proteins in approximately 35% of the total daily protein significantly reduced Alc compared to that of the control group. In general, the results show that the intake of vegetable and animal-derived proteins results in positive outcomes in glycemic control in individuals with diabetes.

In another study investigating the effect tree nuts on achieving glycemic control in diabetic individuals, Viguiliouk *et al.,* (2014) observed significant decreases in A1c and blood glucose when tree nuts nutrition group was compared to the control group. In their study conducted to clarify the effect of ginseng on glycemic control in diabetic and non-diabetic individuals, Shishtar *et al.,* (2014) found that ginseng significantly reduced fasting blood sugar when compared to the control group.

Investigating the effectiveness of camel milk on glycemic control, Agarwal *et al.,* (2003) found insulin requirement significantly decreased in the study group given camel milk. Mohamad *et al.,* (2009) found in their randomized controlled trials that there were significant changes in A1c and other parameters in the group given camel milk after 16 weeks.

Data from the Nurses' Health Study examining whole grains and their components (cereal fiber, bran, and germ) in relation to all-cause and CVD-specific mortality among women with type 2 diabetes suggest a potential benefit of whole-grain intake in reducing mortality and CVD (He *et al.,* 2010).

Fat and Cholesterol in Diabetes Treatment

Today, research into how much of the energy should be taken from fat to prevent chronic diseases is inadequate. However, the "The US Institute of Medicine-(IOM" has determined acceptable levels of macronutrient intake as 20-35% of energy for fat (Trumbo *et al.,* 2002). This is not a specific range determined for diabetic patients (Evert *et al.,* 2014). What is the effectiveness and safety of modified fat intake in the diet in Type 1 diabetes? (Helgeson *et al.,* 2006; Øverby *et al.,* 2007; Snell-Bergeon *et al.,* 2009).

The saturated fat intake should be limited to less than 7% of the total calorie. The saturated fat intake of adult diabetic patients should not exceed 7% of their total daily energy needs. In addition, trans fatty acid intake should be restricted (Anonymous, 2017).

Recommendations	Evidence rating
Data on the ideal total dietary fat content for people with diabetes are inconclusive, so an eating plan emphasizing elements of a Mediterranean-style diet rich in monounsaturated and polyunsaturated fats may be considered to improve glucose metabolism and lower CVD risk and can be an effective alternative to a diet low in total fat but relatively high in carbohydrates.	B
Eating foods rich in long-chain n-3 fatty acids, such as fatty fish (EPA and DHA) and nuts and seeds (ALA), is recommended to prevent or treat CVD B; however, evidence does not support a beneficial role for the routine use of n-3 dietary supplements. A	B, A

(Source: American Diabetes Association 2018a).

The "trans fats" intake should be reduced significantly (<1% of daily energy intake) due to the fact that it lowers LDL-cholesterol levels and increases HDL-cholesterol levels. Cholesterol intake in diabetic individuals should be below 200 mg/day. Two or more portions of fish a week provide omega-3 (n-3), polyunsaturated fatty acids, and the consumption of this amount should be recommended (Anonymous, 2017; Smart *et al.,* 2009).

To compare the effects on insulin sensitivity, body composition and glycaemic control of the recommended standard weight-maintaining diabetes diet and an isocaloric low-fat diabetes diet during two, 3-month periods in patients with Type 1 diabetes. When low-fat isoenergetic diet intake was examined, it was determined that there was a significant improvement in insulin sensitivity in the intervention group, but no difference in HbA1c, BMI (Rosenfalck *et al.,* 2006).

Protein in Diabetes Treatment

It is recommended that 15-20% of daily energy (0.8-1 g/kg/day) should be met from protein in the general population (American Diabetes Association, 2018a).

The amount of protein taken in the case of T1DM should be in accordance with the growth needs and body weight of the child. Low fat foods such as fish and poultry are recommended (Çavuşoğulu, 2013).

If the renal functions are normal, there is no need to modify this recommendation in diabetic individuals. High protein diets are not recommended for weight loss. The effect of protein intake more than 20% of energy needs on the treatment and complications of diabetes is not known. Such diets can result in short-term weight loss and improve glycemia. However, these benefits were not found to persist in the long run. In addition, the increase in protein intake also increases saturated fat intake (Anonymous, 2017).

In adults with low-protein diets, A1c significantly decreased. There is no evidence of the safety and effectiveness of low-protein diets in children and adults with type 1 diabetes. Herbal protein sources, such as legumes, should be encouraged. In addition, the recommended animal protein sources include fish, meat and low-fat dairy products. There is no evidence of the safety and efficacy of high protein diets vs. normal diets for children and adults with normal renal function and Type 1 diabetes (Pan *et al.,* 2008).

Recommendations	**Evidence rating**
In individuals with type 2 diabetes, ingested protein appears to increase insülin response without increasing plasma glucose concentrations. Therefore, carbohydrate sources high in protein should be avoided when trying to treat or prevent hypoglycemia.	B

(Source: American Diabetes Association 2018a).

Macronutrients in Diabetes Treatment

There is no adequate evidence to support the use of cinnamon and other herbal supplements in the treatment of diabetes. No significant changes were found in the A1c level in the study (Allen *et al.,* 2013; American Diabetes Association, 2018a).

Metformin is associated with vitamin B12 deficiency, with a recent report from the Diabetes Prevention Program Outcomes Study (DPPOS) suggesting that periodic testing of vitamin B12 levels should be considered in patients taking metformin, particularly in those with anemia or peripheral neuropathy (Aroda *et al.,* 2016).

Vitamin D is generally necessary for the skeletal system, and bone development and density. Vitamin D has also been associated with a variety of diseases, including type 2 diabetes. It has been observed that people with prediabetes and established diabetes have lower blood 25[OH]D concentrations than patients with oral glucose tolerance (Mitri *et al.,* 2011). In a study investigating the effects of vitamin D on diabetes complications and progression, insulin resistance, and blood sugar, A1c and glucose levels were observed to fall in patients treated with vitamin D compared to placebo (George *et al.,* 2012).

Recommendations	**Evidence rating**
There is no clear evidence that dietary supplementation with vitamins, minerals, herbs, or spices can improve outcomes in people with diabetes who do not have underlying deficiencies, and are not generally recommended. There may be safety concerns regarding the long-term use of antioxidant supplements such as vitamins E and C and carotene.	C

(Source: American Diabetes Association 2018a).

Artifial Sweeteners in Diabetes Treatment

Sweeteners are used to add sugar taste or enhance the taste of food. Synthetic sweeteners are compounds which have no energy value but give sugar taste. They are used by low-calorie dieters or diabetic patients because they do not provide energy. Synthetic sweeteners affect microbiota and the emerging change in microbiota leads to glucose intolerance and possible weight gain (Gültekin *et al.,* 2017).

Recommendations	**Evidence rating**
The use of nonnutritive sweeteners may have the potential to reduce overall calorie and carbohydrate intake if substituted for caloric (sugar) sweeteners and without compensation by intake of additional calories from other food sources. Nonnutritive sweeteners are generally safe to use within the defined acceptable daily intake levels.	B

(Source: American Diabetes Association 2018a).

Honey, jam, refined sugar and starch are significantly restricted in the diet. Fast-digested simple sugars lead to a sudden rise in blood sugar. Therefore, complex carbohydrates are preferred for energy (Çavuşoğlu, 2013). Food labels containing calorie-reduced sweeteners should display calorie values in a visible way and patients should be trained to read labels. Sugar alcohols and non-nutritive sweeteners are safe to consume within the limits approved for use by the FDA (Anonymous, 2017).

Energy-reduced sweeteners (with nutritive value) (sugar alcohols, polyols) such as erythritol, isomalt, lactitol, maltitol, sorbitol, mannitol, xylitol, tagatose and hydrogenated starch hydrolysates (energy values ranging from 0.2-3.0 kcal / g) are sweeteners with reduced calorie which have been approved by the Food and Drug Administration (FDA). The use of stevia (rebaudioside A) as a food additive was found safe by the FDA in 2008 (Anonymous, 2017).

Recommending foods containing sucrose that does not exceed 10% of total daily energy for diabetic individuals with adequate glycemic control does not disrupt glucose and lipid control (Colagiuri *et al.,* 1989).

Alcohol in Diabetes Treatment

Alcohol consumption by people with diabetes is not recommended. Individuals with Type 1 diabetes should be informed that alcohol intake will increase the risk of late hypoglycemia (C). (Ashley *et al.,* 1997). Alcohol should be consumed together with foods containing carbohydrates to reduce the risk of nocturnal hypoglycaemia (Anonymous, 2017; American Diabetes Association, 2018a).

Salt Consumption

The sodium intake of <2300 mg/day recommended for the general population is suitable for diabetic individuals (B). Reducing sodium intake with a diet rich in fruits, vegetables, and low-fat dairy products in normotensive and hypertensive individuals reduces blood pressure values (Anonymous, 2017; Evert *et al.,* 2014; American Diabetes Association, 2018a).

REFERANCES

Agarwal, R. P.; Swami, S. C.; Beniwal, R.; Kochar, D. K.; Sahani, M. S.; Tuteja, F. C.; Ghouri, S. K. (2003). Effect of camel milk on glycemic control, risk factors and diabetes quality of life in type-1 diabetes: A randomized prospective controlled study. Journal of Camel Practice and Research 10:(1), 45-50.

Allen, R. W.; Schwartzman, E.; Baker, W. L.; Coleman, C. I.; Phung, O. J. (2013). Cinnamon use in type 2 diabetes: an updated systematic review and meta-analysis. The Annals of Family Medicine 11:(5), 452-459.

American Diabetes Association. (2018a). 4. Lifestyle Management: Standards of Medical Care in Diabetes-2018. Diabetes Care 41:(Supplement 1), 38-50.

American Diabetes Association. (2018b). Standards of Medical Care in Diabetes-2018 Abridged for Primary Care Providers. Clinical Diabetes 36:(1), 14-37.

American Diabetes Association. (2013). Standarts of medical care in diabetes -2013. Diabetes Care 36: (supp 1), 11-66.

Annuzzi, G.; Rivellese, A. A.; Bozzetto, L.; Riccardi, G. (2014). The results of Look AHEAD do not row against the implementation of lifestyle changes in patients with type 2 diabetes. Nutrition, Metabolism and Cardiovascular Diseases 24(1): 4-9.

Anonymous (2017). TEMD Diabetes Mellitus ve Komplikasyonlarının Tanı, Tedavi Ve İzlem Klavuzu-2017. (2017). 9. Baskı, Miki Matbaacılık, 53-61 s., Ankara.

Ashley, M. J.; Ferrence, R.; Room, R.; Bondy, S.; Rehm, J.; Single, E. (1997). Moderate drinking and health. Implications of recent evidence. Canadian Family Physician 43: 687-694.

Aslander van Vliet, E.; Smart, C.; Waldron, S. (2007). Nutritional management in childhood and adolescent diabetes. Pediatric diabetes 8: (5), 323-339.

Aroda, V. R.; Edelstein, S. L.; Goldberg, R. B.; Knowler, W. C.; Marcovina, S. M.; Orchard, T. J.;& Crandall, J. P. (2016). Long-term metformin use and vitamin B12 deficiency in the Diabetes Prevention Program Outcomes Study. The Journal of Clinical Endocrinology & Metabolism 101(4): 1754-1761.

Barrett, J. C.; Goodwin, D. K.; Kendrick, O. (2002). Nursing, food service, and the child with diabetes. The Journal of School Nursing 18:(3), 150-156.

Brand-Miller, J.; Hayne, S.; Petocz, P.; Colagiuri, S. (2003). Low–glycemic index diets in the management of diabetes: a meta-analysis of randomized controlled trials. Diabetes care 26:(8), 2261-2267.

Colagiuri, S.; Miller, J. J.; Edwards, R. A. (1989). Metabolic effects of adding sucrose and aspartame to the diet of subjects with noninsulin-dependent diabetes mellitus. The American journal of clinical nutrition 50:(3), 474-478.

Coppell, K. J.; Kataoka, M.; Williams, S. M.; Chisholm, A. W.; Vorgers, S. M.; Mann, J. I. (2010). Nutritional intervention in patients with type 2 diabetes who are hyperglycaemic despite optimised drug treatment-Lifestyle Over and Above Drugs in Diabetes (LOADD) study: randomised controlled trial. BMJ 341:(c3337), 1-7.

Cozma, A. I.; Sievenpiper, J. L.; De Souza, R. J.; Chiavaroli, L.; Ha, V.; Wang, D. D.,& Jenkins, A. L. (2012). Effect of fructose on glycemic control in diabetes: a systematic review and meta-analysis of controlled feeding trials. Diabetes care 35:(7), 1611-1620.

Çavuşoğlu, H. (2013). Endokrin Sorunu Olan Çocuk ve Hemşirelik Bakımı, Çocuk Sağlığı Hemşireliği, Sistem Ofset Basımevi, Cilt 2, 157-158s., Ankara.

Dyson, P. A.; Kelly, T.; Deakin, T.; Duncan, A.; Frost, G.; Harrison, Z.; & Oliver, L. (2011). Diabetes UK evidence-based nutrition guidelines for the prevention and management of diabetes. Diabetic Medicine 28:(11), 1282-1288.

Esposito, K.; Maiorino, M. I.; Ciotola, M.; Di Palo, C.; Scognamiglio, P.; Gicchino, M.; & Giugliano, D. (2009). Effects of a Mediterranean-style diet on the need for antihyperglycemic drug therapy in patients with newly diagnosed type 2 diabetes: a randomized trial. Annals of internal medicine 151:(5), 306-314.

Evert, A. B.; Boucher, J. L.; Cypress, M.; Dunbar, S. A.; Franz, M. J.; Mayer-Davis, E. J.; & Yancy, W. S. (2014). Nutrition therapy recommendations for the management of adults with diabetes. Diabetes care 37:(1), 120-143.

Franz, M. J., MacLeod, J., Evert, A., Brown, C., Gradwell, E., Handu, D., ... & Robinson, M. (2017). Academy of Nutrition and Dietetics nutrition practice guideline for type 1 and type 2 diabetes in adults: systematic review of evidence for medical nutrition therapy effectiveness and recommendations for integration into the nutrition care process. Journal of the Academy of Nutrition and Dietetics, 117(10), 1659-1679

Franz, M. J.; Boucher, J. L.; Evert, A. B. (2014). Evidence-based diabetes nutrition therapy recommendations are effective: the key is individualization. Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy 7: 65-72.

Franz, M. J.; Powers, M. A.; Leontos, C.; Holzmeister, L. A.; Kulkarni, K.; Monk, A.; & Gradwell, E. (2010). The evidence for medical nutrition therapy for type 1 and type 2 diabetes in adults. Journal of the American Dietetic Association 110:(12), 1852-1889.

Gandolfo, A. S.; Bastos, D. V.; Makluf, B. A. J.; Neri, L. D. C. L.; Savoldelli, R. D.; Della Manna, T.; & Ferraro, A. A. (2014). Efficacy of photographic educational materials for carbohydrate counting training of adolescents with diabetes mellitus. Nutricion Hospitalaria 29:(2), 344-349.

George, P. S.; Pearson, E. R.; Witham, M. D. (2012). Effect of vitamin D supplementation on glycaemic control and insulin resistance: a systematic review and meta-analysis. Diabetic Medicine 29:(8), 142-150.

Gilbertson, H. R.; Brand-Miller, J. C.; Thorburn, A. W.; Evans, S.; Chondros, P.; Werther, G. A. (2001). The effect of flexible low glycemic index dietary advice versus measured carbohydrate exchange diets on glycemic control in children with type 1 diabetes. Diabetes care 24:(7), 1137-1143.

Gökşen, D.; Altınok, Y. A.; Özen, S.; Demir, G.; Darcan, Ş. (2014). Effects of carbohydrate counting method on metabolic control in children with type 1 diabetes mellitus. Journal of Clinical Research in Pediatric Endocrinology 6:(2), 74-78.

Gültekin, F.; Öner, M. E.; Savaş, H. B.; Doğan, B. (2017). Sweeteners, Glucose Intolerance and Microbiota. Journal of Biotechnology and Strategic Health Research 1: 34-38.

He, M.; Van Dam, R. M.; Rimm, E.; Hu, F. B.; Qi, L. (2010). Whole-grain, cereal fiber, bran, and germ intake and the risks of all-cause and cardiovascular disease–specific mortality among women with type 2 diabetes mellitus. Circulation 121:(20), 2162-2168.

Helgeson, V.S.; Viccaro, L.; Becker, D.; Escobar, O.; Siminerio, L. (2006). Diet of adolescents with and without diabetes, Diabetes Care 29: 982-987.

MacLeod, J.; Franz, M. J.; Handu, D.; Gradwell, E.; Brown, C.; Evert, A.; & Robinson, M. (2017). Academy of Nutrition and Dietetics Nutrition practice guideline for type 1 and type 2 diabetes in adults: nutrition intervention evidence reviews and recommendations. Journal of the Academy of Nutrition and Dietetics 117:(10), 1637-1658.

Mitri, J.; Muraru, M. D.; Pittas, A. G. (2011). Vitamin D and type 2 diabetes: a systematic review. European Journal of Clinical Nutrition 65:(9), 1005-1015.

Mohamad, R. H.; Zekry, Z. K.; Al-Mehdar, H. A.; Salama, O.; El-Shaieb, S. E.; El-Basmy, A. A.; & Sharawy, S. M. (2009). Camel milk as an adjuvant therapy for the treatment of type 1 diabetes: verification of a traditional ethnomedical practice. Journal of Medicinal Food 12:(2), 461-465.

Nansel, T. R.; Laffel, L. M.; Haynie, D. L.; Mehta, S. N.; Lipsky, L. M.; Volkening, L. K.; & Liu, A. (2015). Improving dietary quality in youth with type 1 diabetes: randomized clinical trial of a family-based behavioral intervention. International Journal of Behavioral Nutrition and Physical Activity 12:(1), 58.

Oktay, S., Erdoğan, S., Olgun, N., Özcan, Ş., Coşansu, G., Çelik, S., Bektaş, B., Yıldırım Dökecek, N. (2011). Diyabet Eğiticileri İçin Diyabet Ajandası, Mart Matbaa Sistemleri, No: 978-975-98323-3-9, 64 s., İstanbul.

Opperman, A. M.; Venter, C. S.; Oosthuizen, W.; Thompson, R. L.; Vorster, H. H. (2004). Meta-analysis of the health effects of using the glycaemic index in meal-planning. British Journal of Nutrition 92:(3), 367-381.

Özer, E. (2003). Diyabette Beslenme Tedavisi. Yılmaz T, Bahçeci M, Büyükmeşe M (Ed.), Diabetes Mellitu'un Modern Tedavisi (sayfa 161-168). Türkiye Diyabet Vakfı Yayını: İstanbul.

Pan, Y.; Guo, L. L.; Jin, H. M. (2008). Low-protein diet for diabetic nephropathy: a meta-analysis of randomized controlled trials–. The American Journal of Clinical Nutrition 88:(3), 660-666.

Patton, S. R.; Odar, C.; Midyett, L. K.; Clements, M. A. (2014). Pilot study results for a novel behavior plus nutrition intervention for caregivers of young children with type 1 diabetes. Journal of Nutrition Education and Behavior 46:(5), 429-433.

Pawlak, R. (2017). Vegetarian diets in the prevention and management of diabetes and its complications. Diabetes Spectrum 30:(2), 82-88.

Rinaldi, S.; Campbell, E. E.; Fournier, J.; O'Connor, C.; Madill, J. (2016). A comprehensive review of the literature supporting recommendations from the Canadian Diabetes Association for the use of a plant-based diet for management of type 2

diabetes. Canadian Journal of Diabetes 40:(5), 471-477.
Rosenfalck, A.M.; Almdal, T.; Viggers, L.; Madsbad, S.; Hilsted, J. (2006). A low-fat diet improves peripheral insulin sensitivity in patients with Type 1 diabetes. Diabetic Medicine 23:(4), 384-392.
Rossi, M. C.; Nicolucci, A.; Di Bartolo, P.; Bruttomesso, D.; Girelli, A.; Ampudia, F. J.; & Horwitz, D. (2010). Diabetes Interactive Diary: a new telemedicine system enabling flexible diet and insulin therapy while improving quality of life: an open-label, international, multicenter, randomized study. Diabetes Care 33:(1), 109-115.
Ruan, Y.; Sun, J.; He, J.; Chen, F.; Chen, R.; Chen, H. (2015). Effect of probiotics on glycemic control: a systematic review and meta-analysis of randomized, controlled trials. PloS One 10:(7), 1-15.
Scavone, G.; Manto, A.; Pitocco, D.; Gagliardi, L.; Caputo, S.; Mancini, L.; & Ghirlanda, G. (2010). Effect of carbohydrate counting and medical nutritional therapy on glycaemic control in type 1 diabetic subjects: a pilot study. Diabetic Medicine 27:(4), 477-479.
Schwingshackl, L.; Schwedhelm, C.; Hoffmann, G.; Lampousi, A. M.; Knüppel, S.; Iqbal, K.; & Boeing, H. (2017). Food groups and risk of all-cause mortality: a systematic review and meta-analysis of prospective studies, 2. The American Journal of Clinical Nutrition 105:(6), 1462-1473.
Shishtar, E.; Sievenpiper, J.L.; Djedovic, V.; Cozma, A.I.; Ha, V.; Jayalath, V. H.; Jenkins, D. J.; & Vuksan, V. (2014) The Effect of Ginseng (The Genus Panax) on Glycemic Control: A Systematic Review and Meta-Analysis of Randomized Controlled Clinical Trials. PLoS One 9:(9), e107391, 1-11.
Smart, C.; Aslander-van, Vliet, E.; Waldron, S. (2009). Nutritional management in children and adolescents with diabetes, Pediatric Diabetes 10:(Suppl 12), 100-117.
Snell-Bergeon, J. K.; Chartier-Logan, C.; Maahs, D. M.; Ogden, L. G.; Hokanson, J. E.; Kinney, G. L.; Eckel, R. H.; Ehrlich, J.; Rewers, M. (2009). Adults with type 1 diabetes eat a high-fat atherogenic diet that is associated with coronary artery calcium. Diabetologia 52:(5), 801-809.
Øverby, N. C.; Flaaten, V.; Veierød, M. B.; Bergstad, I.; Margeirsdottir, H. D.; Dahl-Jørgensen, K.; Andersen, L. F. (2007). Children and adolescents with type 1 diabetes eat a more atherosclerosis-prone diet than healthy control subjects. Diabetologia 50:(2), 307-316.
Wheeler, B. J.; Lawrence, J.; Chae, M.; Paterson, H.; Gray, A. R.; Healey, D.; Reirth D. M.; Taylor, B. J. (2016). Intuitive eating is associated with glycaemic control in adolescents with type I diabetes mellitus. Appetite 96: 160-165.
Viguiliouk, E., Stewart, S. E., Jayalath, V. H., Ng, A. P., Mirrahimi, A., de Souza, R. J., Hanley, A.J.; .. & Josse, R. G. (2015). Effect of replacing animal protein with plant protein on glycemic control in diabetes: a systematic review and meta-analysis of randomized controlled trials. Nutrients 7:(12), 9804-9824.
Viguiliouk, E.; Kendall, C. W.; Mejia, S. B.; Cozma, A. I.; Ha, V.; Mirrahimi, A.; ... & de Souza, R. J. (2014). Effect of tree nuts on glycemic control in diabetes: a systematic review and meta-analysis of randomized controlled dietary trials. PloS one 9:(7), e103376, 1-14.
Yılmaz, M. (2005). Hemşirelik bakım hizmetinin kalitesini geliştirme yolu olarak kanıta dayalı uygulama. C.Ü. Hemşirelik Yüksekokulu Dergisi 9:(1), 41-48.
Yurtsever, S.; Altıok, M. (2006). Kanıta dayalı uygulamalar ve hemşirelik. F.Ü. Sağlık Bil. Dergisi 20:(2), 159-166.

Chapter 45

An Important Factor Affecting Nutritional Status: Circadian Rhythm

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1. INTRODUCTION

Many biological processes, including metabolic pathways such as physiology and behaviour, display 24 hours hythms running by endogenous circadian clocks. Increased morbidity consists following prolonged desynchrony of circadian rhythms and the external environment, such as shift work and chronic jet-lag. Of particular relevance to this consensus, shift workers exhibit a higher prevalence of obesity and associated metobolic disorders (Summa & Turek, 2014).

2. CIRCADIAN RHYTHM

Circadian rhythms are widespread and regulate most of the major physiological systems in mammals, if not all. These rhythms are produced by circadian timing system, which consists of a 'central' clock within the suprachiasmatic nucleus (SCN) of the anterior hypothalamus and multiple 'peripheral' clocks located anywhere within the brain or throughout the body (Sollars & Pickard, 2015).

2.1. Suprachiasmatic Nucleus (SCN) (Central Clock)

Circadian rhythm of human is repeated approximately 24.8 hours (Refinetti, 2010). SCN is the main timer of circadian behavioral rhythms and plays a role in the repetition cycle in certain periods of rhythm in mammals (Eckel-Mahan & Sassone-Corsi, 2013; Welsh et al., 2010). The SCN is located in the ventral periventricular zone of the anterior hypothalamus, dorsal to theoptic chiasm, in close proximity to the third ventricle, and medial to the anterior hypothalamic area. Despite the anatomical prominence of the SCN, it was nearly 100 years from its discovery to recognition of a function. This structure is small (10 mm) and contains neuronal cells ranging in size from 20,000 to 100,000, as well as glial cells (Welsh et al., 2010). The SCN is synchronized by evaluating the environmental timers and light is the most important timer for the SCN. The incoming light signal comes from specialized ganglion cells in

the retina via retinohypothalamic tract (RHT) to SCN and it is evulated (Do & Yau, 2010). It is not clear that how the interpreted signals in the SCN reach to oscillators in the brain or other parts of the organism. SCN affects directly on important metabolic processes such as nutrition, sleep/wake cycle, insulin secretion, glucose metabolism and learning (Hastings et al., 2008). Synaptic projections from the SCN to different organsystems have been evidenced in rodents utilizing the trans-synaptic repass tracerpseudorabies virus, including projections to the pineal gland, heart, kidneys, adrenal cortex, liver, pancreas and adipose tissue (Scheer et al., 2003). Also, some hormones, such as glucocorticoids, under SCN controlmay provide to add circadian oscillations in peripheral tissues (Balsalobre et al., 2000).

2.2. Circadian Clock (Peripheral Clocks)

Circadian clock mechanism can be defined by transcription-translation feedback loops (TTFL) (Hosokawa et al., 2013). CLOCK and BMAL1, are circadian proteins, interact with E-box response elements in the supportives of target genes, which stimulation the positive transcription arm of the TTFL. The peripheral clock in eachorgan leads the expression of its own target genes and isthought to play an important role in the maintenance oforgan or homeostasis (Schibler et al., 2015). Two of these target genes encode the circadian proteins Period (Per) (Per1, Per2, and Per3) and Cryptochrome (Cry) (Cry1 and Cry2)(Vriend & Reiter, 2015).

During circadian morning, the levels of Per and Cry mRNA accumulate in SCN neurones and, by the end of the circadian day. After then, Per and Cry proteins appear, form complexes and begin to enter the nucleus where they interfere with the actions of CLOCK and BMAL1, in part by recruiting transcriptional inhibitory complexes (Takeda & Maemura, 2015). As circadian night progresses, mRNA levels drop, translation of Per and Cry proteins declines, and existing Per/Cry complexes are actively degraded: a process essential for clock progression. This in the end releases E-boxes from negative regulation and the cycle is ready to begin anew with a new circadian day. This central feedback oscillation is increased by additional loops involving the RORA, Rev-Erbb, Rev-Erba genes, which are also driven by CLOCK: BMAL1, and their protein products in turn drive rhythmic expression of BMAL1 via RORE (Preitner et al., 2002). The united loss of these genes can be transform to mice behaviourally arrhythmic, as the loss of Cry1 and Cry2, BMAL1 alone, or Per1 and Per2 (Takeda & Maemura, 2015).

3. FACTORS AFFECTING CIRCADIAN RHYTHM

3.1. Light

Because of the direct influence of SCN, it is stated that light is the most important factor affecting circadian rhythm. In lesions that occur in the SCN, they can not fulfill light responsibilities and can disrupt the circadian rhythm of both leukomotor and nutritional consumption behaviors (Eckel-Mahan & Sassone-Corsi, 2013).

3.2. Melatonin

One of the main target organs of SCN is the pineal gland. One of the important functions of this small structure in brain is the influence of darkness, melatonin synthesis, which synthesis is rhythmical in all mammals. The release of melatonin peaked at night (02.00-03.00) after the beginning of darkness (beginning at 21.00-22.00), followed by a sharp decline before the onset of light and ending at 07.00-09.00.

While melatonin is functioning as an input signal in terms of reporting time to organism, can also act as an output signal because the oscillation is affected by SCN (Hofstra & de Weerd, 2008).

Melatonin hormone regulates both food consumption (hunger/satiety) and bioelectrical rhythm. The G protein-binding receptor that binds melatonin is involved in both sleep-wake cycle and islet cell functions, such as melatonin. For this reason, circadian rhythm can affect glucose metabolism via G protein-binding receptor expression. It has been reported that presence of Clock, BMAL1, Period and Cryptochromes in islets and relationship between insulin content and quantity in islets (Mulder et al., 2009).

3.3. Temperature

Temperature; is a strong stimulus for most organisms, while changes in external temperature in mammals constitute a weak stimulus (Refinetti, 2010). But; peripheral oscillators including fibroblast, liver, kidney and lung are very sensitive to temperature change (Abraham et al., 2010).

3.4. Jet lag

Defines travel between different time zones. The inconsistency between the journey's end time clock and light/dark cycle at the destination can cause some problems. The individual's biological clock; it may be difficult to adapt to the variables such as geographical clock of traveled country, difference between night and day, sleeping order, eating and working hours. Problems such as insomnia, fatigue, loss of appetite, intestinal impairment, time and distance impairment, prolonged response time, jurisdictional and memory defects, blurred vision, somatic aches and sweating can be observed in these people (Chassard et al., 2005).

The adaptation of jet lag person to new time zone depends on the circadian hours of individual and number of time zones in which it has been completed. The more time zones traveled during the journey, the more difficult it is to reconfigure the clock (Kolla & Auger, 2011). For this reason, circadian rhythm needs to be adapted to the region of arrival and the jet-lag effect to reduce the negative effects of individual on individual, meals to be consumed after arrival are appropriate to the local time, plenty of liquid is consumed to prevent dehydration and caffeine and alcohol- there is a benefit if not preferred (Benardort, 2012).

3.5. Shift work

It refers to the mode of operation that occurs outside the standard operating conditions. Night-time seizures, rotation work shifts, fixed night work are included within this definition (Kolla & Auger, 2011). The person is active when the biological rhythm is required to be resting; this process leads to circadian rhythm deterioration. With deterioration of rhythm synchronization, total amount of sleep decreases and individuals in this population are at increased risk of developing serious diseases such as gastrointestinal problems, metabolic syndrome, diabetes, heart diseases, hypertension, cancer (Drake et al., 2004; Gooley, 2008; Knutsson, 2003; Morikawa et al., 2005; Schernhammer et al., 2003).

Night shift workers may exhibit increased circulating inflammatory markers associated with increased incidence of dyslipidemia, increased obesity, increased postprandial serum glucose and insulin levels, and diabetes incidence (Copertaro et al.,

2008; Lund et al., 2001).

In a comparative study of shift workers and normal workers; it was found that shift workers had higher Body Mass Index (BMI) (Di Lorenzo et al., 2003). In another study, Japanese workers who worked for 27 years were examined in two groups as shift or daytime workers, and the result was that shift workers were more obese (Kubo et al., 2010). Fujino et al. (2006) found an increase in incidence of ischemic heart diseases in shift workers.

4. FEEDING/FASTING MATTERS

4.1. Circadian Rythm and feeding

Circadian rhythms are self-sustained ~24-hours oscillations in behaviour, physiology, and metabolism. These rhythms have evolved and permit organisms to effectively respond to the predictable daily change in the light: dark cycle and the resultant rhythms in food availability in nature. Whereas light is the dominant timing cue for the SCN oscillator, time of food intake affects the phase of the clocks in peripheral tissues, including liver, muscle, and adipose tissues. For millions of years in the absence of artificial light, the circadian clock—in conjunction with the retinal light input—imposed diurnal rhythms in physiology and behaviours, including the activity/ rest and feeding/fasting cycle. For many of our ancestors, food was probably scarce and primarily consumed during daylight hours, leaving long hours of overnight fasting. With the advent of affordable artificial lighting and industrialization, modern humans began to experience prolonged hours of illumination every day and resultant extended consumption of food (Mattson et al., 2014).

As expected for nocturnal animals, mice mostly consume food during the night. When food is provided exclusively during the day, the phase of peripheral clocks is gradually inverted within several days (Damiola et al., 2000). By contrast, inverted feeding regimen has very little impact on the phase of the master clock in the brain. Therefore, feeding-fasting cycles appear to function as potent timing cues for peripheral clocks, even bypassing the otherwise-dominating synchronization signals emitted by the master clock in the brain.Feeding time had a profound effect on the repertoire, phase, and amplitude of rhythmic gene expression (Asher & Sassone-Corsi, 2015).

4.2. Time Restricted Feeding

Limiting the time and duration of food availability with no calorie reduction is termed time restricted feeding (TRF). TRF allows individuals to consume ad libitum (AL) energy intake within a set window of time (3–4 hours, 7–9 hours, or 10–12 hours), which induces a fasting window of 12–21 hours per day. Restricting food to a particular time of day has profound effects on the behavior and physiology of animals. Two to four hours before the meal, the animals display an anticipatory behavior, which is demonstrated by an increase in locomotor activity, body temperature, corticosterone secretion, gastrointestinal motility, and activity of digestive enzymes all are known output systems of the biological clock. TRF affects circadian oscillators in peripheral tissues, such as liver, kidney, heart, and pancreas (Froy, 2007; Rothschild et al., 2014).

Time-restricted feeding experiments further highlighted the metabolic effects of feeding schedule. Upon nighttime restricted feeding of regular chow, hepatic triglycerides content in wild type mice decreases by 50%, whereas the total daily caloric consumption is unaffected (Adamovich et al., 2014). Similar studies with high-fat diet

demonstrated compelling effects on the propensity to develop obesity and metabolic syndrome. In a study that compared two mice groups which both consume high fat and equal caloric diet, the time restricted group was protected against obesity, hyperinsulinemia, hepatic steatosis, and inflammation but not ad libitum access group that eat frequently throughout day and night, disrupting the normal feeding cycle (Hatori et al., 2012). Chaix et al. (2014) determined that time-restricted feeding protects against excessive body weight gain without affecting caloric intake irrespective of diet, time schedule or initial body weight in mice. As well as in another study mice fed HFDs during the rest phase tended to gain more fat mass than mice fed HFDs during the active phase. Similarly, mice fed normal chow during the rest phase also gained more fat mass than mice fed during the active phase. Rest phase TRF also altered clock and metabolic gene expression profiles in peripheral tissues, blunted corticosterone rhythm amplitudes, reduced energy expenditure despite comparable locomotor activity, and reduced lipid oxidation within 9 days (Arble et al., 2009; Bray et al., 2013; Potter et al., 2016).

Even changes in food availability solely throughout the active phase (e.g., breakfast versus dinner) have been reported to affect body weight. In animal study metabolic parameters in mice that consumed breakfast only a single large meal at the beginning of the active phase compared with mice that consume a bigger breakfast at the beginning of the active phase and a small dinner (two meals per day) at end of the active phase. Although mice in each group consumed an equal amount of food per day, mice on two meals exhibited reduced body weight gain and improved metabolic parameters compared with those on a single meal or freely fed animals (Fuse et al., 2012; Asher & Sassone-Corsi., 2015).

A review indicated that results from animal studies show TRF to be associated with reductions in body weight, total cholesterol, and concentrations of triglycerides, glucose, insulin, interleukin 6, and tumor necrosis factor-α as well as with improvements in insulin sensitivity. Human data support the findings of animal studies and demonstrate decreased body weight (though not consistently), lower concentrations of triglycerides, glucose, and low-density lipoprotein cholesterol, and increased concentrations of high-density lipoprotein cholesterol (Rothschild et al., 2014).

The mechanism underlying the beneficial effect of TRF is likely complex and acts on multiple pathways. The daily fasting and feeding episodes trigger alternative activation of fasting-responsive cAMP response element binding protein (CREB) and AMP kinase, and feeding responsive insulin dependent mammalian target of rapamycin (mTOR) pathways implicated in metabolic homeostasis. In addition, these pathways also impinge on the circadian clock and improve robustness of oscillation of clock components and downstream targets (Mattson et al., 2014). As well as the benefits of TRF seem to be directly related to adiposity. PPARγ, a transcription factor involved in lipid storage and adipocytes differentiation, appears to play an important role. It's observed overexpression of PPARγ in white adipose tissue of TRF mice. The paradoxical increase in lipid synthesis gene expression in the white adipose tissue of TRF mice may be counter-balanced by enhanced activation of the oxidative program and reduced lipid synthesis in liver and brown adipose tissue (Chaix et al., 2014).

5. CIRCADIAN RHYTHM AND OBESITY

One of the peripheral tissues with circadian clock is adipose tissue. The adipose tissue clock maintains its activity even in the lack of SCN (Froy & Garaulet, 2018). The adipose tissue clock supports fat accumulation during both sleep and wakefulness (Bass, 2012). Both clinical and epidemiological studies show that deterioration of sleep pattern can cause obesity (Brady et al., 2018; Demos et al., 2017; Watanabe et al., 2010).

Transcription of the circadian genes in the adipose tissue of nocturnal rodents peaks at two different time periods. One of those periods occurs during the inactive/light period while the other occurs during the active/dark period. These periods are observed when the organism is prepared for the upcoming phase change (Mavroudis et al., 2018). Besides, expression of adipocytokines such as adiponectin, chemerin, IL-6, visfatin peak within the first 5 hours of active phase, while expression of leptin peaks in the first 5 hours of inactive phase in humans (Froy & Garaulet, 2018).

In visceral adipose tissues of obese individuals, the CLOCK, BMAL1 and PER1 expressions that are related to the circadian rhythm differ from lean individuals (Vieira et al., 2014). Human genetic variants of CLOCK, PER2 and Rev-Erbα may cause obesity, while genetic variant of BMAL1 increases the risk of Type 2 diabetes in obese patients (Froy & Garaulet, 2018). Moreover, circadian expression of hormones such as leptin and adiponectin is altered in obesity (Froy, 2012).

5.1. Biological Clock and Intestinal System

One of the factors that affect circadian rhythm is gut microbiota. The gut clock has a very important position in the regulation of daily digestion (Hussain, 2014). There is a two-way relationship between biological clock and gut microbiota. The biological clock can change the composition of the gut microbiota, while the gut microbiota can change the circadian rhythm (Marcinkevicius & Shirasu-Hiza, 2015). The microorganisms found in gut microbiota have their own circadian rhythms and provide the continuity of the homeostatic balance of the host with the substances they secrete (Leone et al., 2015). Since a proper microbiota is required for the properly working intestinal clock, disturbances in the clock can change microbial secretions (Asher & Sassone-Corsi, 2015).

Interactions between microbiota-associated molecular patterns (MAMPs) and Toll-like receptors (TLRs) are required for homeostasis of intestinal epithelial cells. When positive effectors such as RORα and negative effectors such as Rev-Erbα, which are involved in circadian rhythm regulation, are antiphasically expressed, circadian rhythmic TLR expression occurs. Consequently, the transient arrhythmic microbial signalization turns into the circadian rhythmic JNK and IKKβ outputs. As a result, PPARα activates Rev-Erbα and the circadian clock affects negatively (Mukherji et al., 2013).

When biological clock dysfunction occurs, intestinal lipid absorption is impaired in mice. This leads to an increased risk of hyperlipidemia and atherosclerosis (Hussain, 2014). Although the underlying mechanism is not fully known, it is known that the high fat diet changes the expression of circadian rhythm-related genes in central and peripheral tissues. (Kohsaka et al., 2007). In the presence of gut microbiota, when fed with a low fat diet, the central clock provides continuance of the circadian rhythm. The high-fat diets cause microbial signaling to the changing circadian clock dysfunction,

which results in obesity. On the other hand, in the germ free condition, even if the dark-light cycle is provided, expression of the circadian clock gene is affected and the central and peripheral circadian rhythm is disturbed (Leone et al., 2015).

6. CALORIC RESTRICTION, NUTRIENTS AND CIRCADIAN RHYTHMS

Calorie restriction (CR) means that the energy taken is reduced by 25-60% without causing malnutrition (Masoro et al., 1995). It has been shown that calorie restriction is extended of human life and delayed in the pathophysiological changes that occur with age such as cancer, cataracts, kidney diseases (Masoro, 2005). It is still unknown, how CR effects life span or aging pathophysiological changes (Froy, 2007). But the most supported theory is "free radical/oxidativestress theory of aging". This theory says that in normal physiological conditions, aerobic organisms produce energy by using oxygen in cells. Free radicals can arise in the organism throughout life due to the prooxidant and antioxidant imbalances at the end of this process (Sohal & Weindruch, 1996). A recent study on elderly monkeys has shown that calorie restriction has positive effects on the health of monkeys. (Mattison et al., 2012). CR entrains the clock in the SCNindicating that calorie reduction could affectthe central oscillator (Mendoza et al., 2005).

High-fat diets (HFDs) can alter circadian rhythm by affecting glucose tolerance and insulin sensitivity. And also, HFDs can reduce striatal dopamine receptor or dopamine level (Luo et al., 2018). In a study by Luppi et al (2014); plasma glucose, triglyceride and cholesterol levels were found to be increased in rats fed high fat diet (%35 of total energy).

Another nutrient that affects the expression of clock genes is the salt. It is known that high-salt/sodium diet is important risk factor for cardiovascular disease. In addition, various cardiovascular functions can affect circadian rhythm. In Dahl salt-sensitive rats fed a high-salt (4% NaCl) diet for 6 weeks, reduced expression of Per2, Bmal1 and Dbp in heart compared with rats fed anormal salt diet (Mohri et al., 2003).

In a study conducted on a total of 240 adolescents, those who sleep 8 hours or more every day, have lower BMI. In the same study, it was determined that those who slept for a short time (<8 hours/day) consumed higher fat and lower carbohydrate ($p<0.05$) (Weiss et al., 2010).

REFERENCES

Abraham, U.; Granada, A.E.; Westermark, P.O.; Heine, M.; Kramer, A.; Herzel, H. (2010). Coupling Governs Entrainment Range of Circadian Clocks. Molecular Systems Biology 6: (1), 438.

Adamovich, Y.; Rousso-Noori, L.; Zwighaft, Z.; Neufeld-Cohen, A.; Golik, M.; Kraut-Cohen, J.; Wang, M.; Han, X.; Asher, G. (2014). Circadian Clocks and Feeding Time Regulate the Oscillations and Levels of Hepatic Triglycerides. Cell Metabolism 19, 319–330.

Arble, D.M.; Bass, J.; Laposky, A.D.; Vitaterna, M.H.; Turek, F.W. (2009). Circadian Timing of Food Intake Contributes to Weight Gain. Obesity (Silver Spring) 17: 11, 2100–2102.

Asher, G. & Sassone-Corsi, P. (2015). Time for Food: The Intimate Interplay between Nutrition, Metabolism, and the Circadian Clock. Cell 161:(1), 84-92.

Balsalobre, A.; Brown, S. A.; Marcacci, L.; Tronche, F.; Kellendonk, C.; Reichardt, H. M., Schibler, U. (2000). Resetting of Circadian Time in Peripheral Tissues by Glucocorticoid Signaling. Science 289: (5488), 2344-2347.

Bass, J. (2012). Circadian Topology of Metabolism. Nature 491: (7424), 348-356.

Benardort, D. (2012). Part III: Travel. Advanced Sports Nutrition. 2nded. USA: Human Kinetics; p.198-208.

Brady, E. M.; Bodicoat, D. H.; Hall, A. P.; Khunti, K..; Yates, T.; Edwardson, C.; Davies, M. J. (2018). Sleep Duration, Obesity and Insulin Resistance in A Multi-Ethnic UK Population at High Risk of Diabetes. Diabetes Research and Clinical Practice, 139, 195-202.

Bray, M.S.; Ratcliffe W.F; Grenett, M.H.; Brewer, R.A.; Gamble, K.L.; Young, M.E. (2013). Quantitative Analysis of Light-Phase Restricted Feeding Reveals Metabolic Dyssynchrony in Mice. International Journal of Obesity 37:(6), 843–852.

Chaix, A.; Zarrinpar, A.; Miu, P.; Panda, S. (2014). Time-Restricted Feeding is A Preventative and Therapeutic Intervention against Diverse Nutritional Challenges. Cell Metabolism, 20:(6), 991–1005.

Chassard, D.; Allaouchiche, B.; & Boselli, E. (2005). Timing is everything the Pendulum Swings on. The Journal of the American Society of Anesthesiologists 103: (3), 454-456.

Copertaro, A.; Bracci, M.; Barbaresi, M.; Santarelli, L. (2008). Assessment of Cardiovascular Risk in Shift Healthcare Workers. European Journal of Cardiovascular Prevention &Rehabilitation 15: (2), 224-229.

Damiola, F.; Le Minh, N.; Preitner, N.; Kornmann, B.; Fleury-Olela, F.; Schibler, U. (2000). Restricted Feeding Uncouples Circadian Oscillators in Peripheral Tissues From The Central Pacemaker in The Suprachiasmatic Nucleus. Genes & Development 14: 2950–2961.

Demos, K. E.; Sweet, L. H.; Hart, C. N.; McCaffery, J. M.; Williams, S. E.; Mailloux, K. A.; Trautvetter, J.; Owens, M.M.; Wing, R. R. (2017). The Effects of Experimental Manipulation of Sleep Duration on Neural Response to Food Cues. Sleep 40: (11). doi:10.1093/sleep/zsx125.

Di Lorenzo, L.; De Pergola, G.; Zocchetti, C.; L'abbate, N.; Basso, A.; Pannacciulli, N.; Soleo, L. (2003). Effect of Shift Work on Body Mass İndex: Results of a Study Performed in 319 Glucose-Tolerant Men Working in a Southern Italian Industry. International Journal of Obesity 27: (11), 1353.

Do, M. T. H. & Yau, K.W. (2010). Intrinsically Photosensitive Retinal Ganglion Cells. Physiological Reviews 90: (4), 1547-1581.

Drake, C.L.; Roehrs, T.; Richardson, G.; Walsh, J.K.; Roth, T. (2004). Shift Work Sleep Disorder: Prevalence and Consequences beyond That of Symptomatic Day Workers. Sleep 27: (8), 1453-1462.

Eckel-Mahan, K. & Sassone-Corsi, P. (2013). Metabolism and the Circadian Clock Converge. Physiological Reviews 93: (1), 107-135.

Froy, O. (2007). The Relationship between Nutrition and Circadian Rhythms in Mammals. Frontiers in Neuroendocrinology 28: (2-3), 61-71.

Froy, O. (2012). Circadian rhythms and obesity in mammals. International Scholarly Research Network Obesity 437198. doi:10.5402/2012/437198

Froy, O. & Garaulet, M. (2018). The Circadian Clock in White and Brown Adipose Tissue: Mechanistic, Endocrine, and Clinical Aspects. Endocrine Reviews 39: (3), 261-273.

Fujino, Y.; Iso, H.; Tamakoshi, A.; Inaba, Y.; Koizumi, A.; Kubo, T.; Yoshimura, T. (2006). A Prospective Cohort Study of Shift Work and Risk of Ischemic Heart Disease in Japanese Male Workers. American Journal of Epidemiology 164: (2), 128-135.

Fuse, Y.; Hirao, A.; Kuroda, H.; Otsuka, M.; Tahara, Y.; Shibata, S. (2012). Differential Roles of Breakfast Only (One Meal Per Day) And A Bigger Breakfast With A Small Dinner (Two Meals Per Day) In Mice Fed A High-Fat Diet With Regard to Induced Obesity And Lipid Metabolism. Journal of Circadian Rhythms 10:(4), 1-12.

Gooley, J.J. (2008). Treatment of Circadian Rhythm Sleep Disorders with Light. Annals, Academy of Medicine, Singapore 37: (8), 669-676.

Hastings, M. H.; Maywood, E. S.; Reddy, A. B. (2008). Two Decades of Circadian Time. Journal of Neuroendocrinology 20: (6), 812-819.

Hatori, M.; Vollmers, C.; Zarrinpar, A.; Ditacchio, L.; Bushong, Eric A.; Gill, S.; Leblanc, M.; Chaix, A.; Joens, M.; Fitzpatrick, J.A.; Ellisman, M.H.; Panda, S. (2012). Time-Restricted Feeding Without Reducing Caloric Intake Prevents Metabolic Diseases in Mice Fed A High-Fat Diet. Cell Metabolism 15:(6), 848-860.

Hofstra, W.A., & de Weerd, A.W. (2008). How to Assess Circadian Rhythm in Humans: a Review of Literature. Epilepsy & Behavior 13: (3), 438-444.

Hosokawa, N.; Kushige, H.; Iwasaki, H. (2013). Attenuation of the Posttranslational Oscillator via Transcription-Translation Feedback Enhances Circadian-Phase Shifts in Synechococcus. Proceedings of the National Academy of Sciences of the United States of America 110: (35), 14486-14491.

Hussain, M. M. (2014). Regulation of Intestinal Lipid Absorption by Clock Genes. Annual Review of Nutrition 34: 357-375.

Knutsson, A. (2003). Health Disorders of Shift Workers. Occupational Medicine 53: (2), 103-108.

Kohsaka, A.; Laposky, A. D.; Ramsey, K. M.; Estrada, C.; Joshu, C.; Kobayashi, Y.; Turek, F.W.; Bass, J. (2007). High-Fat Diet Disrupts Behavioral And Molecular Circadian Rhythms in Mice. Cell Metabolism 6: (5), 414-421.

Kolla, B.P.; & Auger, R.R. (2011). Jet Lag and shift Work Sleep Disorders: How to Help Reset the Internal Clock. Cleveland Clinic Journal of Medicine 78: (10), 675-84.

Kubo, T.; Oyama, I.; Nakamura, T.; Shirane, K.; Otsuka, H.; Kunimoto, M.; Matsumoto, T. (2010). Retrospective Cohort Study of the Risk of obesity Among Shift Workers: Findings from the Industry-Based Shift Workers' Health Study, Japan. Occupational and Environmental Medicine, 68:(5): 327-331.

Leone, V.; Gibbons, S. M.; Martinez, K..; Hutchison, A. L.; Huang, E. Y.; Cham, C. M.; Pierre, J.F.; Heneghan, A.F.; Nadimpalli, A.; Hubert, N.; Zale, E.; Wang, Y.; Huang, Y.; Theriault, B.; Dinner, A.R.; Musch, M.W.; Kudsk, K.A.; Predergast, B.J.; Gilbert, J.A.; Chang, E. B. (2015). Effects of Diurnal Variation of Gut Microbes and High-Fat Feeding on Host Circadian Clock Function And Metabolism. Cell Host Microbe 17: (5), 681-689.

Lund, J.; Arendt, J.; Hampton, S.M.; English, J.; Morgan, L.M. (2001). Postprandial Hormone and Metabolic Responses amongst Shift Workers in Antarctica. Journal of Endocrinology 171: (3), 557-564.

Luo, S.; Zhang, Y.; Ezrokhi, M.; Li, Y.; Tsai, T. H.; Cincotta, A. H. (2018). Circadian Peak Dopaminergic Activity Response at The Biological Clock Pacemaker (Suprachiasmatic Nucleus) Area Mediates the Metabolic Responsiveness to A High Fat Diet. Journal of Neuroendocrinology,30: (1), 125-63.

Luppi, M.; Cerri, M.; Martelli, D.; Tupone, D.; Del Vecchio, F.; Di Cristoforo, A.; Amici, R. (2014). Waking and Sleeping in The Rat Made Obese Through a High-Fat Hypercaloric Diet. Behavioural Brain Research 258: 145-152.

Marcinkevicius, E. V. & Shirasu-Hiza, M. M. (2015). Message in A Biota: Gut Microbes Signal to The Circadian Clock. Cell Host & Microbe 17: (5), 541-543.

Masoro, E.J. (2005). Overview of Caloric Restriction and Ageing. Mechanisms of Ageing

and Development 126: 913–922.
Masoro, E.J.; Shimokawa, I.; Higami, Y.; McMahan, C.A.; Yu, B.P. (1995). Temporal Pattern Food Intake Not a Factor in The Retardation of Aging Processes by Dietary Restriction. The Journals of Gerontology. Series A, Biological Sciences and Medical Sciences 50: 48–53.
Mattison, J.A.; Roth, G.S.; Beasley, T.M.; Tilmont, E.M.; Handy, A.M.; Herbert, R.L.; Longo, D.L.; Allison, D.B.; Young, J.E.; Bryant, M.; Barnard, D.; Ward, W.F.; Qi, W.; Ingram, D.K.; de Cabo, R.; (2012). Impact of Caloric Restriction on Health and Survival in Rhesus Monkeys from the NIA Study. Nature 489: (7415), 318.
Mattson, M.P.; Allison, D.B.; Fontana, L.; Harvie, M.; Longo, V.D.; Malaisse, W.J.; Mosley, M.; Notterpek, L.; Ravussin, E.; Scheer, F.A. (2014). Meal Frequency and Timing In Health And Disease. Proceedings of The National Academy of Sciences 111:(47), 16647-16653.
Mavroudis, P. D.; DuBois, D. C.; Almon, R. R.; Jusko, W. J. (2018). Daily Variation of Gene Expression in Diverse Rat Tissues. PLoS One 13: (5), e0197258.
Mendoza, J.; Graff, C.; Dardente, H.; Pevet, P.; Challet, E. (2005). Feeding Cues Alter Clock Gene Oscillations and Photic Responses in The Suprachiasmatic Nuclei of Mice Exposed to A Light/Dark Cycle. Journal of Neuroscience 25: (6), 1514-1522.
Mohri, T.; Emoto, N.; Nonaka, H.; Fukuya, H.; Yagita, K.; Okamura, H.; Yokoyama, M. (2003). Alterations of Circadian Expressions of Clock Genes in Dahl Salt-Sensitive Rats Fed a High-Salt Diet. Hypertension, 42: (2), 189-194.
Morikawa, Y.; Nakagawa, H.; Miura, K.; Soyama, Y.; Ishizaki, M.; Kido, T.; Nogawa, K. (2005). Shift Work and the Risk of Diabetes Mellitus among Japanese Male Factory Workers. Scandinavian Journal of Work, Environment & Health, 179-183.
Mukherji, A.; Kobiita, A.; Ye, T.; Chambon, P. (2013). Homeostasis in Intestinal Epithelium Is Orchestrated By The Circadian Clock And Microbiota Cues Transduced by TLRs. Cell 153: (4), 812-827.
Mulder, H.; Nagorny, C.L.F.; Lyssenko, V.; Groop, L. (2009). Melatonin Receptors in Pancreatic Islets: Good Morning to a Novel Type 2 Diabetes Gene. Diabetologia 52: (7), 1240-1249.
Potter, G.D.; Cade, J. E; Grant, P. J.; Hardie, L.J. (2016). Nutrition and the Circadian System. British Journal of Nutrition 116:(3), 434-442.
Preitner, N.; Damiola, F.; Lopez-Molina, L.; Zakany, J.; Duboule, D.; Albrecht, U.; Schibler, U. (2002). The Orphan Nuclear Receptor REV-Erbalpha Controls Circadian Transcription within the Positive Limb of The Mammalian Circadian Oscillator. Cell 110 (2), 251-260.
Refinetti, R. (2010). Entrainment of Circadian Rhythm by Ambient Temperature Cycles in Mice. Journal of Biological Rhythms 25: (4), 247-256.
Rothschild, J.; Hoddy, K.K.; Jambazian, P.; Varady, K.A. (2014). Time Restricted Feeding and Risk of Metabolic Disease: A Review of Human And Animal Studies. Nutrition Reviews 72(5), 308-318.
Scheer, F. A.; Kalsbeek, A.; Buijs, R. M. (2003). Cardiovascular Control by the Suprachiasmatic Nucleus: Neural And Neuroendocrine Mechanisms in Human And Rat. The Journal of Biological Chemistry 384: (5), 697-709.
Schernhammer, E.S.; Laden, F.; Speizer, F.E.; Willett, W.C.; Hunter, D.J.; Kawachi, I.; Colditz, G.A. (2003). Night-Shift Work and Risk of Colorectal Cancer in the Nurses' Health Study. Journal of the National Cancer Institute 95: (11), 825-828.
Schibler, U.; Gotic, I.; Saini, C.; Gos, P.; Curie, T.; Emmenegger, Y., Sinturel, F., Gosselin, P., Gerber, A., Fleury-Olela, F., Rando, G., Demarque, M., Franken, P. (2015). Clock-

Talk: Interactions between Central and Peripheral Circadian Oscillators in Mammals. Cold Spring Harbor Symposia on Quantative Biology 80: 223-232.
Sohal, R. S.; Weindruch, R. (1996). Oxidative Stress, Caloric Restriction, and Aging. Science 273: (5271), 59-63.
Sollars, P. J. & Pickard, G. E. (2015). The Neurobiology of Circadian Rhythms. Psychiatric Clinics of North America 38: (4), 645-665.
Summa, K. C. & Turek, F. W. (2014). Chronobiology and obesity: Interactions between Circadian Rhythms and Energy Regulation. Advances in Nutrition 5: (3), 312-319.
Takeda, N. & Maemura, K. (2015). The Role of Clock Genes and Circadian Rhythm in the Development Of Cardiovascular Diseases. Cellular and Molecular Life Sciences 72: (17), 3225-3234.
Vieira, E.; Ruano, E.; Figueroa, A. L.; Aranda, G.; Momblan, D.; Carmona, F.; Gomis, R.; Vidal, J.; Hanzu, F. A. (2014). Altered Clock Gene Expression in Obese Visceral Adipose Tissue is Associated with Metabolic Syndrome. PLoS One 9: (11), 111678.
Vriend, J. & Reiter, R. J. (2015). Melatonin Feedback on Clock Genes: A Theory Involving the Proteasome. Journal of Pineal Research 58: (1), 1-11.
Watanabe, M.; Kikuchi, H.; Tanaka, K..; Takahashi, M. (2010). Association of Short Sleep Duration with Weight Gain and Obesity at 1-Year Follow-up: a Large-Scale Prospective Study. Sleep 33: (2), 161-167.
Weiss, A.; Xu, F.; Storfer-Isser, A.; Thomas, A.; Ievers-Landis, C. E.; Redline, S. (2010). The Association of Sleep Duration with Adolescents' Fat and Carbohydrate Consumption. Sleep 33: (9), 1201-1209.
Welsh, D. K.; Takahashi, J. S.; Kay, S. A. (2010). Suprachiasmatic Nucleus: Cell Autonomy and Network Properties. Annual Review of Physiology 72: 551-577.

Chapter 46

The Effect of Curcumin on Cancer

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INTRODUCTION

A tumor, defined as a physiological disorder, results in uncontrolled proliferation of some cells in the organism. In the meantime, the normal biochemical functions of some cells are altered and this alternation in the cell is separated as benign and malignant. Benign tumors grow in the area they appear, do not spread around, and cause serious diseases while a malignant tumor, called cancer, causes metastasis by spreading around the surrounding tissues. The tumor may become fatal depending on the type, host's characteristics, nutrition, and treatment methods (Sanrı, 2014).

According to the International Agency for Research on Cancer, a total of 14.1 million new cases of cancer developed in the world in 2012, there were 8.2 million deaths due to cancer, and the data have shown that cancer has become increasingly common. The most common types of cancer are lung (13.0%), breast (12.0%), and colon (9.7%) cancers. At the same time the most common types of cancer seen in death are lung (19.4%), liver (9.1%), and stomach (8.8%) cancers. The World Health Organization (WHO) reports that if the rate of cancer growth continues in this way, a total of 19.3 million new cases of cancer will be seen in 2025 due to the increase in the world population and the aging of the world, and that the cases will be seen mostly in underdeveloped countries (Saatçı, 2014; WHO, 2016). The incidence of cancer in Turkey, compared to developed countries such as the European Union countries and the United States, has been increasing at a lower rate (Republic of Turkey Ministry of Health, 2016).

The rapid spread of cancer and the increase in cancer-related mortality rates suggest that new herbal treatment methods may be used in this area. Herbal agents are the most common products used in alternative and complementary drug. Six out of every ten cancer patients use herbal drugs in addition to general cancer treatments (Mohammadi *et al.,* 2017). Today, drugs produced from plants are developed, and the possible therapeutic roles of these plants used in Ayurveda and Traditional Chinese drugs are investigated. Turmeric is also among the plants that have been examined (Siviero *et al.,* 2015). Comprehensive research results over the last 30 years have shown that curcumin may have therapeutic potential against a variety of diseases such as cancer, lung diseases, neurological diseases, liver diseases, metabolic diseases, autoimmune diseases, cardiovascular diseases and various other inflammatory diseases (Aggarwal & Harikumar, 2009; Kannappan *et al.,* 2011). Curcumin is an active pigment

found in the rhizomes of *curcuma longa* (turmeric) and a spice that gives a yellowish color to curry powder. It is mostly used in Asian cuisines (especially India, Pakistan and Thailand) (Prasad *et al.*, 2014).

It is known that curcumin in turmeric taken with diet has cancer preventive properties such as resveratrol in red grapes (Surh, 2003). In India, the incidence of cancer in both sexes, excluding melanoma skin cancer, is about 62.4%. In the same data, India was at the bottom of the world rankings in terms of cancer rates in 2012 (WHO, 2016). The reason for this is thought to be due to the high use of natural antioxidants such as curcumin in this region (Akpolat *et al.*, 2010).

Curcumin has various potential effects on various cancers such as leukemia, lymphoma and sarcoma, as well as gastrointestinal, chest, ovarian, head and neck and neurological cancers, with its anti-carcinogenic effects with various mechanisms (Anand *et al.*, 2008). In addition, another function of curcumin is both radioprotective effect on normal cells and making cancer cells more sensitive to radiation (Akpolat *et al.*, 2010). It is stated that the use of curcumin by cancer patients is safe and effective (Yalçın *et al.*, 2017).

All in all, curcumin is useful for many diseases and investigated in a variety of ways. This review study was conducted to investigate the effects of curcumin on cancer types.

1. GENERAL PROPERTIES OF CURCUMIN

Curcumin is a natural and yellow pigment obtained from the tubers of curcuma longa (turmeric) plant (Akpolat *et al.*, 2010). Curcumin is found in curcuminoids within rhizomes (underground body) and constitutes 50-60% of color pigments (Aksu Kapucu, 2012). It is a water-insoluble pigment but soluble in ethanol, acetone and dimethyl-sulfoxide solvents (Goel *et al.*, 2008).

Curcumin was first obtained in pure form in 1815 and in crystalline form in 1870 (Goel *et al.*, 2008; Prasad *et al.*, 2014), and discovered by Vogel and Pelletier. The chemical structure of curcumin is shown in Figure 1 (Akpolat *et al.*, 2010).

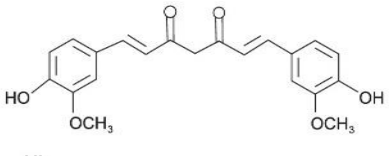

Figure 1: Chemical Structure of Curcumin

Curcumin, the most active component of turmeric plant (2-5% of plant), has been used for medical purposes especially in the Asian region throughout history and involved in Ayurveda and Traditional Chinese Drug treatments. The use of turmeric has attracted the attention of the scientific community in the course of time, and its therapeutic aspects have been experimentally demonstrated in cell and animal models (Yalçın & Bellikci-Koyu, 2014).

Curcumin has been consumed for hundreds of years and is considered pharmacologically safe when taken at doses up to 100 mg/day (Zlotogorski *et al.*, 2013). According to a joint the Food and Agriculture Organization/ The World Health Organization (FAO/WHO) report on food additives, the Acceptable Daily Intake Level

(ADI) of curcumin is 0-3 mg/kg (FAO/WHO, 2003). In clinical trials, curcumin was found to be safe and effective, and the US Food and Drug Administration approved the curcumin as a "generally safe" compound (Prasad *et al.*, 2014).

Curcumin has some disadvantages in oral intake although many therapeutic effect mechanisms are mentioned. It is a hydrophobic polyphenol with low solubility in water and the greatest disadvantage is that bioavailability is low due to the rapid metabolization of conjugates to sulphates and glucuronides in large quantities. New strategies are sought to increase the efficacy of curcumin and eliminate such a disadvantage (Zlotogorski *et al.*, 2013).

2. ANTI-CANCER EFFECT MECHANISMS OF CURCUMIN

A number of scientific studies have been conducted within the last 30-40 years on curcumin, and especially anti-inflammatory and anti-cancer effects of it have been investigated. Curcumin is an alternative to chemotherapy as an anti-cancer agent due to the development of resistance against drug in cancer treatment and the disadvantages of treatments such as cytotoxicity, genotoxicity etc. (Yalçın *et al.*, 2017).

Anti-cancer activity of curcumin was revealed by Kutten et al. (1985) in both in vitro and in vivo studies in the 1980s. In different types of cancer, it induces chemo-preventive effects by inhibiting proliferation and anti-angiogenesis, clearing reactive oxidative species, and reducing inflammatory molecules in cancer cells by promoting tumor apoptosis. Curcumin is shown to be effective against cancer by inducing programmed cell death, inhibiting cell proliferation, regulating cell metastasis, providing anti-angiogenesis and anti-oxidant properties (Chen *et al.*, 2016; Yalçın *et al.*, 2017).

In a study investigating the antioxidant properties of curcuminoids, the antioxidant capacity of curcumin extracts was found to be equivalent to ascorbic acid (Khanna, 1999). Thus, it is thought that it has the potential to prevent damages of drugs, alcohol, radiation, heavy metals on the organs such as liver, stomach, brain and intestine thanks to its antioxidant properties (Hatcher *et al.*, 2008). In Ak and Gülçin's study (2008), it was concluded that curcumin is an antioxidant that can be used safely in the food industry.

3. THE EFFECT OF CURCUMIN ON CANCER TYPES

3.1. Colon cancer and curcumin

Mortality is quite high due to colorectal cancers which are the third most common malignant cancer originating from the colon or rectum. It was pointed out that the turmeric plant in the Indian region has an important place in the diet and the incidence of colorectal cancer in this region is low, and this situation began to be investigated (Kolligs, 2016). Although early diagnosis and treatment increase the survival time of patients with advanced colorectal cancer, approximately one million new cases of colorectal cancer occur each year, resulting in over 500.000 deaths annually (Casagrande *et al.*, 2013).

In a study, the effect of a curcumin analogue on colorectal cancer was investigated. A new monocarbonyl curcumin analogue (MC37) stimulated the G2/M cell cycle, stopped the proliferation of human colon cancer cells and provided mitochondrial mediated programmed cell death (apoptosis). This curcumin analogue provided cytotoxicity against cancer cells as a Nuclear Factor kappa B (NF-kB) inhibitor. As a

highly targeted agent, it was observed that MC37 inhibited the intracellular microtubule assembly, altered the expression of the cyclin-dependent kinase 1 (CDK1) and stopped the G2/M cell cycle. As a result, these observations reveal that MC37 analogues have a promising and highly targeted leading role in the development of anti-colorectal cancer agents. This study provided some information on the molecular mechanism of MC37 analogues for anticancer activity and suggested the development of curcumin analogues as cancer chemotherapy drugs for later periods (Liang *et al.,* 2017).

In a study in which 15 patients with advanced chemotherapy-resistant colorectal cancer were given capsular form daily for up to 4 months, the intake of 440 mg/day of turmeric capsule for 29 days resulted in a reduction of lymphocytic glutathione S-transferase (GST) activity by 59%. However, the same effect was not observed at higher doses and it was emphasized that 2.2 g/day of turmeric (containing 180 mg of curcumin), which is thought to be safe, may be given to the patients, but larger clinical studies should be performed (Sharma et al., 2001). In another study conducted by Sharma et al. (2004), 15 patients with advanced chemotherapy-resistant colorectal cancer were given 0.45 to 3.6 g of curcumin per day for up to 4 months and it was found that 3.6 g of curcumin significantly reduced inducible Prostaglandin E2 (PGE2) production by 62% and 57%, respectively in the blood samples on the 1st and 29th days.

In the study of Garcea *et al.* (2005), curcumin capsules were given to individuals with colorectal cancer for 7 days (3.6 g/day, 1.8 g/day or 0.45 g/day) and the levels of M(1)G, which are adenomatous burden indicators, were found two and a half times higher in the malign tissue than the normal tissue. Curcumin sulfate and curcumin glucuronide were detected in the tissue of these patients. The result of the study showed that the daily dose of 3.6 g curcumin reduced M(1)G levels in malignant colorectal tissues but did not affect the cyclooxygenase-2 (COX-2) enzyme levels.

Studies show evidence of effect of curcumin on colorectal cancer and more clinical studies are needed for clearer results on this subject.

3.2. Breast cancer and curcumin

Increased mortality, particularly in women with breast cancer, encourages efforts to develop new treatment methods. Arabinogalactan and curcumin are two types of herbal products which are extensively investigated in the treatment of cancer and in a study, it was aimed to evaluate the anti-cancer properties of the combination of these reagents on in vitro human breast cancer cells and in vivo animal model of breast cancer. In this study, which evaluated cell proliferation, programmed cell death, cell cycle and protein expression in human breast cancer cells in vitro, it was observed that the combination of arabinogalactan and curcumin significantly reduced cell growth in human breast cancer cells. This combination enhanced apoptosis by increasing reactive oxygen species (ROS) levels, altering the mitochondrial membrane and lowering glutathione. The study reports that the combination of arabinogalactan and curcumin has great potential to provide programmed cell death in in vitro and in vivo breast cancer cells (Moghtaderi *et al.,* 2017).

In a study investigating the effect of ethanolic leaf extracts of 'cassia auriculate' (CALE) against cancer in human breast and larynx carcinomas, when cassia auriculate extract and curcumin were combined, both showed synergistic action together. These data from the study suggest that the combination of CALE and curcumin may be an effective way to treat cancer. This effect was reported to be revealed in the G0/G1

phase of the cell cycle by being stopped cell cycle progression and inducing programmed cell death (apoptosis). The results of the study show that the combination of curcumin and CALE has good anti-cancer activity in vitro, delaying the growth of both human breast carcinoma and human laryngeal carcinoma (Prasanna *et al.,* 2011).

3.3. Prostate cancer and curcumin

Prostate cancer is the second cancer type with the highest incidence in the world and it is ranked as the sixth among cancer-related deaths (Yalçın & Bellikci- Koyu, 2014). Many in vivo and in vitro studies reveal that curcumin has anti-proliferative, anti-invasive, anti-angiogenic and apoptotic activity against prostate cancer (Teiten *et al.,* 2010). According to the results of a clinical study to examine its pharmacokinetics, curcumin was reported to be a reliable and well-tolerated molecule (Sharma *et al.,* 2001).

Narayanan *et al.* (2009) used resveratrol and curcumin together, aimed at increasing bioavailability and as a result, found that cell growth was inhibited, apoptosis was induced, and prostatic adenocarcinoma was significantly reduced in mice. Thangapazham *et al.* (2008) reported positive results in the treatment of prostate cancer in their studies in which they used curcumin encapsulated with liposomes coated with antibodies against prostate cancer. In another study with the mouse prostate cancer xenograft model, curcumin was administered to the mice and it was found that curcumin promoted apoptosis of LNCaP cells by inhibiting prostate cancer growth in vivo and the c-Jun-NH2 (2) -terminal kinase (JNK) pathway in vitro and suppressing H3K4me3 (chemical modification) in LNCaP cells (cancer cells) (Zhao *et al.,* 2018).

In the next step, more clinical studies with curcumin itself and in combination with other herbal elements will better monitor the role and place of curcumin in the prevention and treatment of prostate cancer.

3.4. Oral cancer and curcumin

Oral and pharyngeal cancers, the majority of which are squamous cancer cells, are among the ten most common cancers worldwide. Curcumin is a natural dietary component having well-known anti-neoplastic activities and therefore, classified as a nutraceutical. Curcumin is reported as a promising therapeutic agent alone or in combination with other components for oral cancer (Zlotogorski *et al.,* 2013).

It is known that curcumin is an alternative treatment option for oral squamous cell carcinoma (OSCC) with anti-cancer features, and various OSCC cells give different responses according to the treatment of curcumin. In a study advocating the hypothesis that copper fortification enhances anti-tumor activity of curcumin against oral cancer cells, the correlation between intracellular copper levels and response to curcumin treatment was analyzed in a panel of OSCC cell lines from oral cancer patients. It was observed that the curcumin concertation inhibiting half of the OSCC cell viability was reduced by 5 times in the presence of 250 μM copper. Copper fortification significantly increased the inhibitory effect of curcumin treatment on migration and survival of oral cancer cells. These results suggest a new strategy for cancer treatment by providing a molecular perspective to the role of copper in the oral cancer cells to overcome their insensitivity to curcumin treatment (Lee *et al.,* 2016). Today, anti-tumor effects of curcumin on OSCC show that better results can be obtained if it is combined with existing treatments in addition to be a sole agent (Zlotogorski *et al.,* 2013).

There is a need for further clinical studies to determine the bioavailability and

therapeutic effects of curcumin on the most common OSCC-originated oral cancer.

3.5. Pancreatic cancer and curcumin

Pancreatic cancer is one of the most destructive diseases and treatment options are rather limited (Kesharwani *et al.,* 2015). As one of the deadliest cancers, it can cause the death of the patient in about a year (Dhillon *et al.,* 2008).

A study investigating the safety and efficacy of curcumin as a complementary treatment with gemcitabine for pancreatic cancer was conducted with 42 patients between the ages of 42-87 years with advanced pancreatic cancer and it was determined that high IL-6 and sCD40L levels before the treatment decreased the life span of these patients. As a result of the study, it was found that the complementary treatment of the drug is safe with curcumin and the pancreatic cancer responded rapidly in the first-line treatment while there was no change in the quality of life (Pastorelli *et al.,* 2018). In another study, it was aimed to determine the biological activity of oral ingestion of curcumin, which is characterized by NF-κB and its tumor inhibiting properties, in advanced pancreatic cancer patients and 73% tumor regression was observed while there was a significant increase of serum cytokine levels (in IL-6, IL-8, IL-10 and IL-11 receptor antagonists) of a patient. As a result of this study conducted with 21 patients with pancreatic cancer, it was found that the use of curcumin 8 g per day for up to 18 months did not show any toxicity. However, it was also reported in the study that the bioavailability of curcumin is low, but the biological activity is present (Dhillon et al., 2008). It was also shown that curcumin can block pancreatic cancer metastasis by blocking the PI3K/Akt/NF-κB signaling pathway by stimulating the production of superoxide dismutase-dependent hydrogen peroxide (H2O2) that promotes pancreatic cancer spreading activity (Li *et al.,* 2018).

4. EFFECTS OF CURCUMIN ON OTHER CANCER TYPES AND COMPLICATIONS

There are also studies showing that curcumin has positive effects on other cancer types other than those mentioned above. It is reported in several studies that curcumin has positive effects with similar mechanisms by affecting cell apoptosis mechanism in lung, liver, cervix, thyroid, head and neck, and ovarian cancers (Selvendiran *et al.,* 2011; Kumar *et al.,* 2014; Man *et al.,* 2018; Yang *et al.,* 2018; Perna *et al.,* 2018; Khan *et al.,* 2018; De Matos *et al.,* 2018).

Curcumin also has protective effect against damage caused by radiation in cancer treatment. A study investigated the protective effects of curcumin and vitamin C against the damage caused by the intestinal mucosa in the acute phase due to gamma radiation in cancer treatment on rats on the morphological level. This study consisted of four groups, one was control and three were experimental groups, and one group was given curcumin and others were given vitamin C. At the end of the study, the histopathological score reflecting the severity of mucosal damage was found to be significantly higher in the radiotherapy group compared to other groups when the jejunum specimens of the rats were examined. On the other hand, this score was found to be significantly lower in the groups treated with curcumin and vitamin C than the radiation group. The results of this study show that curcumin and vitamin C administered in pre- and post-ionizing radiation are effective in protecting the morphological structure of jejunum mucosa (Akpolat *et al.,* 2008).

Curcumin also plays an active role in preventing invasive fungal infections in cancer diseases. Invasive fungal infections are critical complications of cancer and among the main causes of morbidity and mortality in patients. Effective infection prevention treatments are necessary to prevent these infections at a significant level. However, the treatment of invasive fungal infections is difficult, and the increased antifungal medicine resistance often causes the relapse. To date, antifungal activity of curcumin against Candida, Cryptococcus, Aspergillus, Trichosporon and Paracoccidioides strains has been reported, and it is thought that curcumin anti-cancer drugs may also have an anti-fungal role (Chen *et al.,* 2016).

5. INCREASING BIOAVAILABILTY OF THE CURCUMIN USED IN CANCER TREATMENT

Although clinical curcumin studies with humans are still new, it can be said that curcumin is effective in preventing various diseases and improving health status as a low toxicity, reliable and effective molecule based on in vitro and in vivo results and clinical pharmacokinetic data. Curcumin is a natural polyphenolic compound with anti-oxidative, anti-inflammatory and anti-cancer properties, but the biggest problem with its clinical use is that it has low solubility in water, short half-life and low bioavailability. To solve this problem, new forms of curcumin with high bioavailability have been developed and related pharmacokinetic studies have been carried out (Kanai *et al.,* 2013).

In a study, it was shown that hydrophobically modified starch (HMS), a food grade biopolymer, can form micelles to enhance the bioavailability of curcumin and that curcumin can be encapsulated with this polymer. The encapsulation resulted in about 1670 times more dissolution of curcumin. Moreover, encapsulated curcumin was shown to have more in vitro anti-cancer activity than free curcumin. In this study, hydrophobically modified starch was shown to self-assemble to form micelles and encapsulate the curcumin in its hydrophobic core. As a result, it was emphasized that hydrophobically modified starch can be used by encapsulation in water-insoluble functional foods (Yu & Huang, 2010).

In a study in which polymeric nanoparticles (NP) were used for enhancing oral bioavailability of curcumin, encapsulation with this type of NP increased the oral bioavailability of curcumin due to resulting in smaller particle sizes and better redispersion as a result of lyophilization (Umerska *et al.,* 2018).

6. RESULT AND RECOMMENDATIONS

In epidemiological studies, low incidence of cancer and adenomas in the Eastern Indian region, where consumption of curcumin is high, has increased all over the world. It is thought be due to the high consumption of natural antioxidants such as curcumin in this region.

There are studies showing that curcumin has a potential effect against various cancers such as breast, mouth, colon, prostate and pancreas cancers by revealing anticarcinogenic effect with various mechanisms. Certain studies show that combination of curcumin with certain dietary components may be more effective on various diseases and improving health status.

Turmeric is the only source of curcumin in human nutrition and it is important to consume this spice to provide the consumption of curcumin. Overall, studies show that

curcumin can be used in the treatment of cancer, which promises to use curcumin as an anti-cancer agent. Although curcumin has recently been started to be investigated and its anti-tumor ability has been confirmed in vivo, further studies are needed to consider it as a safe treatment agent.

REFERENCES

Aggarwal, B.B. & Harikumar, K.B. (2009). Potential therapeutic effects of curcumin, the antiinflammatory agent, against neurodegenerative, cardiovascular, pulmonary, metabolic, autoimmune and neoplastic diseases. The International Journal of Biochemistry & Cell Biology 41: (1), 40–59.

Ak, T. & Gülçin, İ. (2008). Antioxidant and radical scavenging properties of curcumin. Chemico-Biological Interactions 174: (1), 27–37.

Akpolat, M.; Topçu Tarladaçalışır, Y.; Kanter, M. (2008). İyonizan Radyasyonun Neden Olduğu İnce Bağırsak Hasarına Karşı Curcumin ve C Vitamininin Koruyucu Etkilerinin İncelenmesi. Tıp Araştırmaları Dergisi 6: 77 -85.

Akpolat, M.; Topçu Tarladaçalışır, Y.; Uz, Y.H.; Metin, M.L. (2010). The use of curcumin in cancer treatment. The New Journal of Medicine 27: 142-147.

Aksu Kapucu, S. (2012). Pharmacognostical Researches on Some Curcuma longa L. Rhizomes and Preparations in Turkish Market. Hacettepe University, Institute of Health Sciences, Pharmacognosy Program, Ph.D. Thesis Available at http://www.openaccess.hacettepe.edu.tr/ (accessed: 12 January 2017).

Anand, P.; Sundaram, C.; Jhurani, S.; Kunnumakkara, A.B.; Aggarwal, B.B. (2008). Curcumin and cancer: an "old-age" disease with an "age-old" solution. Cancer Letters 267: (1), 133–164.

Casagrande, M.; Cremolini, C.; Loupakis, F.; Aprile, G. (2013). A perspective on the current management of advanced colorectal cancer. Future Oncology 9: 1687–1691.

Chen, J.; He, Z.M.; Wang, F.L.; Zhang, Z.S.; Liu, X.S.; Zhai, D.D.; Chen, W.D. (2016). Curcumin and its promise as an anticancer drug: An analysis of its anticancer and antifungal effects in cancer and associated complications from invasive fungal infections. European Journal of Pharmacology 772: 33-42.

De Matos, R.P.A.; Calmon, MF.; Amantino, C.F.; Villa, L.L.; Primo, F.L.; Tedesco, A.C.; Rahal, P. (2018). Effect of Curcumin-Nanoemulsion Associated with Photodynamic Therapy in Cervical Carcinoma Cell Lines. Biomed Res Int
doi: 10.2174/1871520618666180412114352.

Dhillon, N.; Aggarwal, B.B.; Newman, R.A.; Wolff, R.A.; Kunnumakkara, A.B.; Abbruzzese, J.L.; Ng, C.S.; Badmaev, V.; Kurzrock, R. (2008). Phase II trial of curcumin in patients with advanced pancreatic cancer. Clinical Cancer Research 14: (14), 4491-4499.

FAO/WHO (2003). http://apps.who.int/food-additives-contaminants-jecfa database/chemical.aspx?chemID=638 (Accessed: 20 April 2018).

Garcea, G.; Berry, D.P.; Jones, D.J.L. (2005). Consumption of the putative chemopreventive agent curcumin by cancer patients: assessment of curcumin levels in the colorectum and their pharmacodynamic consequences. Cancer Epidemiology, Biomarkers & Prevention 14: (1), 120-125.

Goel, A.; Kunnumakkara, A.B.; Aggarwal, B.B. (2008). Curcumin as 'Curecumin': From kitchen to clinic. Biochemical Pharmacology 75: (4), 787-809.

Hatcher, H.; Planalp, R.; Cho, J.; Torti, F.M.; Torti, S.V. (2008). Curcumin: from ancient medicine to current clinical trials.Cellular and Molecular Life Sciences 65: (11),

1631-1652.
Kanai, M.; Otsuka, Y.; Otsuka, K.; Sato, M.; Nishimura, T.; Mori, Y.; Kawaguchi, M.; Hatano, E.; Kodama, Y.; Matsumoto, S.; Murakam., Y.; Imaizumi, A.; Chiba, T.; Nishihira, J.; Sihibata, H. (2013). A phase I study investigating the safety and pharmacokinetics of highly bioavailable curcumin (Theracurmin) in cancer patients. Cancer Chemotherapy and Pharmacology 71: 1521-1530.
Kannappan, R.; Gupta, S.C.; Kim, J.H.; Reuter, S.; Aggarwal, B.B. (2011). Neuroprotection by spice-derived nutraceuticals: you are what you eat. Molecular Neurobiology 44: (2), 142–159.
Kesharwani, P.; Banerjee, S.; Padhye, S.; Sarkar, F.H.; Iyer, A.K. (2015). Parenterally administrable nano-micelles of 3,4-difluorobenzylidene curcumin for treating pancreatic cancer. Colloids and Surfaces B: Biointerfaces 132: 138-145.
Khan, M.A.; Zafaryab, M.; Hassan, S.M.; Ahmad, I.; Rizvi, M.A. (2018). Physicochemical characterization of curcumin loaded chitosan nanoparticles: Implications in cervical cancer. Anticancer Agents Med Chem doi: 10.2174/1871520618666180412114352.
Khanna N.M. (1999).Turmeric – Nature's precious gift. Current Science 76: 1351–1356.
Kolligs, F.T. (2016). Diagnostics and epidemiology of colorectal cancer. Visceral Medicine 32: 158–164.
Kumar, B.; Yadav, A.; Hideg, K.; Kuppusamy, P.; Teknos, T.N.; Kumar, P.A. (2014). A novel curcumin analog (H-4073) enhances the therapeutic efficacy of cisplatin treatment in head and neck cancer. PLoS One 9: (3), e93208.
Kuttan, R.; Bhanumathy, P.; Nirmala, K.; George, M.C. (1985). Potential anticancer activity of turmeric (Curcuma longa). Cancer Letters 29: (2), 197–202.
Lee, H.M.; Patel, V.; Shyur, L.F.; Lee, W.L. (2016). Copper supplementation amplifies the anti-tumor effect of curcumin in oral cancer cells. Phytomedicine 23: (12), 1535-1544.
Li, W.; Jiang, Z.; Xiao, X.; Wang, Z.; Wu, Z.; Ma, Q.; Cao, L. (2018). Curcumin inhibits superoxide dismutase-induced epithelial-to-mesenchymal transition via the PI3K/Akt/NF-κB pathway in pancreatic cancer cells. Int J Oncol 52: (5), 1593-1602.
Liang, B.; Liu, Z.; Cao, Y.; Zhu, C.; Zuo, Y.; Huang, L.; Wen, G.; Shang, N.; Chen, Y.; Yue, X.; Du, J.; Li, B.; Zhou, B.; Bu, X. (2017). MC37, a new mono-carbonyl curcumin analog, induces G2/M cell cycle arrest and mitochondria-mediated apoptosis in human colorectal cancer cells. European Journal of Pharmacology 796: 139–148.
Man, S.; Zhang, L.; Cui, J.; Yang, L.; Ma, L.; Gao, W. (2018). Curcumin Enhances the anti-cancer effects of Paris Saponin II in lung cancer cells. *Cell* Prolif *2*:e12458. doi: 10.1111/cpr.12458.
Moghtaderi, H.; Sepehri, H.; Attari, F. (2017). Combination of arabinogalactan and curcumin induces apoptosis in breast cancer cells in vitro and inhibits tumor growth via overexpression of p53 level in vivo. Biomedicine & Pharmacotherapy 88: 582–594.
Mohammadi, A.; Mansoori, B.; Baradaran, B. (2017). Regulation of miRNAs by herbal medicine: A emerging field in cancer therapies. Biomedicine & Pharmacotherapy 86: 262-270.
Narayanan, N.K.; Nargi, D.; Randolph, C.; Narayanan, B.A. (2009). Liposome encapsulation of curcumin and resveratrol in combination reduces prostate cancer incidence in PTEN knockout mice. International Journal of Cancer 125: 1-8.
Pastorelli, D.; Fabricio, A.S.C.; Giovanis, P.; D'Ippolito, S.; Fiduccia, P.; Soldà, C.; Buda, A.; Sperti, C.; Bardini, R.; Da Dalt, G.; Rainato, G.; Gion, M.; Ursini, F. (2018). Phytosome complex of Curcumin as complementary therapy of advanced pancreatic cancerimproves safety and efficacy of gemcitabine: Results of a prospective phase II

trial. Pharmacol Res 132: 72-79.
Perna, A.; De Luca, A.; Adelfi, L.; Pasquale, T.; Varriale, B.; Esposito, T. (2018). Effects of different extracts of curcumin on TPC1 papillary thyroid cancer cell line. BMC Complement Altern Med 18: (1), 63-71.
Prasad, S.; Gupta, S.C.; Tyagi, A.K.; Aggarwal, B.B. (2014). Curcumin, acomponenet of golden spice: From bedside to bench and back. Biotechnology Advances 32: (6), 1053-1064.
Prasanna, R.; Chandramoorthy, H.C.; Ramaiyapillai, P.; Sakthisekaran, D. (2011). In vitro evaluation of anticancer effect of Cassia auriculata leaf extractand curcumin through induction of apoptosis in human breast and larynx cancer cell lines. Biomedicine & Preventive Nutrition 1: 153–160.
Republic of Turkey Ministry of Health (2016). http://kanser.gov.tr/Dosya/ca_istatistik/ANA_rapor_2013v01_2.pdf (Accessed: 20 April 2017).
Saatçi, E. (2014). Dünya'da ve Türkiye'de kanser epidemiyolojisi. Turkiye Klinikleri Journal of Family Medicine Special Topics 5: (2), 1-8.
Sanrı, B. (2014). Determination of Frequent Diseases seen in patients of Istanbul University Istanbul Faculty of Medicine Dietary Services Polyclinic. Baskent University Institute of Medical Sciences Department of Nutrition and Dietetics Postgraduate Thesis Available at: http://dspace.baskent.edu.tr/ (accessed: 11 January 2017).
Selvendiran, K.; Ahmed, S.; Dayton, A.; Lakshmi Kuppusamy, M.; Brian, K.R.; Kálai, T.; Hideg, K.; Kuppusamy, P. (2011). HO-3867, a curcumin analog, sensitizes cisplatin-resistant ovarian carcinoma, leading to therapeutic synergy through STAT3 inhibition. Cancer Biol Ther 12: (9), 837-845.
Sharma, R.A.; Euden, S.A.; Platton, S.L.; Cooke, D.N.; Shafayat, A.; Hewitt, H.R.; Marczylo, T.H.; Morgan, B.; Hemingway, D.; Plummer, S.M.; Pirmohamed, M.; Gescher, A.J.; Steward, W.P. (2004). Phase I clinical trial of oral curcumin: biomkers of systemic activity and compliance. Clinical Canser Research 10: (20), 6847-6854.
Sharma, R.A.; Mclelland, H.R.; Hill, K.A.; Ireson, C.R.; Euden, S.A.; Manson, M.M.; Pirmohamed, M.; Marnett, L.J.; Gescher, A.J.; Steward, W.P. (2001). Pharmacodynamic and pharmacokinetic study of oral curcuma extract in patients with colorectal cancer. Clinical Cancer Research 7: (7), 1894-1900.
Siviero, A.; Gallo, E.; Maggini, V.; Gori, L.; Mugelli, A.; Firenzuoli, F.; Vannacci, A. (2015). Curcumin, a golden spice with a low bioavailability. Journal of Herbal Medicine 5: 57-70.
Surh, Y.J. (2003). Cancer chemoprevention with dietary phytochemicals. Nature Reviews Cancer 3: (10), 768-780.
Teiten, M.H.; Gaascht, F.; Eifes, S.; Dicato, M.; Diederich, M. (2010). Chemopreventive potential of curcumin in prostate cancer. Genes & Nutrition 5: (1), 61-74.
Thangapazham, R.L.; Puri, A.; Tele, S.; Blumenthal, R.; Maheshwari, R.K. (2008). Evaluation of a nanotechnology based carrier for delivery of curcumin in prostate cancer cells. International Journal of Oncology 32: (5), 1119-1123.
Umerska, A.; Gaucher, C.; Oyarzun-Ampuero, F.; Fries-Raeth, I.; Colin, F.; Villamizar-Sarmiento, M.G.; Maincent, P.; Sapin-Minet, A. (2018). Polymeric Nanoparticles for Increasing Oral Bioavailability of Curcumin. Antioxidants (Basel) 7: (4), 46.
World Health Organization (2016). http://globocan.iarc.fr/default.aspx (Accessed: 22 December 2016)
Yalçın, A.S.; Yılmaz, A.M.; Altundağ, E.M.; Koçtürk, S. (2017). Kurkumin, kuersetin ve çay kateşinlerinin anti-kanser etkileri. Marmara Pharmaceutical Journal 21: 19-29.

Yalçın, T. & Bellikci Koyu, E. (2014). The Role of Bioactive Components in Prostate Cancer. Journal of Urology Special Topics 7: (1), 1-9.
Yang, D.H.; Kim, H.J.; Park, K.; Kim, J.K.; Chun, H.J. (2018). Preparation of poly-l-lysine-based nanoparticles with pH-sensitive release of curcumin for targeted imaging and therapy of liver cancer in vitro and in vivo. Drug Deliv 25: (1), 950-960.
Yu, H.; & Huang, Q. (2010). Enhanced in vitro anticancer activity of curcumin encapsulated in hydrophobically modified starch. Food Chemistry 119: 669–674.
Zhao, W.; Zhou, X.; Qi, G.; Guo, Y. (2018). Curcumin suppressed the prostate cancer by inhibiting JNK pathways via epigenetic regulation. J Biochem Mol Toxicol e22049.
Zlotogorski, A.; Dayan, A.; Dayan, D.; Chaushu, G.; Salo, T.; Vered, M. (2013). Nutraceuticals as new treatment approaches for oral cancer - I: Curcumin. Oral Oncology 49: 187-191.

Chapter 47

Nutrition Problems and Social Innovation

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Nutrition, the use of nutrients for growth, maintenance of life and protection of health, is at the top of human needs. Adequate and balanced nutrition is one of the basic conditions of nation' and its individuals' healthy and strong life, economic and social development, level of welfare, happy, peaceful and secure survival (Baysal, 2011).

Over the years, depending on a variety of reasons, nutrition of the community can change, these changes cause nutritional problems and affect public health. The nutritional status of people in the world and Turkey differs according to region, season, socio-economic level, urban and rural settlements. Turkey is developing in terms of nutritional status and also has problems of developed countries (Yağmur and Güneş, 2010).

A significant proportion of the world's population is under the threat of health problems caused by hunger and malnutrition (Baysal, 1993). However, research on nutrition has shown that overfeeding as well as inadequate nutrition can lead to wide range of health problems and negatively affect health and life span. Obesity, some types of cancer, osteoporosis, heart diseases, diabetes, malnutrition, anemia and other macro-micronutrient insufficiency and toxicity are among the diseases that nutrition plays role (Bakanlığı, T. S., 2013).

Social innovation is an activity that produces innovative and remedial solutions to existing social, cultural, economic and environmental problems and evolves projects to provide a sustainable life for people, society and the planet. Within the framework of innovative work on nutritional problems in the world and in Turkey, policy development, creation of supportive environment, development of the personal talents of the community and strengthening of the social movement are the most important points (Özmete and Gök, 2016).

Relation of Social Innovation and Nutrition

Despite the fact that it is not new in the world of science, there is a process that has been prominent in social innovation for the last ten years. From Benjamin Franklin to Max Weber and Emile Durkheim, many thinkers have referred to social innovation in different ways and have emphasized the importance of creating change in society (Tatar and Arslan, 2017). The topic of social innovation is used in a wide range of areas such as economy, management, sociology and regional development. Therefore, there are various social innovation concepts in the literature. These definitions have both common and different points. It is generally accepted that the purpose of social innovation is to solve social problems (Topsakal and Yüzbaşıoğlu, 2017).

Social innovation involves making a difference in the lives of individuals and groups through the realization of new and creative ideas in solving social problems and

meeting the needs of each individual in the society. In broader terms it involves the realization of social change and the determination of the direction of this change (Özmete and Gök, 2016).

BEPA (Bureau of European Policy Advisors) defines two basic approaches to social innovation: 1. Innovative solutions to social demands: Service providers for vulnerable groups in the community are able to provide services in the direction of innovative applications for social needs, unlike traditional methods of service. 2. Social design: It means to empower people at local level in order to solve economic and social problems (Özmete and Gök, 2016).

Social innovation can be divided into three main categories; social innovations at the local level (responding to urgent social demands), social innovations (aimed at the whole society), and systematic social innovations (values, strategies and politics) (Tatar and Arslan, 2017).

Social problems should be identified at the beginning of the social innovation process, new suggestions and ideas should be developed at the second stage, and the first example should be set as the application of suggestions and ideas at the third stage. The outcome of the first example determines whether or not new ideas will be successful. If it is successful, it should be accepted as social innovation and put into practice. Problems after implementation are resolved in a sustainable way and it is is passed to the measurement and spreading phase. It must be spread to every part of the society. As a result, the process of social change has begun (Topsakal and Yüzbaşıoğlu, 2017).

The success of social innovation and the creation of social change depends on its seven characteristics:

- Create new social ideas
- Create, test and approve innovative approaches
- Collect, disseminate and transfer successful applications
- To bring together systems and institutions and create synergy
- Test by trial
- Creating change capacity
- Supporting change in structures, institutions and organizations (Topsakal and Yüzbaşıoğlu, 2017).

One of the basic stages of social innovation, "initiation", involves determining in which areas need innovation. In developed and developing countries, these needs vary according to the social, economic, environmental and cultural structures that shape the structure of society. However, a common need for social problems all over the world is social innovations that will solve nutritional problems (Özmete and Gök, 2016).

What are social innovation projects developed in nutritional problems?

There are many factors that influence policy development, one of them is scientific evidence. These data are obtained by methods such as Public health nutrition cycle, Triple A etc.

Public Health Nutrition Cycle: It is used to solve problems based on nutrition in public health. It is a cycle that the steps necessary to solve the problem are designed. This cycle is similar to a general policy-making cycle. It uses UNICEF "3A" planning cycle (Triple A: Assessment, Analysis, Action). The 'triple' cycle of evaluating a problem, analyzing its causes, and acting on the basis of this analysis is to provide the

most effective and most effective way to human beings at all levels of the target society (UNCF, 1991). PHN (public health nutrition) cycle consists of information, action and evaluation stages. The information section includes community analysis, problem analysis, stakeholder analysis, factor analysis, capacity analysis, authorization for action, intervention research and risk analysis. The Action section includes objectives, goals, modeling, planning and implementing an appraisal, and managing implementation. The evaluation section includes process evaluation, impact and outcome evaluation, assessment of capacity gains, economic evaluation, and dissemination of learning (Hudges and Margetts, 2012)

Nutrition Policy Development

World Food Conference (1974)

It was realized with the participation of representatives from 135 states in Rome. As a result of the conference, there are 20 solutions in the report. Most of these solutions are aimed at improving agriculture. Report includes policies and programs to improve nutrition (Weiss and Jordan, 1976).

World Food Summit for Children (1990)

71 governments and heads of state gathered and signed a contract of 54 items. They set important goals for children's survival, protection and development. Nutritional targets are reducing children under 5 years of age with severe and moderate malnutrition, lowering birth weight to less than 10 percent, reducing the rate of iron deficiency anemia by one third in women, removing iodine deficiency disorders, abolishing vitamin A and its consequences, and encouraging women to breastfeed (UNICEF, 2018).

Hidden Huger Prevention Conference (1991)

The Hidden Hunger Prevention Conference was held in Canada with the WHO-UNICEF initiative. Mild and moderate deficiencies in vitamin A, iodine, and iron have been reported to contribute to the morbidity, mortality, and dysfunction levels of humans and individuals worldwide (Hunger, 1991).

World Food Summit (1996, 2002)

Adequate, regular and nutritious food and hunger protection are defined as a right for every individual. The main goal was to reduce the number of people who could not feed adequately to at least half of the current level by 2015 (MFA, 2018).

International Conference on Nutrition (1992-2014)

It is a meeting organized by the World Health Organization (WHO) and United Nations Food and Agriculture Organization (FAO). The first one was organized in Rome in 1992.

Problems to be tackled until 2000:

• Deaths due to famine and famine

• Hunger and nutritional deficiencies in societies affected by natural and man-made disasters

• Iodine and vitamin A deficiencies

Problems to be reduced to a large extent until 2000:

• Hunger and chronic hunger

• Malnutrition, especially in children and women

• Other micronutrient insufficiencies (including iron)

• Diet-related infectious and non-communicable diseases
• Social and other obstacles to breastfeeding
• Inadequate cleaning and hygiene, contaminated drinking water (Ersoy ve Aksoy, 1994).

The second (ICN2) was held in Rome in November 2014. It has been decided to adhere to the decisions taken at the 2013-2020 meetings and the stated targets (FAO, 2014).

WHO 2025 Global Nutrition Targets (2012)

WHO's Member States have endorsed global targets for improving maternal, infant and young child nutrition in 2012.

1. Reduce the incidence of stunting by 40% in children under five years of age
2. Reduce the incidence of anemia in women of reproductive age by 50%
3. Reduce the rate of low birth weight by 30%
4. Reduce and maintain childhood overweight by 3%
5. Increase the rate of breastfeeding by at least 50% for the first six months
6. Reduce and maintain childhood wasting by 3% (WHO, 2012)

WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013-2020

1. Reduce overall mortality from cardiovascular diseases, cancer, diabetes and chronic respiratory system diseases by 25%
2. Reduce the harmful use of alcohol by at least 10%
3. Reduce the prevalence of inadequate physical activity by at least 10%
4. Reduce the average salt and sodium intake by 30% in the community
5. Reduce prevalence of tobacco use by 30% for individuals 15 years of age and older
6. Reduce high blood pressure by 25% or control high blood pressure prevalence according to national circumstances
7. Stop the rise in the incidence of diabetes and obesity
8. To provide drug treatment and physician services to 50% of the patient population to prevent heart attack and stroke
9. Ensure that the tools, equipment, technology and medicines to be used in the treatment of the most common noncommunicable diseases are found in 80% in both public and private facilities (WHO, 2013).

European Food and Nutrition Action Plan 2015-2020

The aim of the Action Plan is to significantly reduce the burden of nutrition-related preventable noncommunicable diseases, obesity and all other unhealthy nutritional forms that are still prevalent in the WHO European Region.

1. Creating healthy food and beverage circles
2. Improve lifelong healthy nutritional benefits, especially for the most vulnerable groups
3. Strengthen health systems to encourage healthy eating
4. Supporting audit, observation, evaluation and research
5. Strengthen management, partnerships and networks to ensure health care in all politics (WHO, 2014).

Turkey Nutrition and Health Survey (TNHS 2010)

It is a nutrition and health survey covering 19.056 people. Four different

questionnaires (household questionnaire, 0-5 year questionnaire, 6-11 year questionnaire, 12 years and over questionnaire) were used in the study (TBSA, 2010).

Turkey Demographic and Health Survey (TDHS)

Hacettepe University Institute of Population Studies has established demographic indicators every five years since 1968 by collecting reliable national data on population characteristics and maternal and child health issues. TDHS is a sample survey designed to provide information on the national level on fertility levels and trends, infant and child mortality, family planning and maternal and child health issues. 10,525 people participated in TDHS 2008 and 14,490 people participated in TDHS 2013 (TNSA, 2013).

Malnutrition and Nutrition Policies

Malnutrition is a clinical and traceable tablature that occurs when one or more nutrients required for growth and development are inadequate or unbalanced to disrupt the body's balance. The most common form of malnutrition is Protein Energy Malnutrition (PEM) (Köksal, 2013).

The situation in the World: UNICEF, WHO and the World Bank Group announced the percentage of stunts, overweight and wasting in 2016. The stunt in children under the age of 5 wass 32.7% in 2000 and 22.9% in 2016. 51.7 million of the under-5-year-olds were wasted in 2000 and 52 million in 2016. It was stated that more than half of all stunted children under the age of 5 lived in Asia and more than one thirds in Africa in 2016. Also, it was determined that more than two-thirds of all wasted children under age 5 lived in Asia and more than one fourth in Africa in 2016 (LTCM, 2017).

The situation in Turkey: According to TDHS 2008 findings, one out of every 10 children under 5 years old was found to be stunted (10.3%) and only 1% of children were wasted (weight for height) and 3% were underweight (weight for age). The percentages of children with stunted and underweight were higher in the eastern region than in the other regions (TNSA, 2008). According to TDHS 2013 data, the stunting rate in children under 5 years was 12.7%. According to TDHS 2013 data, regions with most stunting in children under 5 years old were Northeast Anatolia, Southeast Anatolia and Middle East Anatolia regions (TNSA, 2013).

Childhood Malnutrition Intervention Programs in the World

Every Woman Every Child: This program was launched in 2010. It was a global movement that moves international and national actions by governments, the private sector and civil society. Within this campaign, until 2015, it was targeted to save 16 million lives in 49 poorest countries with maternal and child health applications. The program's budget was 40 billion dollars (EWECP, 2010).

Accountability for Women's and Children's Health: Within this program launched in 2011, the practices of various countries in improving women's and children's health and the success of these practices are being monitored and evaluated (AWCH, 2014).

The Healthy Growth Project: Within this program, stump reduction agendas are identified and implemented. Monitoring of childhood developments and the development of growth standards for each country are underway. Nutrition trainings are taught to teach the public how to fight malnutrition (HGP, 2018).

Childhood Malnutrition Intervention Programs in Turkey

Nutrition Friendly School Project: It is a project initiated in 2010 to provide schools with the necessary environment for adequate and balanced nutrition. The rules such as making the students' height / weight measurements twice a year, meeting and informing the parents of the students in the risk group, appropriate hygienic conditions of the school (White Flag Project), availability of healthy drinking water facilities within the school, prohibition of the sale of food (frying, carbonated beverages, etc.) which may cause inadequate and unbalanced nutrition are set (BDOP, 2016).

Turkish Healthy Eating and Active Life Program: It is a program to combat obesity with adequate nutrition training (SBHHP, 2013).

Breastfeeding Motivation and Baby-Friendly Healthcare Program: UNICEF and WHO introduced the Baby Friendly Hospitals program in 1991. This program aimed to encourage the breastfeeding of the baby, encourage and support the breastfeeding with the application of the principles of "Successful breastfeeding in 10 steps" (BDOP, 2013).

Obesity and Nutrition Policies

Obesity: WHO makes the definition of overweight and obesity according to body mass index [BMI = Weight (kg) / Height (m^2)]. BMI value for overweight is accepted between 25.0-29.9 kg/m^2 and for obesity is $\geq$30 kg/m^2 (TEMD, 2014).

The prevalence of obesity in the world and Turkey

WHO published data for 2016 showed that more than 1.9 billion adults (39%) over 18 years of age and over were overweight and of which more than 650 million were obese (13%). It was stated that 41 million children under 5 years of age were overweight or obese. More than 340 million children and adolescents between the ages of 5 and 19 were found as overweight or obese (OOFS, 2017). According to the TNHS 2010 data in Turkey, prevalance of overweight was found to be 34.6% and 30.3% for obesity in adults. The obesity prevalance in 0-5 years was 8.5% and 8.2% in 6-18 years (TBSA, 2010).

Obesity prevention programs in the World

In May 2004, WHO developed the Global Strategy on Diet and Physical Activity on the decisions taken at the 2002 World Health Assembly. In this strategy; the major and growing burden of noncommunicable diseases was recognized and two of the most important factors affecting these diseases were identified: diet and physical activity. The overall objective of the strategy is to reduce the incidence of noncommunicable diseases and the deaths resulting from these diseases by developing policies for dietary and physical activity practices, following scientific data. It is a program that covers the whole life span all over the World (WHO, 2004).

Obesity Prevention and Control Programs in Turkey

Turkish Healthy Eating and Active Life Program: This is a program developed from European Certificate of Combat Obesity resolutions to combat obesity in 2010 in Turkey.

1. Informing the public about obesity, adequate and balanced nutrition and physical activity and raising awareness
2. Gaining Adequate and balanced nutrition and regular physical activity habits in fighting with obesity in schools

3. Supporting adequate and balanced nutrition and regular physical activity in media news and advertisements

4. The emphasis is on the promotion of physical activity and the improvement of environmental factors. Goals and strategies have been developed (SBHHP, 2013).

Iodine Deficiency and Nutrition Policies

Iodine is a trace element found in small amount in human body. The total amount in the body does not exceed 15-20 mg. Developmental and functional disturbances called 'Iodine Deficiency Disorders' can occur when the individual's daily iodine needs are not met. Iodine deficiency disorders may differ according to age groups. These disorders may lead to miscarriages and stillbirth in fetus, neonatal goiter and hypothyroidism, goiter in children and adolescents, impaired mental functions, goitre in adults, hypothyroidism and mental retardation (Erdoğan and Erdoğan, 1999).

Programs to combat iodine deficiency: Dietary iodine should be added to prevent iodine deficiency disorders. The methods applied for this are: Enrichment of salt with iodine is the most recommended method and is applied worldwide in some seventy countries including Turkey where iodine deficiency diseases are a public health problem (ISW, 2004).

Decisions were made on the development and implementation of global action plans for the elimination of iodine deficiency disorders at the "World Summit for Children" held by UNICEF in 1990 and The "World Nutrition Conference" conducted by FAO and WHO in 1992 emphasized the need to prevent iodine deficiency disorders. It is recommended by the World Health Organization and UNICEF to enrich the salt with iodine for countries with high iodine deficiency (ISW, 2004).

In Turkey; it is obligatory to add 25-40 mg/kg potassium iodate to the table salt. In addition, for those who should not consume iodine, table-free iodine-free salt production is made so that the package size does not exceed 250 grams.

As Turkey is a country where iodine deficiency disorders are common, "Elimination of Iodine Deficiency Disorders and Salt Iodizing Program" has being implemented since 1994. Within the scope of the program, iodination of salt was made compulsory by legislative regulation on salt iodination in 1998 (SB, 2016).

The Turkish Food Codex Salt Regulation has been revised by publishing in the Official Gazette dated January 2008 and numbered 26765. In 1994, iodized salt use rate of households was 18% in Turkey, but in 2008 it increased to 85% (90% in cities, 72% in rural areas). When it reaches 90% in the country as a whole, it is considered as successful according to international evaluations Programs like Iodized Drinking Water Application, Enrichment of Baby Foods with Iodine, Enrichment of Livestock Feeds, Iodized Oil Application, Potassium Iodide Solution Application have different applications depending on the region (TTTAP, 2018).

Iron Deficiency Anemia and Nutrition Policies

Iron deficiency anemia is a public health problem affecting both developed and developing countries. It can occur in any individual but is more common among pregnant women and children. The incidence of iron deficiency anemia: Globally affects 1.6 billion people, or 24.8% of the population, according to WHO data (1993-2005). Anemia was found in 24.8% of total population. The highest prevalence of anemia was found in pre-school children (47.4%), pregnant women (41.8%) and non-

pregnant women (30.2%). According to WHO 2011 data, the prevalence of anemia among women aged 15-49 was 29% in women who were not pregnant and 38% in pregnant women. According to the results of several studies, iron-deficiency anemia in Turkey is seen average 50% of 0-5 years old children, 30% of school-age children and 50% of lactating women is seen (WPA, 2018).

Iron deficiency anemia policies

Nutrient Enrichment:

Enrichment of some nutrients that are widely consumed in the diet with iron minerals helps prevent anemia of iron deficiency. Frequently used foods for nutrient enrichment are wheat, bread, milk powder, salt, baby food and sugar.

Nutrition education: Special training should be organized to change the nutrition habits of the community to improve iron intake and absorption (DAAPC, 2018)

In Turkey: Iron-Like Turkey

To raise awareness about iron deficiency of society, to infants should be breastfed for the first 6 months, to maintaining up to 2 years of breastfeeding, to proposal of iron therapy for infants aged 13-24 months with anemia, 'Like Turkey' project was launched in 2004.

General strategies

• Important of breast milk, protection and encouragement of breastfeeding

• Allowing babies to feed themselves with breast milk for the first 6 months

• Providing iron support to children

• hemoglobin, hematocrit levels should be measured and treatment should be initiated in children at risk of anemia (DGT, 2018).

D Vitamin Deficiency and Nutrition Policies

D vitamini deficiency may occur due to inadequate exposure to sunlight, inadequate dietary intake, and absorption problems. The level of serum 25 (OH) D below 20 ng / ml (50 nmol / l) can be considered as deficiency. Vitamin D deficiency in Turkey is 62-% to 90% in pregnant women, 58% in newborns, 60-87% in adolescents 44-60% in women and 33-51% in elderly women (Çalışkan, 2012).

Prevention Policies of vitamin D deficiency in Turkey

Prevention of D Vitamin Insufficiency and Bone Health Protection Project (2005)

Project Objectives:

• Preservation of bone health and the prevention of diseases due to vitamin D insufficiency,

• Providing appropriate dosage and duration of vitamin D and educating the society with health personnel

Project Goals:

• Give prophylactic dose vitamins D to 0-12 months infants and give them without paying

• At the end of the project, reduce the frequency of rickets in children by at least 50%

• Informing 90% of pregnant and lactating women about the importance of vitamin D

Sub-targets:

• Achieve at least one million babies every year and provide vitamin D supplementation for prophylactic purposes,

• Reaching one million pregnancies each year and informing about vitamin D and calcium deficiency,

• To inform the families of the pregnant and infants and inform their relatives.

• Encouraging mothers to contact infants and children with sunlight for no less than 20 minutes a day,

Application of vitamin D supplementation:

• Vitamin D supplementation will be provided for at least 12 months at a dose of 400 IU / day (3 drops / day) from the day when 0-12 month olds are diagnosed, and newborns from the first week.

• Other risk groups (adolescents, pregnant and lactating women, primarily) will be informed about adequate vitamin D intake (BDYÖ, 2018).

D Vitamin supplements: The program launched in 2011 by the Health Ministry.

- Six months during pregnancy and six months after birth from 12 weeks of age will receive D Vitamin support.
- Vitamins D to be administered during the prenatal period and after the birth of the mother; should be 1200 IU (9 drops) to be taken as a single daily dose.
- According to the Ministry of Health guidelines, the sustainability of the program will be ensured by monitoring and evaluating the training and practices of health personnel (DVYÖP, 2018**).**

Folate Deficiency and Nutrition Policies

Folate acts as a carbon-element carrier in the synthesis of many components. For this reason, DNA is essential for synthesis. Nucleic acid is necessary for synthesis, that is, it is essential in cell division. Especially in the first weeks of life it is necessary for cell division and proliferation. Folate is also necessary for the synthesis of many amino acids. Cool, glycine, histidine and methionine are some of these. Folate is also required for the synthesis of red blood cells. Folate Resources; Green leafy vegetables, legumes, liver, enriched breakfast cereals, citrus fruits. Folate Inadequacy Diseases; Neural tube defect, cardiovascular diseases, macrocytic anemia (Tunçbilek, 1998).

Folate Inadequacy Programs

In countries that have implemented folic acid support as a government policy, a 17% reduction in NTD prevalence has been detected, while a 0.9% reduction has been observed in non-implemented countries. Most women cause folic acid support to be partially ineffective due to reasons such as not taking routine folic acid supplements and unplanned pregnancy. The idea of food fortification of foods with folic acid has been proposed to provide effective folic acid supplementation (Avşar, 2012).

As an Important Innovative Study; Food Enrichment!

Nutrient Enrichment is the addition of one or more nutrients to a nutrient in order to correct or prevent of nutritional deficiencies in the community or at risk group. Also; is a public health practice aimed at preventing diseases caused by their inadequate consumption by enriching them in terms of limited food items.

Enrichment is the addition of nutrients that are not naturally found in foods. (For example Vitamin A in margarinea, Vitamin D in milk, iodine in salt). It is used as a synonym for food enrichment.

Restoration is the substitution of essential nutrients that are lost during production, normal storage and processing in food industry (Kabakuş, 2017).

The researching of enriching food with some nutrients has accelerated in 1900's

years. Among these, the addition of iodine (salt) and vitamin D (milk) is the most important.

In the 1940's the Enrichment of iron, niacin, thiamine and riboflavinin was initiated by the Food and Drug Administration (FDA). In 1998, folic acid was added to the food.

1980 The FDA (Food and Drug Administration) reported a positive opinion on nutrient enrichment.

At the 1992 International Conference on Nutrition, nutrient enrichment has been identified in vitamin and mineral deficiencies, and nutrient enrichment has been emphasized (SFA 1992, 2018; SFA 1995, 2018)

Nutrient Enrichment- Micro-Nutrient Malnutrition (MNM)

Food enrichment studies are used especially for diseases that are considered to be a common health problem in the society. Today, food enrichment studies are most commonly carried out to prevent micronutrient insufficiencies. In developing countries, especially children and women of reproductive age are at risk for iron, iodine and vitamin A insufficiency. Malnutrition caused by inadequate intake of micronutrient is a risk factor for many diseases (AWCH, 2018).

Types of nutrient enrichment

Biofortification is the enrichment of plants at the production stage. Nutrient content or absorption is increased. (For example, vitamin A and iron-rich rice) The method of mass enrichment should be done if nutritional deficiencies are present in the community. it is legally obligatory. Products such as grain are enriched. Target Enrichment: It is for risk groups. There are certain subgroups targeted (Babies, children, pregnancies, etc.) Sprinkle (Home enrichment) is complementary nutritional support. It contains iron, zinc, vitamins A, C and folic acid. It is in powder form. It rapidly mixes with semi-solid foods prepared at home. It is used at any time during the day. It is an expensive method (FIW 206, 2018).

RESULT

Adequate and balanced nutrition is important for each individual's health. For this reason, it is an important task for an individual to protect his / her health throughout his or her life as well as the community to which he or she belongs. Keeping up with changes and developments in communities has caused dietary habits to change and various nutritional problems. Innovative work designed to prevent these health problems and risks have been effective in reducing public health problems and development of health services by providing community training. In addition, different nutritional problems will emerge in the future due to technological and social developments. Population surveys, policies for the protection of public health and innovative work should be developed to prevent these future health problems.

REFERENCES

Accountability for Women's and Children's Health 2014 Progress Report, (2014). http://www.who.int/woman_child_accountability/about/COIA_report_2014.pdf, (Access Date: 20.03.2018).

Avşar, A. F., Kaya, S., & Kaya, B. (2012). Türkiye'de Folik Asit Perikonsepsiyonel Olarak Kullanılmalı Mıdır? Ankara Medical Journal, 12(4).

Baysal, A. (2011). Beslenme. Hatiboğlu Basım ve Yayım.
Baysal, A. (1993). Gençliğin Beslenme Sorunları. Sosyal Politika Çalışmaları Dergisi, 3(3).
Bebeklerde D vitamini yetersizliğinin önlenmesi ve kemik sağlığının korunması projesi (2018). https://dosyaism.saglik.gov.tr/Eklenti/12650,20050429-1459-bebeklere-d-vitamini-verilmesi-hakkinda-genelge-2005-71pdf.pdf?0 (Access Date:20.03.2018).
Beslenme Dostu Okul Programı Uygulama Klavuzu, (2013). http://beslenme.gov.tr/content/files/okul_sutu/ek_5_bdo_uygulama_kilavuzu.pdf (Access Date: 21.03.2018).
Beslenme Dostu Okullar Programı Uygulama Klavuzu, (2016). https://hsgm.saglik.gov.tr/depo/birimler/saglikli-beslenme-hareketli-hayat-db/okul-sagligi/beslenme-dostu-okullar-program-uygulama-klavuzu.pdf (Access Date: 21.03.2018).
Budak, N. (2002). Folik asitin kadın ve çocuk sağlığında önemi. Erciyes Tıp Dergisi 24 (4): 209, 214.
Çalışkan D. Koçer E. Kasım İ. et al. (2012). Vitamin D. Turkish Medical Journal 6(2):61-67.
Demir gibi Türkiye, (2018). http://ihs.istanbulsaglik.gov.tr/ data/content/CEKUSH/ DemirGibiTurkiye.pdf (Access Date: 20.03.2018)
D vitamini yetersizliğini önleme eğitim programı, https://www.saglik.gov.tr/ TR, 11158/gebelere-d-vitamini-destek-programi.html (Access Date:20.03.2018
Erdoğan M.F., Erdoğan G (1999). Türkiye ve Dünyada Endemk guatr ve iyot eksikliği rahatsızlıkları. T Klin Tıp Bilimleri, 19:106-113.
Ersoy, G., & Aksoy, M. (1994). 1992 Dünya Beslenme Deklarasyonu. Gıda Dergisi, 19(2).
Every woman every child program, (2010). https://www.everywomaneverychild.org/about/ (Access Date: 19.03.2018).
FAO, W. (2014). Conference outcome document: Rome declaration on nutrition. In Second international conference on nutrition. Rome: FAO and WHO.
Food Insecurity in the World, 2006 (2018). http://www.fao.org/docrep/ 009/a0750e/a0750e00.htm (Access Date: 32.05.2018).
Hughes, R., & Margetts, B. (2012). The public health nutrition intervention management bi-cycle: a model for training and practice improvement. Public health nutrition, 15(11), 1981-1988
Hunger, E. H. (1991). A policy conference on micronutrient malnutrition. Montreal, Canada. Task Force for Child Survival and Development, Atlanta, GA.
Iron Deficiency Anaemia Assessment, Prevention, and Control A guide for programme managers, (2018). http://www.who.int/nutrition/publications/en/ida_assessment_prevention_control.pdf, (Access Date: 20.03.2018)
Kabakuş, M. (2017). Mikro Besin Ögesi Malnütrisyonunda Besin Desteği Mi? Yoksa Zenginleştirme Mi?. Gümüşhane Üniversitesi Sağlık Bilimleri Dergisi, 6(2), 77-82.
Köksal G., Gökmen H. (2013). Çocuk hastalıklarında beslenme tedavisi, Hatipoğlu yayınları, Ankara.
Levels and Trends in Child Malnutrition, (2017). http://www.who.int/nutgrowthdb/jme_brochoure2017.pdf (Access Date: 19.03.2018).
MFA, http://www.mfa.gov.tr/dunya-gida-zirvesi---gecmisten-bugune.tr.mfa (Accessed Date: 18.03.2018)
Obesity and Overweight Fact Sheet, (2017). www.who.int/mediacentre/factsheets/fs311/en/, (Access Date: 18.03.2018).
Özmete, E., & Gök, F. A. (2016). Sürdürülebilir Kalkınma İçin Sosyal İnovasyon Ve Sosyal

Hizmet İlişkisinin Değerlendirilmesi. Toplum ve Sosyal Hizmet, 26(2), 127-143.
T.C Sağlık Bakanlığı, Türkiye Halk Sağlığı Kurumu, Türkiye Aşırı Tuz Tüketiminin Azaltılması Programı, 2017-2021, (2016). http://beslenme.gov.tr/content/files/Tuz/t_rkiye_a_r_tuz_t_ketiminin_azalt_lmas_program_2017-2021.pdf (Access Date: 20.03.2018).
Tatar Ş.B. Arslan F.M. Sosyal inovasyon kavramı: bir literatür taraması. International Journal of Academic Value Studies, 2017;3(12):321-338
Topsakal, Y., & Yüzbaşıoğlu, N. (2017). Sosyal İnovasyon Kavramsal Model Önerisi. Uluslararası Yönetim İktisat Ve İşletme Dergisi, 13(3), 565-576.
The Healthy Growth Project, (2018). http://www.who.int/nutrition/healthygrowthproj/en/index1.html, (Access Date: 20.03.2018).
The State of Food And Agrıculture 1995, (2018). http://www.fao.org/docrep/017/v6800e/v6800e.pdf (Access Date: 32.05.2018)
The State of Food And Agrıculture 1992 (2018). http://www.fao.org/3/a-t0656e.pdf (Access Date: 31.05.2018).
Tunçbilek E, Boduroğlu K. (1998) Nöral tüp defektlerinin önlenmesi. Sürekli Tıp Eğitimi Dergisi 1998,7:225-227.
Türkiye Beslenme ve Sağlık Araştırması 2010 Raporu, (2010). http://ekutuphane.sagem.gov.tr/kitaplar/turkiye_beslenme_ve_saglik_arastirmasi_(tbsa)_2010_saha_uygulamasi_el_kitabi.pdf (Access Date: 19.03.2018).
Türkiye Endokrinoloji ve Metabolizma Derneği, Obezite Tanı ve Tedavi Kılavuzu, (2014). http://www.ktu.edu.tr/dosyalar/17_02_15_bb1cf.pdf (Access Date: 21.03.2018).
Türkiye Nüfus ve Sağlık Araştırması 2013, (2013). http://www.hips.hacettepe.edu.tr/tnsa2013/rapor/TNSA_2013_ana_rapor.pdf (Access Date: 19.03.2018).
Türkiye Nüfus ve Sağlık Araştırması, (2008). http://www.hips.hacettepe.edu.tr/TNSA2008-AnaRapor.pdf (Access Date: 19.03.2018).
Türkiye Sağlık Bakanlığı. (2013). Türkiye Halk Sağlığı Kurumu, Türkiye Sağlıklı Beslenme ve Hareketli Hayat Programı, 2013-2017. 3. Baskı, Ankara: Anıl Reklam Matbaa Ltd.
Türkiye Sağlıklı Beslenme ve Hareketli Hayat Programı, (2013). http://beslenme.gov.tr/content/files/home/turkiye_saglikli_beslenme_ve_hareketli_hayat_programi.pdf (Access Date: 21.03.2018).
Türkiye tuz tüketiminin azaltılması programı, (2018). http://beslenme.gov.tr/content/files/Tuz/t_rkiye_a_r_tuz_t_ketiminin_azalt_lmas_program_2017-2021. pdf (Access Date: 20.03.2018).
UNICEF, https://www.unicef.org/wsc/goals.htm, (Accessed Date: 18.03.2018)
United Nations Children's Fund. (UNCF) (1991). Strategy for improved nutrition of children and women in developing countries. The Indian Journal of Pediatrics, 58, 13-24.
Weiss, T. G., & Jordan, R. S. (1976). The world food conference and global problem solving. Praeger Publishers.
WHO 2025 Global Targets (2012). http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/, (Access Date: 18.03.2018)
WHO Global action plan for the prevention and control of noncommunicable diseases 2013-2020, (2013), http://apps.who.int/iris/bitstream/10665/94384/1/9789241506236_eng.pdf?ua=1 (Access Date: 18.03.2018)
WHO Global Strategy on Diet, Physical Activity and Health, (2004). http://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf (Access Date: 18.03.2018).

WHO Global Data on Iodine Deficiency, Iodine Status Worldwide, (2004). http://apps.who.int/iris/bitstream/handle/10665/43010/9241592001.pdf?sequence=1 (Access Date: 19.03.2018).
WHO Regional Committee for Europe, 15-18 September, Copenhagen, Denmark, (2014). http://www.euro.who.int/en/about-us/governance/regional-committee-for-europe/past-sessions/64th-session (Access Date: 18.03.2018)
Worldwide prevalence of anaemia 1993–2005, (2018). http://apps.who.int/iris/bitstream/10665/43894/1/9789241596657_eng.pdf, (AccessDate: 20.03.2018)
Yağmur, C., & Güneş, E. (2010). Dengeli beslenme açısından Türkiye'de gıda üretimi ve tüketiminin irdelenmesi, VII. Ziraat Mühendisliği Teknik Kongresi, Ankara.

Chapter 48

Does Early Enteral Nutrition Benefit for Inpatient?

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1. Introduction

Early enteral nutrition (EN) is defined as feeding to the patient from the first 24 hours to 48 hours after length of stay in the hospital or a surgical operation. EN via tube feeding is a much-preferred way of feeding the patients with critical illness. It also effective in preventing catabolism caused by serious diseases (Kreymann et al., 2006). All Intensive Care Unit (ICU) patients who cannot take a full oral diet within three days should be given EN. In the first 24 hours, a standard high protein formula should be preferred as a nutritional product (Heimburger, Geels, Bilbrey, Redden, & Keeney, 1997; Mowatt-Larssen, Brown, Wojtysiak, & Kudsk, 1992). Malnutrition in the intensive care unit (ICU) is associated with worse in-hospital outcomes. For this reason, certain nutritional approaches are proposed to meet the increased energy requirement and, early enteral nutrition is one of them.

2. Critically ill patients

Critical illness is a complex, life-threatening disease characterized by endocrine and metabolic changes and irregular immune response. Critical illness increases systemic inflammatory response and leads to infection-related morbidity, multiorgan dysfunction, prolonged hospitalization and high mortality (Ingels, Vanhorebeek, & Van den Berghe, 2017). EN protects intestinal mucosal integrity (Yu, Chen, Huang, Shao, & Zeng, 2013) and reduces infection rates (Xiao-Bo et al., 2014) and morbidity (Moore et al., 1992). Major clinical practice guidelines agree that EN should commence “early” within 24 to 48 hours during critical illness. However, no contraindication exists to initiate EN soon after active resuscitation (Blaser et al., 2017; G. Doig et al., 2008; McClave et al., 2016) (Canada 2015). Some guidelines recommend that early nutrition reduce mortality (G. Doig et al., 2008), while others suggest that it reduces infection (Canada 2015) (Blaser et al., 2017)). Despite the recommendation of early support with EN(Khalid, Doshi, & DiGiovine, 2010), there is general concern about the earliest time point at which EN can be safely initiated in critically ill patients.

Nutrition risk in ICU patients should be determined using Nutrition Risk in the Critically ill (NUTRIC) score or Nutritional Risk Screening 2002 (NRS 2002). Patients

with high nutritional risk according to these screening tests should receive nutritional support if EN is not contraindicated. Nutrition support is recommended to be initiated as quickly as possible over 24 to 48 hours (Gramlich et al., 2004). Although nutritional support is standard in critically ill patients, nutritional timing, route of delivery, variety and amount of food applied, can affect the prognosis of the patient (Harvey et al., 2014). It can be avoided at excess of 20-25 kcal / kg BW / day energy loads for critically ill patients during the acute phase and when first started feeding. In later times, as the clinical condition of the patient improves, the energy should be gradually increased to achieve 25-30 kcal/kg BW/day (Ibrahim et al., 2002; McClave et al., 2016; Villet et al., 2005)**.** When the actual calories intake does not reach 10–12.5 kcal/kg/day and the patient is at high risk of malnutrition in the first 3–5 days, PN can be added to a total calorie of 25–30 kcal/kg/day. If calorie intake reaches 10–12.5 kcal/kg/day during the first 3–5 days and 12–15 kcal/kg/day during 7–10 days, PN is not required. Parenteral nutrition should be used as a complementary nutrient if EN cannot achieve targeted nutrient uptake alone (Heidegger et al., 2013; Zhang et al., 2016). At this point, there are different new approaches to adjust the energy to ICU patients. Full feeding is defined as the intake of more than 80% of the total energy, 25-30 kcal/kg IBW/day, trophic feeding is 10–20 mL/h or 10–20 kcal/h up to a maximum of 500 kcal/day energy intake, and permissive underfeeding provides 50% -80% of the total energy (Arabi et al., 2011; McClave et al., 2016). Although this issue is controversial and there is not a clear consensus for patients with acute respiratory distress syndrome (ARDS), with acute lung injury (ALI), or it is expected to require 72 hours or more of mechanical ventilation are recommended to receive EN via either full or trophic feeding (Mulherin & Cogle, 2017).

Sufficient (high-dose) protein should be provided according to ASPEN recommendation. Protein requirements should be in the range of 1.2–2.0 g/kg per day according to actual body weight. For burn or multi-trauma patients, protein requirements may be even higher (McClave et al., 2016). Utilizing nitrogen balance or NPC:N (70:1–100:1) to calculate the amount of protein may not be effective in the ICU (Plank, 2013).

The lack of clear evidence of how to begin early enteral nutrition benefit in the guidelines for critical patients makes it difficult to implement early enteral nutrition. Observational studies have shown that approximately 40% of critically ill patients do not receive any nutritional support within 24-48 hours and 60% of intensive care patients are not fed for 48 hours or more (G. Doig et al., 2008; Heyland et al., 2003). However, studies have shown the benefits of early EN in critical illnesses. While EN is reported to be effective on mortality in a small number of studies, EN provides the most useful benefit with reduced infectious morbidity for especially patients with pneumonia and central line infections and abdominal abscess in trauma patients, and also reduces intensive ICU length of stay (McClave et al., 2016).

Doing et al. (2009) examined six randomised controlled trials (RCTs) with 234 participants. In this study, the provision of early EN was associated with a significant reduction in mortality and pneumonia. There were no other significant differences in outcomes (G. S. Doig, Heighes, Simpson, Sweetman, & Davies, 2009). Likewise, in a study conducted in eight hundred and ninety-eight trauma patients, early enteral nutrition started to show significant positive effect on length of stay and mortality.

Researchers support early initiation of enteral nutrition (Lofgren, Mabesa, Hammarqvist, & Hardcastle, 2015). In contrast to these studies, in another study, patients were divided into two groups, one receiving enteral nutrition within the first 6 hours and the other receiving enteral nutrition support after 6 hours. It was found that patients who started enteral feeding in the first 6 hours had more discharging and lower mortality rates, but this value was not found to be statistically significant (Shankar, Daphnee, Ramakrishnan, & Venkataraman, 2015).

In the vast majority of critical patients, EN is a safer and more practical nutrition than PN (McClave et al., 2016). Several randomized controlled trials have shown that EN has better results in critical illnesses including burns, trauma, head trauma, major surgery, and acute pancreatitis when compared to PN (Chourdakis et al., 2012; Heyland et al., 2003; Kalfarentzos, Kehagias, Mead, Kokkinis, & Gogos, 1997; Kudsk et al., 1996; Windsor et al., 1998). Six previous comprehensive meta-analysis study reported that EN reduced significant reductions in infectious morbidity according to PN (Braunschweig, Levy, Sheean, & Wang, 2001; Gramlich et al., 2004; Heyland et al., 2003; Moore et al., 1992; Peter, Moran, & Phillips-Hughes, 2005; Simpson & Doig, 2005). Peter et al. found in a meta-analysis study that EN reduced the length of stay at the hospital and increased the frequency of diarrhoea compared with PN. However, it was determined that there was no difference between EN and PN in terms of mortality (Braunschweig et al., 2001; Gramlich et al., 2004; Heyland et al., 2003; Moore et al., 1992; Peter et al., 2005; Tian, Heighes, Allingstrup, & Doig, 2018). Only one study found that the PN mortality rate was lower despite high infection complication (Simpson & Doig, 2005). Similarly, in a meta-analysis study of 18 RCS performed in recent years, there was no difference in mortality rates between EN and PN, yet it was found that EN reduced infectious complications and duration of ICU stay, while it did not affect the length of stay in the hospital (Elke et al., 2016).

3. Surgical patients

Surgical patients are often malnourished (Hill et al., 1977; McWhirter & Pennington, 1994), which is known to increase morbidity and mortality in severe cases (The Veterans Affairs Total Parenteral Nutrition Cooperative Study Group, 1991). Before surgery, patients often feel nauseous or are starved for examinations. After gastrointestinal surgery, a period of 'nil by mouth' is common practice before fluids and then solids are introduced. Changes in metabolism are evident such as increased insulin resistance and reduced muscle function within 24h of starvation. This causes decreased nutrient intake and causes malnutrition with increased catabolism. It is very important for surgical patients to replace their increased energy needs as soon as possible (Lewis, Andersen, & Thomas, 2009). The first study with jejunal feeding and early EN in intestinal surgical patients reported that patients shortened the length of stay in the hospital (Sagar, Harland, & Shields, 1979). No similar results were found in other follow-up studies (Beier-Holgersen & Boesby, 1996); Everitt & McMahon, 1994), but nowadays there are many studies revealing the benefits of starting early enteral feeding in surgical patients.

Previous meta-analysis study demonstrate initiation of early EN in gastrointestinal surgery patients not critically ill patients may have clinically important benefits as reduced the risk of any type of infection, the mean length of stay in hospital and

mortality (Lewis, Egger, Sylvester, & Thomas, 2001). Similarly, early EN reduced overall infectious complications in non-critically ill patients (Marik & Zaloga, 2001). In another study on the routes for early enteral nutrition after esophagectomy, 17 eligible studies on early oral intake, jejunostomy or nasojejunal tube feeding were examined. As a result of this study, early oral feeding was associated with a reduced length of stay and delayed oral feeding with increased complication rates. Meeting short-term nutritional requirements is effective, but relaparotomy in 0-2.9% of patients are required for major tube-related complications (Weijs et al., 2015).

Previously published meta-analysis included eleven randomized controlled trials involving 1,095 patients and examined the effect of early enteral nutrition in patients with digestive tract surgery. EEN in patients with digestive tract surgery was more effective in decreasing the incidence of infectious and non-infectious complication and shortening the length of first bowel action. Moreover, EEN contributes to the increase in serum albumin and serum prealbumin levels.

4. Conclusion

EEN improves the nutritional status, reduces the risk of postoperative complications, shortens the length of hospital stay and promotes the functional recovery of the digestive system in patients with digestive tract surgery (Shu, Kang, Gu, & Zhang, 2016).

REFERENCES

Arabi, Y. M., Tamim, H. M., Dhar, G. S., Al-Dawood, A., Al-Sultan, M., Sakkijha, M. H., Brits, R. (2011). Permissive underfeeding and intensive insulin therapy in critically ill patients: a randomized controlled trial–. *The American Journal of Clinical Nutrition, 93*(3), 569-577.

Beier-Holgersen, R., & Boesby, S. (1996). Influence of postoperative enteral nutrition on postsurgical infections. *Gut, 39*(6), 833-835.

Blaser, A. R., Starkopf, J., Alhazzani, W., Berger, M. M., Casaer, M. P., Deane, A. M., Jakob, S. M. (2017). Early enteral nutrition in critically ill patients: ESICM clinical practice guidelines. *Intensive Care Medicine, 43*(3), 380-398.

Braunschweig, C. L., Levy, P., Sheean, P. M., & Wang, X. (2001). Enteral compared with parenteral nutrition: a meta-analysis. *The American Journal of Clinical Nutrition, 74*(4), 534-542.

Chourdakis, M., Kraus, M. M., Tzellos, T., Sardeli, C., Peftoulidou, M., Vassilakos, D., & Kouvelas, D. (2012). Effect of Early Compared With Delayed Enteral Nutrition on Endocrine Function in Patients With Traumatic Brain Injury. *Journal of Parenteral and Enteral Nutrition, 36*(1), 108-116.

Doig, G., Simpson, F., Finfer, S., Delaney, A., Davies, A., Mitchell, I., & Dobb, G. (2008). Nutrition Guidelines Investigators of the ANZICS Clinical Trials Group. Effect of evidence-based feeding guidelines on mortality of critically ill adults: a cluster randomized controlled trial. *JAMA, 300*(23), 2731-2741.

Doig, G. S., Heighes, P. T., Simpson, F., Sweetman, E. A., & Davies, A. R. (2009). Early enteral nutrition, provided within 24 h of injury or intensive care unit admission, significantly reduces mortality in critically ill patients: a meta-analysis of randomised controlled trials. *Intensive Care Medicine, 35*(12), 2018-2027.

Elke, G., van Zanten, A. R., Lemieux, M., McCall, M., Jeejeebhoy, K. N., Kott, M.,.

Heyland, D. K. (2016). Enteral versus parenteral nutrition in critically ill patients: an updated systematic review and meta-analysis of randomized controlled trials. *Critical Care, 20*(1), 117.

Gramlich, L., Kichian, K., Pinilla, J., Rodych, N. J., Dhaliwal, R., & Heyland, D. K. (2004). Does enteral nutrition compared to parenteral nutrition result in better outcomes in critically ill adult patients? A systematic review of the literature. *Nutrition, 20*(10), 843-848.

Harvey, S. E., Parrott, F., Harrison, D. A., Bear, D. E., Segaran, E., Beale, R., Rowan, K. M. (2014). Trial of the route of early nutritional support in critically ill adults. *New England Journal of Medicine, 371*(18), 1673-1684.

Heidegger, C. P., Berger, M. M., Graf, S., Zingg, W., Darmon, P., Costanza, M. C., Pichard, C. (2013). Optimisation of energy provision with supplemental parenteral nutrition in critically ill patients: a randomised controlled clinical trial. *The Lancet, 381*(9864), 385-393.

Heimburger, D. C., Geels, W. J., Bilbrey, J., Redden, D. T., & Keeney, C. (1997). Effects of Small-Peptide and Whole-Protein Enteral Feedings on Serum Proteins and Diarrhea in Critically III Patients: A Randomized Trial. *Journal of Parenteral and Enteral Nutrition, 21*(3), 162-167.

Heyland, D. K., Schroter-Noppe, D., Drover, J. W., Jain, M., Keefe, L., Dhaliwal, R., & Day, A. (2003). Nutrition support in the critical care setting: current practice in canadian ICUs--opportunities for improvement? *Journal of Parenteral and Enteral Nutrition, 27*(1), 74-83.

Hill, G., Pickford, I., Young, G., Schorah, C. J., Blackett, R., Burkinshaw, L., Morgan, D. (1977). Malnutrition in surgical patients: an unrecognised problem. *The Lancet, 309*(8013), 689-692.

Ibrahim, E. H., Mehringer, L., Prentice, D., Sherman, G., Schaiff, R., Fraser, V., & Kollef, M. H. (2002). Early versus late enteral feeding of mechanically ventilated patients: results of a clinical trial. *Journal of Parenteral and Enteral Nutrition, 26*(3), 174-181.

Ingels, C., Vanhorebeek, I., & Van den Berghe, G. (2017). Glucose homeostasis, nutrition and infections during critical illness. *Clinical Microbiology and Infection*.

Kalfarentzos, F., Kehagias, J., Mead, N., Kokkinis, K., & Gogos, C. (1997). Enteral nutrition is superior to parenteral nutrition in severe acute pancreatitis: results of a randomized prospective trial. *BJS, 84*(12), 1665-1669.

Khalid, I., Doshi, P., & DiGiovine, B. (2010). Early enteral nutrition and outcomes of critically ill patients treated with vasopressors and mechanical ventilation. *American Journal of Critical Care, 19*(3), 261-268.

Kreymann, K., Berger, M., Deutz, N. e., Hiesmayr, M., Jolliet, P., Kazandjiev, G., Ebner, C. (2006). ESPEN guidelines on enteral nutrition: intensive care. *Clinical Nutrition, 25*(2), 210-223.

Kudsk, K. A., Minard, G., Croce, M. A., Brown, R. O., Lowrey, T. S., Pritchard, F. E., Fabian, T. C. (1996). A randomized trial of isonitrogenous enteral diets after severe trauma. An immune-enhancing diet reduces septic complications. *Annals of Surgery, 224*(4), 531.

Lewis, S. J., Andersen, H. K., & Thomas, S. (2009). Early enteral nutrition within 24 h of intestinal surgery versus later commencement of feeding: a systematic review and meta-analysis. *Journal of Gastrointestinal Surgery, 13*(3), 569.

Lewis, S. J., Egger, M., Sylvester, P. A., & Thomas, S. (2001). Early enteral feeding versus "nil by mouth" after gastrointestinal surgery: systematic review and meta-analysis of controlled trials. *BMJ, 323*(7316), 773.

Lofgren, E., Mabesa, T., Hammarqvist, F., & Hardcastle, T. C. (2015). Early enteral nutrition compared to outcome in critically ill trauma patients at a level one trauma centre. *South African Journal of Clinical Nutrition, 28*(2), 70-76.

Marik, P. E., & Zaloga, G. P. (2001). Early enteral nutrition in acutely ill patients: a systematic review. *Critical Care Medicine, 29*(12), 2264-2270.

McClave, S. A., Taylor, B. E., Martindale, R. G., Warren, M. M., Johnson, D. R., Braunschweig, C., Cresci, G. A. (2016). Guidelines for the provision and assessment of nutrition support therapy in the adult critically ill patient: Society of Critical Care Medicine (SCCM) and American Society for Parenteral and Enteral Nutrition (ASPEN). *Journal of Parenteral and Enteral Nutrition, 40*(2), 159-211.

McWhirter, J. P., & Pennington, C. R. (1994). Incidence and recognition of malnutrition in hospital. *BMJ, 308*(6934), 945-948.

Moore, F. A., Feliciano, D. V., Andrassy, R. J., McArdle, A. H., Booth, F., Morgenstein-Wagner, T. B., Moore, E. E. (1992). Early enteral feeding, compared with parenteral, reduces postoperative septic complications. The results of a meta-analysis. *Annals of Surgery, 216*(2), 172.

Mowatt-Larssen, C. A., Brown, R. O., Wojtysiak, S. L., & Kudsk, K. A. (1992). Comparison of tolerance and nutritional outcome between a peptide and a standard enteral formula in critically ill, hypoalbuminemic patients. *Journal of Parenteral and Enteral Nutrition, 16*(1), 20-24.

Mulherin, D. W., & Cogle, S. V. (2017). Updates in Nutrition Support for Critically Ill Adult Patients. *Hospital Pharmacy, 52*(1), 17-26.

Peter, J. V., Moran, J. L., & Phillips-Hughes, J. (2005). A metaanalysis of treatment outcomes of early enteral versus early parenteral nutrition in hospitalized patients. *Critical Care Medicine, 33*(1), 213-220.

Plank, L. (2013). Protein for the critically ill patient—what and when? *European Journal of Clinical Nutrition, 67*(5), 565.

Sagar, S., Harland, P., & Shields, R. (1979). Early postoperative feeding with elemental diet. *Br Med J, 1*(6159), 293-295.

Shankar, B., Daphnee, D., Ramakrishnan, N., & Venkataraman, R. (2015). Feasibility, safety, and outcome of very early enteral nutrition in critically ill patients: Results of an observational study. *Journal of Critical Care, 30*(3), 473-475.

Shu, X. L., Kang, K., Gu, L. J., & Zhang, Y. S. (2016). Effect of early enteral nutrition on patients with digestive tract surgery: A meta-analysis of randomized controlled trials. *Experimental and Therapeutic Medicine, 12*(4), 2136-2144.

Simpson, F., & Doig, G. S. (2005). Parenteral vs. enteral nutrition in the critically ill patient: a meta-analysis of trials using the intention to treat principle. *Intensive Care Medicine, 31*(1), 12-23.

Tian, F., Heighes, P. T., Allingstrup, M. J., & Doig, G. S. (2018). Early Enteral Nutrition Provided Within 24 Hours of ICU Admission: A Meta-Analysis of Randomized Controlled Trials. *Critical Care Medicine*.

Villet, S., Chiolero, R. L., Bollmann, M. D., Revelly, J.-P., Cayeux, M.-C., Delarue, J., & Berger, M. M. (2005). Negative impact of hypocaloric feeding and energy balance on clinical outcome in ICU patients. *Clinical Nutrition, 24*(4), 502-509.

Weijs, T. J., Berkelmans, G. H., Nieuwenhuijzen, G. A., Ruurda, J. P., v Hillegersberg, R., Soeters, P. B., & Luyer, M. D. (2015). Routes for early enteral nutrition after esophagectomy. A systematic review. *Clinical Nutrition, 34*(1), 1-6.

Windsor, A., Kanwar, S., Li, A., Barnes, E., Guthrie, J., Spark, J., Reynolds, J. (1998). Compared with parenteral nutrition, enteral feeding attenuates the acute phase response

and improves disease severity in acute pancreatitis. *Gut*, *42*(3), 431-435.
Xiao-Bo, Y., Qiang, L., Xiong, Q., Zheng, R., Jian, Z., Jian-Hua, Z., & Qian-Jun, Z. (2014). Efficacy of early postoperative enteral nutrition in supporting patients after esophagectomy. *Minerva chirurgica*, *69*(1), 37-46.
Yu, G., Chen, G., Huang, B., Shao, W., & Zeng, G. (2013). Effect of early enteral nutrition on postoperative nutritional status and immune function in elderly patients with esophageal cancer or cardiac cancer. *Chinese Journal of Cancer Research*, *25*(3), 299.
Zhang, Z., Li, Q., Jiang, L., Xie, B., Ji, X., Lu, J., Ying, L. (2016). Effectiveness of enteral feeding protocol on clinical outcomes in critically ill patients: a study protocol for before-and-after design. *Annals of Translational Medicine*, *4*(16).
The Veterans Affairs Total Parenteral Nutrition Cooperative Study Group (1991). Perioperative total parenteral nutrition in surgical patients. New England Journal of Medicine, 325(8), 525-532.
Everitt, N., & McMahon, M. (1994). Nutrition and the surgical patient Consensus in clinical nutrition (pp. 239-255): Cambridge University Press, Cambridge.
Canadian Clinical Practice Guidelines Committee: The 2015 Canadian Critical Care Nutrition Clinical Practice Guidelines. Kingston, ON, Canada, Clinical Evaluation Research Unit (CERU), Kingston General Hospital/Queen's University, 2015. Available at: https://www.criticalcarenutrition.com/cpgs. Accessed December 11, 2017

Chapter 49

The Effects of Linoleic Acid on Obesity

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1. INTRODUCTION

Fats are essential macro nutrients to maintain health life. Thus, they must be adequately included in our daily diet (Yucecan, 2008). Fats are commonly classified as saturated fats and unsaturated fats. Unsaturated fats also described in two groups, monounsaturated fats and polyunsaturated fats, according to number of their double bond (Karaca and Aytac, 2012). Since some of polyunsaturated fats cannot synthesized by human body, they must be included in our daily diet. Those polyunsaturated fats, which are Alpha Linolenic Acid (omega-3) and Linoleic Acid (Omega-6), are described as "essential fatty acids". Main nutritional sources of Omega-3 are plant oils such as walnut oil and flaxseed oil, nuts and fatty fishes (Turan et al. 2013), while main sources of Omega-6 are plant oils such as corn oil, safflower oil and soy oil, grains, meats and plant seeds (Simopoulos and DiNicolantonio, 2016).

Energy from fats usually varies between 20% to 30% in a daily diet. Daily fat intake recommendations according to Dietary Guidelines for Turkey, 2015 shown in the table 1.

Table 1. Daily fat intake recommendations according to Dietary Guidelines for Turkey, 2015.

Fat Source of Diet	Contribution to Total Energy (%)
Total Fat İntake	20 -30
Saturated Fats	<10
Polyunsaturated Fats	≤10
Monounsaturated Fats	Remained fat intake other than saturated and polyunsaturated fats
Linoleic Acid (Omega-6)	2-6
Alfa-Linolenic Acid (Omega-3)*	0.5-2

**Daily Fish-derived omega-3 fatty acids (EPA and DHA) intake recommendation is 650mg.*

On the other hand, National Health Institute (NIH) of United States recommends 650mg, 2.22g and 4.44g intake of EPA-DHA, omega-3 and omega-6, respectively. American Heart Association also recommends daily omega-6 intake should be less than 5-10% of total energy intake (Turan et al., 2013). EPA (Eicosapentaenoic acid) and

DHA (Docosahexaenoic acid), which have 20 carbon atoms, are the most beneficial of the omega-3 fatty acids. Those fatty acids are important for brain amd neuron development and also have positive effects on protection from cardiovascular diseases. EPA and DHA are the precursor of eicosanoids (prostaglandins, tromboxanes and leukotrienes) that have anti-inflammatory, antithrombotic and antiarrhythmic effects. Omega-6 fatty acids product Arachidonic acid is also a precursor of eicosanoid group which has proinflammatory and prothrombic effects. Contrary to Omega-3 fatty acid metabolites, Omega 6 fatty acids metabolic products stimulate inflammation, blood clothing and tumor growth (Simopoulos and DiNicolantonio, 2016). Because of that contrary effects of omega-6 and omega-3 fatty acids, their consumption must be rational. For a healthy diet omega-6 to omega-3 ratio should be between 5:1 to 10:1 (Eseceli et al., 2006). More than 100 years ago the ratio was 1:1, but developments in food industry has been led this ratio to increase 20:1. This increase also has been linked to increase in overweight and obesity (Simopoulos, 2016). Recent years, relation between changes in omega-6 to omega-3 ratio and inflammation, cardiovascular disease risk, obesity and cancer prevalence investigated in many studies (Simopoulos, 2008).

In this study we aimed to examine and compare associations between Linoleic acid and obesity.

2. BETA OXIDATION OF LINOLEIC ACID

2.1. Proinflammatory Metabolits of Lineloic Acid

Arachidonic acid, which directly taken by diet or synthesis from linoleic acid, change into different metabolites with cytochrome P450, Cyclooxygenase (COX) and Lipoxygenase (LOX) pathways (Naughton et al., 2016).

Linoleic acid is direct precursor of the Oxlam metabolites via three different pathways (Choque et al., 2014).

1- In vascular endothelial cells, linoleic acid metabolized into leukotoxin and) leucotoxin-diol by cytochrome P450 depended pathway (Viswanathan et al., 2003).

2- By using cyclooxygenase dependent pathway cells can produce 9-HODE and 9-oxoODE and first enzymatic step of 13-HODE and 13-oxoHODE synthesis in leukocytes catalyzes by 12/15 lipoxygenase (Reinaud et al., 1989).

3- These metabolites can produced by free radical-mediated oxidation (Liu et al., 2010).

In recent rat studies, it has been shown those metabolites produce strong proinflammatory effect. A study conducted on human subjects showed that decreasing linoleic acid from 6.8% to 2.4% cause reduction on Oxlam concentrations (Ramsden et al., 2012)

But there is also contradictory evidence about proinflammatory effect of Linoleic Acid. A meta-analysis by Johnson and Fritsche found that Linoleic acid was not associated with increased inflammation on healthy subjects (Jonson and Fritsche, 2012). Although another study found association between linoleic acid and increased inflammation, they specified n6:n3 ratio was much more explanatory than linoleic acid intake (Teng et al. 2014).

Excessive intake of Linoleic acid may have inflammatory effect, and this may lead increased adiposity which is associated with many metabolic disorders. With genetic specialties and adiposity, excessive linoleic acid intake may increase delta-6 desaturase

activity, reduce linoleic acid levels of erythrocytes and adipose tissues. This could lead increased levels of Arachidonic Acid which could convert into proadipogenic endocannabinoids and inflammatory mediators (NAughton et al., 2016).

2.1. Proinflammatory Eicosanoid Production from Arachidonic Acid

Arachidonic Acid levels of body are associated with linoleic acid intake and it is increasing with linoleic acid intake. It also releases from membrane phospholipids by the activity of phospholipase A2 (Murakami et al., 2011). Free arachidonic acid is substrate of cyclooxygenase (COX), lipoxygenase (LOX) or Cytochrome P450 enzymes. Those enzymes provokes synthesis of proinflammatory eicosanoids (Prostaglandin E2, Thromboxane and Leukotriene E4) (Jandacek, 2017; Tilley et al., 2001). Proinflammatory effects of Arachidonic Acid shown in the Figure 2.

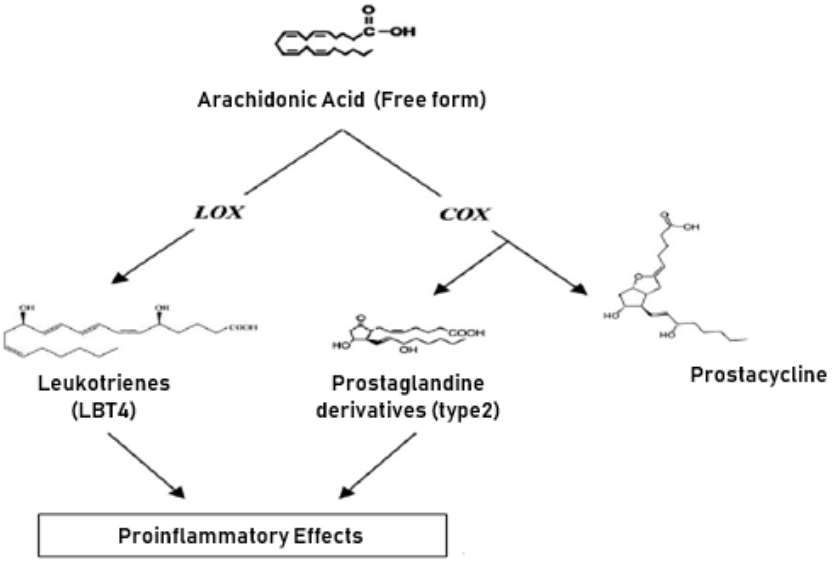


Figure 1: Proinflammatory effects of Arachidonic Acid.

Studies about effects of Arachidonic Acid on obesity mechanism are inconsistent. This may be explained by that mechanisms between inflammation and arachidonic acid are not completely known (Choqu et al. 2014).

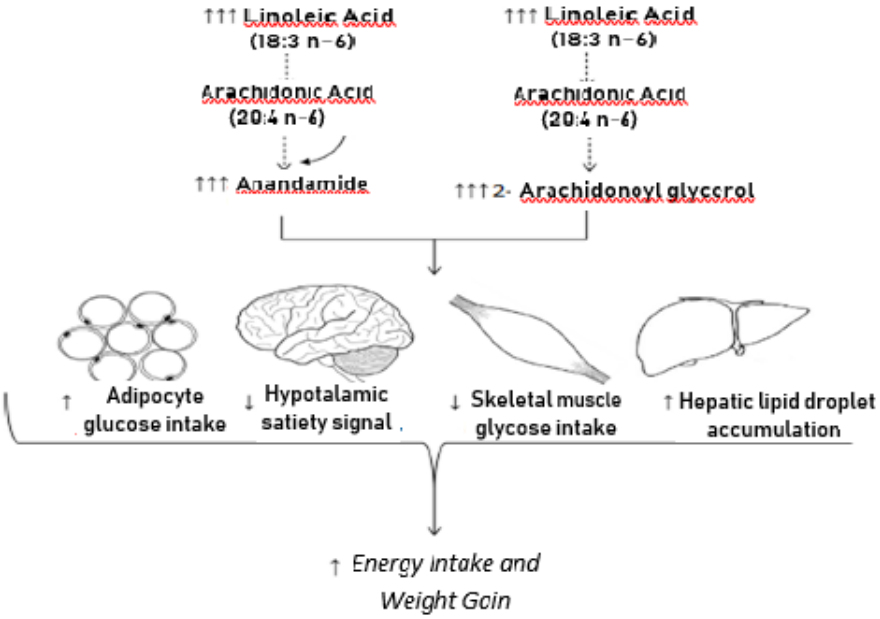
A study showed excessive intake of Linoleic acid in early ages may be related to obesity (Choque et al., 2014). Similarly, a study of Ailhaud et al. suggested excessive intake of n-6 fatty acids may contribute to increased production of adipose tissue (Ailhaud et al., 2006). In piglets, arachidonic supplement (0.5% of total fat intake) resulted with 27% increase in fat tissue. There was a significant correlation with plasma arachidonic acid levels and body weight of the piglets (Nagy et al., 1998).

Catalia et al. defined Arachidonic Acid as a primary adipogenic component and precursor of prostacyclin. After secretion, prostacyclin act like a receptor on white fat tissue surface and supports formation of adipocytes.

2.3. Linoeic Acid and Endocannabinoid System

Endocannabinoid system is also an important topic about effects of Linoleic Acid on obesity. Both human (Joosten et al., 2010) and animal studies (Alvheim et al., 2014) showed high Arachidonic Acid consumption with diet increased Anandamide (AEA) and 2-Arachidonil glycerol (2AG) levels, which are the main mediators of endocannabinoid system. Endocannabinoid system has effects on appetite mechanism, energy metabolism, synthesis of hepatic fatty acids and those mechanisms may lead to increase in adipose tissue (Di marzo et al., 2009). Thus, body weight and endocannabinoid system, studies are mostly focused increased plasma 2-AG levels, may be associated (Bluher et al., 2006). Cable et al. (2011) showed positive association between 2-AG and body mass index (BMI)(kg/m2), waist circumference and itraabdominal obesity.

Increased Linoleic acid intake increases Arachidonic Acid in metabolism. Evaluated Arachidonic Acid levels increases endocannabinoid system products, AEA and 2-AG (Ailhaud et al. 2006), which results with increased glucose usage, number of adipocytes and accumulation of fat cells in liver, while decreased satiety signals from hypothalamus and glucose intake of skeletal muscles. This whole mechanisms cause increase in body weight. Figure 3 shows effects of linoleic acid intake in endocannabinoid system.



3. Linoleic acid and obesity

Health spoiling abnormal and excessive fat accumulation defined as being overweight or obesity. The World Health Organization (WHO) 2016 report indicated that 1,9 billion people (39%) were overweight and 650 million people (13%) were obese over 18 years old. Worldwide obesity prevalence has been tripled from 1975 to

2016. According to gender 39% of men and 40% of women were overweight while 11% of men and 13% of women were obese (WHO).

It has been thought that being overweight and obese are mostly preventable health problems. Focal points on fighting against obesity are having a supportive environment, making healthier food choices and doing exercises on a regular basis. Reducing dietary fat and sugar intake, increasing consumption of legumes, fruits, vegetables, grains and nuts and regularly doing exercises (60 minutes per day for children, 150 minutes per week for adults) are the main strategies to fight against obesity (WHO). In addition to those main strategies there are many more specific hypothesis about obesity as well. Effect of fatty acids intake on obesity is one of those topics.

In recent years; scientist has emphasized the hypothesis of increasing linoleic acid may be associated with body weight gain. Linoleic acid and Arachidonic acid regulate fatty acid desaturase 1 and 2 (FADS 1 and FADS 2) levels in the liver which may play a role in the production of metabolites (leukotrienes, prostaglandins and prostacyclins) that has effect on metabolism and inflammation and also body weight gain. (Steffen et al., 2008). In a study of Martinelli et al., there was a positive relation between delta-6 desaturase activity, C-reactive protein (CRP) levels and obesity (Martinelli et al., 2008).

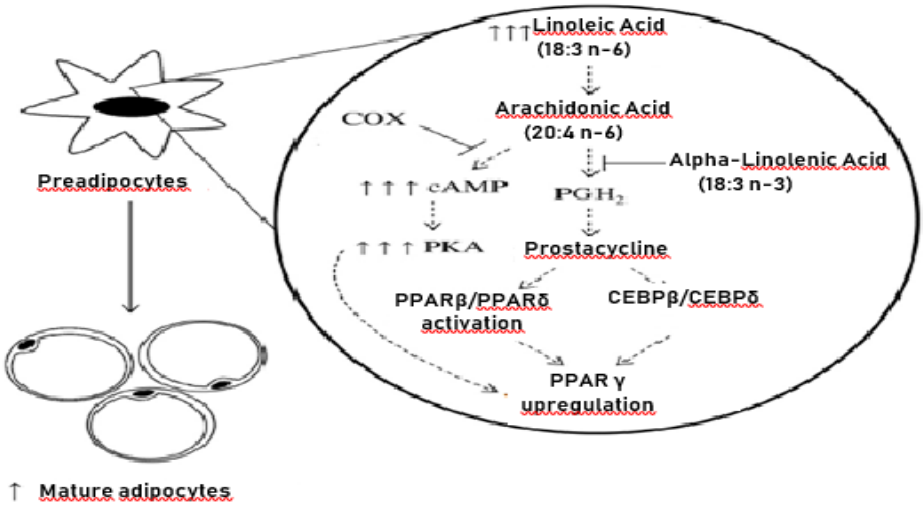


Figure 3. Effects of High Linoleic Acid Intake

In a study of Memounis et al. (2017) mice fed with a diet with 45% of energy from fats for 12 weeks. Those mice divided into three groups according to linoleic acid content (1%, 15% and 22.5%). Control group fed with 10% of energy from fats. Glucose metabolism and body weight changes of mice have been evaluated. High fat intake groups (45%) has doubled the weight gain and also blood glucose levels were higher compare to control group. Highest weight gain within the groups was 22.5% Linoleic acid group, while lowest was 1% Linoleic acid group. Results showed that higher linoleic acid intake caused more increase in the body weight (Mamounis et al., 2017).

In a newborn guinea pig study, the effect of different alpha linolenic acid doses (10%, 2.4% and 0.8% of energy) has been investigated. Diet was containing 25-30%

energy from fats and Linoleic Acid to Alpha Linolenic Acid (LA:ALA) ratio of the groups was 2:1, 10:1 and 30:1. At the end of the 21 days 30:1 group has body weight increase and adiposity was significantly higher that other groups (Pouteau et al., 2010). Another study on rats, increasing n:6/n:3 ratio to 5:1 to 20:1 cause in increase in proinflammatory markers which led to an increase in adipose tissue (Valenzuela and Videla, 2011). Similarly, in another rat study, rats divided into two groups and fed with diets including the same energy and fat content, but different n:6/n:3 ratios (59:1 and 2:1). After 8 weeks, significantly more increase on the fat mass, adipose tissue and higher weight gain was evaluated in 59:1 group in compare to 2:1 group (Massiera et al., 2003). In another study of same authors, mice fed with a diet either had 7.9g Linoleic acid and 0.26g alpha linolenic acid (LA:ALA = 30:1) or 2.2g Linoleic acid and 0.24g alpha linolenic acid (LA:ALA = 9:1). Both groups had the same energy and fat (35% of energy) content. Two groups compared at 8^{th}, 14^{th} and 22^{nd} weeks. The results showed that while at the end of 8^{th} week there was no significant difference between groups, at the end of 14^{th} and 22^{nd} week 30:1 group had more fat mass increase and body weight gain than 9:1 group (Massiera et al., 2010).

Adipogenic effects of Linoleic acid may be effected by the macro nutrient content of the diet. In a study of Madsen et al., same amount of linoleic acid added to diets of mice fed with high carbohydrate diet or high protein diet. Finding showed that while mice fed with high carbohydrate and linoleic acid diet gained body weight, this effect did not occur in the mice fed with high protein diets (Madsen et al., 2008).

In prospective study of Hoson et al., it was found that increased linoleic acid levels are associated with increased body weight in women who are older than 50 years (Hodson et al., 2008). Similarly, prospective cohort study conducted in Germany showed women's body weight gain was positively correlated with higher linoleic acid intake. It has been concluded every 100mg incrase in linoleic acid has caused 0,42% body weight gain in five years (Saito et al., 2013).

A study conducted on 1015 American women showed increase of Linoleic acid from 12% of energy to 39% of energy cause reduction in serum n-3, EPA and DHA levels. As a result of the study it was conclude that reducing average intake of linoleic acid from 7,4% of energy to 2,4% of energy may be more beneficial on reducing eicosanoids than increasing n-3 intake for American population (Land et al., 2017). Simopoulos and DiNicolantonio studied on women's 10 year follow up data of Woman Health Institution and conclude that when Linoleic Acid/ Alpha Linolenic Acid ratio raised to 16:1 caused increasing of arachidonic acid metabolites and this may lead to increase fat production in adipose tissue which end up with body weight gain (Simopoulos and DiNicolatonio, 2016).

In another 10 year follow-up study (Women Health Study), baseline erythrocyte fatty acid concentrations of 534 women, who had normal body weight according to WHO body mass index classification (18,5-25 kg/m2), has been measured. At the end of 10th year women who were in highest quartile of n6/n3 ratio, were more likely to become obese in compare to women in lowest quartile (Wand et al., 2016).

Excessive intake of Linoleic Acid may reduce the synthesis of n-3. In this respect, intake level of linoleic acid should be adjusted according to intake levels of n-3 fatty acides.

4. LOW LINOLEIC ACID INTAKE AND HEALTH

Plant based diets cause decrease in EPA and DHA concentration in tissues and increase in n6:n3 ratio (Alvheim et al., 2013). Decreasing linoleic acid intake and substitute linoleic acid with mono saturated fatty acids (MUFA), e.g. oleic acid, is most effective method to balance n6:n3 ratio (Wood et al., 2013). Since MUFA has not included in synthesis of inflammatory prostanoids, substitute linoleic acid with MUFA may be helpful to avoid body weight gain (Popkin et al. 2013). A study that investigated the relationship between fatty acid composition and obesity found that higher MUFA consumption is associated with lower obesity rates (Moussavi et al., 2008).

CONCLUSION

In this chapter, we discussed the possible association of Linoleic Acid and obesity. Linoleic acid, which is a polyunsaturated fatty acid, consumption is increasing in modern days. In this respect, we presented studies about properties of linoleic acid, its oxidation steps, possible proinflammatory effects and effects of linoleic intake levels on obesity. Omega 6 fatty acids are essential fatty acids and contribute to structure of plasma triglycerides, cholesterol esters and phospholipids. Thus, insufficient intake of omega-6 fatty acids may have negative effects on overall health (Lands, 2009). Studies showed that, similarly to insufficient intake, excessive intake of omega-6 fatty acids may have also health damaging effects (Pisani et al., 2015). Excessive intake of omega-6 fatty acids change n6/n3 ratio and if that ratio exceed 20:1 or 30:1 proinflammatory metabolites of omega 6 fatty acids may release (Simopoulos, 2016). Those metabolites may increase adipogenesis and may cause leptin and insulin resistance which can be lead to being overweight or obese. Therefore, most advisable range for n6:n3 ratio is from 5:1 to 10:1. Decreasing omega-6 fatty acid intake (Hibbeln et al., 2006) or increasing omega-3 fatty acids intake are the focal points of the strategy to achieve this target range (Simopoulos, 2016).

In previous passages we described the mechanisms underlying the relations between linoleic acid, linoleic asit: alpha linolenic acid ratio and obesity. Although excessive linoleic acid intake is suspicious on obesity progress, more studies are needed to confirm these results (Simopoulos, 2016). The major weaknesses of the current literature are length of interventions, genetic variants predisposing to obesity, variation in the dose of fatty acids, number of subjects and severity of diseases, background inflammation, source of the fatty acids (supplement or food), difficulty of determine the composition of the daily diet (Simopoulos and DiNicolantonio, 2016).

In conclusion, in addition to having a supportive environment, making healthier food choices and doing exercises on a regular basis, it would be helpful to held fatty acids intake in balance (n6:n3 = 5:1-10:1) to protect from obesity.

REFERENCES

Ailhaud G, Massiera, F, Weill P, Legrand P, Alessandri JM, Guesnet, P. (2006). Temporal Changes in Dietary Fats: Role of N−6 Polyunsaturated Fatty Acids in Excessive Adipose Tissue Development and Relationship to Obesity. *Progress in Lipid Research*, ***45***(**3**), 203-236.

Alvheim AR, Malde MK, Osei-Hyiaman D, Hong YH, Pawlosky RJ, Madsen L and Hibbeln JR (2012). Dietary Linoleic Acid Elevates Endogenous 2-Ag and Anandamide

and Induces Obesity. *Obesity*, ***20***(**10**), 1984-1994.
Alvheim AR, Torstensen BE, Lin YH, Lillefosse HH, Lock EJ, Madsen L and Malde MK (2014). Dietary Linoleic Acid Elevates The Endocannabinoids 2-Ag and Anandamide and Promotes Weight Gain İn Mice Fed A Low Fat Diet. *Lipids*, ***49***(**1**), 59-69.
Alvheim AR, Torstensen BE, Lin YH, Lillefosse HH, Lock EJ, Madsen L and Malde MK (2013). Dietary Linoleic Acid Elevates Endogenous 2-Arachidonoylglycerol and Anandamide in Atlantic Salmon (Salmo Salar L.) and Mice, and İnduces Weight Gain and İnflammation in Mice. *British Journal Of Nutrition*, ***109***(**8**), 1508-1517.
Hacettepe Üniversitesi Sağlık Bilimleri Fakültesi, Beslenme ve Diyetetik Bölümü (**2015**). Türkiye'ye Özgü Besin Ve Beslenme Rehberi. *Ankara: Hacettepe Üniversitesi*.
Blüher M, Engeli S, Klöting N, Berndt J, Fasshauer M, Bátkai S and Stumvoll M (2006). Dysregulation Of The Peripheral and Adipose Tissue Endocannabinoid System İn Human Abdominal Obesity. *Diabetes*, ***55***(**11**), 3053-3060.
Cable JC, Tan GD, Alexander SP, and O'sullivan SE (2011). The Activity Of The Endocannabinoid Metabolising Enzyme Fatty Acid Amide Hydrolase İn Subcutaneous Adipocytes Correlates With Bmı İn Metabolically Healthy Humans. *Lipids İn Health and Disease*, ***10***(**1**), 129.
Catalioto RM Gaillard D, Maclouf J, Ailhaud G, and Negrel R (1991). Autocrine Control Of Adipose Cell Differentiation By Prostacyclin and Pgf2α. *Biochimica Et Biophysica Acta (Bba)-Molecular Cell Research*, ***1091***(**3**), 364-369.
Choque B, Catheline D, Rioux V, and Legrand P (2014). Linoleic Acid: Between Doubts and Certainties. *Biochimie*, ***96***, 14-21.
Decsi T, Molnár D, and Koletzko B (1996). Long-Chain Polyunsaturated Fatty Acids İn Plasma Lipids Of Obese Children. *Lipids*, ***31***(**3**), 305-311.
Di Marzo V, Verrijken A, Hakkarainen A, Petrosino S, Mertens I, Lundbom N, and Van Gaal L (2009). Role Of İnsulin As A Negative Regulator Of Plasma Endocannabinoid Levels İn Obese and Nonobese Subjects. *European Journal Of Endocrinology*, ***161***(**5**), 715-722.
Engels F, Willems H, and Nijkamp FP (1986). Cyclooxygenase-Catalyzed Formation Of 9-Hydroxylinoleic Acid By Guinea Pig Alveolar Macrophages Under Non-Stimulated Conditions. *Febs Letters*, ***209***(**2**), 249-253.
Eseceli H, Değirmencioğlu A, and Kahraman R (2006). Omega Yağ Asitlerinin İnsan Sağlığı Yönünden Önemi. *Türkiye*, ***9***, 403-406.
Fritsche KL (2008). Too Much Linoleic Acid Promotes İnflammation—Doesn't it?. *Prostaglandins, Leukotrienes and Essential Fatty Acids*, ***79***(**3**), 173-175.
Hibbeln JR, Nieminen LR, and Lands WE (2004). Increasing Homicide Rates and Linoleic Acid Consumption among Five Western Countries, 1961–2000. *Lipids*, ***39***(**12**), 1207-1213.
Hibbeln JR, Nieminen LR, Blasbalg TL, Riggs JA, and Lands WE (2006). Healthy İntakes Of N− 3 and N− 6 Fatty Acids: Estimations Considering Worldwide Diversity. *The American Journal of Clinical Nutrition*, ***83***(**6**), S1483-1493s.
Hodson L, Skeaff CM, and Fielding BA (2008). Fatty Acid Composition of Adipose Tissue and Blood İn Humans and İts Use As A Biomarker Of Dietary İntake. *Progress İn Lipid Research*, ***47***(**5**), 348-380.
Jandacek RJ (2017). Linoleic Acid: A Nutritional Quandary. In *Healthcare* (Vol. **5**, No. **2**, P. 25). Multidisciplinary Digital Publishing Institute.
Johnson GH, and Fritsche K (2012). Effect of Dietary Linoleic Acid on Markers of İnflammation in Healthy Persons: A Systematic Review of Randomized Controlled Trials. *Journal of the Academy Of Nutrition and Dietetics*, ***112***(**7**), 1029-1041.

Joosten MM, Balvers MG, Verhoeckx KC, Hendriks HF, and Witkamp RF (2010). Plasma Anandamide and Other N-Acylethanolamines Are Correlated With Their Corresponding Free Fatty Acid Levels Under Both Fasting and Non-Fasting Conditions İn Women. *Nutrition & Metabolism*, ***7***(**1**), 49.

Karaca E ve Aytaç S (2012). Yağ Bitkilerinde Yağ Asitleri Kompozisyonu Üzerine Etki Eden Faktörler.

Kuehl FA, and Egan RW (1980). Prostaglandins, Arachidonic Acid, and Inflammation. *Science*, ***210***(**4473**), 978-984.

Lala PK, Al-Mutter N, and Orucevic A (1997). Effects Of Chronic İndomethacin Therapy On The Development and Progression Of Spontaneous Mammary Tumors İn C3h/Hej Mice. *International Journal Of Cancer*, ***73***(**3**), 371-380.

Lands B (2009). Measuring Blood Fatty Acids as A Surrogate Indicator For Coronary Heart Disease Risk İn Population Studies. In *A Balanced Omega-6/Omega-3 Fatty Acid Ratio, Cholesterol and Coronary Heart Disease* (Vol. **100**, Pp. 22-34). Karger Publishers.

Lands B, Bibus D, and Stark KD (2017). Dynamic İnteractions of N-3 and N-6 Fatty Acid Nutrients. *Prostaglandins, Leukotrienes and Essential Fatty Acids (Plefa)*.

Liu W, Yin H, Akazawa YO, Yoshida Y, Niki E, and Porter NA (2010). Ex Vivo Oxidation İn Tissue and Plasma Assays Of Hydroxyoctadecadienoates: Z, E/E, E Stereoisomer Ratios. *Chemical Research İn Toxicology*, ***23***(**5**), 986-995.

Madigan C, Ryan M, Owens D, Collins P, and Tomkin GH (2000). Dietary Unsaturated Fatty Acids İn Type 2 Diabetes: Higher Levels Of Postprandial Lipoprotein On A Linoleic Acid-Rich Sunflower Oil Diet Compared With An Oleic Acid-Rich Olive Oil Diet. *Diabetes Care*, ***23***(**10**), 1472-1477.

Madsen L, Pedersen LM, Liaset B, Ma T, Petersen RK, Van Den Berg S, and Kooistra T (2008). Camp-Dependent Signaling Regulates The Adipogenic Effect Of N-6 Polyunsaturated Fatty Acids. *Journal Of Biological Chemistry*, ***283***(**11**), 7196-7205.

Mamounis KJ, Yasrebi A, and Roepke TA (2017). Linoleic Acid Causes Greater Weight Gain Than Saturated Fat Without Hypothalamic İnflammation İn The Male Mouse. *The Journal Of Nutritional Biochemistry*, ***40***, 122-131.

Martin JM, Miranda RA, Barella LF, Palma-Rigo K, Alves VS, Fabricio GS, and Banafé EG (2016). Maternal Diet Supplementation With N-6/N-3 Essential Fatty Acids İn A 1.2: 1.0 Ratio Attenuates Metabolic Dysfunction İn Msg-Induced Obese Mice. *International Journal Of Endocrinology*, *2016*.

Martinelli N, Girelli D, Malerba G, Guarini P, Illig T, Trabetti E, and Heinrich J (2008). Fads Genotypes and Desaturase Activity Estimated By The Ratio Of Arachidonic Acid To Linoleic Acid Are Associated With İnflammation and Coronary Artery Disease. *The American Journal Of Clinical Nutrition*, ***88***(**4**), 941-949.

Massiera F, Barbry P, Guesnet P, Joly A, Luquet S, Moreilhon-Brest C, and Ailhaud G (2010). A Western-Like Fat Diet İs Sufficient To İnduce A Gradual Enhancement İn Fat Mass Over Generations. *Journal Of Lipid Research*, ***51***(**8**), 2352-2361.

Massiera F, Saint-Marc P, Seydoux J, Murata T, Kobayashi T, Narumiya S, and Ailhaud G (2003). Arachidonic Acid and Prostacyclin Signaling Promote Adipose Tissue Development A Human Health Concern?. *Journal of Lipid Research*, ***44***(**2**), 271-279.

Matias I, Gatta-Cherifi B, and Cota D (2012). Obesity and the Endocannabinoid System: Circulating Endocannabinoids and Obesity. *Current Obesity Reports*, ***1***(**4**), 229-235.

Mori TA, and Beilin LJ (2004). Omega-3 Fatty Acids and Inflammation. *Current Atherosclerosis Reports*, ***6***(**6**), 461-467.

Moussavi N, Gavino V, and Receveur O (2008). Is Obesity Related To The Type Of Dietary Fatty Acids? An Ecological Study. *Public Health Nutrition*, ***11***(**11**), 1149-1155.

Murakami M, Taketomi Y, Miki Y, Sato H, Hirabayashi T, and Yamamoto K (2011). Recent Progress İn Phospholipase A 2 Research: From Cells to Animals to Humans. *Progress İn Lipid Research*, ***50***(**2**), 152-192.

Nagy L, Tontonoz P, Alvarez JG, Chen H, and Evans RM (1998). Oxidized Ldl Regulates Macrophage Gene Expression Through Ligand Activation Of Pparγ. *Cell*, ***93***(**2**), 229-240.

Naughton SS, Mathai ML, Hryciw DH, and Mcainch AJ (2016). Linoleic Acid and the Pathogenesis Of Obesity. *Prostaglandins & Other Lipid Mediators*, ***125***, 90-99.

Oosting A, Kegler D, Van De Heijning BJ, Verkade HJ, and Van Der Beek EM (2015). Reduced Linoleic Acid İntake İn Early Postnatal Life İmproves Metabolic Outcomes İn Adult Rodents Following A Western-Style Diet Challenge. *Nutrition Research*, ***35***(**9**), 800-811.

Pagano C, Pilon C, Calcagno A, Urbanet R, Rossato M, Milan G, and Vettor R (2007). The Endogenous Cannabinoid System Stimulates Glucose Uptake İn Human Fat Cells Via Phosphatidylinositol 3-Kinase and Calcium-Dependent Mechanisms. *The Journal Of Clinical Endocrinology & Metabolism*, ***92***(**12**), 4810-4819.

Pisani DF, Amri EZ, and Ailhaud G (2015). Disequilibrium Of Polyunsaturated Fatty Acids Status and İts Dual Effect İn Modulating Adipose Tissue Development and Functions. *Ocl*, ***22***(**4**), D405.

Popkin B, Monteiro C, and Swinburn B (2013). Overview: Bellagio Conference On Program and Policy Options For Preventing Obesity İn The Low-and Middle-Income Countries. *Obesity Reviews*, ***14***(**S2**), 1-8.

Pouteau E, Aprikian O, Grenot C, Reynaud D, Pace-Asciak C, Cuilleron CY, and Turner S (2010). A Low A-Linolenic Intake during Early Life İncreases Adiposity İn The Adult Guinea Pig. *Nutrition & Metabolism*, ***7***(**1**), 8.

Ramsden CE, Ringel A, Feldstein AE, Taha AY, Macıntosh BA, Hibbeln JR, and Chung YM (2012). Lowering Dietary Linoleic Acid Reduces Bioactive Oxidized Linoleic Acid Metabolites İn Humans. *Prostaglandins, Leukotrienes and Essential Fatty Acids*, ***87***(**4**), 135-141.

Reinaud O, Delaforge M, Boucher JL, Rocchiccioli F, and Mansuy D (1989). Oxidative Metabolism Of Linoleic Acid By Human Leukocytes. *Biochemical and Biophysical Research Communications*, ***161***(**2**), 883-891.

Saito E, Okada T, Abe Y, Odaka M, Kuromori Y, Iwata F, and Kitamura Y (2014). Relationship between Estimated Fatty Acid Desaturase Activities and Abdominal Adiposity İn Japanese Children. *Obesity Research & Clinical Practice*, ***8***(**3**), E266-E270.

Saito E, Okada T, Abe Y, Odaka M, Kuromori Y, Iwata F, and Kitamura Y (2013). Abdominal Adiposity İs Associated With Fatty Acid Desaturase Activity İn Boys: İmplications For C - reactive protein and İnsulin Resistance. *Prostaglandins, Leukotrienes and Essential Fatty Acids (Plefa)*, ***88***(**4**), 307-311.

Simopoulos AP (2008). The İmportance of the Omega-6/Omega-3 Fatty Acid Ratio İn Cardiovascular Disease and Other Chronic Diseases. *Experimental Biology and Medicine*, ***233***(**6**), 674-688.

Simopoulos AP (2016). An İncrease in the Omega-6/Omega-3 Fatty Acid Ratio İncreases The Risk For Obesity. *Nutrients*, ***8***(**3**), 128.

Simopoulos AP, and Dinicolantonio JJ (2016). The İmportance of A Balanced Ω-6 To Ω-3 Ratio İn The Prevention and Management Of Obesity.

Spalding KL, Arner E, Westermark PO, Bernard S, Buchholz BA, Bergmann O, and Concha H (2008). Dynamics of Fat Cell Turnover İn Humans. *Nature*, ***453***(**7196**), 783-787.

Steffen LM, Vessby B, Jacobs DR, Steinberger J, Moran A, Hong CP, and Sinaiko AR

(2008). Serum Phospholipid and Cholesteryl Ester Fatty Acids and Estimated Desaturase Activities Are Related To Overweight and Cardiovascular Risk Factors İn Adolescents. *International Journal Of Obesity*, ***32***(**8**), 1297-1304.

Taha AY, Cheon Y, Faurot KF, Macıntosh B, Majchrzak-Hong SF, Mann JD, and Ramsden CE (2014). Dietary Omega-6 Fatty Acid Lowering İncreases Bioavailability Of Omega-3 Polyunsaturated Fatty Acids İn Human Plasma Lipid Pools. *Prostaglandins, Leukotrienes and Essential Fatty Acids (Plefa)*, ***90***(**5**), 151-157.

Teng KT, Chang CY, Chang LF, and Nesaretnam K (2014). Modulation of Obesity-İnduced İnflammation by Dietary Fats: Mechanisms and Clinical Evidence. *Nutrition Journal*, ***13***(**1**), 12.

Tilley SL, Coffman TM, and Koller BH (2001). Mixed Messages: Modulation Of İnflammation and İmmune Responses By Prostaglandins and Thromboxanes. *Journal of Clinical Investigation*, ***108***(**1**), 15.

Turan H, Erkoyuncu İ, ve Kocatepe D (2013). Omega-6, Omega-3 Yağ Asitleri Ve Balık. *Yunus Araştırma Bülteni*, *2013*(**2**).

Valenzuela R, Ve Videla LA (2011). The İmportance Of The Long-Chain Polyunsaturated Fatty Acid N-6/N-3 Ratio İn Development Of Non-Alcoholic Fatty Liver Associated With Obesity. *Food & Function*, ***2***(**11**), 644-648.

Wang L, Manson JE, Rautiainen S, Gaziano JM, Buring JE, Tsai MY, and Sesso HD (2016). A Prospective Study Of Erythrocyte Polyunsaturated Fatty Acid, Weight Gain, and Risk Of Becoming Overweight Or Obese İn Middle-Aged and Older Women. *European Journal Of Nutrition*, ***55***(**2**), 687-697.

WHO (2016) Obesity and Overweight. Erişim Adresi: ⌊http://www.Who.İnt/Mediacentre/Factsheets/Fs311/En/⌋ Erişim Tarihi: 20/12/2017

Wood KE, Mantzioris E, Gibson RA, and Muhlhausler BS (2013). Incorporating Macadamia Oil and Butter to Reduce Dietary Omega-6 Polyunsaturated Fatty Acid İntake. *Nutrition & Dietetics*, ***70***(**2**), 94-100.

Yücecan S (2008). Optimal Beslenme. *Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü Beslenme Ve Fiziksel Aktiviteler Daire Başkanlığı. Ankara. Klasmat Matbaacılık*.

Zietemann V, Kröger J, Enzenbach C, Jansen E, Fritsche A, Weikert C, and Schulze MB (2010). Genetic Variation of the Fads1 Fads2 Gene Cluster and N-6 Pufa Composition İn Erythrocyte Membranes in the European Prospective Investigation İnto Cancer and Nutrition-Potsdam Study. *British Journal of Nutrition*, ***104***(**12**), 1748-1759.

Chapter 50

Innovation in Dieting: Models From Around the World and Turkey

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1. INTRODUCTION

Today, "innovation" stands out as one of the key concepts wherever there is development. The innovation culture that leaves its footprints wherever there is novelty, improvement and diversification is becoming increasingly common and it is being adopted as a pattern of thought and behaviour in almost all spheres of life (Karaata, 2012).

2. DEFINITION and IMPORTANCE of INNOVATION

Derived from Latin "novus", the word innovation serves to mean a new method, idea or invention. Innovation was first defined by the economist and political scientist Joseph Schumpeter as the "driving force of development". In his book, published in 1911 and translated into English in 1934, Schumpeter defines innovation as (1) the introduction of a new good, that is one with which consumers are not yet familiar, or of a new quality of a good, (2) the introduction of a new method of production, (3) the opening of a new market, (4) the conquest of a new source of supply of raw materials or half-manufactured goods, (5) the carrying out of the new organisation of any industry. The famous economist also states that entrepreneurs, as innovators, upset the balance in the market, creating continuous dynamism in the economy (Elçi, 2008).

According to Porter (1990), innovation is associated with new technologies and new methods whereby business is conducted, both of which offer a relative advantage with their roles free from competition in a new market. Damanpour (1991) defines innovation as the consequence of the adaptation, development and composition of new ideas which are the determinants of success of a given firm. Trott (2008), on the other hand, defines innovation as the management of all activities involved in the process of idea generation, technology development, manufacturing and marketing of a new product or manufacturing process or equipment (Karaata, 2012).

As can be seen, while many definitions have been offered in time regarding innovation, it can also be thought of as a means used by entrepreneurs for a different product or service. Having such a long history and seen as the key to competition by firms and to development and prosperity by societies and countries, innovation has helped many firms and countries reach well beyond the reach of others (Elci, 2008).

2.1. The Process of Innovation

Phillip Herzog (2011) defines innovation as a new idea or invention used in trade

and the process of innovation as a series of events that occur successively. In addition, he states that, in an industrial context, before the ideas of innovation can be implemented and developed, people must be in interaction with others (internal and external factors). Though a lot of processes have been created in the literature of innovation, Herzog claims that the whole process is made up of three stages (Oguzturk, 2017).

The first stage is regarded as the beginning of innovation. All efforts to select and produce the new ideas, along with the foreseeable market relations and the assessment of technologies belong in this stage. In the second stage, ideas that are selected are put into use and then they are developed. This stage is also a process by which the operation and design of alternative goods are tested and assessed. The third stage involves the development of the product, its propagation in the market, management of its use and planning (Oguzturk, 2017).

Innovation is a very important means of competition for firms as it boosts productivity and profitability and allows them to enter into new markets, thus helping the market grow. Economies in which effective, profitable and competitive firms are active undergo a period of development and gain a competitive edge on a global scale. Therefore, innovation is the most important factor for countries as it ensures employment, sustainable growth, national prosperity and quality of life (Elci, 2008).

2.2. Innovation Cycle

The innovation process that starts with seizing the opportunities and turning them into innovation ideas is completed through the process of learning. The innovation activity continues as a cycle with the repetition of this process. Main steps of this process are (Elci, 2008):

2.2.1. Seizing of Opportunities:

Any firm must persistently identify and evaluate the opportunities for potential innovation ideas. These opportunities may arise from the innovation ideas of the employees of the firm, changing needs of consumers, efforts of the competitors, new technologies or suppliers. Alternatively, the implications of a research and development study done by any individual or an institution or the obligation to comply with a new regulation, law or standard may bring about innovation opportunities. Any firm that is reluctant to lose its competitive edge should be able to catch these signals without delay (Elci, 2008).

2.2.2. Making the Strategic Selection:

Before sources are allocated with the purpose of launching innovation activities, the most strategically important opportunity must be selected. The requirements and the demands of the consumers play the most vital part in this selection. Even large firms that have huge reserves for innovation may not seize all the opportunities. What matters is to be able to select the opportunity that offers the biggest competitive edge and turn it into innovation (Elci, 2008).

2.2.3. Gaining the Essential Knowledge:

Before the best potential-bearing innovation idea can be put into effect, sources that are needed must be spared. To this end, necessary pieces of information must be brought together in order to develop primarily the product, service and the process. Gaining access to written, as well as unwritten piece of information plays an important role. Among the ways of getting hold of the unwritten piece of information are hiring a

proficient domestic or foreign expert on the execution of the innovation activity or having him or her work as a consultant and receiving service from domestic or foreign universities or research and development institutions. Whichever way is selected, the absorbing of knowledge by the firm and putting that knowledge into writing as much as possible are vital so that the firm can sustain its proficiency and competitive edge (Elci, 2008).

2.3.4. The Development of the Solution and Implementation / Presentation to the Market

Implementation comes right after the essential knowledge and sources of knowledge are brought together and the innovation project is identified. At this stage, work continues until the product, service and the process take their final shape. All the developmental studies supported by the knowledge gained from the market continue with the marketing of the product and service and the commercial use of the process (Elci, 2008).

2.3.5. Learning:

This stage helps to assess the successes and failures experienced at all the other stages, to produce essential pieces of information and to utilize them in the better management of the innovation process. Since the impact of "Learning" has a bearing on all the other stages, the sustainability of innovation is of great importance for the sustainability of the competitive edge of the firm (Elci, 2008).

Experience gained throughout the innovation process enables entrepreneurs to embark on a new process more efficiently and rapidly. Lessons are learned from the rights and wrongs committed throughout the period; these lessons are communicated to the employees and put in writing, thereby contributing to the formation of an institutional memory (Elci, 2008).

The strengths and benefits of the "innovation cycle" approach are as follows:

- It allows for a broader outlook on a wide range of factors that play a part in the innovation process.
- It draws attention to the "interaction" between all the factors in the innovation system.
- It offers the policymakers a framework through which they can identify which interventions will produce the best policy outcomes.
- It enables the innovation and learning processes to take a central position.
- It allows for the determinants of innovation to be handled in a holistic and interdisciplinary framework.
- It stresses that the development of innovative capacity is not linear and that it rests on cooperation.
- It highlights the role of organizations and institutions (Sungur et al., 2014).

4. INNOVATION in the FOOD SECTOR AND ITS IMPORTANCE

Mounting pressure to afford better control in the food sector, to practise food production that is in conformity with food safety and food quality standards and to meet the expectations of the consumer regarding reliability, diversity and quality has increased the need for research activity in this sector, contributing to the acceleration of the innovation process (Kusat, 2011).

As far as small-scale businesses in the food sector are concerned, it would be

wrong to expect radical changes from these innovations. In such businesses, innovation efforts are geared to improve existing products or make improvements in the production process (Kusat, 2011).

According to Menrad (2004), research conducted on the food sector in the past demonstrates that the sector has low research intensity. Nevertheless, innovations – regarded as new goods, processes or services – remain important means for businesses in the food sector that aim to satisfy the consumer expectations and distinguish themselves from their competitors (Kusat, 2011).

The implications of a study carried out by Avermaete et al. suggest that most food companies view innovation as essential though the food industry is considered to be a slow-growing and mature sector. Although large food companies are well-established in the food sector with their brands and qualities, they are forced to renew themselves both to be able to struggle with the rising levels of innovatively competitive capacities of small firms and to put into force the rising safety and quality regulations. Such changes implemented in the goods and processes in small food companies may be instrumental in bringing about strategic changes in all levels of businesses. For this reason, encouraging innovation in small food companies is regarded as a strategy that triggers national and regional growth (Kusat, 2011).

There is plenty of evidence that innovation boosts the competitive powers of firms. Apart form this, it should be noted that innovation also plays a significant role in the financial performance. There is no doubt that innovation has a profound effect upon the firms' and countries' export rates (Kusat, 2011).

The content of technological opportunities in the new economic order plays a central role in the explanation of innovation. Greater technological opportunities lead the way for the new processes and innovations to enter the market. In the food industry, new pieces of information and new technologies are obtained from a few sources and sectors. (e.g. new additives, new preservation techniques, new product techniques.) These techniques have a role play in high quality production and the shaping of new formations in food products. As a result, opportunities for technological change in this sector show an upward trend thanks to the continuous developments in food and technological sciences (Kusat, 2011).

In conclusion, gaining access to high quality life standards and ensuring high profitability and economic development in a global world depend on high competitive power, but the key to attaining competitive edge is viewed as innovation. In this sense, it has become imperative for businesses to make change and innovation a part of their business so as to achieve success (Cetin and Gedik, 2017). The increasing number of studies conducted in this field highlights the undeniable importance of innovation for modern businesses (Kusat, 2011).

5. DIETING INNOVATIONS WORLDWIDE AND IN TURKEY

Research and development activities in Turkey receive 008,5% of the GDP, according to 2010 figures.

Looking at the status of research and development activities in Turkey, it is seen that the share of Gross Domestic Product (GDP) is 8.5 in 2010 compared to 2010 data. This number, which is quite low, actually indicates that our technological infrastructure is also low, which means that we have to buy high tech products from abroad, which

also causes permanent foreign trade. The increase in research and development activities, which play an important role in this context, will also make a significant contribution to the national economy (OKA, 2018).

Therefore, innovation and research and development activities have a significant share in government incentives. Particularly in the area of research and development with special incentive by law no. 5746; it is aimed to produce technological knowledge in order to bring the country's economy to a competitive structure at an international level, to innovate in product and production processes, to increase product quality and standard, to increase productivity, to decrease production costs and to commercialize technological knowledge. Apart from the mentioned law, it is seen that the support given to TUBITAK support and technology development regions is predominant in the incentives related to this field. In addition, EU-funded research and development activities are also supported by the country (OKA, 2018). Turkey among "unpretentious innovative countries' is better at spending and selling R&D innovation compared to new innovative products, Turkey is well above the EU average of 7.0% growth rate. Turkey's performance is 31% compared to EU in 2007, 2013 and 2014 increased by 36% and has reached 46% with a big jump. Nevertheless, Turkey, in all indicators except investment firms because of the high R&D innovation expenditure remains off below the EU average (Guravsar Gokce, 2016).

According to TURKSTAT Research and Development Activities Report in 2009; the manufacturing sector R&D expenditures amounting to approximately 1,593 million liras and food and beverage industry expenditures are calculated as approximately 70 million Turkish Liras. In addition to R&D spending for computers, electronics and motor vehicles, this amount, which is quite low, seems to be inevitable for the improvement and development of food products (Candogan, 2013).

According to the 2015 Innovation Ranking of EU after the economic crisis, the innovation score of 13 members decreased while 15 members increased. According to this ranking, According to this ranking, Denmark, Finland, Germany and Sweden are called 'innovation leaders' with the innovation performance over the EU average. Austria, Belgium, France, Ireland, Luxembourg, the Netherlands, Slovenia and the UK are called 'innovation followers' with scores above or below the EU average. Croatia, Cyprus, Czech Republic, Estonia, Greece, Hungary, Italy, Lithuania, Malta, Poland, Portugal, Slovakia and Spain are called "innovators in the middle level" with their performances below the EU average. Bulgaria, Latvia and Romania are called "unprecedented innovators" with their innovation performance well below the EU average. Outside the EU, the US, Japan and South Korea innovation scores are above the EU average. Turkey is among the unpretentious innovative countries. According to Gross National Product (GSHM) Turkey takes part in the transition group from efficiency to innovation (Ertan, 2010).

Comparing to rest of the world, the USA stands out on a country basis. For example, the 'Department for Education and Skills Research Portal' project; aiming to establish a mechanism for putting the results of R&D studies into practice and to present the academic literature to practitioners and policy makers is an example of an innovation that triggers innovation. Beside USA organizes award-winning competitions that can be attended at the corporate or individual level to resolve outstanding issues of the public at https://www.challenge.gov/. This provides motivation for all people to

work towards solving public problems in the country. In Beijing, it was began to offer award-winning sales chips designed for businesses to seek out solutions to unregistered economies and to provide businesses with a pilot application specifically designed to encourage goods and services providers to issue chips and invoices. This has encouraged customers to buy chips, and this has led to a significant improvement in tax rates. This innovative idea, which seemed to be very simple in its essence, made an important contribution to the country's economy. Another example was South Korea's industrialization process, which quickly became one of the technology giants; the government has set up large conglomerates and put forward sectoral projects and export targets to be completed before these holdings in the planned periods. The government has restricted imports, encouraged engineering and the development of new technologies (Guravsar Gokce, 2016).

Examples of food innovation projects in worldwide that have important economic benefits include:

Functional Foods: People no longer go to the doctor as often as before, but prefer to stay healthy by eating well and actually treating themselves in some way. At this point, there is a tendency toward functional foods (Candogan, 2013).

Functional food is defined as a food or food component that has a positive effect on an individual's health, physical performance or mental status as well as its nutritional value (Dolekoglu et al., 2015). The function of these foods is naturally derived from biologically active components (Acıkgoz and Onenç, 2006).

Functional foods that hold health as a primary are the most popular innovative food products. Functional foods that hold health as a prelude to health are the favourite innovative food products. Examples of these products in Turkey and worldwide;

Functional foods specific to diseases (Acıkgoz and Onenç, 2006). :

1- *For heart diseases:* Omega-3 enriched eggs, milk, margarine, vegetable sterols and stanols enriched margarine, reduced fat products

2- For diabetes: Jams, biscuits etc. prepared with sweeteners

3- *For celiac:* Gluten free products, chia/quinoa bread, quinoa crackers

4- *For phenylketonuria:* special formulas, low protein special foods

5- *For lactose intolerance:* lactose free milk/yogurt

6- *For hypertension:* sodium reduced salt, salt reduced bread, pickles etc.

7- *For obesity:* Sugar/fat/energy reduced products

8- *For intestinal diseases:* probiotic yogurts, plain and flavored kefir, probiotic beverages, prebiotic and probiotic-enriched breakfast cereals, dietary fiber content enriched drinks/puddings/soups

Other functional foods

1- *Enhanced antioxidant nutrients:* green coffee, grape seed pasta, vitamin water

2- *Mental performance enhancing nutrients:* ginseng, guarana and taurine added drinks

3- *Sports nutrition: sports drinks, sports bar and gellies, protein bars, high protein products*

Home Delivery Cooking Companies: Healthy eating habits are increasing in Turkey and in the world. The more people want to eat healthy foods, the less time it will take to prepare meals for intensive life. At this point, dietary caterers are in the process of preparing dietary menus according to their physical characteristics, health status and

wishes, and delivering them to the persons. The number of these companies, which are found beneficial for health and make people's lives easier, is increasing day by day (Bergdoll, 2008).

Frozen products: Frozen products that provide the convenience of cooking at home, which is often preferred by consumers due to lack of time and food preparation skills, or reluctance to prepare food are also among innovative products. Frozen products sold in Turkey and in the world are as follows: ravioli, pies, potatoes, vegetables and fruit, chopped onion, red meat, poultry and fish products, pizza, sandwiches and home cookings (Candogan, 2013).

Biscuits: In the 3rd century BC in Rome, the biscotum, the Latin biscuits, which were called twice cooked, were consumed by soaking in wine. Biscuits were imported to Turkey as well. In Semitin Sami's French-Turkish dictionary in 1905, the word "biscuit" is given as "crispy, crispy, crispy, biscuit with egg and sugar". Production started in 1924, two factories were established in 1932. Production began in 1954, Ulker was founded in 1944, Arı was founded in 1949, and by the end of 1950, the number of factories in Istanbul was 22. Eti Production started in Eskisehir in 1972. The first protein biscuits were made in 1992. Developments in the GIDA sector have begun to be produced under many names, ranging from candy, cake, pastry and cookies to biscuit varieties.

Margarine: Margarine was first made in Paris in 1870 with the request of the Third Napoleon, and was taken on a patio. III. Napoleon opened a contest for the development of another ingredient to replace butter in the navy. Mege-Mouries became the only person to participate in this contest and received the prize that the king put in. It was decided to establish a margarine factory in Poissy. But as full-time work continued, the Franco-Austrian war broke out and the project was on track. Two Dutch oil traders named Jan and Anton Jurgens bought the margarine production right for 60,000 francs and set up the first margarine factory in Oss in the Netherlands in 1871.

Impossible Burger: The Impossible Burger project represents the last point that was came up with in food innovation. This project aimed at producing meat with the combination of whole plants, developed on the basis of producing "impossible hamburger" on its name. Even though the labs' meat projects were talked about, it was far from realistic because of the high production costs and the intention to substitute red meat for the main idea; or creating tremendous disappointments in their taste tests. The Impossible Burger project was able to quickly break away from all these negative results, creating a low-cost, just plant-based tasty burger. They have succeeded in creating a burger that is the same with the taste, smell, texture and even the Maillard reaction (the wonderful scientific reaction that makes the outer parts crispy when you cook it, the caramelization of natural sugars).

Food Truck: In recent years, especially in areas with high population, known as "foodtruck" in foreign literature, the number of wheeled restaurants which are translated as food trucks is increasing rapidly. First, in the late 1800s, an old army wagon in the United States emerged from stockpiles of internal shelves and kitchen utensils, food and medical supplies. The designed vagoon contained dried beans, coffee, corn flour, and similar food items that were generally easy to store, dried or salted or smoked. The emergence of a modern food truck began in 1872 when Walter Scott cut a small vagoon and sold a sandwich from a window opened. Food trucks, widely used in many

countries of the world, serve major cities such as New York, San Francisco and Los Angeles; advertising, location, and roots using social media channels like Facebook and Twitter. Food trucks serve an average of 200 servings per day. The most important feature of food trucks is that it offers a single product rather than a rich menu like a restaurant, and one of the main reasons for preference is its price (Weber, 2012).

One of the fastest growing trends, food trucks have been restricted due to unplanned development by means of many regulations and applications. Many companies in the food sector have turned to this sector because it does not require marketing and excess material investment In recent years, especially fast food chain brands have been getting rid of costs like building costs, making cheaper and less risky food trucks in line with the characteristics of their own brands. As the food trucks provide many benefits for the operation, the number is increasing day by day (Gökçe and Sunar, 2017).

Packaging: In the food packaging industry, many innovative packages have been developed in recent years where new technologies are used. The use of nanotechnology in packaging systems has an important place (Candoğan, 2013).

Nanotechnology is a rapidly developing field of science and technology that is carried out at a scale smaller than 100 nanometers. Nanotechnology creates advanced products in every field with new techniques; medicine, health, food, packaging materials and systems, medicine, electronics. Although the use of nanotechnology in the food sector is useful and important, it is still used in limited quantities. In recent years, studies all over the world are seeking ways to make the most out of this technology in the food industry. On the other hand, since the increase in consumption of ready-to-eat foods has recently become more and more important, the importance of fresh and long-lasting foods has been emphasized. Particularly in terms of the shelf life and quality of food, work continues on packaging processed meat-fish products, fresh fruits and vegetables. Nanotechnology, on the other hand, creates new food and intelligent packaging systems in the food industry. In particular, the safety and shelf life of food can be controlled with technological systems such as edible films, antimicrobial packaging, biodegradable materials, intelligent packaging, nanocopositic packaging, nanosensors developed recently (Sürengil and Kılınç, 2011).

6. RESULT

In recent years, focus on innovation activities in the food sector has been combined with process innovations. Rerouting the food sector can lead to successful innovations. However, significant application flaws cause falls in innovation activities. The food industry will face a wide range of new scientific approaches and technological opportunities in the coming years.

In addition, modern biotechnology, high pressure technology, modified atmosphere packaging and aseptic packaging have evolved over the last few years, but only a few of them have been used in the food industry until now. In order for the food industry to be able to attain an innovative structure, it is explained that they have to make production in accordance with the standards while trying to diversify the products and that they must save both time and cost by employing qualified personnel and thus they can come to the forefront with both price and price competitiveness. It seems that the government needs to be aware of the approaching food sector to innovation and to

help organize educations by bringing experts from universities together with industry and trade chambers on the same topic.

REFERENCES

Açıkgoz, Z., & Onenç, S. S. (2006). Fonksiyonel yumurta üretimi. Hayvansal Uretim, 47(1), 36-46.

Bergdoll, B., Christensen, P., Christensen, P. H., & Oshima, K. (2008). Home delivery: fabricating the modern dwelling. The Museum of Modern Art.

Candogan K., 2013, https://www.gidahatti.com/g-da-sektoeruende-inovasyon-ve-yeni-trendler-30562/ (Accessed Date: 31.5.2018).

Çetin, K., & Gedik, H. (2017). İşletmelerde İnovasyona Etki Eden Faktörler: Karaman İli Örneği. Uluslararası Yönetim İktisat Ve İşletme Dergisi, 13(5), 160-172.

Dolekoglu, C. Ö., Şahin, A., & Giray, F. H. (2015). Kadınlarda Fonksiyonel Gıda Tüketimini Etkileyen Faktörler: Akdeniz. Tarım Bilimleri Dergisi, 21(4), 572-584.

Elçi, Ş., & Karataylı, İ. (2008). İnovasyon Rehberi: Kârlılık ve Rekabetin Elkitabı. Technopolis Group Türkiye.

Ertan, F. (2010). Küçük Ve Orta Büyüklükteki İşletme (Kobi)'lere Sağlanan Kamusal Ar-Ge Teşvikleri: Kamusal Ar-Ge Teşviklerinin Kobi'ler Üzerindeki Etkilerine Yönelik Bir Anket Çalışması. Ankara Üniversitesi Sosyal Bilimler Enstitüsü, Ankara.

Gökçe F. and Sunar H. Gastronomi Ve Tanıtım Faaliyetlerinde İnovasyon: Yöresel Gastro Mobil Örneği. İçinde: 3. Turizm Şûrası 1-3 Kasım 2017 Tebliğler Kitabı. Cilt 2. Ankara, T.C. Kültür Ve Turizm Bakanlığı Basım Özel Matbaası, 2017: 144-152

Guravsar Gokce, S., (2016). The Current Status Of Public Innovation In Turkey And Suggestions For Improvement.

Karaata, S. (2012). Yenilik–Yenileşim-İnovasyon Dünyasına Bir Yolculuk., Ege Genç iş Adamları Derneği (EGİAD).

Kuşat, N. (2011). Gıda sektöründe inovasyon: Batı Akdeniz Bölgesi şekerleme, kakao ve çikolata alt sektörü üzerine bir uygulama (Doctoral dissertation, SDÜ Sosyal Bilimler Enstitüsü).

Oğuztürk, B. S., Özbay, F., & Pehlivan, C. (2017). Güney Kore'nin Büyüme Sürecinde İnovasyonun Rolü: Ekonometrik Bir Analiz 1984-2015. Suleyman Demirel University Journal of Faculty of Economics & Administrative Sciences, 22(4).

Sungur, O., Koç, R., & Dulupçu, M. A. (2014). Antalya'da Tarım Ve Tarımla İlişkili Firmaların İnovasyon Ve Yerel Aktörlerle İşbirliği Faaliyetlerinin Analizi. Turkish Journal Of Agricultural Economics, *20*(1): 1-15.

Sürengil, G., and Kılınç, B. (2011). Gıda-Ambalaj Sektöründe Nanoteknolojik Uygulamalar ve Su Ürünleri Açısından Önemi. Journal Of Fisheriessciences. Com, 5(4), 317-325.

OKA, http://oka.org.tr/okaIcerik.aspx?Id=139, Accessed date: 2018.

Weber, D. (2012). The Food truck handbook: Start, grow, and succeed in the mobile food business. John Wiley & Sons.

Chapter 51

The Short and Long Term Outcomes of Maternal Obesity

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INTRODUCTION

The worldwide prevalence of obesity has been increasing in all age groups, especially in women of childbearing age (Yogev & Visser, 2009; Guelinckx *et al*., 2008). According to the World Health Organization (WHO); 40% of women are overweight and 15% of women are obese (WHO, 2016). In the United States, overweight and obesity have been reported to affect 60% of women of childbearing age (Arabin *et al*., 2018). Obesity is a problem all over the world as an important public health problem in Turkey. According to the WHO report for Nutrition, Physical Activity and Obesity, 64.1% of women (≥20 years) are overweight and 35.0% of women (≥20 years) in Turkey are obese (WHO, 2013).

The effect of nutrition on the increase of obesity frequency is indisputable. Nowadays, reaching nutrients in an easier and cheaper way, such as increased availability of ready-to-eat food outside the home, have caused changes in eating habits. The high energy and fat content of consumed foods leads to an increase in body weight. In this situation, the addition of physical activity insufficiency increases the risk of obesity as a result of increased body weight (Yardımcı, 2016).

Maternal obesity is explained as the pre-pregnancy and pregnancy obesity. This can lead to short and long-term complications for both maternal and infant health (Vitner *et al*., 2018; Blanco *et al*., 2015).

MATERNAL OBESITY

Maternal obesity is defined as the body mass index (BMI) obtained with body weight and height at the beginning of pregnancy, or the BMI at the first antennal visit is greater than or equal 30 kg/m^2 if the data is not available. This definition is based on the WHO obesity classification.

Table 1 shows that increasing in the maternal BMI is related to an increased risk of developing health problems (Arabin *et al*., 2018; Vitner *et al*., 2018; Ma *et al*., 2016; ACOG, 2015).

It is recommended that body mass indexes of women planning pregnancy should not exceed 28-30 kg/m^2 (Huang *et al*., 2017).

Table 1: BMI values for maternal obesity

	Body mass index (kg/m^2)	Risk of developing health problems
Underweight	<18.5	Increased
Normal weight	18.5–24.9	Least
Overweight	25.0–29.9	Increased
Obese class I	30.0–34.9	High
Obese class II	35.0–39.9	Very high
Obese class III	≥40.0	Extremely high

MATERNAL OBESITY EFFECTS DURING PREGNANCY AND IN LATER LIFE

Adverse effects of obesity begin to be seen in pre-pregnancy period. It is known that the prevalence of polycystic ovary syndrome (PCOS) is higher in obese women. Polycystic ovary syndrome, which affects normal ovulation and menstruation, is an endocrine disorder causing amenorrhea and infertility (Guelinckx *et al*., 2008). In addition, obesity seen in women in the age of fertility is closely related to infertility (Çagıran-Yılmaz & Yardımcı, 2015). Miscarriage and stillbirths in both normal pregnancies and infertility treatment in overweight/obese women are a more common clinical condition (Guelinckx *et al*., 2008).

Thromboembolic diseases rarely occur in the pregnancy period and it has been reported that the prevalence of thromboembolism is higher in obese pregnant women than in normal weight women. The risk of venous thromboembolism is high in premenstrual and postpartum women with overweight and obese women and it is seen as one of the causes of maternal mortality (Sener *et al*., 2011; Tsoi *et al*., 2010; Yogev & Visser, 2009).

Increasing in the prevalence of obesity causes a significant increment in the incidence of type 2 diabetes for women of childbearing age. The presence of type 2 diabetes in the pre-pregnancy period leads to the occurrence of conditions such as low birth weight, fetal macrosomia, and congenital malformations. These conditions cause undesirable results in the maternal, fetal and neonatal periods. In addition, there is a strong relationship between gestational diabetes and maternal obesity. It has been also reported that pregnancies with high BMIs are four to nine times more likely to develop gestational diabetes than those with normal weight (Poston *et al*., 2016).

Arterial blood pressure, hemoconcentration and cardiac function are all related to hemodynamic changes caused by obesity (Yogev & Visser, 2009). Women who are overweight and obese before pregnancy, have higher prevalence of hypertension or preeclampsia due to pregnancy compared to women with normal weight (Mrema *et al*., 2018; Yogev & Visser, 2009). In a conducted study, maternal obesity is reported to increase the incidence of preeclampsia by three to ten times (Poston *et al*., 2016). For obese women, the risk of gestational diabetes and preeclampsia including cardiac dysfunction, proteinuria, sleep apnea and nonalcoholic fatty liver disease and the risk of cesarean birth are higher (ACOG, 2015). Planned cesarean operations are twice as high as the emergency cesarean operation in 77% of the patients with the BMI, which is greater than or equal 30 kg/m^2 (Pettersen-Dahl *et al*., 2018). In addition, cesarean birth maternal mortality and morbidity also increase perinatal morbidity (Caglayan *et al*.,

2010). It is important that the mother should be ideal weight before the pregnancy to reduce the cesarean delivery rates while considering the impact on mortality and morbidity, bringing the economic cost and the risks.

When the maternal obesity is investigated other negative results for the mother, postpartum hemorrhage and risk of genital/urinary infections increase and the birth rate and the length of hospital stay increase as well (Tsoi *et al*., 2010). Psycho-social problems, such as depression and social isolation, in obese pregnancies are more common during and after gestation (Kumpulainen *et al*., 2018). Obesity during pregnancy is closely related to future metabolic dysfunction in these women (ACOG, 2015). In a research study, women with maternal obesity have been reported to have higher metabolic risks, such as insulin resistance, metabolic syndrome, abdominal obesity, low HDL level and hypertriglyceridemia in long-term than in women with normal weights (Garmendia *et al*., 2017).

MATERNAL OBESITY EFFECTS FOR THE FETUS AND OFFSPRING

There is a directly relationship between maternal BMI and birth weight. The most common negative consequence of maternal obesity is macrosomia, which is defined as the excess birth weight for the infant. Since maternal obesity is a proinflammatory process, it is thought that the mechanism of fetal macrosomia may be related to this condition (Gallo *et al*., 2017). Infants with maternal obesity large gestation age (LGA) also have an increased risk of birth (Hemond *et al*., 2016; Yogev & Visser, 2009), preterm labor and the birth of infants with low birth weight (Ju *et al*., 2018; Yogev & Visser, 2009). There is a significant relationship between maternal BMI and fetal death (Poston *et al*., 2016), stillbirth (Poston *et al*., 2016; Chu *et al*., 2014), neonatal and infant (Huang *et al*., 2017; Hemond *et al*., 2016; Meehan *et al*., 2014; Yogev & Visser, 2009).

Women who are obese during the maternal period, may be more reluctant to breastfeed their babies after birth (Rasmussen, 2007; Hilson *et al*., 2004). Several authorities, such as the WHO, the United Nations International Child Emergency Relief Fund (UNICEF) and the American Academy of Pediatrics (APA), only suggest breast milk for the first 6 months of the newborn for optimal development of newborns (Badillo-Suárez *et al*., 2017; Ventura, 2017). Maternal obesity also reduces both the rate and duration of breastfeeding (Boudet-Berquier *et al*., 2018; Kürklü & Kamarlı, 2016; Tsoi *et al*., 2010). In conducted research studies, it has been determined that breastfeeding protects against obesity, cardiovascular diseases, diabetes and hematological malignancy in the long term (Horta *et al*., 2015; Badillo-Suárez *et al*., 2017). For all these reasons, the newborn should be fed only with breast milk for the first 6 months. In order to satisfy the necessary condition, the obesity seen in women in the age of fertility should be reduced.

The etiology of congenital disorders is a very complex health problem. Although the etiology of congenital disorders is not fully known, genetic and environmental factors are thought to be effective. The maternal nutritional status of environmental risk factors is important in this context. The mechanism between maternal obesity and birth defects cannot be explained clearly. However, possible mechanisms, such as folic acid for maternal BMI, increasingly prevalent in pregnancy affect the absorption and use of some nutrients (Huang *et al*., 2017; Brite *et al*., 2014). Another mechanism is that

obesity may be related to glucose metabolism. Obesity leads to maternal hyperglycemia and hyperglycemia may increase the risk of congenital malformation by increasing oxidative stress (Huang *et al*., 2017; Blanco *et al*., 2015). In addition, obesity may lead to a more difficult reading of the ultrasound images in the pregnancy and anomalies that may be present in the fetus. This may lead to an increase in the prevalence of congenital anomalies (Brite *et al*., 2014). In recent studies, neural tube defect of maternal obesity (Huang *et al*., 2017; Gao *et al*., 2013), congenital heart defects (Huang *et al*., 2017; Cai *et al*., 2014; Brite *et al*., 2014), orofacial cleft (Kutbi *et al*., 2017; Blanco *et al*., 2015), congenital anomalies in the kidney and urinary system (Macumber *et al*., 2017) were investigated in order to determine that urogenital anomalies are an important risk factor for all congenital anomalies (Arendnt *et al*., 2017; Rankin *et al*., 2010), mainly in the case of urogenital anomalies (Huang *et al*., 2017; Hemond *et al*., 2016).

Maternal obesity is a risk factor that affects negatively and changes the cognitive development of children (Arabin *et al*., 2018; Widen *et al*., 2018; Hemond *et al*., 2016). In the conducted research, it is determined that children of obese mothers during the pregnancy had lower academic scores at six, ten, and fourteen years (Pugh *et al*., 2016). By influencing the neurodevelopmental process, maternal obesity not only affects academic success but also increases the risk of negative neurodevelopmental outcomes, such as hyperactive diseases, autistic spectrum disorders and emotional/behavioral problems (Sanchez *et al*., 2018; Godfrey *et al*., 2016). In this context, it is reported that one of the factors, which is maternal obesity, increases the risk of childhood epilepsy (Razaz *et al*., 2017) and cerebral palsy (Janik *et al*., 2013). It is also believed that maternal obesity, which is related to psychosocial stress, is an important factor affecting brain development throughout life (Arabin *et al*., 2018).

The mechanism between maternal obesity and long-term obesity has not been clearly explained (Sloboda & Vickers, 2011). However, the possible mechanism is explained by the “fetal origins of diseases” hypothesis. According to the fetal origin’s hypothesis, fetal nutrition and changes in endocrine status cause permanently change the structure, physiology and metabolism adaptations and make the individual susceptible to cardiovascular, metabolic and endocrine diseases during adulthood (Lau *et al*., 2004). This hypothesis, also known as the Barker hypothesis, has emerged as a result of Barker and his colleagues’ observations. At the beginning of the 20th century in the UK, infant mortality was found to be high in the region, where it was seen that death rate from coronary heart disease increased after several decades. Retrospectively, the most common cause of infant mortality was found to be low birth weight and hypothesis was presented that surviving infants might increase the risk of coronary heart disease in adulthood (Demir, 2011).

Another possible mechanism, similar to this hypothesis, is thought to be explained by the "developmental hypersensitivity hypothesis". In this mechanism, it is stated that high maternal glucose, free fatty acid and amino acid concentrations may cause permanent changes in appetite control, neuroendocrine function and/or developing fetal energy metabolism; therefore, leading to long-term adiposity, metabolic and cardiovascular diseases (Drake & Reynolds, 2010). In addition to this mechanism, it is reported that obesity in the pre-pregnancy period causes deterioration of oocyte quality and may affect the development of the embryo and lead to long-term negative health outcomes (Minge *et al*., 2008).

Several studies have reported a relationship between maternal obesity and childhood and the risk of adolescent obesity (Jharap *et al*., 2017; Hemond *et al*., 2016). It has been observed the risk of cardiovascular diseases, metabolic syndrome and mortality due to higher fat mass and abdominal fat mass for children of mothers who are obese in pregnancy (Hemond *et al*., 2016).

Maternal obesity has been identified as a new risk factor for type 1 diabetes for children (Lindell *et al*., 2018). It has also been found that maternal obesity is associated with childhood asthma (Polinski *et al*., 2017; Lowe *et al*., 2011).

In conclusion, although it is seen that maternal obesity has many negative effects on short and long terms, the underlying mechanisms may not be explained clearly yet. In order to reduce the incidence of many diseases, especially stillbirths, childhood obesity, congenital anomalies and metabolic diseases, women of childbearing age should pay more attention to being in ideal body weight before pregnancy and during pregnancy.

REFERENCES

ACOG. The American College of Obstetricians and Gynecologists (2015). Obesity in Pregnancy. Practıce Bulletın Number 156

Arabin, B.; Timmesfeld, N.; Noever, K.; Behnam, S.; Ellermann, C.; Jenny, M. A. (2018). How to Improve Health Literacy to Reduce Short-and Long-Term Consequences of Maternal Obesity? The Journal of Maternal-Fetal&Neonatal Medicine, 1-8

Arendt, L. H.; Ramlau-Hansen, C. H.; Lindhard, M. S.; Henriksen, T. B.; Olsen, J.; Yu, Y.; Cnattingius, S. (2017). Maternal Overweight and Obesity and Genital Anomalies İn Male Offspring: A Population Based Swedish Cohort Study. Paediatric and Perinatal Epidemiology, 31(4), 317-327

Badillo-Suárez, P. A.; Rodríguez-Cruz, M.; Nieves-Morales, X. (2017). Impact of Metabolic Hormones Secreted in Human Breast Milk on Nutritional Programming in Childhood Obesity. Journal of Mammary Gland Biology and Neoplasia, 22: 171-191

Blanco, R.; Colombo, A.; Suazo, J. (2015). Maternal Obesity Is A Risk Factor For Orofacial Clefts: A Meta-Analysis. British Journal of Oral and Maxillo facial Surgery, 53: 699-704

Boudet-Berquier, J.; Salanave, B.; Desenclos, J. C.; Castetbon, K. (2018). Association between Maternal Prepregnancy Obesity and Breastfeeding Duration: Data from A Nationwide Prospective Birth Cohort. Maternal & Child Nutrition, 14: E12507

Brite, J.; Laughon, S. K.; Troendle, J.; Mills, J. (2014). Maternal Overweight and Obesity and Risk of Congenital Heart Defects in Offspring. International Journal of Obesity, 38: 878.

Cai, G. J.; Sun, X. X.; Zhang, L., Hong, Q. (2014). Association between Maternal Body Mass Index and Congenital Heart Defects in Offspring: A Systematic Review. American Journal of Obstetrics&Gynecology, 211: 91-117

Chu, S. Y.; Kim, S. Y.; Lau, J.; Schmid, C. H.; Dietz, P. M.; Callaghan, W. M.; Curtis, K. M. (2007). Maternal Obesity and Risk of Stillbirth: A Metaanalysis. American Journal Of Obstetrics&Gynecology, 197: 223-228

Çağıran-Yılmaz, F. & Yardımcı H. (2015). Beden Kütle İndeksinin İnfertilite Üzerine Etkisi. Hacettepe University Faculty of Health Sciences Journal, 1: 1-6.

Çağlayan, E. K.; Kara, M.; Cihan Gürel, Y. (2011). Kliniğimizde Üç Yıllık Sezaryen Oranı ve Endikasyonları. Journal of Experimentaland Clinical Medicine, 27: 50-53

Drake, A. J. & Reynolds, R. M. (2010). Impact of Maternal Obesity on Offspring Obesity

and Cardiometabolic Disease Risk. Reproduction, 140: 387-398
Demir, H. (2011). Erişkin Dönemdeki Hastalıkların Fetal Programlanması: Beslenmenin Rolü. Çocuk Sağlığı ve Hastalıkları Dergisi, 54, 45-50.
Gallo, L. A.; Barrett, H. L.; Nitert, M. D. (2017). Placental Transport and Metabolism of Energy Substrates in Maternal Obesity and Diabetes. Placenta, 54: 59-67
Gao, L. J.;Wang, Z. P.; Lu, Q. B.; Gong, R.; Sun, X. H.;Zhao, Z. T. (2013). Maternal Overweight and Obesity and the Risk of Neural Tube Defects: A Case–Control Study İn China. Birth Defects Research Part A: Clinical and Molecular Teratology, 97: 161-165
Garmendia, M. L.; Zamudio, C.; Araya, M., Kain, J. (2017). Association between Prepregnancy Obesity and Metabolic Risk in Child and Premenopausal Women 10 Y Postpartum. Nutrition, 38: 20-27.
Godfrey, K. M.; Reynolds, R. M.; Prescott, S. L.; Nyirenda, M.; Jaddoe, V. W.; Eriksson, J. G.; Broekman, B. F. (2017). Influence of Maternal Obesity on the Long-Term Health of Offspring. The Lancet Diabetes&Endocrinology, 5: 53-64
Guelinckx, I.; Devlieger, R.; Beckers, K.; Vansant, G. (2008). Maternal Obesity: Pregnancy Complications, Gestational Weight Gain and Nutrition. Obesity Reviews, 9: 140-150
Hemond, J.; Robbins, R. B.; Young, P. C. (2016). The Effects of Maternal Obesity on Neonates, Infants, Children, Adolescents, and Adults. Clinical Obstetrics and Gynecology, 59: 216-227
Hilson, J. A.; Rasmussen, K. M.; Kjolhede, C. L. (2004). High Prepregnant Body Mass Index is associated with Poor Lactation Outcomes among White, Rural Women Independent of Psychosocial and Demographic Correlates. Journal Oof Human Lactation, 20: 18-29
Horta, B. L.; Loret de Mola, C.; Victora, C. G. (2015). Long term Consequences of Breastfeeding on Cholesterol, Obesity, Systolic Blood Pressure and Type 2 Diabetes: A Systematic Review and Meta-Analysis, Acta Paediatrica, 104: 30-37
Huang, H. Y.; Chen, H. L.; Feng, L. P. (2017). Maternal Obesity and the Risk of Neural Tube Defects in Offspring: A Meta-Analysis. Obesity Research&Clinical Practice, 11: 188-197
Janik, M. D. C.; Newman, T. B.; Cheng, Y. W.; Xing, G.; Gilbert, W. M.; Wu, Y. W. (2013). Maternal Diagnosis of Obesity and Risk of Cerebral Palsy in the Child. The Journal of Pediatrics, 163: 1307-1312
Jharap, V. V.; Santos, S.; Steegers, E. A.; Jaddoe, V. W.; Gaillard, R. (2017). Associations of Maternal Obesity and Excessive Weight Gain during Pregnancy with Subcutaneous Fat Mass in Infancy. Early Human Development, 108: 23-28
Ju, A. C.; Heyman, M. B.; Garber, A. K.; Wojcicki, J. M. (2018). Maternal Obesity and Risk of Preterm Birth and Low Birth Weight in Hawaii PRAMS, 2000–2011. Maternal and Child Health Journal, 22: 893-902
Kutbi, H.; Wehby, G. L.; Moreno Uribe, L. M.; Romitti, P. A.; Carmichael, S.; Shaw, G. M.; Wilcox, A. (2017). Maternal Underweight and Obesity and Risk of Orofacial Clefts in A Large İnternational Consortium of Population-Based Studies. International Journal of Epidemiology, 46: 190-199
Kumpulainen, S. M.; Girchenko, P.; Lahti-Pulkkinen, M.; Reynolds, R. M.; Tuovinen, S.; Pesonen, A. K.; Laivuori, H. (2018). Maternal Early Pregnancy Obesity and Depressive Symptoms During and After Pregnancy. Psychological Medicine, 1-11.
Kürklü, N. & Kamarlı, H. (2016). Maternal Obezitenin Emzirmeye Etkisi. Journal of Anatolia Nursing and Health Sciences, 19: 53-56
Lau, C. & Rogers, J. M. (2004). Embryonic and Fetal Programming of Physiological Disorders in Adulthood. Birth Defects Research Part C: Embryo Today: Reviews, 72:

300-312
Lindell, N.; Carlsson, A.; Josefsson, A.; Samuelsson, U. (2018). Maternal Obesity as a Risk Factor for Early Childhood Type 1 Diabetes: A Nationwide, Prospective, Population-Based Case–Control Study. Diabetologia, 61: 130-137
Lowe A.; Bråbäck L.; Ekeus C.; Hjern A.; Forsberg B. (2011). Maternal Obesity during Pregnancy As a Risk For Early-Life Asthma. J Allergy Clin Immunol, 128: 1107–1109
Ma, R. C. W.; Schmidt, M. I.; Tam, W. H.; Mcıntyre, H. D.; Catalano, P. M. (2016). Clinical Management of Pregnancy in the Obese Mother: Before Conception, During Pregnancy, and Post-Partum. The Lancet Diabetes & Endocrinology, 4: 1037-1049
Macumber, I.; Schwartz, S.; Leca, N. (2017). Maternal Obesity is Associated with Congenital Anomalies of The Kidney and Urinary Tract in Offspring. Pediatric Nephrology, 32: 635-642
Meehan, S.; Beck, C. R.; Mair-Jenkins, J.; Leonardi-Bee, J.; Puleston, R. (2014). Maternal Obesity and Infant Mortality: A Meta-Analysis. Pediatrics, 133: 863-871
Minge, C. E.; Bennett, B. D.; Norman, R. J.; Robker, R. L. (2008). Peroxisome Proliferator-Activated Receptor-Γ Agonist Rosiglitazone Reverses The Adverse Effects of Diet-Induced Obesity On Oocyte Quality. Endocrinology, 149: 2646-2656
Mrema, D.; Lie, R. T.; Østbye, T.; Mahande, M. J.; Daltveit, A. K. (2018). The Association between Pre Pregnancy Body Mass Index and Risk of Preeclampsia: A Registry Based Study from Tanzania. BMC Pregnancy and Childbirth, 18: 56
Pettersen-Dahl, A.; Murzakanova, G.; Sandvik, L.; Laine, K. (2018). Maternal Body Mass İndex As A Predictor For Delivery Method. Acta Obstetricia et Gynecologica Scandinavica, 97: 212-218
Polinski, K. J.; Liu, J.; Boghossian, N. S.; Mclain, A. C. (2017). Peer Reviewed: Maternal Obesity, Gestational Weight Gain, and Asthma in Offspring. Preventing Chronic Disease, 14: E109
Poston, L.; Caleyachetty, R.; Cnattingius, S.; Corvalán, C.; Uauy, R.; Herring, S.; Gillman, M. W. (2016). Preconceptional and Maternal Obesity: Epidemiology And Health Consequences. The Lancet Diabetes & Endocrinology, 4: 1025-1036
Pugh, S. J.; Hutcheon, J. A.; Richardson, G. A.; Brooks, M. M.; Himes, K. P.; Day, N. L.; Bodnar, L. M. (2016). Child Academic Achievement in Association with Pre-pregnancy Obesity and Gestational Weight Gain. J Epidemiol Community Health, 70: 534-540
Rankin, J.; Tennant, P. W. G.; Stothard, K. J.; Bythell, M.; Summerbell, C. D.; Bell, R. (2010). Maternal Body Mass Index and Congenital Anomaly Risk: A Cohort Study. International Journal of Obesity, 34: 1371-1380
Rasmussen, K. M. (2007). Association of Maternal Obesity before Conception with Poor Lactation Performance. Annu. Rev. Nutr, 27: 103-121
Razaz, N.; Tedroff, K.; Villamor, E.; Cnattingius, S. (2017). Maternal Body Mass Index in Early Pregnancy and Risk of Epilepsy in Offspring. JAMA Neurology, 74: 668-676
Sanchez, C. E.; Barry, C.; Sabhlok, A.; Russell, K.; Majors, A.; Kollins, S. H.; Fuemmeler, B. F. (2017). Maternal Pre-Pregnancy Obesity and Child Neuro Developmental Outcomes: A Meta-Analysis. Obesity Reviews, 19: 464-484
Sloboda, D. M. & Vickers, M. H. (2011). Maternal Obesity and Developmental Programming of Metabolic Disorders in Offspring: Evidence from Animal Models. Experimental Diabetes Research, 592408
Şener, E. H.; Uzun, A.; Malas, M. A. (2011). Maternal Obezitenin Fetusun Prenatal ve Postnatal Gelişimi Üzerine Etkileri. Turkiye Klinikleri Journal Of Gynecology and Obstetrics, 21: 112-120
Tsoi, E.; Shaikh, H.; Robinson, S.; Teoh, T. G. (2010). Obesity in Pregnancy: A Major

Healthcare İssue. Postgraduate Medical Journal, 86: 617-623
URL: WHO (2013). http://www.euro.who.int/en/nutrition-country-profies (Accessed: 5 April 2018)
URL: WHO (2016). http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight (Accessed: 16 April 2018)
Vitner, D.; Harris, K.; Maxwell, C.; Farine, D. (2018). Obesity in Pregnancy: A Comparison of Four National Guidelines. The Journal of Maternal-Fetal & Neonatal Medicine, 1-11.
Widen, E. M.; Kahn, L. G.; Cirillo, P.; Cohn, B.; Kezios, K. L.; Factor-Litvak, P. (2018). Prepregnancy Overweight and Obesity are Associated with Impaired Child Neurodevelopment. Maternal & Child Nutrition, 14: e12481
Yardımcı, H. (2016). Kadınlarda Obezitenin Nedenleri ve Obezitenin Yaşam Kalitesi Üzerine Etkileri [Keser, A., Yıldırım, F., and Kaplan, M (Ed.)] Hastalıkta Sağlıkta Kadın Olmak kitabı içinde (bölüm 14, s: 297-323). Nobel Tıp Kitabevi
Yogev, Y. & Visser, G. H. (2009). Obesity, Gestational Diabetes and Pregnancy Outcome. In Seminars in Fetal and Neonatal Medicine, 14: 77-84

Chapter 52

Vitamin D in Prevention of Neurodegenerative Diseases

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INTRODUCTION

The first known effect of vitamin D is to increase the absorption of calcium and phosphorus from the intestinal tract to provide the mineralization of the skeletal system. Subsequently it was found to provide differentiation of osteoclasts (rickets & osteomalasia) (Holick, 2007). Until that time, in many areas, such as cancer, diabetes, cardiovascular diseases, depression, immunity and muscle strength, the importance of vitamin D has been emphasized (Bouillon, 2007; Holick, 2007; Wang et al., 2008).

In the last decade, the discovery of vitamin D receptors (VDR) and 1-α-hydroxylase (CYP27B1) has led to dramatic changes in how vitamin D affects human health. Contrary to what is expected of this enzyme, it is not found in the bone tissue but in the intestine, prostate, pancreas and immune cells (Battault et al., 2013).

This review aims to examine vitamin D in prevention of neurodegenerative diseases with current approaches.

VITAMIN D METABOLISM

There are three potential sources of vitamin D. These; dietary, UVB-dependent endogenous production and supplementation. In particular, some food such as eggs, fish and liver are rich in vitamin D (Lamberg-Allardt, 2006). Endogenous production in the organism depends on climate, skin color, lifestyle and genetic factors (Calvo & Whiting, 2005).

There are two forms of essential vitamin D in humans. These are; biologically more active vitamin D3 (cholecalciferol) is synthesized in the form of more human body, vitamin D2 (ergocalciferol) is a form especially dietary (Akpınar & İçağasıoğlu, 2012).

The cholecalciferol we synthesize from cholesterol or dietary is converted to 7-dihydrocholesterol by the action of UVB rays in the skin. 7-dihydrocholesterol has the ability to bind rapidly to albumin and vitamin D binding proteins (DBD) and is inactivated. With this feature can be transported quickly to the liver. The circulating 7-dihydrocholesterol is hydrolyzed in the liver by the action of CYP2R1 and CYP27A1 enzymes. As a result of this hydrolysis, the 25-hydroxy vitamin D [25 (OH) D], which is the circulating baseline vitamin D metabolite, is synthesized. This metabolite is the most commonly used parameter in deciding the vitamin D level of an individual. In the

kidneys, 25 (OH) D is converted to the active form of vitamin D, calcitriol [1,25 (OH) 2D]. The enzyme that performs these reactions is 1-a-hydroxylase (CYP27B1). The CYP27B1 enzyme is under strict control by the hormones parathyroid hormone (PTH) and fibroblast growth factor-23 (FGF-23) to inhibit hypercalcemia. If necessary, CYP27B1 may be inhibited or the activity of the enzyme CYP24A1 may result in the conversion of calcitriol to calcitic acid. Calcitroic acid is water-soluble and is an inactive form that is disposable by urine (Bikle, 2014; Christakos, 2010; Lehmann & Meurer, 2010).

VITAMIN D AND NERVOUS SYSTEM

The involvement of vitamin D in the function of the nervous system is supported by the presence of the enzyme 25(OH)D3-1a-hydroxylase (Wrzosek et al., 2013). The major metabolites of vitamin D include 25(OH)D3, $1,25(OH)_2D3$ and 24,25(OH)2D3, and these are present in human cerebrospinal fluid (CSF). In a similar fashion to other neurosteroids, vitamin D metabolites have been found to cross the blood brain barrier. Blood brain barrier permeability may not be necessary, however, because the P450 enzymes involved with the conversion of 25(OH)D3 to 1,25(OH)2D3 and 1,25(OH)2D3 to 24,25(OH)2D3 (1-alpha-hydroxylase enzyme and 24-hydroxylase enzyme respectively) are present in the brain. 1-alpha-hydroxylase has been identified in fetal human brain, cultured glial cells and throughout the adult human brain. In the adult brain, 1-alpha-hydroxylase was present in both neurons and glia and was most strongly expressed in the substantia nigra and the supraoptic and paraventricular nuclei of the hypothalamus. This indicates that the brain has the potential to synthesize the active metabolite 1,25(OH)2D3. As well as the VDR protein is expressed throughout human and rat brains in the pontine–midbrain area, cerebellum, thalamus, hypothalamus, basal ganglia, hippocampus, olfactory system and the temporal, orbital and cingulate cortices (Harms et al., 2011).

One of the influence of the active form of vitamin D on the nervous system is associated with modifying the production and release of neurotrophic factors such as nerve growth factor (NGF), which is essential for neuron differentiation, as well as increasing the levels of glial cell line-derived neurotrophic factor (GDNF) (Wrzosek et al., 2013). Vitamin D has also been shown to up-regulate neurotrophin 3 (NT3) whereas downregulate neurotrophin 4 (NT4) (Neveu et al., 1994b). In addition, vitamin D increases neurite outgrowth, when added to cultured hippocampal cells (Brown et al., 2003).

In addition to vitamin D's role in neuronal growth and survival, vitamin D and its metabolites have been shown to mediate the synthesis of a variety of neurotransmitters, such as acetylcholine via increased gene expression of the enzyme choline acetyltransferase (CAT), catecholamines via stimulating the expression of tyrosine hydroxylase, serotonin and dopamine (DeLuca et al., 2013; Wrzosek et al., 2013).

Vitamin D has also neuroprotective effect. The administration of vitamin D or its metabolites has been shown to reduce neurological injury and/or neurotoxicity. It is mostly because of the involvement of vitamin D3 to synthesis of proteins binding calcium (Ca+2) ions (e.g., parvoalbumin) and thus maintaining cellular calcium homeostasis, which is very important for brain cell function. Moreover, 1,25(OH)2D3 administration was shown to down-regulate L-type voltage-sensitive Ca2+ channel expression in rat hippocampal cultures. This indicates the protective effect of the

hormonal form of vitamin D on the brain via a reduction in the influx of calcium ions into neurons. Physiologically, an increase in calcium (Ca^{2+}) ions in nerve cells contributes to an increased release of glutamic and asparaginic acids that stimulate the N-methyl-D-aspartate (NMDA) receptors to open the calcium channels, which results in nerve cell depolarization and increased influx of Ca^{2+} ions through the voltage-dependent calcium channels. Increased levels of these ions in cytosol lead to the fusion of synaptic vesicles with the presynaptic membrane and the release of transmitters. Excess calcium in nerve cells can contribute to excitotoxicity because it leads to an increased release of stimulating amino acids and other neurotransmitters, the activation of nitric oxide synthase (NOS), and the formation of reactive oxygen species (ROS), as well as the activation of proteases and lipases, leading to plasmic and mitochondrial membrane damage (Brewer et al., 2001; Wrzosek et al., 2013).

The other neuroprotective effects of vitamin D:

- Reducing neurotoxicity associated with ischemia via increasing GDNF levels (Wang et al., 2000)
- Reducing neurotoxicity associated to experimental diabetic neuropathy via inducing nerve growth (Riaz et al., 1999)
- Reducing 6-hydroxydopamine-induced neurotoxicity (Wang et al., 2001)
- Increasing γ-glutamyl transpeptidase (only enzyme able to achieve the hydrolysis of extracellular glutathione) activity and decreases the synthesis of ınducible nitric oxide synthase (iNOS) in brain (Garcion et al., 1996; Garcion et al., 1999)
- Increasing glutathione concentration in brain (Garcion et al., 1999)

Finally, vitamin D has a crucial role in neuroplasticity. Gene array and proteomic studies on brains of adult rats deprived of vitamin D during gestation have demonstrated many genes involved in nervous system development that are differentially regulated. In particular, vitamin D deficiency has been shown to affect the transcript profiling of a multitude of genes, including those involved in (i) cytoskeletal maintenance (e.g. RhoA, microtubule associated protein-2, growth associated protein-43, neurofilament-light chain, glial fibrillary acidic protein); (ii) mitochondrial function (e.g. ATPase H^+ transporting V1B2, Mn-containing superoxide dismutase, cytochrome c, catalase); (iii) synaptic plasticity (e.g. aquaporin-4, apolipoprotein B, myristoylated alanin-rich C kinase substrate); and (iv) cellular proliferation and growth (e.g. growth arrest and DNA-damage-inducible 45 alpha growth arrest specific 5, insulin-like growth factor 1 (DeLuca et al., 2013; Ko et al., 2004) . But though this finding high vitamin D supplementation didn't affect neuroplasticity in older adults in a double-blinded, placebo-controlled randomised trial (Pirotta et al., 2015).

Most of the actions of vitamin D in neurons are summarised in Figure 1 (Fernandes de Abreu et al., 2009).

VDR is expressed by all neural cells while 1-a-hydroxylase is found only in neurons and astrocytes. 1,25(OH)2D stimulates the expression of choline acetyl transferase (ChAT) and tyrosine hydroxylase (TH) in dopaminergic neurons. 1,25(OH)2D is a potent modulator of neurotrophin expression: in astrocytes, NGF, NT-3 and GDNF are up-regulated while NT-4 is down-regulated. In neurons, 1,25(OH)2D modulates the activity of L-type calcium channels (L-Ca^{2+}). It also plays a protective role by stimulating the production of g-glutamyl transpeptidase (g-GT) and decreasing the synthesis of Inducible Nitric Oxide Synthase (iNOS) in the astrocytes. VDR: vitamin D receptor NGF: neuron growth factor; NT-3: neurotrophine-3; GDNF: glial cell line-derived neurotrophic factor; NT-4:

neurotrophine-4.

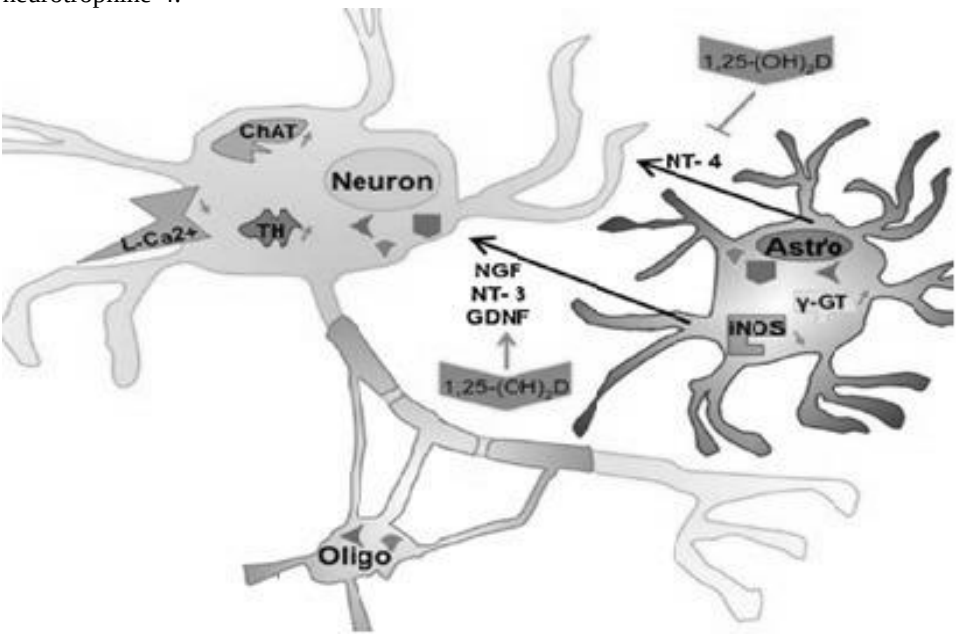

Figure 1. Vitamin D and CNS Cells (Fernandes de Abreu et al. (2009)

RELATIONSHIP BETWEEN VITAMIN D AND ALZHEIMER'S DISEASE

The increase in the elderly population in Turkey and in the world has increased the frequency of health problems seen in the elderly (Özenoğlu & Sökülmez 2013). Alzheimer's disease was first described by the German neuropathologist Alois Alzheimer in 1906 and is a progressive memory loss pattern characterized by cell loss in neural structures (Michel & Bernardino, 2007).

Alzheimer's disease is the most common of all dementia diseases. Approximately 75% of the 35 million dementia patients worldwide have Alzheimer type dementia, and this prevalence is predicted to double in 20 years (Povova et al., 2012).

If we look at the studies about the incidence of the disease, 2 studies on individuals over 65 years; it can be argued that 15 out of 1000 people get this disease every year and this rate is found as 13,0 and 16,9 for women and men, respectively (Kawas et al., 2000; Kukull et al., 2002).

The most important and irreversible risk factor for Alzheimer's disease is age. Over the age of 65 years, the prevalence doubles every five years (Gürvit et al., 2008; Reitz et al., 2011). Down syndrome, low education level, frequent head trauma, sex (being female) are among the risk factors of Alzheimer's (Karaman, 2002).

Macroscopic pathological findings of Alzheimer's disease have been reported to be atrophy in the brain, narrowing in the gyrus, dilation in the sulcus and ventricles. Neurofibrillary tangles (NFT) accumulating in the neuron, amyloid plaques showing extracellular accumulation and neuronal losses are also considered to be basic microscopic changes of the disease (Chung, 2009). The major component of amyloid plaques is amyloid-β proteins (Aβ). Increased inflammatory responses in the brain with

Aβ accumulation are the main reasons for cognitive performance decline (Kumar et al., 2015; Zhang et al., 2015).

It has been reported that increased Ca^{+2} concentration in the brain in Alzheimer's disease causes activation of neutral proteinases activated by this ion, resulting in the formation of amyloid plaques and NFT (Edelberg, 1996). One of the function of vitamin D is calcium homeostasis in the brain (Eyles et al., 2005).

The first association between alzheimer and vitamin D was established in 1992 by Sutherland et al. Sutherland and colleagues (1992) found that decreased mRNA VDR levels in brain of alzheimers disease patients. It has been shown that VDR is present in many cells such as oligodendrocytes, neurons, brain endothelial cells and glial cells (Landel et al. 2016).

It is known that Vitamin D_3 is involved in neurological protection and exhibits neuroprotective effects by modulating neuronal calcium homeostasis and production of neurotrophins. The first study in genetic areas about the relationship between alzheimer disease and vitamin D was conducted by Gezen Ak et al. (2007). A study proved that polymorphisms in VDR genes are associated to increased risk of alzheimer disease (Gezen Ak et al., 2012).

In an experimental control study, it has been shown that the use of vitamin D_3 supplementation for 6 months in addition to memantine therapy affects cognitive performance in alzheimer patients positively (Annweiler, 2012).

Some Alzheimer disease mouse model studies demonstrated that Vitamin D_2 supplementation or vitamin D_3 injection enhanced cognitive performance, learning and memory (Bennett et al., 2013; Durk et al., 2014).

VITAMIN D AND PARKINSON DISEASE

Parkinson's disease (PD) is a neurodegenerative disease characterized by the cardinal features of tremor, rigidity, akinesia, and postural instability. Pathologically, PD affects the central dopaminergic pathways with neuronal loss and a-synuclein aggregates in multiple brain regions (DeLuca et al., 2013). As reported before, vitamin D increases the rate of neurotrophic factors such as GDNF in the substratum nigra or striatum, and also protects dopaminergic neurons from cell death when exposed to toxic agents (Mpandzou et al., 2016). Also vitamin D plays a role for modulating the activation of Matrix Metalloproteinases (MMPs) which involves the degeneration of dopaminergic neurons in PD (McClain et al., 2009). On the other hand, the oxidative stress and inflammation play important role in the development of Parkinson disease with damaging the dopaminergic neurons. Vitamin D protects neurons from oxidative stress via inducing the expression of several molecules involved in the antioxidant defense system including GSH, GSH peroxidase and superoxide dismutase (SOD) and suppressing the expression of NADPH oxidase (Mokhtari et al., 2017). Vitamin D also inhibits inflammation via reducing prostaglandin synthesis (Aparna et al., 2008). As well as there are some genomic factors associated with vitamin D in Parkinson's disease:

Several genes in the Major Histocompatibility Complex (MHC) region promote susceptibility to PD (Lương & Nguyễn, 2012). Significantly increased levels of MHC class II expressions were detected in the cerebrospinal fluid (CSF) monocytes of PD patients. And calcitriol (1,25-dihydroxyvitamin D3) has an inhibitory effect on MHC

class II antigen expression by professional antigen-presenting cells (Tokuda & Levy, 1996).

The primary function of the The Renin-Angiotensin System (RAS) maintains fluid homeostasis and regulate blood pressure. Several components of the RAS and its receptors are found in the CNS. ACE inhibitors known as inactivator of RAS (Lương & Nguyễn, 2012). The ACE inhibitor perindopril has been shown to exert beneficial effects on the dopaminergic system (Reardon et al., 2000). 1,25-dihydroxyvitamin D(3)-mediates downregulation of renin expression and RAS activity via its interaction with the vitamin D receptor (Vaidya & Williams, 2012).

Heme Oxygenase-1 (HO-1) is a stress protein that may confer cytoprotection by enhancing catabolism of pro-oxidant heme to the radical scavenging bile pigments, biliverdin, and bilirubin (Lương & Nguyễn, 2012). Serum HO-1 levels are increased in PD patients (Mateo et al., 2010). And 1,25-D3 administration alters the expression of HO-1 and GFAP in glial cells, either directly or indirectly and 1,25-D3 has protective effects at the cellular level in regions affected by secondary injury-related responses (Oermann et al., 2004).

Poly(ADP-Ribose) Polymerase-1 (PARP-1) is a nuclear protein that can promote either neuronal death or survival under certain stress conditions. Overexpression of PARP-1 has been reported in the dopaminergic neurons of the SN in PD (Lương & Nguyễn, 2012; Soós et al., 2004). The active metabolite of vitamin D acted as a PARP-1 inhibitor. The UV irradiation–mediated PARP activation in human keratinocytes was inhibited by treatment with vitamin D, 7-dehydrocholesterol, or 1α,25-dihydroxyvitamin D3 (Mabley et al., 2007).

Sp1 transcription factor is a member of an extended family of DNA-binding proteins that is acetylated in response to oxidative stress in neurons. The Sp1 family of proteins plays an important role in controlling the expression of the dopamine transporter gene within dopaminergic neurons and also regulates expression of rat dopamine receptor gene (Lương & Nguyễn, 2012). And researchers determined that the mVDR promoter is controlled by the Sp1 sites and is the main VDR promoter in intestine and kidney (Jehan & DeLuca, 2000).

The prevalence of vitamin D deficiency appears to be higher in persons with PD than other populations. Sleeman et al. (2017) reported that patients with incident PD had significantly lower serum 25(OH)D concentrations than age-matched controls. In a study individuals with higher serum vitamin D concentrations showed a reduced risk of Parkinson's disease. Those with PD had a borderline significance lower mean vitamin D level of 11.5(5.8) ng/mL vs. 13.1(6.1) ng/mL But study has some residual confoundings (Knekt et al., 2010). In a systematic review it's shown that serum 25(OH) D levels tend to be low in PD. And it supports possible protective and symptomatic effects of vitamin D in PD (Rimmelzwaan et al., 2016).

Furthermore, in a randomized double blinded controlled study that consists of patients who were randomly assigned to receive vitamin D3 supplements (n = 56; 1200 IU/d) or a placebo (n = 58) for 12 months vitamin D3 significantly prevented deterioration of the HY stage and stabilized PD for a short period in PD patients. They also examined VDR FokI and FokI TT genotypes but not FokI CC genotypes modified the effect of vitamin D3 (Suzuki et al., 2013).

VITAMIN D AND AMYOTROPHIC LATERAL SCLEROSIS

Amyotrophic lateral sclerosis (ALS) is a progressive neurodegenerative disease affecting both the central and peripheral nervous systems. The epidemiological evidence incriminating vitamin D as a possible risk factor in ALS is sparse. The relatively low population prevalence probably contributes but there may be no association. Similar to PD, studies have highlighted that vitamin D deficiency is prevalent in patients with ALS. However, it is probable that this is secondary to the consequences of the disease, such as decreased UVB exposure from reduced mobility and advance aged. The impact of vitamin D supplementation on subsequent disease susceptibility and progression in ALS is not known (DeLuca et al., 2013).

CONCLUSION

Vitamin D deficiency presumably plays a causative role in the pathogenesis and course of various neurodegenerative diseases. But still there are some points about vitamin D that need to clarify. First of all, neurodegenerative diseases are mostly genetic diseases that have different genetic variations. Genotypes of which vitamin D is effective should be determined. And suggestions about vitamin D should be personalized. For second, prospective studies are needed to evaluate the eligibility of vitamin D-related parameters in models or tools to predict the development or course of diseases. Third, it's still undetermined whether normal serum levels or a personalized high-dose vitamin D supplementation are superior in the prevention or modification of diseases. Therefore, normal serum vitamin D levels should be provided in patients but higher vitamin D levels for protection or cure is uncertain and more studies should be done about this point.

REFERENCES

Akpınar, P.; İçağasıoğlu, A.D. (2012). Vitamininin Yaşam Kalitesi Ile Ilişkisi. Türk Osteoporoz Dergisi 18: (1), 13-18.

Annweiler, C.; Herrmann, F.R.; Fantino, B.; Brugg, B.; Beauchet, O. (2012). Effectiveness of The Combination of Memantine Plus Vitamin D on Cognition in Patients with Alzheimer Disease: A Pre-Post Pilot Study. Cognitive and Behavioral Neurology 25: (3), 121-127.

Aparna, R.; Subhashini, J.; Roy, K.R.; Reddy, G.S.; Robinson, M.; Uskokovic, M.R.; Venkateswara R.; Reddanna, P. (2008). Selective Inhibition of Cyclooxygenase-2 (COX-2) by 1α, 25-dihydroxy-16-ene-23-yne-vitamin D3, A Less Calcemic Vitamin D Analog. Journal of Cellular Biochemistry, 104:(5), 1832-1842

Battault, S.; Whiting, S.J.; Peltier, S.L.; Sadrin, S.; Gerber, G.; Maixent, J. M. (2013). Vitamin D Metabolism, Functions and Needs: From Science to Health Claims. European Journal of Nutrition 52: (2), 429-441.

Bennett, L.; Kersaitis, C.; Macaulay, S.L.; Munch, G.; Niedermayer, G.; Nigro, J.; Payne, M.; Sheean, P.; Vallotton, P.; Zabaras, D.; Bird, M. (2013). Vitamin D2-Enriched Button Mushroom (Agaricus Bisporus) Improves Memory in Both Wild Type and Appswe/PS1dE9 Transgenic Mice. PLoS One 8: (10), e76362.

Bikle, D.D. (2014). Vitamin D Metabolism, Mechanism of Action, and Clinical Applications. Chemistry & Biology 21: (3), 319-329.

Bouillon, R.; Norman, A. W.; Lips, P. (2007). Vitamin D Deficiency. The New England Journal of Medicine, 357: (19), 1980-1981.

Brewer, L. D.; Thibault, V.; Chen, K.-C.; Langub, M.C.; Landfield, P. W.; Porter, N. M. (2001). Vitamin D hormone Confers Neuroprotection in Parallel with Downregulation of L-Type Calcium Channel Expression in Hippocampal Neurons. Journal of Neuroscience, 21: (1), 98-108.

Brown, J.; Bianco, J.I; McGrath, J.J; Eyles, D.W. (2003). 1,25-Dihydroxyvitamin D3 Induces Nerve Growth Factor, Promotes Neurite Outgrowth and Inhibits Mitosis In Embryonic Rat Hippocampal Neurons. Neuroscience Letters, 343, 139-143

Calvo, M. S.; Whiting, S. J. (2005). Overview of The Proceedings from Experimental Biology 2004 Symposium: Vitamin D Insufficiency: A Significant Risk Factor in Chronic Diseases and Potential Disease-Specific Biomarkers of Vitamin D Sufficiency. The Journal of Nutrition 135: (2), 301-303.

Christakos, S.; Ajibade, D. V.; Dhawan, P.; Fechner, A. J.; Mady, L. J. (2010). Vitamin D: Metabolism. Endocrinology and Metabolism Clinics 39: (2), 243-253.

Chung, S.H. (2009). Aberrant Phosphorylation İn The Pathogenesis of Alzheimer's Disease. BMB Reports 42: 467-74.

DeLuca, G.; Kimball, S.; Kolasinski, J;, Ramagopalan, S.; Ebers, G. (2013). The Role of Vitamin D In Nervous System Health And Disease. Neuropathology and Applied Neurobiology, 39: (5), 458-484.

Durk, M.R.; Han, K.; Chow, E.C.; Ahrens, R.; Henderson, J.T.; Fraser, P.E.; Pang, K.S. (2014). 1alpha,25-Dihydroxyvitamin D3 Reduces Cerebral Amyloid-Beta Accumulation and Improves Cognition in Mouse Models Of Alzheimer's Disease. The Journal of Neuroscience 34: 7091-7101.

Edelberg, H.K.; Wei, J.Y. (1996). The Biology of Alzheimer's Disease. Mechanisms of Ageing and Development 91:95-114.

Eyles, D. W.; Smith, S.; Kinobe, R.; Hewison, M.; McGrath, J. J. (2005). Distribution of The Vitamin D Receptor and 1α-Hydroxylase in Human Brain. Journal of Chemical Neuroanatomy, 29: (1), 21-30.

Fernandes de Abreu, D.A.; Eyles, D.; Féron, F. (2009). Vitamin D, A Neuro-Immunomodulator: Implications for Neurodegenerative and Autoimmune Diseases. Psychoneuroendocrinology, 34, 265-277.

Garcion, E.; Do Thanh, X.; Bled, F.; Teissier, E.; Dehouck, M.; Rigault, F.; Brachet, P.; Girault, A.; Torpier, G.; Darcy, F. (1996). 1, 25-Dihydroxyvitamin D3 Regulates γ-Glutamyl Transpeptidase Activity in Rat Brain. Neuroscience Letters, 216: (3), 183-186.

Garcion, E.; Sindji, L.; Leblondel, G.; Brachet, P.; Darcy, F. (1999). 1, 25-Dihydroxyvitamin D3 Regulates the Synthesis of γ-Glutamyl Transpeptidase and Glutathione Levels in Rat Primary Astrocytes. Journal of Neurochemistry, 73: (2), 859-866.

Gezen-Ak, D.; Dursun, E.; Ertan, T.; Hanagasi, H.; Gurvit, H.; Emre, M.; Eker, E.; Ozturk, M.; Engin, F.; Yilmazer, S. (2007). Association between Vitamin D Receptor Gene Polymorphism and Alzheimer's Disease. The Tohoku Journal of Experimental Medicine 212: 275-282.

Gezen-Ak, D.; Dursun, E.; Bilgic, B.; Hanagasi, H.; Ertan, T.; Gurvit. H.; Emre, M.; Eker, E.; Ulutin, T.; Uysal, O.; Yilmazer, S. (2012). Vitamin D Receptor Gene Haplotype is Associated with Late-Onset Alzheimer's Disease. The Tohoku Journal of Experimental Medicine 228: 189-196.

Gürvit, H.; Emre, M.; Tinaz, S. (2008). The Prevalence of Dementia in An Urban Turkish Population. American Journal of Alzheimer's Disease and Other Dementias 23: (1), 67-76.

Harms, L. R.; Burne, T.H.; Eyles, D.W.; McGrath, J.J. (2011). Vitamin D and the Brain.

Best Practice & Research Clinical Endocrinology & Metabolism, 25(4), 657-669.
Holick, M. F. (2007). Vitamin D Deficiency. New England Journal of Medicine 357: (3), 266-281.
Jehan, F. & DeLuca, H. F. (2000). The Mouse Vitamin D Receptor Is Mainly Expressed Through an Sp1-Driven Promoter In Vivo. Archives of Biochemistry and Biophysics, 377(2), 273-283.
Karaman, Y. (2002). Alzheimer Hastalığı ve Diğer Demanslar. Lebib Yalkın Matbaası 1. Baskı. Ankara.
Kawas, C.; Grey, S.; Brookmeyer, R.; Fozard, J.; Zonderman, A. (2000). Age- spesific Incidence Rates of Alzheimer's Disease: The Baltimore Longitunial Study of Aging. Neurology 54: 2072-2077.
Knekt, P.; Kilkkinen, A.; Rissanen, H.; Marniemi, J.; Sääksjärvi, K.; Heliövaara, M. (2010). Serum Vitamin D and the Risk of Parkinson Disease. Archives of Neurology, 67(7), 808-811.
Ko, P.; Burkert, R.; McGrath, J.; Eyles, D. (2004). Maternal Vitamin D3 Deprivation and the Regulation of Apoptosis and Cell Cycle During Rat Brain Development. Developmental Brain Research, 153(1), 61-68.
Kukull, W.A.; Higdon, R.; Bowen, J.D.; Mccormick, W.C.; Teri, L.; Schellenberg, G.D.; Van Belle, G.; Jolley, L.; Larson, E.B. (2002). Dementia and Alzheimer's Disease Incidence: A prospective cohort study. Archives of Neurology 59: 1737-1746.
Kumar, A., Singh, A., Ekavali. (2015). A Review on Alzheimer's Disease Pathophysiology and Its Management: An Update. Pharmacological Reports 67: 195-203.
Lamberg-Allardt, C. (2006). Vitamin D in Foods and As Supplements. Progress in Biophysics and Molecular Biology 92: (1), 33-38.
Landel, V.; Annweiler, C.; Millet, P.; Morello, M.; Féron, F. (2016). Vitamin D, Cognition and Alzheimer's Disease: The Therapeutic Benefit Is in the D-Tails. Journal of Alzheimer's Disease 53: (2), 419-444.
Lehmann, B.; Meurer, M. (2010). Vitamin D Metabolism. Dermatologic Therapy 23: (1), 2-12.
Lương, K. & Nguyễn, L. (2012). Role of Vitamin D in Parkinson's Disease. ISRN Neurology, 2012.
Mabley, J. G.; Wallace, R.; Pacher, P.; Murphy, K.; Szabo, C. (2007). Inhibition of Poly (Adenosine Diphosphate-Ribose) Polymerase by the Active Form of Vitamin D. International Journal of Molecular Medicine, 19: (6), 947-952.
Mateo, I.; Infante, J.; Sánchez-Juan, P.; García-Gorostiaga, I.; Rodríguez-Rodríguez, E.; Vázquez-Higuera, J.; Berciano, J.; Combarros, O. (2010). Serum Heme Oxygenase-1 Levels Are Increased in Parkinson's Disease But Not In Alzheimer's Disease. Acta Neurologica Scandinavica, 121: (2), 136-138.
McClain, J.A.; Phillips, L.L.; Fillmore, H.L. (2009). Increased MMP-3 and CTGF Expression during Lipopolysaccharide-Induced Dopaminergic Neurodegeneration. Neuroscience Letters, 460: (1), 27-31.
Michel, G.; Bernardino, G. (2007). Alois Alzheimer: His life and Times. Brain Pathology 17: 57–62.
Mokhtari, Z.; Hekmatdoost, A.; Nourian, M. (2017). Antioxidant Efficacy of Vitamin D. Journal of Parathyroid Disease, 5:(1), 11-16.
Mpandzou, G.; Aït Ben Haddou, E.; Regragui, W.; Benomar, A.; Yahyaoui, M. (2016). Vitamin D Deficiency and Its Role in Neurological Conditions: A Review. Revue Neurologique (Paris), 172: (2), 109-122.
Neveu, I.; Naveilhan, P.; Jehan, F.; Baudet, C.; Wion, D.; De Luca, HF.; Brachet, P. (1994).

1,25-Dihydroxyvitamin D3 Regulates the Synthesis of Nerve Growth Factor in Primary Cultures of Glial Cells. Brain Research, Molecular Brain Research, 24, 70-76.

Oermann, E.; Bidmon, H.-J.; Witte, O.-W.; Zilles, K. (2004). Effects of 1α,25 Dihydroxyvitamin D3 On the Expression of HO-1 and GFAP In Glial Cells of the Photothrombotically Lesioned Cerebral Cortex. Journal of Chemical Neuroanatomy, 28: (4), 225-238.

Özenoğlu, A.; Sökülmez, P. (2013). Hastalıklarda Beslenme Tedavisi. 1. Baskı. Ankara: Hatiboğlu Yayınları s. 757-805.

Pirotta, S.; Kidgell, D.; Daly, R. (2015). Effects of vitamin D Supplementation on Neuroplasticity In Older Adults: A Double-Blinded, Placebo-Controlled Randomised Trial. Osteoporosis International, 26:(1), 131-140.

Povova, J.; Ambroz, P.; Bar, M.; Pavukova, V.; Sery, O.; Tomaskova, H.; Janout, V. (2012). Epidemiological of And Risk Factors for Alzheimer's Disease. Biomedical Papers of The Medical Faculty of The University Palacký, Olomouc, Czechoslovakia 156: (2), 108-114.

Reardon, K.; Mendelsohn, F.; Chai, S.; Horne, M. (2000). The Angiotensin Converting Enzyme (ACE) Inhibitor, Perindopril, Modifies the Clinical Features Of Parkinson's Disease. Internal Medicine Journal, 30:(1), 48-53.

Reitz, C.; Brayne, C.; Mayeux, R. (2011). Epidemiology of Alzheimer Disease. Nature Reviews Neurology 7: 137-152.

Riaz, S.; Malcangio, M.; Miller, M.; Tomlinson, D. (1999). A Vitamin D3 Derivative (CB1093) Induces Nerve Growth Factor and Prevents Neurotrophic Deficits In Streptozotocin-Diabetic Rats. Diabetologia, 42:(11), 1308-1313.

Rimmelzwaan, L.M.; Van Schoor, N.M.; Lips, P.; Berendse, H.W.; Eekhoff, E.M. (2016). Systematic Review of The Relationship Between Vitamin D and Parkinson's Disease. Journal of Parkinson's Disease, 6:(1), 29-37.

Sleeman, I.; Aspray, T.; Lawson, R.; Coleman, S.; Duncan, G.; Khoo, T. K.; Schoenmakers, I.; Rochester, L.; Burn, D.; Yarnall, A. (2017). The Role of Vitamin D in Disease Progression in Early Parkinson's Disease. Journal of Parkinson's Disease, 7:(4), 669-675.

Soós, J.; Engelhardt, J.I.; Siklós, L.; Havas, L.; Majtényi, K. (2004). The Expression of PARP, NF-κB and Parvalbumin Is Increased In Parkinson Disease. Neuroreport, 15:(11), 1715-1718.

Suzuki, M.; Yoshioka, M.; Hashimoto, M.; Murakami, M.; Noya, M.; Takahashi, D.; Urashima, M. (2013). Randomized, Double-Blind, Placebo-Controlled Trial of Vitamin D Supplementation In Parkinson Disease. The American Journal of Clinical Nutrition, 97:(5), 1004-1013.

Sutherland, M.K.; Somerville, M.J.; Yoong, L.K.; Bergeron, C.; Haussler, M.R.; McLachlan, D.R. (1992). Reduction of Vitamin D Hormone Receptor mRNA Levels in Alzheimer As Compared to Huntington Hippocampus: Correlation with Calbindin-28k mRNA Levels. Brain Research. Molecular Brain Research13: 239-250.

Tokuda, N. & Levy, R. B. (1996). 1, 25-Dihydroxyvitamin D3 Stimulates Phagocytosis but Suppresses HLA-DR and CD13 Antigen Expression in Human Mononuclear Phagocytes. Proceedings of the Society for Experimental Biology and Medicine, 211:(3), 244-250.

Vaidya, A. & Williams, J. S. (2012). The Relationship between Vitamin D and the Renin-Angiotensin System in the Pathophysiology of Hypertension, Kidney Disease, and Diabetes. Metabolism, 61:(4), 450-458.

Wang, J.Y.; Wu, J.-N.; Cherng, T.-L.; Hoffer, B. J.; Chen, H.-H.; Borlongan, C.V.; Wang,

Y. (2001). Vitamin D3 Attenuates 6-Hydroxydopamine-Induced Neurotoxicity in Rats. Brain Research, 904:(1), 67-75.
Wang, Y.; Chiang, Y.-H.; Su, T.-P.; Hayashi, T.; Morales, M.; Hoffer, B.; Lin, S.-Z. (2000). Vitamin D3 Attenuates Cortical Infarction Induced by Middle Cerebral Arterial Ligation in Rats. Neuropharmacology, 39:(5), 873-880.
Wang, T. J.; Pencina, M. J.; Booth, S. L.; Jacques, P. F.; Ingelsson, E.; Lanier, K.; Vasan, R. S. (2008). Vitamin D Deficiency and Risk of Cardiovascular Disease. Circulation, 117: (4), 503-511.
Wrzosek, M.; Łukaszkiewicz, J.; Wrzosek, M.; Jakubczyk, A.; Matsumoto, H.; Piątkiewicz, P.; Radziwoń-Zaleska, M.; Wojnar, M.; Nowicka, G. (2013). Vitamin D and the Central Nervous System. Pharmacological Reports, 65:(2), 271-278.
Zhang, F.; Jiang, L. (2015). Neuroinflammation in Alzheimer's Disease. Neuropsychiatric Disease and Treatment 11, 243-256.

Chapter 53

Anthropometric Measurements as a Component of Nutritional Assessment in Hospitalized Adults

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1. Introduction

Hospitalized patients are at high risk of malnutrition (Kirkland, Kashiwagi, Brantley, Scheurer, & Varkey, 2013). Nutritional status should be assessed to determine the risk early before it causes other adverse outcomes in hospitalized patients (Avelino-Silva et al., 2014). Anthropometry is one of the simple and objective methods for nutritional assessment of patients. By using anthropometry, the adequacy of the main body components of patients can be determined (de Onis & Habicht, 1996). This section emphasizes the importance of nutritional assessment in hospitalized adults and investigates the anthropometric measurements as a component of nutritional assessment which can be utilized to determine the nutritional status of the hospitalized patients.

2. Nutritional assessment in hospitalized adults

Hospital-based malnutrition is one of the biggest problems regarding patient care. Older adults are the group that are most affected by malnutrition. Besides, malnutrition affects people of all ages (Thomas et al., 2002). In hospitalized patients, the baseline prevalence of malnutrition was 50%. Unfortunately, most of the rest develop malnutrition during hospitalization (Kirkland et al., 2013). Hospital-based malnutrition causes adverse outcomes and it is an important problem for healthcare systems (Avelino-Silva et al., 2014). In patients with malnutrition, peptic ulcer is two times and infections are three times more common than patients with no malnutrition. Malnutrition is seen in about half of the patients who fall during hospitalization (Banks, Bauer, Graves, & Ash, 2010). Furthermore, older adults who are malnourished during consultation to a hospital stay there longer and the prevalence of death in hospitals is higher for malnourished patients (Rasheed & Woods, 2013).

Early diagnosis against nutrient deficiencies in patients is important to increase the effectiveness of treatment and helps patients recover rapidly. Biochemical measurements are one of the ways for nutritional assessment, but it may be inadequate in predicting the risk of malnutrition. Therefore, weight, stature and other anthropometric measures are generally reliable measures against malnutrition risk (Care, 2006).

Nutritional screening is one of the reliable ways to determine malnutrition in

hospitalized adults. Repetitive screening tools were developed to be used by clinicians to help patients in need of more careful assessment (Care, 2006).

Subjective Global Assesment (SGA) and Mini Nutritional Assesment (MNA) are two of the most used and well accepted nutrition assesment tools available to perform nutritional screening and assessment (Olivares et al., 2014).

3. Anthropometric measurements in hospitalized patients

In hospitalized patients, nutritional assessment is an important guide to support the therapeutic intervention and monitor the effectiveness of nutritional interventions. Anthropometric measurements, especially body weight and stature, are the most widely used nutritional assessment methods (Melo, Salles, Vieira, & Ferreira, 2014). There are three aims of anthropometric nutritional assessment in the hospitalized patients. In the hospitalized patients, it is used 1- to determine protein-energy intake relative to the normal range of patient, 2- to observe the change and rate of protein- energy balance during nutritional treatment, 3-to define the risk of potential complications of undernutrition or obesity. Anthropometry is a simple, noninvasive and inexpensive method to achieve these goals (S. Heymsfield, 1990).

Anthropometric measurements such as body weight and stature are indicators of nutritional status and also are necessary for drug and nutrient therapy prescription. For example, weight measurement is required to estimate energy expenditure, plan the amount of nutrients, such as protein and lipids, for enteral/parenteral nutritional therapy (Rabito et al., 2006). Studies showed that calculation errors occur when weight and stature are estimated by visual observation (Leary, Milner, & Niblett, 2000). Estimation of body weights by medical staff have previously been shown to be inaccurate (Maskin et al., 2010). Equipment and technological solutions are required to meet the need for weighing the bedridden patients. There are scales integrated to hospital beds, but these instruments cost pretty much and generally are not used in daily life (Melo et al., 2014). Thus, several methods were developed to estimate body weight and stature from specific measures of body segments that can be measured in these patients. The most commonly used measures are skinfold thickness, arm and calf circumferences and knee height (William Cameron Chumlea, Guo, Roche, & Steinbaugh, 1988; William Cameron Chumlea, Roche, & Steinbaugh, 1985; Mitchell & Lipschitz, 1982).

Weight, stature, upper middle arm circumference, arm span, triceps skin fold thickness, subscapular skin fold thickness, ulna length, knee height and calf circumference are among the anthropometric measurements which are used in hospitalized adults. BMI, arm muscle area and arm fat area are the indexes which are used to evaluate body components (Baysal, 2008; Lee and Nieman, 2010). All of anthropometric measurements are discussed below:

3.1. *Weight and stature*

Two of the most important measurements are body weight and stature. Weight is a gross measure of the body's fluid and tissue mass, and serial weighing indicate changes in those body constituents. Marked, unintentional weight loss is generally viewed as a manifestation of serious disease (Corish & Kennedy, 2000). Weight is necessary for equations to calculate BMI and energy expenditure (William Cameron Chumlea et al., 1988). Stature is necessary for determining weight for stature and for calculating BMI, the creatinine height index, body surface area, and energy expenditure (WM Cameron

Chumlea, Guo, & Steinbaugh, 1994).

Since important clinical decisions are made based on weight and stature of patient, it is important to obtain measurements that are as accurate and precise as possible. Although the patient should be asked about his or her weight history, actual weight and stature should be measured or estimated using the appropriate equation, rather than relying on the patient's statement of his or her weight and stature (Lee and Nieman, 2010).

Body weight gain can indicate repletion of lean and fat tissues, obesity development, or abnormal accumulation of body fluids, as in edema, ascites, pleural effusion, or fluid overload in the patient receiving excessive intravenous fluid. Weight loss can represent the presence, severity, or progress of a disease or nutritional impairment. It can also be seen in patients receiving diuretics, which increase renal excretion of water. Depletion of lean body mass can be masked by the simultaneous retention of fluid. For these reasons, body weight measurements need to be carefully scrutinized (Lee and Nieman, 2010).

Comparing body weight to reference weight interval is one of the ways to assess body weight. This can also be called as a percent of desirable body weight. The following equation is used for calculating percent of desirable weight (relative weight):

$$\text{Percent desirable body weight} = \frac{\text{Current weight}}{\text{"Desirable", or reference, weight}} \quad \text{x } 100$$

The value for desirable or reference weight depends on what kind of a reference that has been chosen by a particular health care facility its standard. If the patient's percent of desirable body weight (%DBW) is 80%, he or she is 20% below desirable body weight. Many authors regard a %DBW of < 80% as substandard (Ireton-Jones, 1992).

One way to assess the change in body weight is to calculate percent of usual weight. This can be done using the following equation (Corish & Kennedy, 2000):

$$\text{\% usual weight} = \frac{\text{Current or admit weight}}{\text{Usual weight}} \text{ x } 100$$

Information about usual weight can be obtained from the patient, a person close to the patient, nurses' notes, or medical records of previous consultations. An alternative approach to assess recent changes in body weight is to calculate percent of weight change using the following equation:

$$\text{\% weight change} = \frac{\text{Usual weight} - \text{Current weight}}{\text{Usual weight}} \text{ x } 100$$

A < 5% weight loss is considered small, while 5% to 10% weight loss is considered potentially significant, and > 10% weight loss is considered definitely significant (Corish & Kennedy, 2000). Rapid changes should be observed in body weight.

3.2. *Knee height*

When patients cannot stand up for stature measurements or stature is likely to be inaccurate because of skeletal deformity, it can be estimated from knee height (WM Cameron Chumlea et al., 1994).

3.3. *Midarm Circumference*

Midarm circumference (MAC), also known as upper midarm circumference, can be used in equations for calculating arm muscle area and estimated body weight

(Chumlea and Roche, 1988). MAC is an indicator of muscle and subcutaneous adipose tissue. It is an accepted measure of nutritional status (Falciglia, O'Connor, & Gedling, 1988).

3.4. *Calf Circumefrence*

Calf circumference is used in some equations for estimating body weight and a measure of muscle and subcutaneous adipose tissue. In elderly men, it is significantly correlated with lean body mass (Wm C Chumlea, Roche, & Webb, 1984).

3.5. *Estimating body weight*

Most patients can be weighed on scales, but it is sometimes difficult or impossible to obtain a patient's weight. This case may be due to medical condition of patient, equipment attached to the patient or lack of a suitable bed or wheelchair scale. When it is difficult or impossible to obtain a patient's body weight directly, it can be estimated from various anthropometric measures (that are knee height, midarm circumference, calf circumference, and subscapular skinfold thickness) using the equations. The decision of which equation to be used will depend on the patient's age and the anthropometric measures that can be obtained or are available. Equations for estimating body weight from knee height (KH) and midarm circumference (MAC) according to age and gender are given in Table 1 (Lee and Nieman, 2010).

Table 1. Equations for estimating body weight from knee height (KH) and midarm circumference (MAC) according to age and gender

Age groups/Gender	**Equation**
Females	
6-18	(KH x 0.77) + (MAC x 2.47) - 50.16
19-59	(KH x 1.01) + (MAC x 2.81) - 66.04
60-80	(KH x 1.09) + (MAC x 2.68) - 65.51
Males	
6-18	(KH x 0.68) + (MAC x 2.64) - 50.08
19-59	(KH x 1.19) + (MAC x 3.21) - 86.82
60-80	(KH x 1.10) + (MAC x 3.07) - 75.81

3.6. *Estimating stature*

For most patients, stature can be easily obtained. However, for the individuals who are non-ambulatory or have contractures, severe arthritis, paralysis, amputations, or other conditions limiting their ability to stand erectly, stature may have to be estimated. The most common approach is to estimate stature from knee height because knee height has been shown to correlate highly with stature (Muncie, Sobal, Hoopes, Tenney, & Warren, 1987). An alternative approach is to estimate stature from either upper-arm or lower-arm length as described by Jarzem (Jarzem & Gledhill, 1993). Equations for estimating body stature from knee height (KH) according to age and gender are given in Table 2 (WM Cameron Chumlea et al., 1994).

Table 2. Equations for estimating stature from knee height (KH) and age (A) according to age and gender

Age groups/Gender	Equation
Females	
6-18	(KH x 2.15) + 43.21
19-59	(KH x 1.86) - (A x 0.05) + 70.25
60-80	(KH x 1.91) - (A x 0.17) + 75.00
Males	
6-18	(KH x 2.22) + 40.54
19-59	(KH x 1.88) + 71.85
60-80	(KH x 2.08) + 59.01

3.7. *Skinfold Measurements*

Skinfold measurement is the thickness of a double fold of skin and compressed subcutaneous adipose tissue. It is the most widely used method to estimate percent body fat indirectly in clinical settings (Martin, Ross, Drinkwater, & Clarys, 1985). Although more accurate methods to assess percent body fat exist, skinfold measurement has following advantages: the equipment needed is inexpensive and takes up little space; measurements are easily and quickly obtained; and, when correctly done, skinfold measurement provides estimates of body composition that correlate well with those derived from hydrostatic weighing, and finally, it is the most widely used laboratory method for determining body composition. Because of its accessibility, the triceps is the most commonly measured area (Lee and Nieman, 2010). Several types of skinfold calipers are available. Harpenden calipers are highly recommended because these were used in developing prediction equations and reference values (Ross, Pate, Delpy, Cold, & Svilar, 1987).

3.8. *Arm Muscle Area*

Arm muscle area is used as an index of lean tissue or muscle in the body (Avelino-Silva et al., 2014). This is based on the observation that an organism facing nutritional deprivation draws on its nutritional reserves in the form of adipose tissue, visceral protein, and skeletal protein. In the case of upper-arm anthropometry, thickness of the triceps skinfold is used as an index of fat stores, and arm muscle size is used to represent muscle protein reserves. As the size of arm muscle changes in response to growth, development, and nutritional status, the resulting change in arm muscle area is greater than the change in midarm circumference. Consequently, changes in upper-arm musculature are not as easily detected by measurement of MAC as by measurement of AMA. Therefore, AMA is the preferred nutritional index (Frisancho, 1981).

AMA is related to total body muscle mass in adults (S. B. Heymsfield, McManus, Smith, Stevens, & Nixon, 1982). It is particularly valuable in assessing individuals with edema, whose body weights would be augmented by increased intracellular water, and individuals who have undergone amputation. AMA is estimated from the triceps skinfold measurement and midarm circumference (S. B. Heymsfield et al., 1982). The standard equation for calculating arm muscle area is:

AMA = $\frac{[MAC-(\pi \times TSF)]^2}{4\pi}$ where AMA = arm muscle area in mm²; MAC = midarm circumference in mm; and TSF = triceps skinfold thickness in mm.

Heymsfield and coworkers developed the following revised equations, which partially correct for the overestimation of AMA by subtracting a constant that accounts for the presence of bone, nervous tissue, and vascular tissue in the upper arm (S. B. Heymsfield et al., 1982):

cAMA for females = $\frac{[MAC-(\pi \times TSF)]^2}{4\pi}$ - 6.5

cAMA for males = $\frac{[MAC-(\pi \times TSF)]^2}{4\pi}$ - 10 where cAMA = corrected arm muscle area in cm² ; MAC = midarm circumference in cm; and TSF = triceps skinfold thickness in cm.

4. Conclusion

Hospital malnutrition is often overlooked and adversely affects patient outcomes. Clinicians should include nutritional assessment as part of their hospital practice to avoid hospital malnutrition (Guenter et al., 2015). Anthropometric measurement is one of the most used methods to evaluate nutritional status in hospitalized patients. BMI, arm muscle area and skinfold measures are useful to evaluate body components. For bedridden patients, there are equations to identify body weight and stature by using different anthropometric measurements (subscapular skinfold, calf circumference, knee height, and midarm circumference etc).

REFERENCES

Avelino-Silva, T. J., Farfel, J. M., Curiati, J. A., Amaral, J. R., Campora, F., & Jacob-Filho, W. (2014). Comprehensive geriatric assessment predicts mortality and adverse outcomes in hospitalized older adults. *BMC geriatrics, 14*(1), 129.

Banks, M., Bauer, J., Graves, N., & Ash, S. (2010). Malnutrition and pressure ulcer risk in adults in Australian health care facilities. *Nutrition, 26*(9), 896-901.

Care, N. C. C. f. A. (2006). Nutrition support for adults: oral nutrition support, enteral tube feeding and parenteral nutrition.

Chumlea, W. C., Guo, S., Roche, A., & Steinbaugh, M. (1988). Prediction of body weight for the nonambulatory elderly from anthropometry. *Journal of the American Dietetic Association, 88*(5), 564-568.

Chumlea, W. C., Guo, S. S., & Steinbaugh, M. L. (1994). Prediction of stature from knee height for black and white adults and children with application to mobility-impaired or handicapped persons. *Journal of the Academy of Nutrition and Dietetics, 94*(12), 1385-1391.

Chumlea, W. C., Roche, A. F., & Steinbaugh, M. L. (1985). Estimating stature from knee height for persons 60 to 90 years of age. *Journal of the American Geriatrics Society, 33*(2), 116-120.

Chumlea, W. C., Roche, A. F., & Webb, P. (1984). Body size, subcutaneous fatness and total body fat in older adults. *International journal of obesity, 8*(4), 311-317.

Corish, C. A., & Kennedy, N. P. (2000). Protein–energy undernutrition in hospital in-patients. *British Journal of Nutrition, 83*(6), 575-591.

de Onis, M., & Habicht, J.-P. (1996). Anthropometric reference data for international use:

recommendations from a World Health Organization Expert Committee. *The American journal of clinical nutrition, 64*(4), 650-658.
Falciglia, G., O'Connor, J., & Gedling, E. (1988). Upper arm anthropometric norms in elderly white subjects. *Journal of the American Dietetic Association, 88*(5), 569-574.
Frisancho, A. R. (1981). New norms of upper limb fat and muscle areas for assessment of nutritional status. *The American journal of clinical nutrition, 34*(11), 2540-2545.
Guenter, P., Jensen, G., Patel, V., Miller, S., Mogensen, K. M., Malone, A., . . . DiMaria-Ghalili, R. A. (2015). Addressing disease-related malnutrition in hospitalized patients: a call for a national goal. *Joint Commission journal on quality and patient safety, 41*(10), 469-473.
Heymsfield, S. (1990). Anthropometric measurements: application in hospitalized patients. *Transfusion Medicine and Hemotherapy, 17*(Suppl. 3), 48-51.
Heymsfield, S. B., McManus, C., Smith, J., Stevens, V., & Nixon, D. W. (1982). Anthropometric measurement of muscle mass: revised equations for calculating bone-free arm muscle area. *The American journal of clinical nutrition, 36*(4), 680-690.
Ireton-Jones, C. (1992). Comprehensive nutritional assessment: the dietitian's contribution to the team effort. *Nutrition, 8*, 75-81.
Jarzem, P., & Gledhill, R. (1993). Predicting height from arm measurements. *Journal of pediatric orthopedics, 13*(6), 761-765.
Kirkland, L. L., Kashiwagi, D. T., Brantley, S., Scheurer, D., & Varkey, P. (2013). Nutrition in the hospitalized patient. *Journal of hospital medicine, 8*(1), 52-58.
Leary, T., Milner, Q., & Niblett, D. (2000). The accuracy of the estimation of body weight and height in the intensive care unit. *European journal of anaesthesiology, 17*(11), 698-703.
Martin, A., Ross, W., Drinkwater, D., & Clarys, J. (1985). Prediction of body fat by skinfold caliper: assumptions and cadaver evidence. *International journal of obesity, 9*, 31-39.
Maskin, L., Attie, S., Setten, M., Rodriguez, P., Bonelli, I., Stryjewski, M., & Valentini, R. (2010). Accuracy of weight and height estimation in an intensive care unit. *Anaesthesia and intensive care, 38*(5), 930.
Melo, A. P. F., Salles, R. K. d., Vieira, F. G. K., & Ferreira, M. G. (2014). Methods for estimating body weight and height in hospitalized adults: a comparative analysis. *Revista Brasileira de Cineantropometria & Desempenho Humano, 16*(4), 475-484.
Mitchell, C., & Lipschitz, D. A. (1982). Arm length measurement as an alternative to height in nutritional assessment of the elderly. *Journal of parenteral and enteral nutrition, 6*(3), 226-229.
Muncie, H. L., Sobal, J., Hoopes, J. M., Tenney, J. H., & Warren, J. W. (1987). A practical method of estimating stature of bedridden female nursing home patients. *Journal of the American Geriatrics Society, 35*(4), 285-289.
Olivares, J., Ayala, L., Salas-Salvadó, J., Muñiz, M., Gamundí, A., Martínez-Indart, L., & Masmiquel L, L. (2014). Assessment of risk factors and test performance on malnutrition prevalence at admission using four different screening tools. *Nutrición hospitalaria, 29*(3).
Rabito, E. I., Vannucchi, G. B., Suen, V. M. M., Neto, C., Lopes, L., & Marchini, J. S. (2006). Weight and height prediction of immobilized patients. *Revista de Nutrição, 19*(6), 655-661.
Rasheed, S., & Woods, R. T. (2013). Malnutrition and associated clinical outcomes in hospitalized patients aged 60 and older: an observational study in rural Wales. *Journal of nutrition in gerontology and geriatrics, 32*(1), 71-80.
Ross, J. G., Pate, R. R., Delpy, L. A., Cold, R. S., & Svilar, M. (1987). New health-related

fitness norms. *Journal of Physical Education, Recreation & Dance, 58*(9), 66-70.
Thomas, D. R., Zdrowski, C. D., Wilson, M.-M., Conright, K. C., Lewis, C., Tariq, S., & Morley, J. E. (2002). Malnutrition in subacute care. *The American journal of clinical nutrition, 75*(2), 308-313.

Chapter 54

The Relationship of Obesity with Sarcopenia in the Elderly

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INTRODUCTION

The prevalence of elderly obesity has been increasing in the last years (Ogden et al., 2006). Sarcopenia, characterized by age-related decrease in skeletal muscle mass and function, is a common medical condition nowadays (Denison et al., 2015). The World Health Organisation (WHO) reports that there are 50 million people affected by sarcopenia. It is estimated that this number will reach 200 million in the next 40 years (Cruz-Jentoft et al., 2010; Wang & Bai, 2012). Both old age and obesity have a critical impact on public health. The rapidly increasing prevalence of obesity and the aging population are thought to create an ever-increasing financial problem (Roubenoff, 2004).

For both men and women, the natural aging process is associated with an increasing fatty mass starting from the age 65 (Prentice, 2001). The fat distribution in the body starts to change with old age: the visceral abdominal fatty mass increases and the subcutaneous fatty mass decreases. These changes may not lead to a significant change in the body-mass index (BMI), however, they lead to important alterations in the metabolic profiles and the cardiovascular risk factors of the elderly (Zamboni et al., 1997). The different effects of weight gain and old age are presented in Table 1.

Sarcopenia is defined as the loss of muscle strength and mass that is associated with old age. Even healthy individuals with a stable weight and without diseases can lose muscle mass with old age (Newman et al., 2005). Immunization, physical disability and mortality rates are also increasing in elderly individuals due to decreased muscle mass (Strasser et al., 2013). There are several suggested mechanisms to explain age-related muscle loss, which include neuronal, hormonal, nutritional changes; physical inactivity and low-grade inflammation (Solomon and Boudoux, 2006). The decreased muscle quality has been associated with decreased mitochondrial function, decreased protein synthesis, loss of type II muscle fibers, and decreased muscle fiber size and number (Nair, 2005). Sarcopenia can be prevented and/or delayed by integrated interventions such as nutrition, exercise and hormonal therapy (Boirie, 2009).

Sarcopenic obesity is defined as the age-related changes in the body composition (decreased muscle mass and strength) and the age-related increase in the prevalence of

obesity (Roubenoff, 2004). As obesity and sarcopenia negatively influence each other, their co-morbidity causes further physical limitations, mortality and morbidity. Thus, sarcopenia and obesity are a mounting problem, especially for the developed and developing countries (Zamboni et al., 2008).

Table 1: The effects of obesity and old age on the distribution of the fatty mass.

Adipose tissue sub-tissues	**Effects**		
	Obesity		**Old Age**
Subcutaneous	67.1%	+	+/-
Subcutaneous, proper			
Intramuscular	12.2%	+	+
Visceral	20.7%	+	+
Abdominal		+	+
Intraperitoneal			
Retroperitoneal			
Thoracic		+	+
Cardiac		+	+
Thoracic, other		+	+

1. THE DEFINITION OF SARCOPENIC OBESITY

The term sarcopenia was first used by Irwin Rosenberg to describe the muscle loss that develops with old age (Cruz-Jentoft et al., 2010). The word sarcopenia is derived from Old Greek words "sarx (muscle)" and "penia (loss)" (Yaman & Vural, 2016). European Working Group on Sarcopenia in Older People (EWGSOP) defines sarcopenia as "a syndrome that is characterized by the progressive loss of skeletal muscle that comes with aging, whose effects include decreased muscle strength, problems with mobility, frailty, weak bones (osteoporosis), falls and fractures, decreased activity levels, diabetes, middle-age weight gain and a loss of physical function and independence" (Cruz-Jentoft et al., 2010). Both the muscle mass and strength increasingly decline with old age. In healthy 30-year-old individuals, the loss of the muscle mass is 1% per year. This number increases for those over 50 years of age. It should be noted that the rate of muscle loss can change from person to person. The loss of muscle mass is gradual in males, whereas the females experience a sudden drop after menopause (Naseeb & Volpe, 2017).

The measurement of the muscle mass requires specific techniques, however, it is observed that these techniques are not routinely used in the clinic. Currently, the Dual Energy X-Ray Absorptiometry (DEXA) is accepted as a reliable method for the evaluation of the body composition (Mazess et al., 1990); however, it is possible to use simpler methods, such as the Bioelectric Impedance Analysis (BIA) (Lukaski et al., 1985). Both methods are reported to be applicable for the elderly (Visser et al., 2000; Roubenoff et al., 2004; Guida et al., 2007). The evaluation of sarcopenic obesity includes the total muscle mass, the appendicular muscle mass (the total of the skeletal muscles in the arms and legs), and several different methods for including the body size (Baumgartner et al., 1998; Melton et al., 2000; Jensen et al., 2002).

The first evaluation method was developed by Baumgartner et al. (1998) using the DEXA. In this method, the appendicular skeletal muscle mass was divided by the body

height squared (ASM/h^2) in order to calculate the size of the body. The result of this calculation is named relative skeletal muscle index. If a persons ASM/h^2 value is within the -1 and -2 standard deviation (SD) range of the young reference group (gender-specific), the patient is diagnosed with class I sarcopenia. If it is below -2 SD, the patient is diagnosed with class II sarcopenia. A study that was conducted using the index developed by Baumgartner et al. (2000) has found that, among individuals aged 60-69 (males and females), the prevalence of sarcopenic obesity was 2.0% and this number increased 10.0% for individuals aged 80 and older. There were 426 males and 323 females in a New Mexico study, it was determined that the sarcopenia prevalence is 13-24% for ages below 70, and that this number increases 50% for individuals older than 80 years old (Baumgartner et al., 1998).

Jensen et al. (2002) indicated that the skeletal muscle index (SMI) can be the proper method for the determination of sarcopenia (SMI%, total muscle mass/body massx100). This method uses BIA for the determination of the skeletal muscle mass. This index is able to define the body mass. Among 4504 individuals aged 60 or older, the prevalence of Class I sarcopenia (defined as an SMI value within -1 and -2 SD of young adult values) was 59.0% for females and 45.0% for males.

A third method was developed by Schutz et al. (2002), which includes both BIA and the free fat mass index (FFMI: fat-free mass/$height^2$). If the value is below the 50th percentile, the person is sarcopenic. It should be noted that the prevalence of sarcopenia can change according to the index used. According to Davison et al. (2002), a sarcopenic person has a fatty mass score of three or more and a muscle mass score of two or less on a scale of five. This study has found that among 1391 males and 1526 females aged 70 and older, it was found that the elderly have a high body fat (9.6%) and a low muscle mass (7.4%).

Newman et al. (2003) use a residual method. In this method, the appendicular lean mass (aLM/h^2) and the effects of height and muscle mass over aLM are evaluated to determine the prevalence of sarcopenic obesity. None of the individuals that are defined as sarcopenic using the aLM/h^2 method have a BMI>30 kg/m^2. When the residual method is applied, 14.4% of females and 11.5% of males are found to be sarcopenic. These findings clearly indicate that, as obese people have high fatty and lean masses, and thus, as the absolute muscle mass is normal (even if it is not sufficient for the body), the person will not be classified as sarcopenic (Newman et al., 2003). A high BMI can mask the presence of sarcopenia. The definition that is suggested by Baumgartner et al. (1998) may cause the presence of sarcopenic obesity to be missed among over-weight and obese individuals.

Both sarcopenia and sarcopenic obesity have problematic definitions. The first problem is the lack of a definite cut-off value for the muscle mass for sarcopenic obesity, despite the high morbidity and mortality rates (Marcell, 2003). Secondly, the most suitable index and cut-off value for the definition of obesity among the elderly is still controversial. The BMI (or the body fat mass percentage) cut-off values - which are used by Baumgartner to define sarcopenic obesity - do not rely on the standard criteria that are used for the definition of obesity (Baumgartner, 2000).

Two important factors are overlooked in the definition of sarcopenic obesity: muscle mass and the fat infiltration of muscle (Zamboni et al., 2008). Villareal et al. (2004) have compared 52 elderly subjects with 52 non-obese fragile subjects and 52

non-obese non-fragile subjects. They have found that the absolute muscle mass is higher for the obese elderly individuals, but have poor muscle quality. Also, the obese subjects functional status, aerobic capacity, power balance and the walking speed values were worse than those of fragile non-obese subjects. Thus, the obese older adults can be sarcopenic, despite the total lean body mass. A study monitored healthy older African American females for 2 years. It was observed that, with old age, the visceral abdominal adipose tissue and intermuscular fat increases and the muscle loss decreases (Song et al., 2004). The age-dependent fat infiltration of muscle is due to insulin resistance, and decreased muscle strength and mobility (Visser et al., 2002; Petersen et al., 2003; Visser et al., 2005).

2. THE PATHOGENESIS OF SARCOPENIC OBESITY

The age-dependent changes in body composition (decreasing muscle mass, increasing fatty mass) are closely associated with several mechanisms in the body. The decrease in physical activity can be determined by the age-related decrease in muscle mass and muscle strength. The decreased muscle mass and strength decrease the total energy consumption, which leads to abdominal fat accumulation and increased body weight (Nair, 2005).

The muscle catabolism and physical inactivity can directly lead to systemic inflammation, oxidative stress and visceral fat accumulation (which may lead to muscular atrophy) (Olsen et al., 2008). In addition, increased fatty mass (especially in the visceral region) can increase the secretion of proinflammatory cytokines. These cytokines then strengthen the macrophages (Neels & Olefsky, 2006). The adipocytes and macrophages are determined to take part in the pathogenesis of sarcopenic obesity. It is also shown that BMI distribution and obesity level (determined through waist circumference) can influence the inflammation that leads to the development of sarcopenia. It is suggested that the muscles with a higher rate of fat infiltration are less inflames, thus, the muscle triglyceride content may be associated with inflammation (Zamboni et al., 2008).

The C-reactive protein (CRP) and interleukin-6 (IL-6) levels are positively correlated with total body mass and negatively correlated with muscle mass. These adipokines may stimulate protein catabolism in the muscle (Cesari et al., 2005). A study conducted with individuals aged 55 and older has found that the CRP and IL-6 levels are strong determinants of the loss of muscle power (Schaap et al., 2006). The mechanism related to sarcopenic obesity may be associated with insulin resistance, the energy metabolism and the increased production of different factors [such as the tumor necrosis factor-α (TNF-α) and leptin] in the adipocytes. Thus, when muscle mass decreases, the body fat can increase (Roubenoff, 2004).

The age-related increase in the fatty mass can increase the leptin levels in the body and lead to leptin resistance. In this case, the decreased fatty acid oxidation in muscles can cause ectopic fat accumulation in the organs such as the liver, heart and muscles (Unger, 2005). The relationship between muscle loss and fat gain can further accelerate the development of sarcopenia, which may lead to an increase in body weight and can cause inflammation (Figure 1).

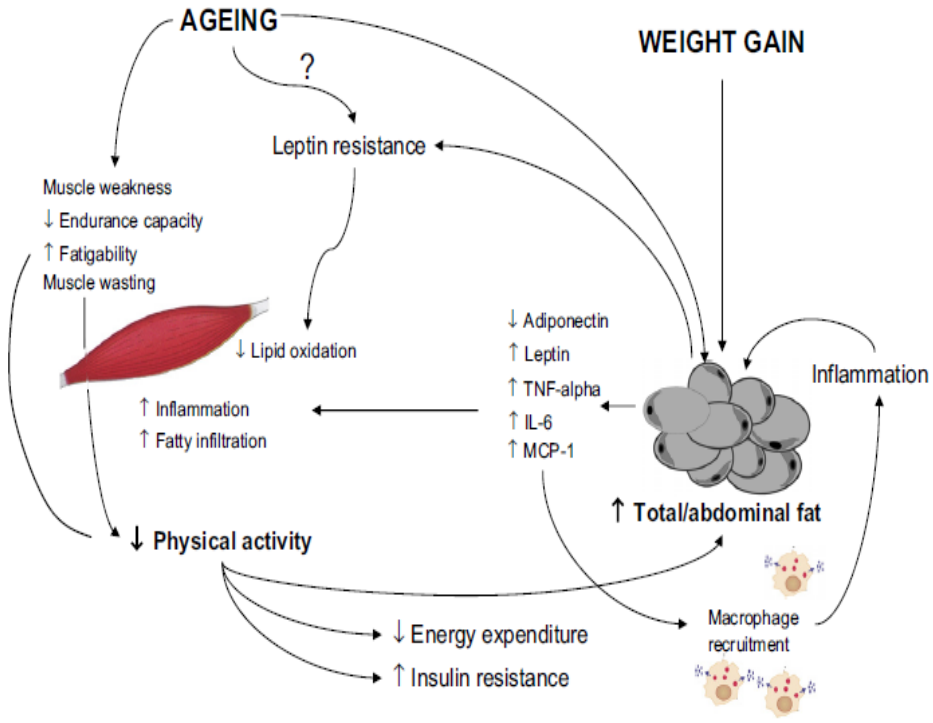

Figure 1: The mechanism of sarcopenic obesity development (Zamboni et al., 2008).

The association between old age and sarcopenia should be properly understood in order to understand the relation between fat gain and inflammation (systemic or local) (Zamboni et al., 2008).

3. THE RELATIONSHIP BETWEEN SARCOPENIC OBESITY AND OTHER DISORDERS

The age-related obesity and decreased muscle strength can cause problems in the musculoskeletal and the cardiovascular systems, and increase mortality rates, regardless of the BMI.

3.1. Musculoskeletal System Disorders

The insufficient muscle mass of the older adults increases the risk of sarcopenia, thus, most of the studies concerning the effects of sarcopenic obesity on the musculoskeletal system focus on mobility and disability. In addition, it is reported that sarcopenic obesity increases disability (Baumgartner, 2000; Rolland et al., 2009; Chang et al., 2015), and that the physical functions are similar to those in sarcopenic or obese individuals (Newman et al., 2003). It is also found that the disablement risk increases 2.5 fold in 8 years among the sarcopenic obese. However, according to the Tasmanian Older Adult Cohort (TASOAC), the physical components associated with falling are similar for the older adults, regardless of obesity or sarcopenia (Scott et al., 2016).

Sarcopenic obesity is thought to be related to poor physical function (Stenholm et

al., 2009; Choquette et al., 2010). Among American and Chinese older adults; high fatty mass and BMI, and low muscle power have poorer motility and physical functions compared to the individuals with only high fatty mass or only low muscle mass (Bouchard & Janssen, 2009; Yang et al., 2015). A Korean study has found that the poor muscle strength and high fatty mass only synergically contribute to disablement (Kim et al., 2014).

High muscle mass and strength are associated with a good bone health. The prevalence of sarcopenia is 95.0% for females and 64.0% for males with hip fractures (Di Monaco et al., 2012). However, it is thought that the increases bone mineral density of obese individuals may decrease the risk of bone fractures (Chan et al., 2014; Compston et al., 2011). Together with this, it is reported that more than half of the fractures of 65 to 74-year-olds are seen among over-weight and obese individuals. Also, obese women have a higher risk of ankle or femur fracture, compared to the non-obese women (Compston et al., 2011; Nielson et al., 2012).

A high fatty mass improves the bone mineral density through mechanical impact and the estrogen metabolism (Edwards et al., 2013; Sjöblom et al., 2013). Recent studies indicate that high visceral adiposity can endanger cone health due to insulin resistance, adipokines and inflammatory markers. All of these factors may have negative effects on the bones, and this may especially be the case for the visceral adipose tissue (Bradella et al., 2012; Ng et al., 2013). The Hertfordshire Cohort Study has found that the tibial cortical area and thickness is not only correlated with the fatty mass, but also the lean mass (Edwards et al., 2015). Thus, the preservation of the lean mass (instead of the fatty mass) may be more beneficial for bone health (Scott & Hirani, 2016).

A New Zealand study has found that the femur osteoporosis prevalence is the highest (22.0%) among older individuals with only sarcopenia (Aubertin-Leheudre et al., 2008). Waters et al. (2010) have found that the osteoporosis prevalence is 17.0% among the sarcopenic obese, 12.0% among the non-obese sarcopenic and 7.0% among the obese without sarcopenia. This may be due to the increased risk of falling among the sarcopenic obese and the poor bone health associated with obesity (Scott & Hirani, 2016).

3.2. Cardiovascular Disorders

The association between cardiovascular diseases (CVD), metabolic syndrome (MetS) and sarcopenic obesity was studied through extensive prospective studies (Scott & Hirani, 2016). It was found that among the 3366 healthy subjects aged 65 and older, the risk of sarcopenic obesity increased, however, there wasn't a significant correlation between CVD and sarcopenic obesity (Stephen & Janssen, 2009). Several studies have investigated the relationship between sarcopenic obesity and MetS in the Asian countries (Kim et al., 2011; Lim et al., 2010; Chung et al., 2013; Kim et al., 2015). Kim et al. (2011) have found that; compared to the healthy individuals, the MetS risk is three times higher for the sacropenic obese (defined through total skeletal muscle mass and total body fat percentage), and two times higher for the obese. According to KHANES (Korea National Health and Nutrition Examination Survey)-which examines the relationship between body composition and the cardiometabolic risk factors; the insulin resistance, MetS and CVD risks are higher for the sarcopenic obese (Chung et al., 2013). Aubertin-Leheudre et al. (2006) have conducted a cross-sectional study (n=22).

They have found that the obese post-menopausal women have a significantly higher fatty mass and a worse lipid profile compared to the sarcopenic obese; however, sarcopenic obesity was associated with a lower risk of CVD. The KNHANES study (2010-2011) has found that, among the 879 Korean men, a high TG-to-HDL (triglyceride/high-density lipoprotein) ratio is positively correlated to a high risk of sarcopenia. The TG-to-HDL ratio is a simple indicator of insulin resistance that can be used for the determination of sarcopenia among old Korean males (Chung et al., 2016). Studies indicate a positive relationship between sarcopenic obesity and the risk for CVD. As sarcopenic obesity increases the metabolic load and decreases the metabolic capacity, it can lead to the development of metabolic syndrome or arterial stiffness (Lim et al., 2010; Chung et al., 2013; Kim et al., 2015).

3.3. Sarcopenic Obesity and the Risk of Mortality

National Health and Nutrition Examination Survey III (NHANES-III) (1988–1994) indicates that the sarcopenic obese males (aged 60 or older) have a higher risk of mortality when sarcopenic and non-sarcopenic ones among the 4652 male individuals aged 60 or older are compared (Batsis et al., 2014). The recent British Regional Heart Study (60 to 79-year-old males, n=4252) has found that sarcopenia [Mid-Upper Arm Circumference (MUAC)], central obesity (waist circumference) and sarcopenic obesity are all associated with an increased CVD mortality. However, if lifestyle changes are made, this risk is not significant in the long run. Sarcopenia and sarcopenic obesity are not independently associated with obesity, but they can lead to mortality through all the reasons (other than the CVD risk factors, inflammation and body weight loss) (Atkins et al., 2014). A prospective cohort meta-analysis has found that sarcopenic obesity is significantly correlated with increased mortality risks (Tian & Xu, 2016). In the recent years, two new diagnostic criteria (upper mid-arm circumference and muscle strength= have been defined for the evaluation of the effects of sarcopenic obesity on the risk of mortality (Rossi et al., 2016; Tian & Xu, 2016). Rossi et al. (2016) indicate that the abdominally obese with weak muscle strength have a higher 10-year mortality risk, compared to those with only abdominal obesity or only weak muscle strength.

4. TREATMENT OF SARCOPENIC OBESITY

The most effective treatment of sarcopenic obesity is changing the lifestyles of the elderly. KNHANES IV and Ansan Geriatric studies have reported that the serum 25-OH- vitamin D levels were negatively correlated with the appendicular fatty mass and positively correlated with the appendicular lean mass. Low vitamin D levels are associated with increased prevalence of sarcopenic obesity (Kim et al., 2011; Seo et al., 2012). The Koreans with sarcopenic obesity have a diet that is poorer in protein and richer in fat compared to the rest of the population (Oh et al., 2015). Thus, it is suggested that the interventions that aim to improve physical activity and the quality of the diet will be the most effective way to prevent sarcopenic obesity (Wakabayashi & Sakuma, 2013). For the prevention of sarcopenic obesity; an individual should consume high-energy (an attachment of 200-750 kcal) and high-quality protein (1.5g/kg) together with nutritional supplements; and also, take part in aerobic, flexibility and resistance training (Villareal et al., 2011; Sakuma & Yamaguchi, 2013). A randomized controlled study has found that among 38 post-menopausal women who have low muscle strength; resistance training had a positive effect on physical performance, and the energy

limitation improved the fatty mass and the cardiometabolic health. Thus, a combined lifestyle of a healthy diet and regular physical exercise is the correct approach to treat sarcopenic obesity (Senechal et al., 2012).

Nutrition and exercise may not be enough to treat severe cases of sarcopenic obesity. In these cases, a pharmaceutical therapy can be preferred (Wakabayashi & Sakuma, 2013). Hormone replacement therapy (testosterone dehydroepiandrosterone and growth hormone) is applied to explain the contradictory findings regarding the age-related muscle mass and strength losses (Borst, 2004). Even though these approaches are theoretically correct, the physician should watch out for possible tissue damages and pathological changes (Borst, 2004; Adamo et al., 2006).

The treatment of sarcopenia should focus on improving the muscle mass and the physical functions. Early diagnosis and treatment are important for the maintenance of a positive muscle-protein balance (Kim et al., 2014). A positive muscle-protein balance is when the muscle or myofibrillar anabolism is higher than protein catabolism. Adequate protein intake and resistance training support a positive muscle-protein balance (Naseeb & Volpe, 2017). It is shown that the resistance exercises are safe even among very old and fragile individuals (Fiatorone et al., 1994). Exercise - especially resistance training - and protein supplementation positively affect muscle mass, muscle strength and physical performance in the elderly population (Kim et al., 2014). Tieland et al. (2012a) have found that the lean muscle mass can improve with protein supplements among weak individuals aged 65 or older. Two groups were trained for resistance and one group was given protein supplement (250 mL of beverage containing 15g of protein, twice a day) and the other group received placebo. It was found that the protein-supplemented group had increased from 42.2 to 48.5 kg, compared to the placebo group ($p=0.006$). Furthermore, long-lasting resistance training significantly improves muscle strength and physical performance among weak older individuals. An additional protein supplementation in the diet (1.4g/kg/day) is reported to be safe, that is the muscle mass increases without affecting the renal function (Tieland et al., 2012a; Tieland et al., 2012b).

The treatment and management of sarcopenia have become increasingly popular over the last few years. The literature indicates that adequate nutrition (especially protein intake) and physical activity play major roles in the treatment of sarcopenia. It is reported that the decreased protein intake among the elderly leads to decreased muscle mass and strength. Resistance training is important to increase muscle protein synthesis. Consumption of protein following resistance training can prevent the catabolism of muscle proteins to provide a positive muscle-protein balance (Naseeb & Volpe, 2017).

5. CLINICAL INDICATIONS OF SARCOPENIC OBESITY

Sarcopenic obesity is an increasingly popular research topic for the public health professionals. Sarcopenic obesity is defined as decreased muscle strength and it is closely associated with poor physical activity. It is reported that the individuals with sarcopenic obesity are at a higher risk for bone fractures, compared to older adults with obesity without sarcopenia. Sarcopenic obesity is associated with increased cardiometabolic disorders and increased risk of mortality. Sarcopenic obesity has become a significant subject due to its effects on physical disability, cardiometabolic health and mortality. However, the lack of a consensus regarding its definition limits the

researchers' ability to effectively investigate the subject. There are a limited number of intervention studies regarding the treatment of sarcopenic obesity. The most effective option for the treatment and prevention of sarcopenic obesity is a combination of adequate nutrition and exercise. The best strategies for the treatment and prevention of sarcopenic obesity can be achieved through randomized controlled trials that include resistance training and aerobic exercises together with energy restrictions and/or protein and vitamin D supplements. Medication may be applied in the cases where lifestyle changes are ineffective or contraindicated.

REFERENCES

Adamo, M. L.; & Farrar, R. P. (2006). Resistance training, and IGF involvement in the maintenance of muscle mass during the aging process. Ageing Research Reviews 5: (3), 310-331

Atkins, J. L.; Whincup, P. H.; Morris, R. W.; Lennon, L. T.; Papacosta, O.; Wannamethee, S. G. (2014). Sarcopenic obesity and risk of cardiovascular disease and mortality: a population-based cohort study of older men. Journal of the American Geriatrics Society 62: (2), 253-260

Aubertin-Leheudre, M.; Lord, C.; Goulet, E. D.; Khalil, A.; Dionne, I. J. (2006). Effect of sarcopenia on cardiovascular disease risk factors in obese postmenopausal women. Obesity 14: (12), 2277-2283

Aubertin-Leheudre, M.; Lord, C.; Labonté, M.; Khalil, A.; Dionne, I. J. (2008). Relationship between sarcopenia and fracture risks in obese postmenopausal women. Journal of Women & Aging 20: (3-4), 297-308

Batsis, J. A.; Mackenzie, T. A.; Barre, L. K.; Lopez-Jimenez, F.; Bartels, S. J. (2014). Sarcopenia, sarcopenic obesity and mortality in older adults: results from the National Health and Nutrition Examination Survey III. European Journal of Clinical Nutrition 68: (9), 1001

Baumgartner, R. N.; Koehler, K. M.; Gallagher, D.; Romero, L.; Heymsfield, S. B.; Ross, R. R.; Lindeman, R. D. (1998). Epidemiology of sarcopenia among the elderly in New Mexico. American Journal of Epidemiology 147: (8), 755-763.

Baumgartner, R. N. (2000). Body composition in healthy aging. Annals of the New York Academy of Sciences 904: (1), 437-448

Boirie, Y. (2009). Physiopathological mechanism of sarcopenia. J Nutr Health Aging 13: (8), 717-723

Borst, S. E. (2004). Interventions for sarcopenia and muscle weakness in older people. Age and Ageing 33: (6), 548-555

Bouchard, D. R.; & Janssen, I. (2009). Dynapenic-obesity and physical function in older adults. Journals of Gerontology Series A: Biomedical Sciences and Medical Sciences 65: (1), 71-77

Bredella, M. A.; Lin, E.; Gerweck, A. V.; Landa, M. G.; Thomas, B. J.; Torriani, M.; Bouxsein, M. L.; Miller, K. K. (2012). Determinants of bone microarchitecture and mechanical properties in obese men. The Journal of Clinical Endocrinology & Metabolism 97: (11), 4115-4122

Cesari, M.; Kritchevsky, S. B.; Baumgartner, R. N.; Atkinson, H. H.; Penninx, B. W.; Lenchik, L.; Palla, S.H.; Ambrasius, W.T.; Pahor, M. (2005). Sarcopenia, obesity, and inflammation—results from the Trial of Angiotensin Converting Enzyme Inhibition and Novel Cardiovascular Risk Factors study–. The American Journal of Clinical Nutrition 82: (2), 428-434

Chan, M. Y.; Frost, S. A.; Center, J. R.; Eisman, J. A.; Nguyen, T. V. (2014). Relationship between body mass index and fracture risk is mediated by bone mineral density. Journal of Bone and Mineral Research 29: (11), 2327-2335

Chang, C. I.; Huang, K. C.; Chan, D. C.; Wu, C. H.; Lin, C. C.; Hsiung, C. A.; Hsu, C.C.; Chen, C. Y. (2015). The impacts of sarcopenia and obesity on physical performance in the elderly. Obesity Research & Clinical Practice 9: (3), 256-265

Choquette, S.; Bouchard, D. R.; Doyon, C. Y.; Sénéchal, M.; Brochu, M.; Dionne, I. J. (2010). Relative strength as a determinant of mobility in elders 67–84 years of age. A nuage study: Nutrition as a determinant of successful aging. The Journal of Nutrition, Health & Aging 14: (3), 190-195

Chung, J. Y.; Kang, H. T.; Lee, D. C.; Lee, H. R.; Lee, Y. J. (2013). Body composition and its association with cardiometabolic risk factors in the elderly: a focus on sarcopenic obesity. Archives of Gerontology and Geriatrics 56: (1), 270-278

Chung, T. H.; Kwon, Y. J.; Shim, J. Y.; Lee, Y. J. (2016). Association between serum triglyceride to high-density lipoprotein cholesterol ratio and sarcopenia in elderly Korean males: The Korean National Health and Nutrition Examination Survey. Clinica Chimica Acta 463: 165-168

Compston, J. E.; Watts, N. B.; Chapurlat, R.; Cooper, C.; Boonen, S.; Greenspan, S.; Saag, K. G. (2011). Obesity is not protective against fracture in postmenopausal women: GLOW. The American Journal of Medicine 124: (11), 1043-1050

Cruz-Jentoft, A.J.; Baeyens, J.P.; Bauer, J.M.; Boirie, Y.; Cederholm, T.; Landi, F.; Topinkova, E. (2010). Sarcopenia: European consensus on definition and diagnosis Report of the European Working Group on Sarcopenia in Older People. Age and Ageing 39, 412-423

Davison, K. K.; Ford, E. S.; Cogswell, M. E.; Dietz, W. H. (2002). Percentage of body fat and body mass index are associated with mobility limitations in people aged 70 and older from NHANES III. Journal of the American Geriatrics Society 50: (11), 1802-1809

Denison, H.J.; Cooper, C.; Sayer, A.A.; Robinson, S.M. (2015). Prevention and Optimal Management of Sarcopenia: A Review of Combined Exercise and Nutrition İnterventions to İmprove Muscle Outcomes in Older People. Clinical Interventions in Aging 10, 859–869

Di Monaco, M.; Castiglioni, C.; Vallero, F.; Di Monaco, R.; Tappero, R. (2012). Sarcopenia is more prevalent in men than in women after hip fracture: a cross-sectional study of 591 inpatients. Archives of Gerontology and Geriatrics 55: (2), e48-e52

Edwards, M. H.; Gregson, C. L.; Patel, H. P.; Jameson, K. A.; Harvey, N. C.; Sayer, A. A.; Dennison, E.M.; Cooper, C. (2013). Muscle size, strength, and physical performance and their associations with bone structure in the Hertfordshire Cohort Study. Journal of Bone and Mineral Research 28: (11), 2295-2304

Edwards, M. H.; Ward, K. A.; Ntani, G.; Parsons, C.; Thompson, J.; Sayer, A. A.; Dennison, E.M.; Cooper, C. (2015). Lean mass and fat mass have differing associations with bone microarchitecture assessed by high resolution peripheral quantitative computed tomography in men and women from the Hertfordshire Cohort Study. Bone 81, 145-151

Fiatarone, M. A.; O'Neill, E. F.; Ryan, N. D.; Clements, K. M.; Solares, G. R.; Nelson, M. E.; Roberts, S.B.; Kehayias, J.J.; Lipsitz, L.A.; Evans, W. J. (1994). Exercise training and nutritional supplementation for physical frailty in very elderly people. New England Journal of Medicine 330: (25), 1769-1775

Guida, B.; Laccetti, R.; Gerardi, C.; Trio, R.; Perrino, N. R.; Strazzullo, P.; Siani, A.; Farinaro, E.; Colantuoni, A. (2007). Bioelectrical impedance analysis and age-related differences of body composition in the elderly. Nutrition, Metabolism and

Cardiovascular Diseases 17: (3), 175-180
Janssen, I.; Heymsfield, S. B.; Ross, R. (2002). Low relative skeletal muscle mass (sarcopenia) in older persons is associated with functional impairment and physical disability. Journal of the American Geriatrics Society 50: (5), 889-896
Kim, J. H.; Cho, J. J.; Park, Y. S. (2015). Relationship between sarcopenic obesity and cardiovascular disease risk as estimated by the Framingham risk score. Journal of Korean Medical Science 30: (3), 264-271
Kim, M. K.; Baek, K. H.; Song, K. H.; Il Kang, M.; Park, C. Y.; Lee, W. Y.; Oh, K. W. (2011). Vitamin D deficiency is associated with sarcopenia in older Koreans, regardless of obesity: the Fourth Korea National Health and Nutrition Examination Surveys (KNHANES IV) 2009. The Journal of Clinical Endocrinology & Metabolism 96: (10), 3250-3256
Kim, Y. P.; Kim, S.; Joh, J. Y.; Hwang, H. S. (2014). Effect of interaction between dynapenic component of the European working group on sarcopenia in older people sarcopenia criteria and obesity on activities of daily living in the elderly. Journal of the American Medical Directors Association 15: (5), 371-381
Lim, S.; Kim, J. H.; Yoon, J. W.; Kang, S. M.; Choi, S. H.; Park, Y. J.; Kim, K.W.; Lim, J.Y.; Park, K,S.; Jang, H. C. (2010). Sarcopenic obesity: prevalence and association with metabolic syndrome in the Korean Longitudinal Study on Health and Aging (KLoSHA). Diabetes Care 33: (7), 1652-1654
Lukaski, H. C.; Johnson, P. E.; Bolonchuk, W. W.; Lykken, G. I. (1985). Assessment of fat-free mass using bioelectrical impedance measurements of the human body. The American Journal of Clinical Nutrition 41: (4), 810-817
Marcell, T.J. (2003). Sarcopenia: causes, consequences and preventions. J Gerontol Med Sci 58: (10), M911-916
Mazess, R. B.; Barden, H. S.; Bisek, J. P.; Hanson, J. (1990). Dual-energy x-ray absorptiometry for total-body and regional bone-mineral and soft-tissue composition. The American Journal of Clinical Nutrition 51: (6), 1106-1112
Melton III, L. J.; Khosla, S.; Crowson, C. S.; O'connor, M. K.; O'fallon, W. M.; Riggs, B. L. (2000). Epidemiology of sarcopenia. Journal of the American Geriatrics Society 48: (6), 625-630
Nair, K.S. (2005). Aging muscle. Am J Clin Nutr 81: (5), 953-963
Naseeb, M. A.; & Volpe, S. L. (2017). Protein and exercise in the prevention of sarcopenia and aging. Nutrition Research 40, 1-20
Neels, J. G.; & Olefsky, J. M. (2006). Inflamed fat: what starts the fire?. The Journal of Clinical investigation 116: (1), 33-35
Newman, A. B.; Kupelian, V.; Visser, M.; Simonsick, E.; Goodpaster, B.; Nevitt, M., Harris, T. B. (2003). Sarcopenia: alternative definitions and associations with lower extremity function. Journal of the American Geriatrics Society 51: (11), 1602-1609
Newman, A. B.; Lee, J. S.; Visser, M.; Goodpaster, B. H.; Kritchevsky, S. B.; Tylavsky, F. A.; Harris, T. B. (2005). Weight change and the conservation of lean mass in old age: the Health, Aging and Body Composition Study. The American Journal of Clinical Nutrition 82: (4), 872-878
Ng, A. C.; Melton, L. J.; Atkinson, E. J.; Achenbach, S. J.; Holets, M. F.; Peterson, J. M.; Drake, M. T. (2013). Relationship of adiposity to bone volumetric density and microstructure in men and women across the adult lifespan. Bone 55: (1), 119-125
Nielson, C. M.; Srikanth, P.; Orwoll, E. S. (2012). Obesity and fracture in men and women: an epidemiologic perspective. Journal of Bone and Mineral Research 27: (1), 1-10

Ogden, C.L.; Carroll, M.D.; Curtin, L.R.; McDowell, M.A.; Tabak, C.J.; Flegal. K.M. (2006). Prevalence of overweight and obesity in the United States, 1999-2004. JAMA 295, 1549e55

Oh, C.; Jho, S.; No, J. K.; Kim, H. S. (2015). Body composition changes were related to nutrient intakes in elderly men but elderly women had a higher prevalence of sarcopenic obesity in a population of Korean adults. Nutrition Research 35: (1), 1-6

Olsen, R. H.; Krogh-Madsen, R.; Thomsen, C.; Booth, F. W.; Pedersen, B. K. (2008). Metabolic responses to reduced daily steps in healthy nonexercising men. Jama 299: (11), 1261-1263

Petersen, K. F.; Befroy, D.; Dufour, S.; Dziura, J.; Ariyan, C.; Rothman, D. L.; Shulman, G. I. (2003). Mitochondrial dysfunction in the elderly: possible role in insulin resistance. Science 300: (5622), 1140-1142

Prentice, A. M.; & Jebb, S. A. (2001). Beyond body mass index. Obesity Reviews 2: (3), 141-147

Rolland, Y.; Lauwers-Cances, V.; Cournot, M.; Nourhashémi, F.; Reynish, W.; Rivière, D.; Grandjean, H. (2003). Sarcopenia, calf circumference, and physical function of elderly women: a cross-sectional study. Journal of the American Geriatrics Society 51: (8), 1120-1124

Rolland, Y.; Lauwers-Cances, V.; Cristini, C.; van Kan, G. A.; Janssen, I.; Morley, J. E.; Vellas, B. (2009). Difficulties with physical function associated with obesity, sarcopenia, and sarcopenic-obesity in community-dwelling elderly women: the EPIDOS (EPIDemiologie de l'OSteoporose) Study–. The American journal of clinical nutrition, 89: (6), 1895-1900

Rossi, A. P.; Fantin, F.; Caliari, C.; Zoico, E.; Mazzali, G.; Zanardo, M.; Zamboni, M. (2016). Dynapenic abdominal obesity as predictor of mortality and disability worsening in older adults: A 10-year prospective study. Clinical Nutrition 35: (1), 199-204

Roubenoff, R. (2004). Sarcopenic obesity: the confluence of two epidemics. Obesity 12: (6), 887-888

Sakuma, K.; & Yamaguchi, A. (2013). Sarcopenic obesity and endocrinal adaptation with age. International Journal of Endocrinology 204164

Schaap, L. A.; Pluijm, S. M.; Deeg, D. J.; Visser, M. (2006). Inflammatory markers and loss of muscle mass (sarcopenia) and strength. The American Journal of Medicine 119: (6), 526-e9

Schutz, Y.; Kyle, U. U. G.; Pichard, C. (2002). Fat-free mass index and fat mass index percentiles in Caucasians aged 18–98 y. International Journal of Obesity 26: (7), 953

Scott, D.; Chandrasekara, S. D.; Laslett, L. L.; Cicuttini, F.; Ebeling, P. R.; Jones, G. (2016). Associations of sarcopenic obesity and dynapenic obesity with bone mineral density and incident fractures over 5–10 years in community-dwelling older adults. Calcified Tissue International 99: (1), 30-42

Scott, D.; & Hirani, V. (2016). Sarcopenic obesity. European Geriatric Medicine **7,** 214-219

Sénéchal, M.; Bouchard, D. R.; Dionne, I. J.; Brochu, M. (2012). The effects of lifestyle interventions in dynapenic-obese postmenopausal women. Menopause, 19: (9), 1015-1021

Seo, J. A.; Cho, H.; Eun, C. R.; Yoo, H. J.; Kim, S. G.; Choi, K. M.; Kim, N. H. (2012). Association between visceral obesity and sarcopenia and vitamin D deficiency in older Koreans: the Ansan Geriatric Study. Journal of the American Geriatrics Society 60: (4), 700-706

Sjöblom, S.; Suuronen, J.; Rikkonen, T.; Honkanen, R.; Kröger, H.; Sirola, J. (2013). Relationship between postmenopausal osteoporosis and the components of clinical sarcopenia. Maturitas 75: (2), 175-180

Solomon, A. M.; & Bouloux, P. M. G. (2006). Modifying muscle mass–the endocrine perspective. Journal of Endocrinology 191: (2), 349-360

Song, M. Y.; Ruts, E.; Kim, J.; Janumala, I.; Heymsfield, S.; Gallagher, D. (2004). Sarcopenia and increased adipose tissue infiltration of muscle in elderly African American women. The American Journal of Clinical Nutrition 79: (5), 874-880

Stenholm, S.; Alley, D.; Bandinelli, S.; Griswold, M. E.; Koskinen, S.; Rantanen, T.; Ferrucci, L. (2009). The effect of obesity combined with low muscle strength on decline in mobility in older persons: results from the InCHIANTI study. International Journal of Obesity 33: (6), 635

Stenholm, S.; Rantanen, T.; Heliövaara, M.; Koskinen, S. (2008). The mediating role of C-reactive protein and handgrip strength between obesity and walking limitation. Journal of the American Geriatrics Society 56: (3), 462-469

Stephen, W. C.; & Janssen, I. (2009). Sarcopenic-obesity and cardiovascular disease risk in the elderly. The Journal of Nutrition, Health and Aging 13: (5), 460-466

Strasser, E.M.; Draskovits, T.; Praschak, M.; Quittan, M; Graf, A. (2013). Association Between Ultrasound Measurements of Muscle Thickness, Pennation Angle, Echogenicity and Skeletal Muscle Strength in The Elderly. Age 35: 2377–2388

Tian, S.; & Xu, Y. (2016). Association of sarcopenic obesity with the risk of all-cause mortality: a meta-analysis of prospective cohort studies. Geriatrics & Gerontology International 16: (2), 155-166

Tieland, M.; Dirks, M. L.; van der Zwaluw, N.; Verdijk, L. B.; Van De Rest, O.; de Groot, L. C.; Van Loon, L. J. (2012a). Protein supplementation increases muscle mass gain during prolonged resistance-type exercise training in frail elderly people: a randomized, double-blind, placebo-controlled trial. Journal of the American Medical Directors Association 13: (8), 713-719

Tieland, M.; van de Rest, O.; Dirks, M. L.; van der Zwaluw, N.; Mensink, M.; van Loon, L. J.; de Groot, L. C. (2012b). Protein supplementation improves physical performance in frail elderly people: a randomized, double-blind, placebo-controlled trial. Journal of the American Medical Directors Association 13: (8), 720-726

Unger, R. H. (2005). Longevity, lipotoxicity and leptin: the adipocyte defense against feasting and famine. Biochimie 87: (1), 57-64

Villareal, D. T.; Banks, M.; Siener, C.; Sinacore, D. R.; Klein, S. (2004). Physical frailty and body composition in obese elderly men and women. Obesity 12: (6), 913-920

Visser, M.; Fuerst, T.; Lang, T.; Salamone, L.; Harris, T. B.; Health, F. T.; Group, B. C. W. (2000). Validity of fan-beam dual-energy X-ray absorptiometry for measuring fat-free mass and leg muscle mass. Journal of Applied Physiology 87: (4), 1513-1520

Visser, M.; Kritchevsky, S. B.; Goodpaster, B. H.; Newman, A. B.; Nevitt, M.; Stamm, E.; Harris, T. B. (2002). Leg muscle mass and composition in relation to lower extremity performance in men and women aged 70 to 79: the health, aging and body composition study. Journal of the American Geriatrics Society 50: (5), 897-904

Visser, M.; Goodpaster, B. H.; Kritchevsky, S. B.; Newman, A. B.; Nevitt, M.; Rubin, S. M.; Harris, T. B. (2005). Muscle mass, muscle strength, and muscle fat infiltration as predictors of incident mobility limitations in well-functioning older persons. The Journals of Gerontology Series A: Biological Sciences and Medical Sciences 60: (3), 324-333

Wakabayashi, H.; & Sakuma, K. (2013). Nutrition, exercise, and pharmaceutical therapies for sarcopenic obesity. Journal of Nutritional Therapeutics 2: (2), 100-111

Wang, C.; & Bai, L. (2012). Sarcopenia in the elderly: basic and clinical issues. Geriatrics & Gerontology International 12: (3), 388-396

Waters, D. L.; Hale, L.; Grant, A. M.; Herbison, P.; Goulding, A. (2010). Osteoporosis and gait and balance disturbances in older sarcopenic obese New Zealanders. Osteoporosis International 21: (2), 351-357

Yaman, H.; & Vural, R. (2016). Management of Sarcopenia in Elderlies. Turkish Journal of Family Medicine and Primary Care 10(4): 243-249.

Yang, M.; Jiang, J.; Hao, Q.; Luo, L.; Dong, B. (2015). Dynapenic obesity and lower extremity function in elderly adults. Journal of the American Medical Directors Association 16: (1), 31-36

Zamboni, M.; Armellini, F.; Harris, T.; Turcato, E.; Micciolo, R.; Bergamo-Andreis, I. A.; Bosello, O. (1997). Effects of age on body fat distribution and cardiovascular risk factors in women. The American Journal of Clinical Nutrition 66: (1), 111-115

Zamboni, M.; Mazzali, G.; Fantin, F.; Rossi, A.; Di Francesco, V. (2008). Sarcopenic obesity: a new category of obesity in the elderly. Nutrition, Metabolism and Cardiovascular Diseases 18: (5), 388-395

Chapter 55

Effects of Polyphenols on Diabetes Mellitus and Current Insights

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INTRODUCTION

Diabetes mellitus (DM) is increasing globally and affects 7% of the world's adult population (Philippe & Raccah, 2009). There are two important classifications of DM. Type 1 DM (T1D) autoimmune-mediated loss of pancreatic β-cells, complete or near total insulin deficiency; Type 2 DM (T2D) is associated with varying degrees of insulin resistance, impaired insulin secretion, moderate to severe β-cell apoptosis, and increased liver glucose production (Akkati *et al*., 2011).

Globally, diabetes is estimated to be 382 million people in 2013, and this number is projected to be 592 million by 2035 (Guariguata *et al*., 2014). In the United States, approximately 8.3% of the total population has diabetes, and in addition 79 million people have prediabetes (fasting blood glucose ≥100 mg/dL and ≤126 mg/dL) (Fonseca *et al*., 2012).

Lifestyle factors such as unhealthy diets, obesity, smoking and excessive alcohol consumption are responsible for 90% of T2D cases (Chen *et al*., 2012). T2D can cause micro- and macro vascular complications, and these complications can lead to long-term pathogenic conditions such as decreased quality of life and increased mortality rate (Santaguida *et al*., 2008).

Diet, one of the multiple risk factors affecting the incidence and progression of T2D, is a basic and changeable factor (Bastaki, 2005). Based on insulin resistance and T2D pathophysiology, multiple pharmacological and non-pharmacological interventions have been developed to increase glycemic control and prevent diabetic complications.

In recent years, functional foods and bioactive components have been considered as a new approach in the prevention and treatment of diabetes and its complications (Bahadoran *et al*., 2012).

Increasingly epidemiological studies have shown that phytochemical content, high total antioxidant capacity, and nutrient-rich diets with polyphenolic compounds may be

associated with lower risk of diabetes and predisposed factors (Mirmiran *et al*., 2009).

Polyphenols are nutraceuticals suitable for various aspects of glycemic control due to their biological properties (Bahadoran *et al*., 2013). The effect of polyphenols on blood sugar regulation is mainly; modulating the enzymes involved in glucose metabolism, improving β-cell function and insulin response, induction of insulin secretion, and antioxidative and anti-inflammatory properties of these components (Cabrera *et al*., 2006).

The polyphenols are found mainly in plant-based foods including fruits, vegetables, grains, coffee tea and hazelnuts. Polyphenols; glycemia and T2D can be influenced by different mechanisms such as increasing glucose uptake in tissues and thus increasing insulin sensitivity (Guasch-Ferré *et al*., 2017).

2. CLASSIFICATION OF POLYPHENOLS

Dietary polyphenols are the most abundant antioxidants found in human diets. With more than 8,000 structural derivations, they show many substances containing aromatic cyclic which are secondary minerals of plants and carry one or more hydroxyl (Gutteridge, 1993).

Polyphenols are a large heterogeneous group of phytochemical groups of plant foods such as tea, coffee, wine, grains, vegetables, legumes, fruits. The structural diversity of polyphenols extends from simple phenol hydroxybenzoic and hydroxycinnamic acids to broad polymeric macromolecules such as protonocyanidins and ellagitannins (Ovaskainen *et al*., 2008).It is estimated that dietary intake of polyphenols is about 1 g/day (Chun *et al*., 2007). The bioavailability of these bioactive components depends on the nutrient preparation processes, gastrointestinal digestion, absorption and metabolism (Scalbert &Williamson, 2000). Polyphenols are grouped as flavonoids, phenolic acids, stylbens and lignans (Pandey &Rizvi, 2009).

2.1. Flavonoids

Flavonoids have subgroups that are flavones, flavonols, flavanols, flavanons, isoflavones and anthocyanins (Williamson, 2013). They represent a large class of at least 6,000 phenolic compounds found in fruits, vegetables, herbs, cocoa, chocolate, tea, soy, red wine and other plant food and drink products (Manach *et al*., 2004).It is estimated that in the United States (USA) the daily dietary intake of mixed flavonoids is 1000 mg, but this figure can be higher for those who support diets with herbal preparations containing flavonoids or flavonoids.In Table 1, subclasses of flavonoids and nutrient sources are shown(Ren *et al*., 2003).

Table 1. Flavonoids, food and representative flavonoids

Flavonoids	Food	Representative Flavonoids
Flavonols	Onion, cabbage, broccoli, apple, cherry, strawberry, tea, red wine	Kaempferol, myristine, quercetin, routine
Flavons	Parsley, thyme	Apigenin, krisin, luteolin
Flavonones	Citrus	Hesperitine, erodictyol, naringenin
Catechins	Apple, tea	Catechin, gallocatechin
Antosiyanidin	Cherry, grape	-
Isoflavones	Soybean, legumes	Daidzein, genistein, glycite, formanthin

2.2. Phenolic Acids

Phenolic acids are divided into benzoic acid derivatives and cinnamic acid derivatives.Phenolic acids are one-third of the dietary polyphenolic compounds, they are hydroxybenzoic acid derivatives (protocatechuic acid, gallic acid, p-hydroxybenzoic acid) and hydroxycinnamic acid derivatives (caffeic acid, chlorogenic acid, coumaric acid, ferulic acid, sinapic acid). Phenolic acids are high in nutrients which are strawberry, kiwi, cherry, apple, pear, chicory and coffee (Manach *et al*., 2004).Due to their presence in plant foods, people consume phenolic acids daily. The estimated consumption range is 25 mg-1 g per day, depending on the diets (fruit, vegetables, cereal, tea, coffee, spices)(Clifford, 1999).

Caffeic acid, free or esterified form, is generally the most common phenolic acid and represents 75-100% of the total hydroxycinnamic acid content of most fruits.Hydroxycinnamic acids are found all over the fruit, but the highest concentrations are seen in the outer parts of ripe fruits.Concentrations generally decrease during ripening, but total amounts increase as fruit size increases (Lempereur *et al*., 1997).

2.3. Stilbens

Stilbens are low quantities in human diet and their main representative is resveratrol, which is present in both cis and trans isomeric forms, mostly glycosylated forms.It is produced by plants in response to pathogens or infections due to various stress conditions (Baveresco, 2003). They have been identified in more than 70 plant species, including grapes, strawberries and groundnuts. Fresh grapes of red grapes are particularly rich in resveratrol (50-100 g/kg) (Baliga *et al*., 2005).

2.4. Lignans

The lignans are composed of two phenylpropane units. The richest nutritional source is quetiaparasilicol (3.7 g/kg dry weight) and flaxseed containing a small amount of matairezyme. There are fewer cereals, lentils, fruits (pears, prunes) and vegetables (garlic, asparagus, carrots). But the concentrations in flax seeds are 1000 times higher than those in other nutrient sources (Adlercreutz & Mazur, 1997).

3. Impact Mechanisms Of Polyfenols On Glycemic Control

The carbohydrate metabolism of polyphenols and their potential activity in glucose homeostasis have been investigated in in vitro animal models and in some clinical trials (Hanhineva *et al*., 2010).Numerous evidence in human studies has widely reported that the intake of polyphenols and their major nutrient sources have beneficial effects to improve related diabetes risk factors such as insulin resistance, inflammation and oxidative stress (Yin *et al*., 2011; Zhang *et al*., 2011).

The mechanisms of action of polyphenols and phenolic compounds providing glycemic control in diabetic patients are inhibition of glucose absorption, protection of pancreatic β-cell damage, improvement of insulin secretion and sensitivity, reduction of inflammation, regulation of carbohydrate metabolism pathway and regulation of insulin dependent and independent signaling pathways (Bahadoran *et al*., 2013; Williamson, 2013). In conclusion, polyphenolic compounds have gained a scientific interest to investigate the mechanisms of anti-diabetic effects (Solayman *et al*., 2016).

3.1 Effect on carbohydrate digestion

Important enzymes that play a role in dietary carbohydrate digestion are α-amylase

and α-glucosidase. Maltose, maltotriose and α-dextrins are the three major products of α-amylase digestion. (Hanhineva *et al*., 2010). Glucose is taken up by cells on the brush border membrane at the apical side of the enterocytes, predominantly through the sodium-dependent glucose transporter (SGLT1) (Roder *et al*., 2014).Disturbed digestion and absorption of dietary carbohydrates, depletion of glycogen deposits, increased glyconeogenesis and excess output hepatic glucose, β-cell dysfunction, peripheral tissue insulin resistance, and impairment of insulin signaling pathways are important causes of hyperglycemia (Dinneen *et al*., 1992).

Several polyphenols have been shown to inhibit the α-amylase and α-glucosidase activities. Inhibitor polyphenols include flavonoids (anthocyanins, catechins, flavones, flavonols, flavones and isoflavones), phenolic acids and tannins (proanthocyanins and elagitannins). (Kwon *et al*., 2007), black rice (pork, beans, corn and eggplant) (Yao *et al*., 2009), legumes (Ademiluyi & Oboh, 2012), green and black tea (Koh *et al*., 2010), tea polyphenols (Hara & Honda, 1990) and red wine (Kwon *et al*., 2008) have been reported inhibitory activities for polyphenolic extracts of food.

3.2. Effect on glucose absorption

Glucose intestinal absorption is achieved by active transport through SGLT1 and sodium-independent transport via GLUT-2.On the luminal side of the intestinal brush border membrane, two Na1+ ions bind to SGLT1 and cause a change that allows for glucose binding. Followed by another conformational change to allow glucose and Na1+ to enter the enterocyte. Glucose enterocyte is released by GLUT-2, a high-capacity facilitator carrier on the basolateral membrane to enter free circulation (Hanhineva *et al*., 2010).

The effect of polyphenols on glucose carriers was examined in vitro using intestinal brush border membranes, vesicles and Caco-2 cells. The inhibition of glucose transport has been shown with flavonoids and phenolic acids (Manzano & Williamson, 2010). Na+ induced SGLT1-mediated glucose transport has been inhibit by chlorogenic, ferulic, caffeic and tannic acids (Welsch *et al*., 1989),quercetin monoglycosides (Cermak *et al*., 2004), tea catechins (Kobayashi *et al*., 2000; Johnston *et al*., 2005) and naringenin (Li *et al*., 2006).Glucose transport by GLUT2 has been blocked by quercetin, mycicin, apigenin and tea catechins (Johnston *et al*., 2005).

3.3. Effect on postprandial glycemia

The effects of polyphenols, polyphenolic food fractions and polyphenols-rich foods and beverages on postprandial blood sugar responses have been investigated in animal models and human studies (Hanhineva *et al*., 2010).Some studies have shown that polyphenolic compounds can regulate postprandial glycemia by creating an enhanced insulin response and attenuated glucose dependent insulinotropic polypeptide (GIP) and inhibiting the secretion of glucagon-like polypeptide-1 (GLP-1) (Johnston *et al*., 2003; Dao *et al*., 2011).

Gingko biloba extracts and their flavonoid fraction reduced the plasma glucose level after oral administration of starch, maltose, sucrose or glucose in rats (Tanaka *et al*., 2004).In diabetic rats, flavonoid fraction, sucrose and glucose administration also weakened the glucose response. When quercetin and glucose were administered to diabetic rats, hyperglycaemia significantly decreased compared to glucose alone (Song *et al*., 2002).

Cinnamon contains high amounts of proanthocyanidins. The ingestion of cinnamon (6 gr) with rice pudding significantly reduced blood sugar response in the postprandial phase (15th, 30th and 45th minutes) in 14 healthy subjects (Hlebowicz*et al*., 2007).However, in another study in the same group, cinnamon (3 g) lowered postprandial serum insulin and increased GLP-1 concentrations without significantly affecting the blood glucose response (Hlebowicz*et al*., 2009).

3.4. Effect on pancreatic β-cells function

The β-cells are found in the langerhans islets of the pancreas. The main function of a β-cell is to produce, store and release the insulin hormone responsible for controlling blood sugar levels (Cernea & Dobreanu, 2013).

Blood glucose starts to rise during the digestion, The β-cells of the pancreas control the rise of blood sugar by releasing stored insulin and producing more. Glucose is transported to β-cells via facilitated diffusion of GLUT-2.Intracellular glucose is converted to glucose-6 phosphatase by glucokinase. Then, it is metabolized to ATP with phosphorylation, thus increasing the ATP/ADP ratio leads to the inactivation of ATP-sensitive potassium channels in the cell membrane. As a result, cell membranes become depolarized. Voltage-gated calcium channels open. Calcium ions (Ca2+) enter to cell.Increased Ca2+ concentration causes the release of insulin from exiting storage granules by exocytosis (Rutter, 2004).

T2D occurs when the β-cells fail to meet the insulin requirements of the pancreas, as the β-cell mass is disrupted or destroyed or the increased insulin requirements due to insulin resistance or growth are higher than the insulin producing capacity (Buchanan *et al*., 2002).

Typically, prolonged hyperglycaemia and hyperlipidemia in the development of metabolic syndrome leads to impaired autocrine insulin resistance, impaired pancreatic β-cells causing impaired insulin secretion, decreased expression of genes involved in insulin production, and consequent apoptosis and decreased β-cell mass. Thus, insulin deficiency due to the metabolic syndrome in the pancreas results from both cellular damage and impaired activity of insulin synthesis (Chang-Chen *et al*., 2008).

Some protective effects of polyphenols are related to their ability to modulate important cellular signaling pathwaysin β-cells.Anthocyanin-rich Chinese bay extract has been shown to protect against oxidative damage via upregulation of hemoxygenase-1, modulation of extracellular signal-regulated kinases (ERK1/2), modulation of the phosphotidyl inositol 3-kinase (PI3K/Akt) signaling pathway and inhibition of apoptosis of β-cells (Zhang *et al*., 2011).

Isoflavones, especially genistein, have effects on the pancreatic β-cells. Liu *et al*. (2006) found that the antidiabetic effects of genistein were not associated with the stimulation of insulin synthesis, the synthesis of GLUT-2 or the glycolytic pathway,genistein has been shown to function as a novel agonist of cyclic adenosine monophosphate (AMP)/ protein kinase signaling, an important physiological regulatorbase on glucose (Fu & Liu, 2009; Liu *et al*., 2006). In addition, Fu *et al*. (2010) reported that genistein was able to induce protein expression of cyclin D1, an important cell cycle regulator in β-cell growth, and then to promote islet β-cell proliferation, vitality and mass (Fu *et al*., 2010).

Oxidative stress caused by hyperglycemia in pancreatic β-cells plays a crucial role in the development of diabetes (Kajimoto & Kaneto, 2004; Drews *et al*., 2010).Some of

the polyphenolic compounds protect the β-cells from hyperglycemic and oxidative damage. The oral giving of phenolically-rich chestnut extract in streptozocin-induced diabetic rats caused positive effects on β-cell viability and serum glucose through the reduction of oxidative stress, the strengthening of the natural antioxidant system and the inhibition of lipid peroxidation (Yin *et al*., 2011).

Resveratrol alleviates the evoked chronic inflammation and stresses on β-cells andthen delays pancreatic islet degeneration and progression of T2D. This effect appears to be due to the reduction of stimulatory effects of hyperglycemia in insulin secretion. Some experimental and in vitro studies have shown that resveratrol has the potential to reduce insulin secretion through the induction of metabolic changes in β-cells (Szkudelski & Szkudelska, 2011).

3.5. Effect on glucose receiving (Tissue)

Increasing peripheral glucose uptake in both insulin sensitive and non-insulin sensitive tissues is an important therapeutic approach in the treatment of diabetes.Dietary polyphenols can affect glucose metabolism by stimulating peripheral glucose uptake in insulin-sensitive and noninsulin-sensitive tissues (Bahadoran *et al*., 2013).

In vitro studies have shown that have shown some polyphenolic compounds such as quercetin (Zhang *et al*., 2011), resveratrol (Park *et al*., 2007), epicatechin (Ueda-Wakagi, 2015), epigallocatechin-3-O-gallate (EGCG) (Zhang *et al*., 2010), grape seed derived procyanidins (Montagut *et al*., 2010), bitter melon (Cummings *et al*., 2004), blueberries (Vuong *et al*., 2007), black soybean (Kurimoto *et al*., 2013), canna indica (Purintrapiban*et al*., 2006), improve insulin-dependent glucose uptake by translocation of GLUT-4 to the plasma membrane via induction of AMP-activated protein kinase (AMPK) in muscle cells and adipocytes (Bahadoran *et al*., 2013).

AMPK, an important sensor of cellular energy status, plays a key role in metabolic control.Activation of this pathway, the main target of antidiabetic drugs, including metformin, is considered a new treatment inobesity, T2D, metabolic syndrome (Towler & Hardie, 2007).

The effect of polyphenols in the activation of AMPK has been reported 50-200 times more than metformin (Zang *et al*., 2006). The induction potential PI3k of some polyphenols is shown as an important signaling pathway for the up-regulation of glucose uptake (Kumar *et al*., 2009). The anthocyanins rich black soybean seed (cyanidin 3-glucoside) and procyanidins lowered glucose levels and improved insulin sensitivity by activating AMPK in skeletal and liver of mice with T2D (Kurimoto *et al*., 2013).

3.6. The effect of glucose homeostosis function in the liver

The liver plays an important role in the regulation of blood glucose levels in coordination with peripheral tissues. The liver is presumed to be responsible for integrating a third of postprandial glucose into the tissue. In the postprandial state, liver glucose is stored as glycogen by the glycogenase pathway, which contains glycokinase and glycogen synthase, which are key enzymes in regulating the use of glucose in the liver (Hanhineva *et al*., 2010). In the case of fasting, liver is the main regulator of maintaining stable glucose levels and produces glucose in two different ways, either by digesting glycogen (glycogenolysis) or by synthesizing glucose from other metabolites

(gluconeogenesis) such as pyruvate, lactate, glycerol and amino acids. The main enzymes responsible for the regulation of glycogenesis are glycokinase and glycogen synthase. Pyruvate carboxylase & phosphoenolpyruvate carboxykinase (PEPCK), fructose-1,6-bisphosphatase (FBP-1) and glucose-6-phosphatase (G6Pase) are the major enzymes responsible for the regulation of gluconeogenesis (Pilkis& Claus, 1991).

There are many factors that affect hepatic glucose homeostatic control. At the hormonal level, insulin and glucagon directly regulate liver glucose metabolism. For example, nutritional insulin suppresses liver glucose production and excretion via the insulin receptor pathway (Dentin *et al*., 2007). In addition, the central nervous system directs some of the effects of other signals such as insulin and long chain fatty acids (LCFA) to provide greater control over hepatic glucose metabolism (Pocai *et al*., 2008). In the presence of T2D and insulin resistance, hepatic glucose metabolism and hepatic glucose output control are inhibited and the liver causes serious defects in glucose homeostasis regulation, such as insulin-responsive failure, hepatic glucose uptake and hyperglycaemia. Non-alcoholic liver fat accumulation with triglyceride accumulation, which can lead to fibrosis in the liver, is clearly associated with hepatic insulin resistance. However, it is unclear whether insulin resistance causes excessive triglyceride accumulation in the liver or that the increase in triglycerides does not play a causal role in the development of hepatic or systemic insulin resistance (Postic & Girard, 2008).

Some polyphenols regulate the main pathways of carbohydrate metabolism and hepatic glucose homeostasis, including glycolysis, glycogenesis and gluconeogenesis. Ferulic acid, a hydrocycinnamic acid derivative, inhibits blood glucose by increasing glucokinase activity and production of glycogen in the liver and increasing plasma insulin levels in diabetic rats (Jung *et al*., 2007).

Tea catechins and their effects on liver glucose metabolism have been extensively investigated in animal and cell culture models. Green tea extracts and green tea catechins such as EGCG have been shown to lower blood glucose levels, as well as reduce liver triglyceride content. EGCG administration (25 mg/kg/day) significantly reduced the serum glucose and serum triglyceride levels for eight weeks in diabetic rats induced by streptozotocin (Roghani & Baluchnejadmojarad, 2010). Potential mechanisms explaining how the liver contributes to reduced blood glucose levels in animal models treated with green tea and EGCG are also examined. Wolfram *et al*. (2006) assessed glucose and insulin tolerance in db/db mice, a model for diabetic dyslipidemia, and investigated the effect of EGCG supplements on hepatic gene expression using real-time quantitative PCR (RT-PCR) for 5-7 weeks. It has been shown in the OGTT tests that EGCG supplements (2.5-10.0 g/kg) cause a decrease in blood glucose levels (Wolfram *et al*., 2006).

Similar to green tea, it has been shown that genistein and daidzein supplements (0.2 g/kg), which are soy and soy isoflavones, reduce hepatic triglyceride and blood glucose level in db/db mice model (Ae Park *et al*., 2006) and non-obese diabetic mice (Choi *et al*., 2008). Both studies have shown that reduced G6Pase and PEPCK enhance liver activities and glucokinase activities, while genistein and daidzein supplementation suppressed liver glucose production.

It has been shown that citrus flavonoids, hesperidin and naringin (0.2 g/kg) reduced blood glucose levels in db/db rats when compared with control group (Jung *et*

al., 2006). It has been reported that these physiological changes are caused by the increase of hepatic glucokinase mRNA, the decrease of PEPCK and G6Pase expression of glycogenic enzymes and the improvement in lipid metabolism promoted by the altered activities of hepatic lipid metabolizing enzymes. (Jung *et al*., 2006). Grape seed derived polyphenols such as procyanidins have also been shown to alleviate insulin resistance in mice fed with a high fat diet. Simultaneous addition of the grape seed derivative rich procyanidin-rich extract and G. pentafilium (Jiaogulan) extract (total 80 mg/kg) improved glucose tolerance and HOMA-IR index, lowered high fat diet-induced serum glucose levels and increased hepatic glucokinase activity (Zhang *et al*., 2010).

REFERENCES

Adlercreutz, H.; Mazur, W. (1997). Phyto-oestrogens and Western Diseases. Annals of Medicine 29, 95-120.

Ademiluyi, A.O.; Oboh, G. (2012). Phenolic-Rich Extracts from Selected Tropical Underutilized Legumes İnhibit Alpha-Amylase, Alpha-Glucosidase, and Angiotensin I Converting Enzyme in vitro. J. Basic Clin. Physiol. Pharmacol 23, 17-25.

Ae Park, S.; Choi, M.S.; Cho, S.Y.; Seo, J.S.; Jung, U.J.; Kim, M.J.; Sung, M.K.; Park, Y.B.;Lee, M.K. (2006). Genistein and Daidzein Modulate Hepatic Glucose and Lipid Regulating Enzyme Activities in C57BL/KsJ-db/db Mice. Life Sci, 79, 1207-1213.

Akkati, S.; Sam, K.G.; Tungha, G. (2011). Emergence of Promising Therapies in Diabetes Mellitus. J Clin Pharmacol 51, 796-804.

Bahadoran, Z.; Tohidi, M.; Nazeri, P.; Mehran, M.; Azizi, F.; Mirmiran, P. (2012). Effect of Broccoli Sprouts on Insulin Resistance in Type 2 Diabetic Patients: A Randomized Double-Blind Clinical Trial. Int. J. Food Sci. Nutr 63, 767-771.

Bahadoran, Z.; Mirmiran, P.; Azizi, F. (2013). Dietary Polyphenols as Potential Nutraceuticals in Management of Diabetes: A Review. Journal of Diabetes & Metabolic Disorders 12, 43.

Baliga, M.S.; Meleth, S.; Katiyar, S.K. (2005). Growth Inhibitory and Antimetastatic Effect of Green Tea Polyphenols on Metastasisspecific Mouse Mammary Carcinoma 4T1 Cells invitro and invivo Systems. Clin Cancer Res 11, 1918-1927.

Bastaki, S. (2005). Diabetes Mellitus and its Treatment. Int. J. DiabetesMetab13: 111-134.

Bavaresco, L. (2003). Role of Viticultural Factors on Stilbene Concentrations of Grapes and Wine.Drugs Exp Clin Res 29, 181-187.

Buchanan, T.A.; Xiang, A.H.; Peters, R.K. (2002). Preservation of Pancreatic B-Cell Function and Prevention of Type 2 Diabetes by Pharmacological Treatment of Insülin Resistance in High-Risk Hispanic Women. Diabetes 51, 2796-2803.

Cabrera, C.; Artocho, R.; Gimenez, R. (2006). BeneficialEffects of Green Tea-A Review. J Am Coll Nutr 25, 79–99.

Cermak, R.; Landgraf, S.; Wolffram, S. (2004). Quercetin Glucosides Inhibit Glucose Uptake into Brushborder-Membrane Vesicles of Porcine Jejunum. Br. J. Nutr 91, 849-855.

Cernea, S.; Dobreanu, M. (2013). Diabetes and Beta Cell Function: Frommechanisms to Evaluation and Clinical Implications. Biochem. Med 23, 266-280.

Chang-Chen, K.J.; Mullur, R.; Bernal-Mizrachi, E. (2008). Beta-Cell Failure as a Complication of Diabetes. Rev. Endocr Metab. Disord 9,329-343.

Chen, L.; Magliano, D.J.; Zimmet, P.Z. (2012). The Worldwide Epidemiology of Type 2 Diabetes Mellitus-Present and Future Perspectives. Nature Reviews Endocrinology 8,

228-236.
Choi, M.S.; Jung, U.J.; Yeo, J.; Kim, M.J.; Lee, M.K. (2008). Genistein and Daidzein Prevent Diabetes Onset by Elevating Insulin Level and Altering Hepatic Gluconeogenic and Lipogenic Enzyme Activities in Non-Obese Diabetic (NOD) Mice. Diabetes Metab. Res. Rev 24, 74-81.
Chun, O.K.; Chung, S.J.; Song, W.O. (2007). Estimated Dietary Flavonoid Intake and Major Food Sources of U.S. Adults. J. Nutr 137, 1244-1252.
Clifford, M.N. (1999). Chlorogenic Acids and Other Cinnamates-Nature, Occurrence, and Dietary Burden. J. Sci. Food Agric 79, 362-372.
Cummings, E.; Hundal, H.S.; Wackerhage, H.; Hope, M.; Belle, M.; Adeghate, E.; Singh, J. (2004). Momordica Charantia Fruit Juice Stimulates Glucose and Amino Acid Uptakes in L6 Myotubes. Mol. Cell. Biochem 261, 99–104.
Dao, T.M.; Waget, A.; Klopp, P.; Serino, M.; Vachoux, C.; Pechere,L. (2011). Resveratrol Increases Glucose Induced GLP-1 Secretion in Mice: A Mechanism which Contributes to the Glycemic Control. PLoS One 6, e20700.
Dentin, R.; Liu, Y.; Koo, S.H.; Hedrick, S.; Vargas, T.; Heredia, J.; Yates, J.I.I.I.; Montminy, M. (2007). Insulin Modulates Gluconeogenesis by Inhibition of the Coactivator TORC2. Nature 449, 366-369.
Dinneen, S.; Gerich, J.; Rizza, R. (1992). Carbohydrate Metabolism in non-Insulin Dependent Diabetes Mellitus. N Engl J Med 327, 707-713.
Drews, G.; Krippeit-Drews, P.; Düfer, M. (2010). Oxidative Stress and Beta-Cell Dysfunction. Pflugers Archiv 460,703-718.
Fonseca, V.A.; Kirkman, M.S.; Darsow, T.; Ratner, R.E. (2012). The American Diabetes Association Diabetes Research Perspective. Diabetes 61, 1338–1345.
Fu, Z.; Liu, D. (2009). Long-Term Exposure to Genistein Improves Insulin Secretory Function of Pancreatic Beta-Cells. Eur J Pharmaco 616, 321-327.
Fu, Z.; Zhang, W.; Zhen, W.; Lum, H.; Nadler, J.; Bassaganya-Riera, J. (2010). Genistein Induces Pancreatic Beta-Cell Proliferation through Activation of Multiple Signaling Pathways and Prevents Insulin-Deficient Diabetes in Mice. Endocrinology 151, 3026-3037.
Guariguata, L.; Whiting, D.R.; Hambleton, I.; Beagley, J.; Linnenkamp, U.; Shaw, J.E. (2014). Global Estimates of Diabetes Prevalence for 2013 and Projections for 2035. Diabetes Res. Clin. Pract 103, 137-149.
Guasch-Ferre, M.; Merino, J.; Sun, Q.; Fito, M.; Salas-Salvado, J. (2017). Dietary Polyphenols.; Mediterranean Diet, Prediabetes, and Type 2 Diabetes: A Narrative Review of the Evidence. Oxid. Med. Cell. Longev 2017, 6723931.
Gutteridge, J.M. (1993). Free Radicals in Diseases Processes: A Compilation of Cause and Consequence. Free Radic. Res. Commun 19, 141-158.
Hanhineva, K.; Torronen, R.; Bondio-Pons, I.; Pekkinen, J.; Kolehmainan, M.; Mykkanen, H. (2010). Impact of Dietary Polyphenols on Carbohydrate Metabolism. Int J Mol Sci 11, 1365-1402.
Hara, Y.; Honda, M. (1990). The Inhibition of a-Amylase by Tea Polyphenols. Agric. Biol. Chem 54, 1939-1945.
Hlebowicz, J.; Darwiche, G.; Bjorgell, O.; Almer, L.O. (2007). Effect of Cinnamon on Postprandial Blood Glucose, Gastric Emptying, and Satiety in Healthy Subjects. Am. J. Clin. Nutr 85, 1552-1556.
Hlebowicz, J.; Hlebowicz, A.; Lindstedt, S.; Bjorgell, O.; Hoglund, P.; Holst, J.J.; Darwiche, G.; Almer, L.O. (2009). Effects of 1 and 3 g Cinnamon on Gastric Emptying, Satiety, and Postprandial Blood Glucose, Insulin, Glucose-Dependent Insulinotropic

Polypeptide, Glucagon-Like Peptide 1, and Ghrelin Concentrations in Healthy Subjects. Am. J. Clin. Nutr 89, 815-821.
Johnston, K.; Sharp, P.; Clifford, M.; Morgan,L. (2005). Dietary Polyphenols Decrease Glucose Uptake by Human Intestinal Caco-2 Cells. FEBS Letters 579, 1653- 1657.
Johnston, K.L.; Clifford, M.N.; Morgan, L.M. (2003). Coffee Acutely Modifies Gastrointestinal Hormone Secretion and Glucose Tolerance in Humans: Glycemic Effects of Chlorogenic Acid and Caffeine. Am J Clin Nutr 78, 728-733.
Jung, U.J.; Lee, M.K.; Park, Y.B.; Kang, M.A.; Choi, M.S. (2006). Effect of Citrus Flavonoids on Lipid Metabolism and Glucose-Regulating Enzyme Mrna Levels in Type-2 Diabetic Mice. Int. J.Biochem. Cell Bio l38, 1134-1145.
Jung, E.H.; Kim, S.R.; Hwang, I.K.; Ha, T.Y. (2007). Hypoglycemic Effects of a Phenolic Acid Fraction of Rice Bran and Ferulic Acid in C57BL/KsJ-db/db Mice. J. Agric. Food Chem 55, 9800-9804.
Kajimoto, Y.; Kaneto, H. (2004). Role of Oxidative Stress in Pancreatic Beta-Cell Dysfunction. Ann NY Acad Sci 1011, 168-176.
Kobayashi, Y.; Suzuki, M.; Satsu, H.; Arai, S.; Hara, Y.; Suzuki, K.; Miyamoto, Y.; Shimizu,M. (2000). Green Tea Polyphenols Inhibit the Sodium Dependent Glucose Transporter of Intestinal Epithelial Cells by a Competitive Mechanism. J. Agric. Food Chem 48, 5618-5623.
Koh, L.W.; Wong, L.L.; Loo, Y.Y.; Kasapis, S.; Huang, D. (2010). Evaluation of Different Teas against Starch Digestibility by Mammalian Glycosidases. J. Agric. Food Chem 58, 148-154.
Kumar, R.; Balaji, S.; Uma, T.S.; Sehgal, P.K. (2009). Fruit Extracts of Momordica Charantia Potentiate Glucose Uptake and Up-Regulate Glut-4, PPAR Gamma and PI3K. J Ethnopharmacol 126, 533–537.
Kurimoto, Y.; Shibayama, Y.; Inoue, S.; Soga, M.; Takikawa, M.; Ito, C.; Nanba, F.; Yoshida, T.; Yamashita, Y.; Ashida,H. (2013). Black Soybean Seed Coat Extract Ameliorates Hyperglycemia and Insulin Sensitivity via the Activation of AMP Activated Protein Kinase in Diabetic Mice. J. Agric. Food Chem 61, 5558-5564.
Kwon, Y.I.; Apostolidis, E.; Kim, Y.C.; Shetty, K. (2007). Health Benefits of Traditional Corn, Beans, and Pumpkin: in Vitro Studies for Hyperglycemia and Hypertension Management. J. Med. Food 10, 266–275.
Kwon, Y.I.; Apostolidis, E.; Shetty, K. (2008). Inhibitory Potential of Wine and Tea Against A-Amylase and A-Glucosidase for Management of Hyperglycemia Linked to Type 2 Diabetes. J. Food Biochem 32, 15-31.
Lempereur, I.; Rouau, X.; Abecassis,J. (1997). Genetic and Agronomic Variation in Arabinoxylan and Ferulic Acid Contents of Durum Wheat (Triticum Durum L.) Grain and Its Milling Fractions. J. Cereal Sci 25, 103-10.
Li, J.M.; Che, C.T.; Lau, C.B.; Leung, P.S.; Cheng, C.H. (2006). Inhibition of Intestinal and Renal Na+- Glucose Cotransporter by Naringenin. Int. J. Biochem. Cell Biol 38, 985-995.
Liu, D.; Zhen, W.; Yang, Z.; Carter, J.D.; Si, H.; Reynolds, K.A. (2006). Genistein Acutely Stimulates Insulin Secretion in Pancreatic Beta-Cells Through aCamp Dependent Protein Kinase Pathway. Diabetes 55, 1043-1050.
Manzano, S.; Williamson, G. (2010). Polyphenols andPhenolic Acids from Strawberry and Apple Decrease Glucose Uptake and Transport by Human Intestinal Caco-2 Cells. Mol. Nutr. Food Res 54, 1773–1780.
Mirmiran, P.; Noori, N.; Zavareh, M.B.; Azizi,F. (2009). Fruit and Vegetable Consumption and Risk Factors for Cardiovascular Disease. Metabolism 58, 460-468.

Montagut, G.; Onnockx, S.; Vaque, M.; Blade C.; Blay, M.; Fernandez-Larrea, J.; Pujadas, G.; Salvadomj.; Arola, L.; Pirson,I. (2010). Oligomers of Grape-Seed Procyanidin Extract Activate the Insulin Receptor and Key Targets of the Insulin Signaling Pathway Differently from Insulin. J. Nutr. Biochem 21, 476-481.

Ovaskainen, M.I.; Torronen, R.; Koponen, J.M.; Sinkko, H.; Hellstrom, J.; Reinivuo, H.; Matilla,P. (2008). Dietary Intake and Major Food Sources of Polyphenols in Finnish Adults. J. Nutr 138,562-566.

Pandey, K.B.; Rizvi, S.I. (2009). Plant Polyphenols as Dietary Antioxidants in Human Health and Disease. Oxid. Med. Cell. Longev 2, 270-278.

Park, C.E.; Kim, M.J.; Lee, J.H.; Min, B.I.; Bae, H.; Choe, W. (2007). Resveratrol Stimulates Glucose Transport in C2C12 Myotubes by Activating AMP-Activated Protein Kinase. Mol Med 39, 222–229.

Philippe, J.; Raccah, D. (2009). Treating Type 2 Diabetes: How Safe are Current Therapeutic Agents? Int. J. Clin. Pract 63, 321-332.

Pilkis, S.J.; Claus, T.H. (1991). Hepatic Gluconeogenesis/Glycolysis: Regulation and Structure/Function Relationships of Substrate Cycle Enzymes. Annu. Rev. Nutr 11, 465–515.

Postic, C.; Girard,J. (2008). Contribution of de novo Fatty Acid Synthesis to Hepatic Steatosis and Insulin Resistance: Lessons from Genetically Engineered Mice. J. Clin. Invest 118, 829–838.

Purintrapiban, J.; Suttajit, M.; Forsberg, N.E. (2006). Differential Activation of Glucose Transport in Cultured Muscle Cells by Polyphenolic Compounds from Canna Indica L. Root. Biol. Pharm. Bull 29, 1995–1998.

Ren, W.; Qiao, Z.; Wang, H.; Zhu, L.; Zhang, L. (2003). Flavonoids: Promising Anticancer Agents. Med Research Rev 23, 519-534.

Roder, P.V.; Geiilinger, K.E.; Zietek, T.S.; Thorens, B.; Koepsell, H.; Daniel,H. (2014). The Role of SGLT1 and GLUT-2 in Intestinal Glucose Transport and Sensing. PLoS ONE 9, e89977.

Roghani, M.; Baluchnejadmojarad,T. (2010). Hypoglycemic and Hypolipidemic Effect and Antioxidant Activity of Chronic Epigallocatechin-Gallate in Streptozotocin Diabetic Rats. Pathophysiology 17, 55–59.

Rutter, G.A. (2004). Visualising Insulin Secretion. The Minkowski Lecture 2004. Diabetologia 47, 1861–1872.

Santaguida, P.L.; Balion, C.; Hunt, D. (2008). Diagnosis, Prognosis, and Treatment of Impaired Glucose Tolerance and Impaired Fasting Glucose. Evid Rep Technol Assess 12, 1-11.

Scalbert, A.; Williamson, G. (2000). Dietary Intake and Bioavailability of Polyphenols. J. Nutr 130, 2073-2085.

Solayman, M.D.; Yousuf, Ali.; Alam, F.; Asiful İslam, M.D.; Alam, N.; Khalil, I.; Gan,S.H. (2016). Polyphenols: Potential Future Arsenals in the Treatment of Diabetes. Cur. Pharm. Design 22,549-565.

Szkudelski, T.; Szkudelska, K (2011). Anti-Diabetic Effects of Resveratrol. Ann NY Acad Sci 1215, 34-39.

Tanaka, S.; Han, L.K.; Zheng, Y.N.; Okuda, H. (2004). Effects of the flavonoid Fraction from Ginkgo Biloba Extract on the Postprandial Blood Glucose Elevation in Rats. Yakugaku Zasshi 124, 605–611.

Towler, M.C.; Hardie, D.G. (2007). AMP-Activated Protein Kinase in Metabolic Control and Insulin Signaling. Circ Res 100, 328–341.

Ueda-Wakagi, M.; Mukai, R.; Fuse, N.; Mizushina, Y.; Ashida, H. (2015). 3-O-Acyl

Epicatechins Increase Glucose Uptake Activity and GLUT4 Translocation through Activation of PI3K Signaling in Skeletal Muscle Cells. Int. J. Mol. Sci 16, 16288-16299.
Vuong, T.; Martineau, L.C.; Ramassamy, C.; Matar, C.; Haddal, P.S. (2007). Fermented Canadian Lowbush Blueberry Juice Stimulates Glucose Uptake and AMP-Activated Protein Kinase in Insulin-Sensitive Cultured Muscle Cells and Adipocytes. Can. J. Physiol. Pharmacol 85, 956-965.
Welsch, C.A.; Lachance, P.A.; Wasserman, B.P. (1989). Dietary Phenolic Compounds: Inhibition of Na+- Dependent D-Glucose Uptake in Rat Intestinal Brush Border Membrane Vesicles. Nutr. J 119, 1698-1704.
Williamson, G. (2013). Possible Effects of Dietary Polyphenols on Sugar Absorption and Digestion. Mol. Nutr. Food Res 57, 48-57.
Wolfram, S.; Raederstorff, D.; Preller, M.; Wang, Y.; Teixeira, S.R.; Riegger, C.; Weber,P. (2006). Epigallocatechin Gallate Supplementation Alleviates Diabetes in Rodents. J. Nutr136, 2512-2518.
Yao, Y.; Sang, W.; Zhou, M.; Ren, G. (2009). Antioxidant and α-Glucosidase Inhibitory Activity of Colored Grains in China. J. Agric. Food Chem 58, 770-774.
Yin, P.; Zhao, S.; Chen, S.; Liu, J.; Shi, L.; Wang, X.; Liu, Y.; Ma, C. (2011). Hypoglycemic and Hypolipidemic Effects of Polyphenols from Burs of Castanea Mollissima Blume. Molecules 16, 9764-9774.
Zang, M.; Xu, S.; Maitland-Toolan, K.A.; Zuccollo, A.; Hou, X.; Jiang, B. (2006). Polyphenols Stimulate AMP-Activated Protein Kinase, Lower Lipids, and Inhibit Accelerated Atherosclerosis in Diabetic LDL Receptor-Deficient Mice. Diabetes 55, 2180–2191.
Zhang, B.; Kang, M.; Xie, Q.; Xu, B.; Sun, C.; Chen, K.; Wu, Y. (2011). Anthocyanins from Chinese Bayberry Extract Protect β Cells From Oxidative Stress-Mediated Injury via HO-1 Upregulation. J Agric Food Chem 59, 537-545.
Zhang, Z.F.; Li, Q.; Liang, J.; Dai, X.Q.; Ding, Y.; Wang, J.B.; Li, Y. (2010). Epigallocatechin- 3-O-Gallate (EGCG) Protects the Insulin Sensitivity in Rat L6 Muscle Cells Exposed to Dexamethasone Condition. Phytomedicine 17, 14-18.

Chapter 56

Role of Vitamins in Metabolic Regulation

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INTRODUCTION

Vitamins are organic compounds the body needs in trace amounts in the execution of special cellular functions. They can be classified according to their solubility and functions in the metabolism. Vitamins cannot be synthesized in the body. Therefore, they have to be taken with foods. Until recently, it was believed that the sole function of vitamins is the prevention of acute deficiency diseases like scurvy and beri beri.

Micronutrients play a central role in the maintenance of metabolism and tissue functions. Most vitamins or vitamin metabolites function in complex biochemical reactions. For example; riboflavin and niacin in the electron transport chain; and folic acid in the transfer of methyl groups. These reactions are critical in the metabolism. They are also important in providing energy, proteins and nucleic acids for the use of basic nutrients (Fairfield & Fletcher, 2002).

FUNCTIONS OF VITAMINS IN METABOLIC REGULATION

Vitamin A

Vitamin A plays a significant role in the anti-oxidant defence mechanism. Its basic form is retinol. The oxidized form of retinol is retinoic acid. Retinoic acid is synthesized inside the cell (Shenkin, 2006). It plays a role in gene expression through the nuclear retinoic acid receptor (Mino, 1993).

Vitamin D

The classical effect of vitamin D is the maintenance of mineral balance through the regulation of calcium absorption. In addition to this, it has been determined that $1,25(OH)_2D_3$ can be associated with the development of diabetes in adolescents (Ongunkolade *et al*., 2002). It has also been demonstrated that vitamin D can have an effect on insulin secretion (Virtanen & Knip, 2003). $1,25(OH)_2D_3$ is necessary for normal insulin secretion (Hirai *et al*., 2000). $1,25(OH)_2D_3$ is associated with insulin secretion. $1,25(OH)_2D_3$ insufficiency may lead to a decrease in insulin secretion. Hypovitaminosis D is a risk factor for glucose intolerance (Dusso *et al*., 2005). Hypovitaminosis has a negative impact on β cell function. Vitamin D can have an inhibitory effect on protein kinase which is activated by stress. $1,25(OH)_2D_3$ needs receptors for most of its biological activities (Chiu *et al*., 2004).

Vitamin E

Vitamin E is a fat soluble vitamin. It has anti-oxidant properties. Vitamin E is an anti-oxidant protecting cells from oxidative reaction. Vitamin E can neutralize free radicals. α-tocopherol can inhibit skeletal muscle cell proliferation, decrease protein kinase C activity and increase phosphoprotein phosphatase 2A activity (Brigelius-Flohé & Traber, 1999). Lower vitamin E levels are associated with an increase in diabetes incidence. Diabetic people display increased oxidative stress indicators. α-tocopherol may lower plasma glucose concentrations.

Vitamin K

Vitamin K serves as a co-factor for the carboxylase enzyme. Vitamin K participates in the carboxylation of osteocalcin reaction (Tsugawa *et al*., 2006). γ-carboxy glutamic acid is an amino acid synthesized via modification of specific glutamic acid residues. This reaction is catalysed by vitamin K dependent γ-glutamyl carboxylase (Begley *et al*., 2000). Vitamin K is a co-factor for the transformation reaction of glutamyl residues to γ-carboxylated glutamyl residues.

Vitamin C

Vitamin C is known as a strong anti-oxidant. Vitamin C plays an essential role in many metabolic pathways such as collagen synthesis. Vitamin C is required for the modification of procollagen polypeptides. Vitamin C is needed also for carnitine biosynthesis. Carnitine is a small molecule responsible for the transport of long chain fatty acids across the mitochondrial membrane for their β-oxidation. Therefore, vitamin C is associated with tissue carnitine concentrations and fat oxidation (Johnston, 2005).

Thiamin

The active form of thiamine is thiamine pyrophosphate. One of the enzymes requiring thiamine pyrophosphate is the enzyme acetohydroxyacid synthase (Tittmann, 2005). This enzyme catalyzes the first step in branched chain amino acid biosynthesis. Thiamine pyrophosphate ia a co-factor also for the decarboxylase enzyme (Lonsdale, 2006). Thiamine dependent enzymes play key roles also in sugar metabolism. They catalyze decarboxylation of α-ketoacid and transfer of aldehyde and acyl groups.

Riboflavin

Riboflavin is a water soluble vitamin found in milk and dairy products. The most important biologically active forms are FAD (flavin adenine dinucleotide) and FMN (flavin mononucleotide). Riboflavin takes part in redox reactions. It performs this function through co-factors FAD and FMN which serve as electron carriers. Most flavoproteins use FAD as a co-factor (Powers, 2003). D-aminoacid oxidase is a member of the flavoprotein oxidase family. It can play a key role in understanding some reactions catalyzed by flavin (Umhau *et al*., 2000). FAD may have a prominent role in the oxidative protein formation mechanism in the endoplasmic reticulum.

Riboflavin insufficiency may result in a significant decrease in the hepatic methyltetrahydrofolate reductase activity. In addition, vitamin B_6 metabolism is flavin dependent. Correction of riboflavin insufficiency may lead to an increase in erythrocyte pyridoxamine phosphate oxidase activity. This enzyme is responsible for the transformation of pyridoxamine phosphate and pyridoxine phosphate to pyridoxal phosphate.

FAD is a co-factor for the enzyme aminocid dehydrogenase. FAD dependent L-2 hydroxyglutarate dehydrogenase catalyzes the oxidation of L-2 hydroxyglutaric acid to α-ketoglutarate. The enzyme in question is a membrane bound enzyme and is stimulated by FAD. Glyserol 3 phosphate dehydrogenase is also a FAD dependent mitochondrial enzyme (Yang *el al*., 2007). The enzyme phenyl cystein lyase responsible for modification of lipids is another FAD dependent enzyme.

Niacin

There are 2 forms of niacin. Nicotinic acid and nicotinamide. Active co-enzyme forms are NAD and NADP. These are necessary for normal carbohydrate, lipid and protein metabolism and hundreds of enzyme functions.

In a study conducted, it has been shown that it can protect against diabetes by preserving pancreatic β-cells (O'Connell, 2001). Niacin can be used in treating various lipid disorders including metabolic syndrome, diabetes, decreased HDL-cholesterol and hypertriglyceridemia. Improvements in serum lipid levels caused by niacin have a positive impact on coronary artery disease. Niacin may indirectly affect LDL-cholesterol by decreasing the synthesis of LDL-cholesterol and VLDL-cholesterol precursors. It can decrease the mobilization of free fatty acids from adipose tissue. Niacin may also decrease apolipoprotein B-100 synthesis. It can increase VLDL catabolism by increasing lipoprotein lipase. Niacin can reduce the amount of apolipoprotein A-1. Apo A-1 is being catabolized from HDL during hepatic cholesterol intake. Niacin can increase HDL-cholesterol levels and decrease triglyceride and LDL-cholesterol levels. Niacin can lead to inhibition of lypolysis and inhibition of VLDL production.

It can also negatively affect glucose levels. NAD is a co-factor for glycolytic enzymes. Pentose phosphate pathway is a basic metabolic pathway in all cells. It is comprised of the dehydrogenase-decarboxylation system in which D glucose 6 phosphate is converted to D ribulose 5 phosphate. $NADPH+H^-$ is also necessary for this system. NAD also takes part in the Krebs cycle. NADP dependent 5,10 methylenetetrahydrofolate dehydrogenase functions in the amino acid metabolism. Folate dependent enzymes are located in the mitochondria. NAD dependent mitochondrial methylenetetrahydrofolate dehydrogenase cyclohydrolase plays a role in embryo development. This enzyme is also responsible in purine synthesis. Nitric oxide takes part in the inactivation of the enzyme $NADP^+$ isocitrate dehydrogenase (Yang *et al*., 2002).

Vitamin B_6

Vitamin B_6 is an essential co-factor for enzymes, glucose, lipid and amino acid metabolism and neurotransmitter synthesis. The active form of the vitamin is pyridoxal 5 phosphate (PLP). It is a vitamin containing a nitrogen group. Apart from pyridoxal it has two other forms called pyridoxine and pyridoxamine. It participates in more than 100 enzymatic reactions. It plays an important role in the maintenance of the biochemical balance of the body. PLP associated enzymes participating in the metabolism are ATP dependent pyridoxal kinase and FMN dependent pyridoxine 5 phosphate oxidase. The enzyme PLP oxidase shows that vitamin B_6 plays a role in the metabolic pathway.

PLP is closely associated with glycogen phosphorylase in the muscles. Vitamin B_6 insufficiency can be associated with glucose intolerance. However, supplementation cannot improve glycemic control.

PLP catalyzes reactions like pentose and triose isomerization, and amine group addition. Vitamin B_6 takes part in aminotransferase reactions. PLP serves as a co-enzyme for transaminases. Vitamin B_6 also takes part in decarboxylation reactions. PLP serves as a co-factor also for enzymes responsible for cystein production.

Vitamin B_6 participates in one carbon metabolism. Vitamin B_6 insufficiency can affect one carbon metabolism by impairing the synthesis of methyl groups and whole body transsulfuration for homocysteine remethylation. Vitamin B_6 can play a role for protection from cardiovascular diseases by participating in homocysteine detoxification. Vitamin B_6 can change homocysteine metabolism by decreasing the serine hydroxymethyl transferase activity and suppressing homocysteine catabolism. Cytosolic and mitochondrial forms of the enzyme serine hydroxymethyl transferase require PLP as co-enzyme. In the transsulfuration reaction of homocysteine catabolism cystathionine β synthase and γ- cystathionase PLP are required.

Besides these effects, it has been shown that vitamin B_6 can possess antioxidant effects (Choi & Cho, 2009).

Folic acid

Folic acid is essential for purine and thymidylate synthesis. Moreover, folic acid is also required for the remethylation of homocysteine to methionine to support most cellular methylation reactions using [S] adenosyl methionine. Homocysteine is a sulphur amino acid synthesized from methionine during transmethylation. Homocysteine metabolism depends on 2 reactions. Methionine cycle and transulfuration, when homocysteine is converted to methionine remethylation occurs. Remethylation reaction is catalyzed by 5-methyl tetrahydrofolate- homocysteine S-methyl transferase or methionine synthase. This reaction requires folic acid and vitamin B12 as co-enzyme and methyl donor. Conversion to cysteine is dependent on vitamin B6 and this reaction is catalyzed by the enzyme cystathionine β-synthase. Folic acid supplementation can have a curative effect also on insulin and lipid metabolism. Folic acid participates in one carbon metabolism.

Vitamin B_{12}

Vitamin B_{12} plays a role as a co-factor for fat, carbohydrate and protein synthesis and haematopoiesis. In addition, it is necessary for normal homocysteine metabolism. One carbon metabolism also needs this vitamin.

Biotin

Biotin is a water soluble vitamin synthesized by plants, some fungi and most bacteria. It is necessary for normal cellular functions and growth of all living organisms. Biotin participates in decarboxylation and transcarboxylation reactions. Carboxylase enzymes are enzymes that require biotin as co-factor. These enzymes are; pyruvate carboxylase, propionyl CoA carboxylase, 3-methyl crotonil CoA carboxylase and acetyl CoA carboxylase.

Biotin can change the transcription of the methylcrotonyl CoA carboxylase gene. Biotin plays a role also in gene expression. (MCCaz) catalyzes the ATP dependent carboxylation of 3-methyl crotonyl CoA to 3-methyl glutaryl CoA. Biotin acts as carrier

of carboxyl groups. MCCaz is responsible for catabolism of acetaoacetate and acetyl CoA. The primary metabolic role of methyl crotonyl CoA is the mitochondrial catabolism of leucine.

There is an inverse correlation between serum biotin level and fasting blood glucose concentration. Biotin deficiency has been linked to impaired glucose tolerance and decreased glucose use. Biotin treatment can lower postprandial glucose concentration. Biotin affects the expression of genes that are critical in glucose metabolism. Biotin increases the expression of hepatic and pancreatic glucokinase. This enzyme plays a key role in glucose balance through regulation of insulin secretion by β cells in response to glucose. Conversely, biotin can decrease phosphoenol pyruvate carboxylase expression. This enzyme is important in the regulation of gluconeogenesis.

Carnitine

Carnitine was discovered in the muscle 100 years ago. It is a water soluble amine. More than 95% of total body carnitine is stored in the skeletal muscle mass. Its most frequently mentioned function is the oxidation of long chain fatty acids. It performs the function of carrying the long chain fatty acids to the mitochondrial matrix for β-oxidation. Moreover, it also has an effect on the acetyl CoA production of carnitine. In 1996 another metabolic function of carnitine in the muscles was discovered. Free carnitine serves as a buffer for acetyl CoA. After a few minutes of exercise, the free carnitine content in skeletal muscle drops to approximately 75% of the level in the resting state. When this decrease is around 20%, acetyl carnitine formation increases. The increase in acetyl carnitine formation during heavy exercise is directly associated with the increase in the level of muscular acetyl CoA. Carnitine can buffer the acetyl groups through a reaction catalyzed the acetyl transferase enzyme.

Inositol

Phosphoinositide dependent kinase-1 (PDK-1) can play a role increasing the effect of insulin. TSH stimulation can lead to an increase in the level of inositol (1,4,5)P_3, inositol 1,3,4-triphosphate and inositol 1,3,4,5, tetraphosphate.

CONCLUSION

Micronutrients play important roles in all metabolic processes. For this reason, insufficient metabolic processes occur when they are inadequate. These defects support the formation of various health problems. In all of this, it can be said that adequate and balanced nutrition is an important element in protecting the health.

REFERENCES

Begley, G.S.; Furie, B.C.; Czerwiec, E.; Taylor, K.L.; Furie, G.L.; Bronstein, L.; Stenflo, J.; Furie, B. (2000). A conserved motif within the vitamin K-dependent carboxylase gene is widely distributed across animal phyla. J Biol Chem 275: (46), 36245-36249.

Brigelius-Flohé, R.; Traber, M.G. (1999). Vitamin E: Function and metabolism. FASEB J 13:1145-1155.

Chiu, K.C.; Chu, A.; Go, V.L.W.; Saad, M.F. (2004). Hypovitaminosis D is associated with insulin resistance and β cell dysfunction. Am J Clin Nutr, 79:820-825.

Choi, E.Y.; Cho, Y.O. (2009). Effect of vitamin B6 deficiency on antioxidative status in rats with exercise-induced oxidative stress. Nutr Res Pract 3: 208-211.
Dusso, A.S.; Brown, A.J.; Slatopolsky, E. (2005). Vitamin D. Am J Physiol Renal Physiol 289:F8-F28.
Fairfield, K.M.; Fletcher, R.H. (2002). Vitamins for chronic disease prevention in adults. JAMA 287:(23), 3116-3126.
Hirai, M.; Suzuki, S.; Hinokio, Y.; Hirai, A.; Chiba, M.; Akai, H.; Suzuki, C.; Toyota, T. (2000). Variations in vitamin D-binding protein (group-specific component protein) are associated with fasting plasma insulin levels in Japanese with normal glucose tolerance. J Clin Endocrinol Metab 85:(5), 1951-1953.
Johnston, C.S. (2005). Strategies for healthy weight loss: from vitamin c to the glycemic response. J Am Coll Nutr 24:(3), 158-165.
Lonsdale, D. (2006). A review of the biochemistry, metabolism and clinical benefits of thiamin (e) and its derivatives. eCAM 3:(1), 49-59.
Mino, M. (1993). Metabolic regulation on retinoic acid and vitamin E function. Nippno Rinsho, 51:(4), 871-878.
O'Connell, B.S. (2001). Select vitamins and minerals in the management of diabetes. Diabetes Spectrum 14:(3), 133-148.
Ongunkolade, B.W.; Boucher, B.J.; Prahl, J.M.; Bustin, S.A.; Burrin, J.M.; Noonan, K.; North, B.V.; Manan, N.; McDermott, M.F.; DeLuca H.F.; Hitman, G.A. (2002). Vitamin D receptor (VDR) mRNA and VDR protein levels in relation to vitamin D status, insulin secretory capacity, and VDR genotype in Bangladeshi Asians. Diabetes 51:2294-2312.
Powers, H.J. Riboflavin (vitamin B-2) and health. (2003). Am J Clin Nutr 77:1352-1360.
Shenkin, A. Micronutrients in health and disease. (2006). Postgrad Med J 82:559-567.
Tittmann, K.; Vyazmensky, M.; Hübner, G.; Barak, Z.; Chipman, D.M. (2005). The carboligation reaction of acetohydroxyacid synthase II: steady-state intermediate distributions in wild type and mutants by NMR. PNAS 102 :(3), 553-558.
Tsugawa, N.; Shiraki, M.; Suhara, Y.; Kamao, M.; Tanaka, K.; Okano, T. (2006). Vitamin K status of healthy Japanese women: age-related vitamin K requirement for γ-carboxylation of osteocalcin. Am J Clin Nutr 83:380-386.
Umhau, S.; Pollegioni, L.; Molla, G.; Diederichs, K.; Welte, W.; Pilone, M.S.; Ghisla, S. (2000). The x-ray structure of D-amino acid oxidase at very high resolution identifies the chemical mechanism of flavin-dependent substrate dehyrogenation. PNAS, 97 :(23), 12463-12468.
Virtanen, S.M.; Knip, M. (2003). Nutritional risk predictors of β cell autoimmunity and type 1 diabetes at a young age. Am J Clin Nutr 78:1053-1067.
Yang, E.S.; Richter, C.; Chun, J.S.; Huh, T.L.; Kang, S.S.; Park, J.W. (2002). Inactivation of $NADP^+$-dependent isocitrate dehydrogenase by nitric oxide**.** Free Radical Biology and Medicine 33:(7), 927-937.
Yang, W.; Cao, Y.; Sun, X.; Huang, F.; He, Q.; Qiao, D.; Dr, L.B. (2007). Isolation of a FAD-GAPDH gene encoding a mitochondrial FAD dependent glycerol-3-phosphate dehydrogenase from Dunaliella salina. Journal of Basic Microbiology 47: 266-274.

Chapter 57

Living with Phenylketonuria

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1. Introduction

It has been suggested that phenylketonuria (PKU), an inherently autosomal recessive disorder, develops due to the mutation in the phenylalanine hydroxylase (PAH) gene on 12th chromosome. As a result of this mutation, phenylalanine (Phe) is not convertible to the tyrosine and levels of Phe elevate in blood, especially accumulate in the brain leads to permanent damage. Disorder in the PAH gene is the most common cause of hyperphenylalanine.

The PKU, which is considered one of the first hereditary metabolic diseases and has a globally high prevalence, was first described by Asbjorn Folling in 1934 as "hereditary metabolic disease characterized by severe mental disorder, motor problem and skin abnormalities." In the 1950s, Horst Bickel developed a low phenylalanine diet for PKU treatment. In the same years, deficiency of PAH activity in PKU has been identified. During 1960s, Robert Guthrie developed a diagnostic test (Guthrie test) for the diagnosis of hyperphenylalanine, which is still widely used worldwide today. Over the years 1980, researches on the human PAH gene have been increased and this gene was mapped. After the 1990s, special products were developed for individuals with PKU and the problems faced by individuals with PKU in social life have begun to be addressed.

The only rule that does not change from day of the discovery of PKU to now is the necessity of a lifelong diet. However there are drug treatments developed for individuals with PKU, they have to maintain their protein-restricted diet for life. Therefore, although individuals with PKU early diagnosed are physically close to healthy, they may have a lot of social problems.

2. Phenylketonuria

2.1. Mechanism and Classification

Phenylalanine, an essential and aromatic amino acid, is the precursor of the tyrosine amino acid and of catecholamines such as epinephrine, norepinephrine, dopamine and tiramycin. Phe forms many neuropeptides in the central nervous system. With the PAH enzyme and the tetrahydrobiopterin (BH_4) cofactor, phenylalanine is converted to tyrosine, non-essential amio acid, by the irreversible reaction. In the absence of the PAH enzyme or BH_4 cofactor in the mechanism, the situation is called phenylketonuria. As a result, the unusable phenylalanine enters the different metabolic

pathways and converts to phenyl ketones such as phenyl acetic acid, phenyl lactic acid, and phenyl pyruvic acid. In fact, the name of disease comes from these metabolic products (Figure 1). Hyperphenylalaninemia is considered as biochemical indicators of the disease. Defects in BH_4, which act as a cofactor in the function of the PAH enzyme in this mechanism, can also lead to hyperphenylalanine.

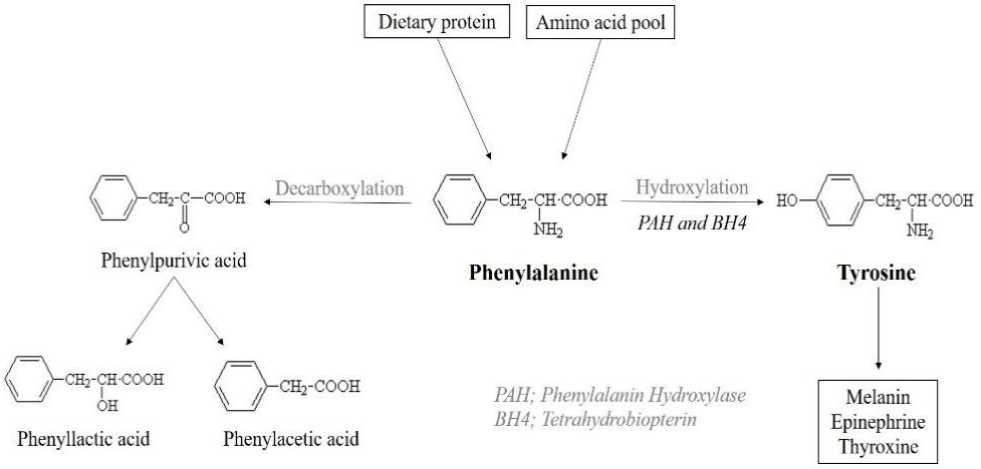

Figure 1. Metabolic pathways of phenylalanine

Depending on the enzyme defect, genotype and severity of the disease, different forms of PKU in different clinical phenotypes have been defined (Table 1). Although there are types such as BH_4 cofactor defects, maternal phenylketonuria, there is no common phenotype classification. The limits of the plasma Phe levels required for development and growth of individuals with PKU may vary between countries.

Table 1. Classification of PKU

Biochemical phenotypes	**Phe Levels**	
Classic PKU	> 20 mg/dl	> 1200 mmol/L
Moderate PKU	15-20 mg/dl	900-1200 mmol/L
Mild PKU	10-15 mg/dl	600-900 mmol/L
Mild HPA	5-10 mg/dl	300-600 mmol/L

HPA: Hyperphenylalaninemia

2.2. Epidemiology

In 2001, PKU prevalance in Turkey was 1.4200, which is higher than other countries. The prevalance was 1.6094 in 2011. Unfortunately, there is no data about latest PKU prevalance in Turkey but Ministry of Health of Turkey indicated it as 1.4500 in 2012. This high prevalance is because of consanguineous marriage in Turkey is very high. In a study by Hardelid, et al., the overall PKU prevalance in European, Chinese and Korean populations was approximately 1.10000. In 2012, estimated PKU prevlance in Europe was 1.10000. Although these high prevalences, PKU is a disease that may treatable with Phenylalanine-low diet. For PKU patients, it is essential to adherence diet for life and it would remain as a major treatment many years.

2.3. Treatment

Many studies have been carried out for many years to understand the mechanism of the PKU and to improve its treatment. With the Guthrie test, drug treatments have been tried to be developed, especially for individuals diagnosed early. It is emphasized that the blood phenylalanine at normal levels can only be attained with appropriate nutritionally to PKU. Protein-limited diet therapy and/or BH_4-containing drug therapy is administered to prevent PKU patients from being adversely affected by the negative consequences of elevated Phe levels on various occasions.

2.3.1. Drug treatment

Biochemistry of PKU disease; is basically based on changes or deletions in the enzyme PAH converting phenylalanine, which is essential in the synthesis of amino acids in humans, to tyrosine having important functions in neurotransmitter synthesis. In this transformation, the tetra-hydro-bioprotein (BH_4) functions as a cofactor and it is used as the main factor in drug therapy. By increasing PAH activity, this important cofactor reduces blood Phe levels and increases diet Phe tolerance.

The PAH enzyme, which is involved in the metabolic system of PKU disease, was cloned in the 1980s and the first mutations were identified. Many studies have indicated that Phe metabolism occurs in the liver, although it has also been reported to occur in the kidneys.

Due to the lack of PAH enzyme or deficiency of BH_4 cofactor in PKU disease, phenylalanine can not be hydroxylated and, alternatively, phenylketones such as phenethyl acetate, phenylethylamine, and phenylacetate which are negative for health are formed. Trefz et al. (2009) concluded that there was a decrease in blood Phe levels in individuals with 33 PKU who received sapropterin (BH_4) therapy, thus indicating that Phe tolerance and the amount of Phe that they may intake in their diets increase. Recently, Phenylalanine ammonium lyase (PAL) enzyme, which converts phenylalanine to ammonium and trans-cinnamic acid as an alternative treatment to PKU, is clinically applied. This enzyme, designated as less complex than PAH, does not require a cofactor.

2.3.2. Dietary treatment

In addition to drug treatment, dietary treatment based on protein restriction is critical to PKU patients. These low Phe diets, specially prepared for individuals, are essential for the normal course of blood phe levels and normal development of the brain in PKU patients. In addition, it is very important that following of the nutritional status of individuals with PKU by dietitians. Because, as a result of catabolized products with insufficient energy intake, the amount of phenylalanine can increase.

The PKU diet consists of selected vegetables and fruits based mainly on the contents of phenylalanine, nutrients containing variable amounts of low phenylalanine, and synthetic products that do not contain phenylalanine and that provide essential amino acids. The education and the knowledge of the nutrients and quantities of PKU patients and their families are also very important in selection of appropriate nutrients. It affects their social life. Studies have indicated that treatment with low phenylalanine diet, BH_4 or amino acid-containing products enhances the quality of life of individuals with PKU.

Most of the non-phenylalanine proteins in PKU are derived from phenylalanine-free amino acids. In recent years, nutritional development studies have been carried out

in accordance with the diets of individuals with PKU. Studies have especially focused on glycomacropeptide (GMP) obtained from whey-proteins does not contain aromatic amino acids such as Phe. GMP has a unique amino acid pattern for individuals with PKU in terms of Phe does not contain. In a study conducted by Ney et al. (2008) on rats, it was found that Phe levels decrease in plasma and brain in GMP-fed rats. Therefore, GMP may be a safe alternative for individuals with PKU.

The risks of growth and development and malnutrition are also quite high due to the constraints of diet of individuals with PKU. Studies show that PKU individuals are slower to develop. Moreover, it has been shown that individuals with PKU consumed inadequate micronutrients including vitamins (A, C, E, B2, B6, B12) and minerals (selenium, folate, iron, calcium). Therefore, the early diagnosis of PKU is very important. However, even if the severity of the disease is reduced by early diagnosis, diet therapy should be set individually.

3. Challenges/difficulties of individuals with PKU in social life

PKU patients can face various problems in social life due to the diet rules and/or special supplements/formula they consumed (Figure 2). They should be evaluated as both biochemically and social life quality. Quality of life for PKU patients is important and there is need for studies towards social life of PKU patients.

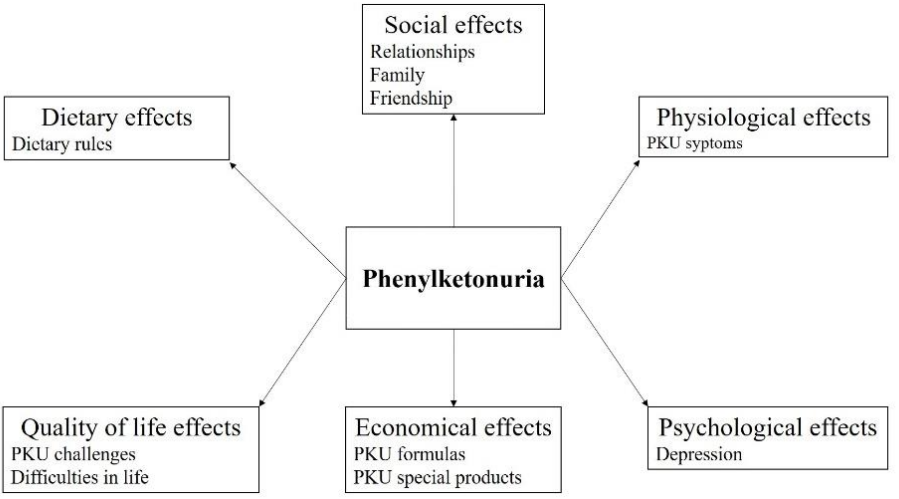

Figure 2. General effects of PKU

After the PKU was discovered in the 19th century, many researches have been carried out and the mechanism has been determined. The PKU has been studied not only biochemically, but also on the difficulties that individuals with PKU have in their social life, depending on diet rules. Some studies were reviewed in Table 2.

Table 2. Studies carried about effects of PKU on social life

Reference	Method/Subjects	Conclusion(s)
Bilginsoy et al. (2005)	50 patients with PKU (ages of 2 and 18 years). A survey on certain aspects of PKU management.	A large majority of respondents believe that a home monitor would facilitate better management of PKU through more regular and timely feedback.
Simon et al (2008)	67 patients with PKU (aged 17 years and above). A questionnaire on quality of life and social status.	PKU does not preclude healthy emotional adjustment when the disease is diagnosed early and treated well.
Özel et al. (2011)	36 children with PKU (aged 2-12 years). The aim is that to evaluate effect of dietary education given to the caregivers of children with PKU in their home environment on children's blood Phe levels.	A well-controlled blood Phe level can be achieved with intense, regular and continuing education programs, which include regular home visits.
Ten Hoedt et al. (2011)	Randomize controlled trial with 38 patients with PKU aged ≥1 year.	Increased self-management in PKU by providing patients and/or parents their Phe values without advice is feasible and safe and is highly appreciated.
Di-Ciommo et al. (2012)	20 patients with PKU (aged between 8 and 23 years). Qualitative study was performed using semi structured interviews. The interviews were audiotaped and were all transcribed and analyzed by investigators.	The impact of long-standing, demanding health behaviors on the social life of patients affected by a chronic metabolic disease must be recognized, taking into particular consideration both social functioning and adherence to dietary treatment.
Thimm et al. (2013)	50 children/adolescents with PKU and their parents. Aim of the study is the evaluation of health related quality of life (HRQoL) and the detection of deviant behavior in early-treated children and adolescents with PKU in comparison with healthy peers. Special focus was laid on the impact of compliance with treatment as defined by the national recommendations on HRQoL.	Quality of metabolic control does not have an impact on HRQoL in children and adolescents with PKU. In addition, in comparison to healthy peers quality of life in PKU patients is unimpaired. However, parents are concerned about school success and success in life when Phe concentrations in their children are mainly above the therapeutic range.

Cazzorla et al. (2014)	22 patients with mild PKU respondent to BH_4 and 21 patients with classical PKU treated with diet. WHOQOL questionnaire-100 (WHOQOL-100) for adult patients and the Pediatric QoL inventory (PedsQLTM) for pediatric patients.	Both diet and medical treatment based upon BH_4 seem to be associated with higher QoL in the long run. However, patients with mild PKU can rely on BH_4 to achieve a higher Phe tolerance and a better compliance to therapy due to diet relaxation/avoidance.
Clacy et al. (2014)	8 adults wtih PKU (aged 15 to 25 years). Patients with early and continuously treated PKU completed the Depression Anxiety Stress Scale, which was correlated with lifetime and concurrent measures of Phe, Tyr, and Phe-Tyr ratios.	Strong associations were present with lifetime levels, suggesting a developmental impact of PKU-related biochemical exposure and the emergence of mood disturbances.
Sharman et al. (2013)	This was a qualitative study, with the authors using thematic analysis to interpret the findings. A focus group was conducted with the adolescents to gather information about factors that encourage and discourage dietary adherence.	Adolescents with PKU appear to share several barriers and incentives for maintaining the strict dietary regimen. Considering such perceptions may aid future interventions aiming to reduce diet attrition rates among adolescents.
Bushueva et al. (2014)	64 pairs- PKU child and one of his parents. The common questionnaire survey Pediatric Quality of Life Inventory was used.	Results confirmed the need of early diagnostics of PKU and initiation of dietary treatment, as well as the organization of timely psychological support for parents of sick children.
Bosch et al. (2015)	Patients diagnosed with PKU aged ≥9 years and treated with a Phe-restricted diet and/or Phe-free amino acid protein supplements and/or pharmacological therapy. HRQoL and newly developed PKU-QOL questionnaires were used.	Patients with PKU showed good HRQoL in the study, both with the generic and PKU-specific measures. Negative impacts of PKU on a patient's life, including the emotional impact of PKU and its management, were delineated by the PKU-QOLs across all age groups.

PKU: Phenylketonuria. QoL: Quality of Life.
PKU: Phenylketonuria. Phe: phenylalanine.
PKU: Phenylketonuria. Phe: phenylalanine. Tyr: Tyrosine. QoL: Quality of Life. BH_4: Tetrahydrobiopterin.

With these results, it can be said that PKU is a relatively benign disease in terms of physical functions. There is a great responsibility for parents and health workers. There is more needed to studies about social lives of individuals with PKU.

4. Conclusions

PKU is the first disease screened in the newborn period in Turkey. PKU, previously a common cause of severe intellectual disability, is a metabolic disorder now promptly diagnosed and effectively treated thanks to newborn screening programs. Newborn screening programs in Turkey are extremely beneficial for preventing late diagnosis of PKU. Despite the fact that there are beautiful developments, there is limited study in terms of quality of life for PKU patients. Given that PKU treatment and prevention are difficult process, there is important responsibility for healthcare workers and society. There is need to more studies such as food development or towards social life for individuals with PKU.

The treatment of individuals with PKU is very important and it requires a multidisciplinary approach. Activities that increase the quality of life of individuals with PKU are also very important. Because of the low protein percentage, rich in carbohydrate/lipid and consuming certain specialty products of these individuals' diets, both their health and their social lives are negatively affected. Not only for individuals with PKU, but also in terms of their families, it is very difficult to prepare foods suitable for diets and to meet suitable products. There is a need for more studies towards to enhance quality of life.

REFERENCES

Bélanger-Quıntana A, Burlina A, Harding CO et al (2011). Up to date knowledge on different treatment strategies for phenylketonuria. Molecular Genetics and Metabolism, **104:**19–25.

Blau N, Van-Spronsen FJ, Levy HL (2010). Phenylketonuria. Lancet, **376**:1417–27.

Bosch AM, Tybout W, Van-Spronsen FJ et al (2007). The course of life and quality of life in early and continuously treated Dutch patients with phenylketonuria. J Inherit Metab Dis, **30:**29-34.

Bosch A.M, Burlina A, Cunningham, A. et al. (2015). Assessment of the impact of phenylketonuria and its treatment on quality of life of patients and parents from seven European countries. Orphanet J Rare Dis, **10**:80–94.

Burton BK, Levıton L (2010). Reaching out to the lost generation of adults with earlytreated phenylketonuria (PKU). Mol Genet Metab, **101:**146–148.

Bushueva TV, Vınyarskaya IV, chernıkov VV, borovık TE, kuzenkova LM (2014). Assessment of the life quality in children with phenylketonuria. Vestn Ross Akad Med Nauk. **(11-12):**39-45.

Cazzorla C, Cegolon L, Burlina AP, Celato A, Massa P, Giordano L, Polo G, Daniele A, Salvatore F, Burlina AB (2014). Quality of Life (QoL) assessment in a cohort of patients with Phenylketonuria. BMC Public Health, **14**:1243–1252.

Christ SE (2003). Asbjorn Folling and the discovery of phenylketonuria. J Hist Neurosci, **12**: 44–54.

Demirkol M, Giżewska M, Giovannini M, Walter J (2011). Follow up of phenylketonuria patients. Molecular Genetics and Metabolism, **104:**31–39.

Clacy A, Sharman R, Mcgill J (2014). Depression, Anxiety, and Stress in Young Adults

with Phenylketonuria: Associations with Biochemistry. J Dev Behav Pediatr. **35:**388–391.
Cotugno G, Nicolò R, Cappelletti S et al (2011). Adherence to diet and quality of life in patients with phenylketonuria. Acta Pædiatrica, **100**:1144–1149.
Crujeiras V, Aldámiz-Echevarria L, Dalmau J et al (2015). Vitamin and mineral status in patients with hyperphenylalaninemia. Mol Genet Metab, **115:**145–150.
Desviat LR, Pérez B, Gutiérrez E et al (2001). Molecular basis of phenylketonuria in Cuba. Hum Mutat, **18**:252–256.
Di-Ciommo V, Forcella E, Cotugno G (2012). Living With Phenylketonuria from the Point of View of Children, Adolescents, and Young Adults: A Qualitative Study. J Dev Behav Pediatr, **33**:229 –235.
Gassió R, Campistol J, Vilaseca MA et al (2003). Do adult patients with phenylketonuria improve their quality of life after introduction/resumption of a phenylalanine-restricted diet? Acta Paediatr, **92:**1474–1478.
Gökmen-Özel H, Büyüktuncer Z, Köksal G, Kalkanoğlu-Sivri HS, Coşkun T (2011). Home visits in phenilketonuria: a 12-month longitudinal study. Turk J Pediatr, **53:**149-153.
Guldberg P, Rey F, Zschocke J et al (1998). A European multicenter study of phenylalanine hydroxylase deficiency: classification of 105 mutations and a general system for genotype-based prediction of metabolic phenotype. Am J Hum Genet, **63**:71–79.
Guthrie R, Susi AA (1963). Simple phenylalanine method for detecting phenylketonuria in large populations of newborn infants. Pediatrics, **32:** 338–43.
Hardelid P, Cortina-Borja M, Munro A et al (2008). The Birth Prevalence of PKU in Populations of European, South Asian and Sub-Saharan African Ancestry Living in South East England. Ann Hum Genet, **72**:65-71.
Ho G, Christodoulou J (2014). Phenylketonuria: translating research into novel therapies. Transl Pediatr, **3**:49–62.
Koch R, Moseley MD, Yano S et al (2003). Large neutral amino acid therapy and phenylketonuria: a promising approach to treatment. Mol Genet Metab, **79:**110-113.
Laclair CE, Ney DM, Macleod EL et al (2009). Purification and Use of Glycomacropeptide for Nutritional Management of Phenylketonuria. J Food Sci, **74**:199 206.
Lim K, Van-Calcar SC, Nelson KL et al (2007). Acceptable low-phenylalanine foods and beverages can be made with glycomacropeptide from cheese whey for individuals with PKU. Mol Genet Metab, **92**:176–178.
Macdonald A, Özel HG, Daly A (2009). Changing dietary practices in phenylketonuria. Turk J Pediatr, **51**:409–415.
Macdonald A, Rocha RJ, Van-Rijn M et al (2011). Nutrition in phenylketonuria. Mol Genet Metab, **104:**10–18.
Macleod EL, Ney DM (2010). Nutritional Management of Phenylketonuria. Ann Nestlé, **68**:58–69.
Ney DM, Hull AK, Van-CalcAR SC et al (2008). Dietary Glycomacropeptide Supports Growth and Reduces the Concentrations of Phenylalanine in Plasma and Brain in a Murine Model of Phenylketonuria. J Nutr **138**:316–322.
Özalp I, Coşkun T, Ceyhan M et al (1986). Incidence of PKU and HPA in a sample of the Turkish newborn population. J Inher Metab Dis, **9**:237.
Özalp I, Coşkun T, Tokatli A et al (2001). Newborn PKU screening in Turkey: at present and organization for future. Turk J Pediatr, **43**:97 101.
Regnault A, Burlina A, Cunningham A et al (2015). Development and psychometric validation of measures to assess the impact of phenylketonuria and its dietary treatment on patients' and parents' quality of life: the phenylketonuria -quality of life (PKU-QOL)

questionnaires. Orphanet J Rare Dis, **10**:59-77.
Rojas E, Torres G (2013). Isolation and recovery of glycomacropeptide from milk whey by means of thermal treatment. Food Sci Technol, 33:14-20.
Santos LL, Fonseca CG, Starling ALP et al (2010). Variations in genotype-phenotype correlations in phenylketonuria patients. ***Genetics and Molecular Research*** *9 (1)**: 1-8.***
Sharman R, Mulgrew K, Katsikitis M (2013). Qualitative Analysis of Factors Affecting Adherence to the Phenylketonuria Diet in Adolescents. Clin Nurse Spec, 205-210.
Simon E, Schwarz M, Roos J et al (2008). Evaluation of quality of life and description of the sociodemographic state in adolescent and young adult patients with phenylketonuria (PKU). Health Qual Life Outcomes, **6:**25-32.
Strisciuglio P, Concolino D (2014). New Strategies for the Treatment of Phenylketonuria (PKU). Metabolites, **4:**1007-1017.
Ten-Hoedt AE, Hollak CE, Boelen CC et al (2011). Orphanet J Rare Dis, **6:**48-55.
Thimm E, Schmidt LE, Heldt K et al. (2013). Health-related quality of life in children and adolescents with phenylketonuria: unimpaired HRQoL in patients but feared school failure in parents. J Inherit Metab Dis, **36:**767–772.
Van-Calcar SC, Macleod EL, Gleason ST et al (2009). Improved nutritional management of phenylketonuria by using a diet containing glycomacropeptide compared with amino acids. Am J Clin Nutr, **89**:1068–77.
Weglage J, Funders B, Wılken B, Schubert D, Schmıdt E, Burgard P, Ulldıch K (1992). Psychological and social findings in adolescents with phenylketonuria. Eur J Pediatr 151:522-525.
Williams RA, Mamotte CDS, Burnett JR (2008). Phenylketonuria: An Inborn Error of Phenylalanine Metabolism. Clin Biochem Rev, **29**:31–41.
Woo SL, Lidsky AS, Guttler F et al (1983). Cloned human phenylalanine hydroxylase gene allows prenatal diagnosis and carrier detection of classical phenylketonuria. Nature, **306**:151–155.

Child Development and Health

Chapter 58

Child Neglect and Abuse

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INTRODUCTION

Child neglect and abuse are as old as human history, a very important social problem that can be seen in every society and all parts of society, and harms the physical, social development and health of children. Although the neglect and abuse exposure of children who need special protection and care are seen in every period of history, it is far more new to be treated as a social problem. Child neglect and abuse have very different individual and social reasons and that's why it is a subject that goes into the field of study of many disciplines.

Due to different socio-cultural reasons, child neglect and abuse have only been put on the agenda over the world only for the last 30-40 years, have begun to be regarded as a problem, and the studies of scientific and legal prevention, treatment and rehabilitation have been comenced. Nowadays, although there are differences between countries in terms of socio-cultural characteristics, protection, observance of the child, securing it by law, and the development of policies on this issue by the states have been identified as an important goal. However, despite all the work done, children all around the world are being neglected and abused, causing them to be crumpled up and even die (Özbeşler and Çoban, 2013: 140).

1. BASIC CONCEPTS

1.1. Child

The definition of the concept of children varies according to time, societies, and the science in which the definition is made. Although definitions are made in different age ranges, in general, every person under the age of 18 is considered a child.

The Convention on the Rights of the Child adopts the end of childhood as 18 years of age. According to the Turkish Penal Code; According to Article 1 of the Child Protection Law No. 5395 the child, even if he/she is become adult at an early age, is an individual who has not completed the age of 18. In the Turkish Civil Code, an individual becomes adult when he/she completes the age of 18. The child reaches the age of majority has a full adult status in terms of civil rights (Cengiz, 2017: 3).

The child is the one who has its own needs and rights, and must be protected privately because of its small age. According to the United Nations 'Convention on the Rights of the Child (CRC), except in the case of reaching the age of majority at an earlier age, every human being under the age of 18 is considered to be a child (Seyyar and Genç, 2010: 143).

1.2 Perpetrator

A person who abuses a child emotionally, physically or sexually is called an perpetrator (The Glossary of Child Abuse and Neglect Terms).

1.3 Child Neglect and Abuse

The word of ‘istismar’ in Turkish corresponds to abuse, abus words in foreign languages. These words include abuse, misuse, exploitation, harm, improper use or ill treatment behavior (Topçu, 1997: 1).

In 1999, the World Health Organization (WHO) defined child abuse or ill treatment to the child; as physical or emotional negative behaviors that can harm the child's general values of responsibility, trust and ability, child's health, life and development, behaviors that inculedes sexual abuse, neglect and the use of child for all kinds of benefits. In 2016, the World Health Organization (WHO) defined child abuse as ‘actions that harm the child's health and physical development, actions made intentionally or unintentionally by an adult, society or country’. On the other hand; In 2002, The World Health Organization (WHO) defined child neglect as “the child's basic needs such as nutrition, health care, housing, clothing, education, protection and supervision are not met by its caring individual” (Cited in, Fırat, İltaş and Yılmaz, 2016: 3-4).

Actions or behaviors that are made intentionally or unintentionally by an adult, society or state and that have negative effects on the child's health, physical and psychological development are called 'Child Abuse'. On the other hand, It is called "child neglect" if health of the child, physical or psychological development needs of it are not met (Özcan and Elyas, 2012: 220).

Child abuse is to be exposed to actions and movements that negatively affect physical, emotional, mental and/or social development of it, which are harmful to the body and/or mental health, by the child's parents, those who are obliged to look after, observe and educate it or strangers. Child neglect is the inability to meet adequately the basic needs of the child such as nutrition, protection, love, supervision, education and guidance, which are essential for the child's mental and physical health and development by those who are legally obliged to look after them (Yıldırım& Yıldırım, 2008:206-207).

Abuse of relationships among persons involves behaviors and actions aim at harming, hurting, and upsetting another person intentionally or unintentionally by someone. The abuse of a person means that he or she is exposed to actions, movements, or situations that are unacceptable or inappropriate, in the manner that would harm or be against him. In abusive behavior, there is a deliberate misuse. Therefore, abuse is a very important social problem not only for individuals but also for social institutions and societies (Topçu, 1997: 1).

1.4. Reasons for Child Abuse and Neglect

Child abuse and neglect is a social problem arising from the interaction of many different factors. According to reports prepared by the World Health Organization and the Turkish Grand National Assembly, the risk factors that cause child neglect and abuse are: personal risk factors, relational risk factors, environmental risk factors, risk factors at social level (cited in Turgut, 2017: 215-216-217; cited in Saltalı, 2015:63; cited in Yenibaş ve Şirin, 2007:19-21):

Personal Risk Factors

- Be born as a result of an unintended pregnancy
- Be born as a result of extramarital affair

- Not being met Parents' expectations and wishes (gender etc.)
- Having a specific problem such as chronic diseases, mental disorders, physical disabilities that need more and constant care, or having a compulsive feature that the parent regards as problematic (hyperactivity, behavioral disorders, etc.)
- Incessant crying of the child and not being pacified
- Be born as a result of multiple pregnancies or frequent pregnancies, having children with low age range
- The presence of dangerous behavior problems or exposure to such behaviors (turn into crime, self-harm, aggression, substance abuse, etc.)
- Child's excessive interest in one of its parent
- Family dislike of child's resemblance to adults and not matching of the personality structure of the child with the its family being the only child or the smallest child in the family
- Not having a healthy family structure
- Not having sufficiently developed domestic communication and problem solving skills.
- Having difficulty attaching to a newborn baby
- Parents or caregivers themselves suffering from neglect, abuse
- Lack of awareness about child development or parents having inappropriate expectations fort he child based on the its age
- Accepting physical punishment as an effective way of child education, believing it to be effective and implementing it
- Having parental physical or mental problems that damage their child-rearing skills
- Having a single parent
- Inadequate parental control of impulse and anger
- Being Alcohol and/or substance abuser of one or both parent
- Being parent at a very young immature ages
- Economical problems
- Parent committing a crime that would harm the parents-child relationship
- Low Parental educational level
- Parent having a low sense of self-esteem, being inadequate and a feeling of worthlessness

Relational Risk Factors

- Having broken attachment between parent and child and failure to be established
- Separate parents and/or parents living with his/her second spouse
- Disagreement about who will take care of the child in case of separation or divorce, and who will take custody.
- Domestic violence
- Family living isolated from society
- Cessation of support of large families in child-rearing
- Committing a crime or violent incidents of one or more of the family members
- Living with people who have experienced traumatic events (natural disasters,

war etc.)

- Long working hours of the person responsible for taking care of the child and being alone of the child

Environmental Risk Factors

- Growing up in an environment where violence is rewarded, praised, accepted, tolerated
- Growing up in an environment where discrimination is encouraged
- Having inadequate nutrition, housing and care facilities, growing up in an environment where it is necessary to fight for these needs
- Widespread poverty in society
- Growing up in an environment where illicit living methods are dominated
- Policies and programs implemented by institutions being far from the ability to reduce the possibility of ill-treatment of children
- Weakening of informal support systems with migration from village to town

Social Risk Factors

- High unemployment rate
- High crime rate
- Lack of social services
- Gender discrimination
- Social, economic, health and education programs that cause adverse living conditions
- Ongoing wars
- Economic inequalities and instability
- Cultural values and norms that encourage, strengthen, and elavate violence
- The dominance of policies that promote discrimination
- Social and cultural norms and values that lower the status of the child
- Not having effective and adequate child policies
- Media impact

1.5. Child Abuse

Child abuse is all kinds of attitudes and behaviors which are made againts to children under the age of 18 or adolescents by their parents and individuals such as teachers, masters, foster parent members, guardians who are obliged to take care of, supervise and educate them, or foreigners, and which damage the physical, emotional, sexual or cognitive development of children and adolescents that negatively affect their physical and/or psychological health. It is not compulsory for this action to be perceived by the child or to be intentionally carried out by the adult (Human Rights Association, 2008).

Child abuse, an active phenomenon, is a revealing case which is the result of the harm of mother, father or caregiver to the child. Child abuse includes intentional physical harm to the child, malnutrition, sexual abuse, using of the child for the benefit, as well as any behavior that prevents normal and physical development of the child (Özcan and Elyas.2012: 220-221).

1.5.1. Sexual Abuse

It is a case in which a child, who has not completed his/her psychosocial

development, is abused for the sexual satisfaction of an adult. It is a type of abuse that is difficult to identify among the types of child abuse and is often hidden. It is a very important social problem because it affects the development process of the child in the short and long term (Şeker, 2013:101).

Abusing of a child by an adult or older child for his/her sexual satisfaction, in a way that the child does not understand and/or accept and is not ready in terms of its development, is called sexual abuse (Human Rights Association, 2008).

By taking advantage of desperateness, helplessness, inexperience and weaknesses of the child, it is to show harassing and aggressive behavior against the child in terms of sexual. Sexual abusing to a child at a young age, forcing him/her to commit sexual acts, or deceiving a child to do such activities is considered within the context of sexual abuse. Groping, sexual intercourse, showing sexual organs, playing in porn movies or watching, taking or displaying pictures with sexual content, words and swearings with sexual content are among some of the sexual abuse behaviors (Polat, 2014: 205-206).

Sexual abuse is the exploiting of a child by an adult for the purpose of sexual satisfaction or allowing another person to exploit the child for sexual gratification. It is called sexual abuse that an adult exploits child who has not completed psychosocial development for sexual gratification and sexual stimulation (Erbay, 2016: 177).

Sexual abuse is the most difficult form of abuse to be identified in the types of child abuse. It is the exploiting of a child sexually by an adult or a child older than him/her. Such as sexual content conversations, groping, touching the sexual organs of the child, showing the sexual organs to the child, watching pornographic films next to the child, forcing the child to watch the pornographic films, having sexual intercourse next to the child, having oral, genital and/or anal intercourse with the child, recording this intercourse, forcing the child for prostitution are sexual abuse behaviors (Özbeşler ve Çoban, 2013: 141).

1.5.2. Domestic Sexual Abuse (Incest)

Sexual abuse by a parent or an individual within a family (The Glossary of Child Abuse and Neglect Terms). The intercourse between a man and a woman who are blood-related to each other at a level prohibited by the law is called incest. It is the immoral and illicit sexual intercourse between father-daughter, mother-son, sisters and brothers, briefly close relatives of blood (Genç and Seyyar, 2010: 200).

1.5.3. Symptoms Of Sexual Abuse

Physical Symptoms

- Having difficulty in walking and sitting
- Having torn, bloody, stained underwear
- Pain, swelling, redness, bleeding or itchiness in genital area
- Pain during urination
- Bruising, bleeding or tearing outside the genital area
- The presence of a sexually transmitted disease

Behavioral Symptoms

- Playing sexual games inappropriate with his/her age or knowing sexual subjects and randomly having sexual intercourse
- Hysteria, difficulty in emotional control
- Unexpected difficulties in the school environment
- Estrangement and depression

- Extreme sadness in case of competition among siblings
- Having difficulty in relationships with peers and avoiding peer relationships
- Self-social abstraction
- Avoid physical contact or closeness
- Sudden and extreme changes in weight (weakness or fatness)
- Extreme fear of some regions and people
- Showing avoiding and avoidance behavior from an acquaintance adult

Long and Short-Term Psychological Effects

- Indication of post-traumatic stress disorder
- Nightmares
- Phobias-fears

Emotional Symptoms: Sexual abuse significantly damages the child's confidence. Perpetrator tells the abused child "not to tell anyone" (such as, it's is a secret between you and me) or threatens the child. The child's developmental level is not capable of understanding this orientation. Different emotional responses are seen in the child: such as self-problems, low self-esteem, guilt (my mistake), shame, depression, anxiety, psychic tides, significant decrease in self-esteem, anger reactions, oppositional defiant disorder.

1.5.4 Physical Abuse

Physical abuse is the physical impairment with non-accidental events and the deterioration of physical integrity of a child (Şeker, 2013: 101). Except accidents, the case of any kind of injury such as being beaten, biten, burned, boiled, shaked, etc. by father-mother who are obliged to look after, teachers, caregivers is called physical abuse (The Glossary of Child Abuse and Neglect Terms).

It is that an adult harms any part of the child's body by hand and/or device for the purpose of obedience, punishment, discharge of anger (Erbay, 2016: 176).

Physical abuse is an injury that does not occur as a result of an accident and harms the child physically. It is a matter of conscious harm to the child in physical abuse. Physical abuse can endanger the child's life and cause long-term harm (Human Rights Association, 2008). Physical abuse includes behaviors such as hitting, kicking, shaking, biting, pressing smoke, iron, hot iron, pouring hot water, cutting, child tethering, enchaining with different or in combination of a hand or an object (Özbeşler ve Çoban, 2013: 141) .

In the family; factors such as being a parent at a very young age, unemployment, low level of education, substance or alcohol abuse in the family, marital conflict, a large number of children, unwanted children and parents having psychiatric problems are the reasons for increased domestic violence. In school; the overcrowded classroom environment, social pressure, the adoption of beating as a disciplinary tool, or the teacher's personality structure can be shown as the reasons for the increased violence against the child (Özcan and Elyas, 2012: 222).

1.5.4. Symptoms of Physical Abuse

Physical Symptoms;

Children can hurt themselves while playing games, but;

- Injury that is not appropriate for the child's age and is unlikely to be by itself
- Delaying in applying for treatment,

- Narration of contradictory injury stories,

Inappropriate statements that do not match the child's age and level of development or inappropriate statements about the area in which the injury is located and the cause of the injury,

- Frequently repeated, new and old scars injuries
- Fading of skin color,
- Fractures that are not possible accidental,
- Swelling on the body,
- Contstant blaming of the child for injury,
- Unconcerned Parents or being overly anxious towards their child injury

Unexplained wound bruises and beat scars:

- Bruises on face, lip and mouth region
- Bruises on body, back, hip, calf
- Handprints, bite marks in different levels of healing symptoms
- Clustered and regular forms shapes
- Belt, electric cable, etc. marks
- Repeatedly appearing after holiday, weekend etc.

Unexplained burns:

- Cigar and smoke burns that exist on sole, palm, back or nates
- Immersion burns (Burns with sharp edges in the form of gloves or socks, occur when someone puts chil hands and feet into the boiling water, this type of sharp edges burns do not occur accidentally)

Unexplained fractures/dislocations, hair loss in scalp

- Long and short-term effects
- Bruises,
- Cuts in certain parts of the body,
- Bone fractures,
- Immediate effects such as internal bleeding
- Shaken baby syndrome (such as blindness, learning disability, mental retardation, paralysis),
- Damaging of the brain development,
- Having weak physical health throughout life.

Behavioral Symptoms

- Thought that he/she deserves punishment
- Avoid contact with adults

Fear of parents

- Nostophobia (Fear of going home)
- Injuries reported by the parent
- Self- injurious behaviors
- Extremely timid or aggressive behavior
- Feeling uncomfortable with physical contact
- Complaing about pain or uncomfortable movements
- Clothes not suitable for climate conditions and worn to hide the body
- Sensitivity to crying

- Go to school before the deadline and get out of school late
- Run away from home (in adolescents)
- Problems with social functioning
- Difficulties in establishing close relationships
- Establish conflicting, low intense emotional, intense anger relations
- Oppositional defiant disorder

Cognitive / Academic Symptoms

• Developmental disorders
• Fall of school success

Cognitive/Academic Symptoms

• Developmental disorders
• Falling of school success

Long and Short Psychological Consequences

• Isolation
• Fear
• Loss of trust
• Depression and anxiety
• Low self-esteem (Human Rights Association, 2008).

1.5.5. Emotional Abuse

All behaviors and actions that negatively affect the child's emotional integrity and personality development are defined as emotional abuse. Pretending against the child as if he/she is psychologically absent, not showing the love, attention, compassion and intimacy that the child needs, any kind of humiliation, rejection, accusation behaviors are assessed within the context of emotional abuse. Emotional abuse can be either alone or in conjunction with physical and/or sexual abuse (Human Rights Association, 2008).

Within the context of emotional abuse, there are different types of behaviors such as rejection, intimidation, threatening, isolation, vexation, humiliation, japing, believing that the child is constantly mistaken and making the child believe that, scapegoating, blaming the child for any wrong situation, expecting performance above or below the characteristics of his/her age and development (Özbeşler ve Çoban, 2013: 142).

Emotional abuse is different from emotional neglect. Emotional abuse includes non-physical but very severe punishments and threats. On the other hand, in emotional neglect, there are behaviors such as not giving enough support, not showing enough attention and affection, and allowing the child to be subjected to violence (Arslantaş, 2014: 52).

Emotional abuse; includes behaviors such as rejection, isolation, intimidation, criminalization, refusing emotional reaction, humiliation, using the child for its own benefit, requiring the role of an adult before time, etc. (Erbay, 2016:176).

Symptoms of Emotional Abuse

Physical Symptoms

- Speech or other communication disorders
- Retardation in physical development
- Increase in the severity of certain diseases, such as asthma or allergies
- Substance abuse

Behavioral Symptoms

- Habits disorders (such as thumbsucking, swinging, etc.)
- Antisocial and destructive behaviors including juveline delinquency
- Neurotic features (sleep disorders, addiction to playing games)
- Extreme behaviors such as passivity or aggression
- Developmental delays
- Behavioral disorders (complaining, being passive, aggression, etc.)
- Extreme compliance problems (Act older or younger)
- Self-harmful behaviors or suicidal ideas

It is difficult to prove emotional abuse. There is no physical injury in the child, or he/she is a very properly dressed and fed. The child who thinks that this situation is normal may not say anything about the emotional abuse (Human Rights Association, 2008).

Emotional Symptoms

- Influence on social relations
- Not behaving as required by age

Cognitive / Academic Indicators: The developmental delay accompanying emotional abuse also causes cognitive delay and affects the child's academic performance.

1.5.6.Economic Abuse

In a way that harms physical, social, mental health and development of a child, labour in unprotected work environments with long working hours and low wages, in other words, the exploitation of labour are called economic abuse (Özbeşler, Çoban, 2013: 142). The concept of child labour is defined as 'a labour that deprives children of their characteristics, hidden talents and honor, negatively affects their physical and mental development'. According to this definition, the labouring is dangerous and harmful to children in terms of mental, physical, social and moral aspects (Cited in Erbay, 2016: 179).

Labouring in work that prevents child's development and violates of his/her rights, employing, labouring as a low wage manpower is called economic abuse. In other words, the inclusion of children in production in the early period is called economic abuse of the child. The working areas of the children are within a wide range of sectors ranging from agriculture to industry, from industry to prostitution (Bayraktar, 2014: 78).

1.5.7.Peer Abuse

Child's ability abusing and lacerating another child directly or indirectly, physically or verbally in a manner of repetitive, hurting the child by abusing its power.

1.5.8. Corporate Abuse

The abuse of the child in the institutional environment, showing behaviors that conflicts with the fundamental rights of the child, the abuse of the child in a way that it harms his/her benefits, limit his/her freedom and alienate him (Saltalı, 2015: 82).

1.5.9. Causes of Child Abuse

Unemployment, unsatisfied marriage, low level of education, low level of economic status, drug users in the family or alcohol addiction, marital conflict, a large number of children, unwanted children, stepparent, inadequate participation in social

organizations, having parental mental disorder (Arslantaş, 2014: 52).

2. CHILD NEGLECT

Child neglect is a situation that the needs such as nutrition, protection, love, supervision, education and guidance, which is fundamental to children under 18 years or adolescents' physical and psychological health and development, is not met inadequately (Human Rights Association, 2008).

Child neglect is a situation that the child's mental and physical needs are not met (Kök, 2013:6). Child neglect is usually the lack of fulfillment of fundamental responsibilities by family, institutions or state. The neglected behavior created by society, institutions and individuals as a whole appears to be a deprivation of equal rights and freedoms for children and consequently behavior that prevents them from achieving their development at highest level. The inability to meet nutrition and care needs at an adequate level, the lack of essential medical treatment, not providing counseling to the child by the parents, and the child being left alone are examples of neglect behaviors (Özcan, Elyas.2012: 220-221).

Neglect is the inability to meet fundamental needs of the child, such as nutrition, clothing, housing, medical care, education or appropriate supervision, emotional and psychological needs, educational/cognitive needs, and not to provide the necessary supervision on appropriate growth and development (human rights association, 2008).

Neglect; is that the child's physical needs such as nutrition, clothing, cleaning and protection and emotional needs such as being loved, compassion and attention are not adequately met. The child caregiver or caregivers must be sensitive to the physical and psychological needs of the child and be able to meet these needs adequately. Children who do not get love, attention, and compassion adequately are subjected to neglect. The physical and mental development of children who are subjected to neglect is very negatively affected by this situation and these children fall behind by age group in terms of physical and mental development. There are psychological problems in significant proportion of mothers and fathers of these children (Öztürk, 2011: 21).

2.1. Symptoms of Child Neglect

Physical Symptoms

- Being constantly hungry,
- Non-hygienic environment: felting of hair, dirty skin, heavy smell on body
- Inappropriate clothes
- Constant lack of inspection: The child says there is no one at home to look after me. The person responsible to look after the child uses drugs or alcohol
- Neglected physical problems and medical care
- Be under the required weight
- Poor development patterns
- Failure to thrive
- Lice, swelling of the belly, very weak image
- Sleepless appearance

Behavioral Symptoms

- Self-harmful behaviors
- Begging, stealing food
- Prolongation of school stay (coming to school early and going home late)

- Constantly being tired, sluggish or falling asleep during class
- Undertake responsibilities and interests of adults
- No caregivers at home
- Frequently breaking the school or being late

Emotional Symptoms

- Low self-perception
- Attachment difficulties
- Social problems, limited friend relationships
- Difficulties in establishing personal intimacy
- Unable to say no to inappropriate requests (concerning attention needs)
- Social withdrawal, intensive introjection problems

Cognitive / Developmental / Academic Symptoms

- Absence problem
- Lack of learning self-discipline
- Unable to perform a task alone
- Low grades
- Learning disability (The Glossary of Terms of Child Abuse and Neglect).

2.2. Emotional Neglect

Emotional neglect is a case that can occur in forms such as not showing interest and love to the child, and not fulfilling the educational needs. The family is irrelevant and indifferent to the child's emotional needs, may reject emotionally, may ignore the child and may not send it to the school. In the children who send to the school, cases such as not being interested in their lessons, problems or failures may be seen (Hergüner, 2011: 52).

Behaviours such as not showing love, attention, compassion, not appreciating for the child's achievements, not supporting for the child's abilities, deprivation of supervision, being irrelevant and indifferent to his/her wishes, exclusion of the child, ignoring, threatening, humiliating, insulting, behaving in a humiliating manner, showing extreme protective behavior or not protecting the child are called emotional neglect of the child (Bayraktar, 2014: 89).

Behaviors such as not showing attention and love to the child, not rewarding their achievements, not supporting their abilities, deprivation of supervision, not sending them to the school, being indifferent to their wishes, excluding or ignoring are considered as emotional neglect (The Glossary of Terms of Child Abuse and Neglect).

2. 3. Physical Neglect

Physical neglect is described as a result of inadequacy of parents or foster family to meet the child’s fundemental needs such as adequate food, nutrition, housing, etc. (Cited in Turgut, 2017: 211).

Behaviors such as not being fed properly and adequately, not being dressed appropriately and cleanly, living in a dirty and neglected environment, not taking precautions against accidents, not providing appropriate housing and resting conditions, not washing or combing the child, smoking and using alcohol during pregnancy are considered as physical neglect (The Glossary of Terms of Child Abuse and Neglect).

Physical neglect leads to negative consequences in the child's social, cognitive,

emotional and behavioral development in the long term. Behaviors such as the child's growth and development retardation as a result of inadequate and irregular nutrition, infections with decline in body resistance, not being dressed appropriately and cleanly, not taking care of body cleanliness, living in a dirty and neglected environment, not taking the necessary precautions against the accident, not providing appropriate environment and conditions for housing, not being protected from bad habits such as being left alone at home, being fired from home, smoking, alcohol and substance abuse, and smoking alcohol and substance abuse during pregnancy are considered physical abuse. Among the children who are subjected to physical neglect, it is seen undesirable, negative behaviors such as social withdrawal, limited peer relationships, introjection problems, sleep disturbances, reluctance to school, dull and empty gaze, escape from school, begging, stealing, alcohol and substance abuse (Bayraktar, 2014: 89).

2.4. Education Neglect

Not sending a child to school at the educational age, not meeting the school needs of a child, not supervising the child, not meeting the special education needs of the child, depriving him/her of educational opportunities suitable for him/her skills and abilities, depriving him/her of actions such as painting, sports, music are considered as an education neglect (Bayraktar, 2014: 89). It is the inadequacy of parents or foster families of enrolling a child who is at educational age in a school or in a private educational institution in the case child needs a special education. In case a child enrolled in the school is allowed to break the school permanently, and necessary precautions are not taken to prevent it, these behaviors also fall within the scope of educational neglect (cited in Turgut, 2017: 211-212). Educational neglect can be seen in different forms of behavior such as not sending the child to the school, not meeting the educational needs, and not providing the appropriate environment and conditions for studying (Cited in Saltalı, 2015: 91).

2.5 Medical Neglect

Behaviors such as not observing a child without a health problem, not having him/her vaccinated, not taking him/her to the physician for treatment in case of illness, failure to obey the treatment recommendations, not meeting the needs such as medicine, glasses, hearing aids, crutch, orthosis, prosthesis and not having him/her benefit from health facilities suitable for modern technology are considered medical neglect (Bayraktar, 2014: 90). Not providing the necessary health care in case of illness that may cause him/her to be disabled, handicapped or killed, as well as neglecting to treat the patient in chronic illnesses as it should be treated is defined as health neglect or medical neglect (Cited in Turgut, 2017: 212).

2.6. Social Neglect

Along with the primary responsibility for meeting the fundamental needs of the child belongs to parents, the state which comprises institutions such as health, education, social assistance and security is also responsible for the chil neglect. Building schools to meet children's educational needs, specifying children who are not sent to school and educating them, carrying out continuous and regular inspections of child worker, providing training and housing services for street children, preventing children from being pushed to crime, providing the necessary services in the detention and judicial processes of children, providing the necessary training services to children

with disabilities and ensuring the appropriate job opportunities as to their abilities is the government's duties concerned with the children. The fact that these services are not provided by the state or provided at insufficient level is called social neglect (Cited in Saltalı, 2015: 90-91). Actions such as insensitivity of the institutions and organizations in the areas they are responsible for, local governments not providing services such as children's playground for children's social development, not removing the harmful factors for the child in the environment or not taking necessary precautions to protect the child are called social neglect (Bayraktar, 2014: 90).

2.7. Sexual Neglect

Not protecting the Children from sexual abuse and remaining irrelevant and indifferent to this situation, not giving sufficient attention to the sexual development of the child is defined as sexual neglect (Cited in Saltalı, 2015: 91).

2.8. Measures to Prevent Child Abuse and Neglect

- Developing of effective and competent child policies by the authorities
- Performing works without loss of time in accordance with United Nations Convention on the Rights of the Child
- Begining extensive and effective training to prevent all kinds of abuse and neglect
- Removing risk factors with identification of risk groups
- Creating special action plans for risk groups and communities at risk, using different social figures in interventions and training activities to increase the effectiveness of studies (such as opinion leaders, community leaders)
- Strengthening protective systems at individual and community level, conducting the necessary studies to operate support systems
- Conducting studies to increase the value given to the child in the society
- Empowering the mother, raising awareness of the risks and the awareness of the hazards to protect the child
- Increasing the sensitivity of personnel working in all kinds of institutions and organizations such as education, health care services for children, local governments, non-governmental organizations and media; taking solid steps to solve the problem with plans based on scientific data and being determined when the predetermined steps are put into practice
- Providing a safe housing and loving atmosphere for children who are subjected to violence and neglect, and taking them from their families and placing in a nursery school, care home or foster family
- Strengthening the attachment between family and society
- Developing creative options for healthy mental and personal development of the family
- Empowering families to maximize their children's capacities and development
- Educating families on child development
- Respecting family unity and supporting family unity
- Establishing contact with community support systems
- Establishing, supporting and developing the services that families need
- Creating environments where families can meet and spend time with their children, interact and receive information and support from each other

- Raising public awareness about healthy family practices (Turgut, 2017: 218, Tackett, 2002, cited in. Saltalı, 2015: 96-979).

REFERENCES

Arslantaş, A. (2014). Aile Kurumu ve Aile İçi Şiddet. Yener Şişman (Ed.) Sosyal Sorunlar kitabı içinde (bölüm 2, sayfa 30-
72). Anadolu Üniversitesi Yayınları: Eskişehir.

Bayraktar, S. (2014). İnsanlığın Kanayan Yarası Çocuk İstismarı ve İhmali. Nobel Tıp Kitabevleri No: 15710, 89-90s., İstanbul.

Cengiz, G.Ş.T. (2017). Çocuk ve Çocukluk Kavramı. Zihni Merey (Ed.), Çocuk Hakları kitabı içinde (bölüm 1 sayfa 2-14). Pegem Akademi: Ankara.

Çoban, A. İ., &Özbesler, C. (2009). Türkiye'de Aileye Yönelik Sosyal Politika ve Hizmetler. Sosyal Politika Çalışmaları Dergisi, 18(18),31-43.

Doğru, S.Y. & Saltalı, N.D., (2015). Korunmaya Muhtaç Çocuklar. S. Sunay Yıldırım Doğru (Ed.). Çocuk Hakları ve Koruma kitabı içinde (bölüm 8, sayfa 233-257). Eğiten Kitabevi: Ankara.

Erbay, E. (2016). Risk Altındaki Çocukların Sorunları ve Sosyal Hizmetler. Yusuf Genç, H. Hüseyin Taylan (Ed). Aile ve Çocukla Sosyal Hizmet (p.162-188). Anadolu Üniversitesi Yayınları: Eskişehir.

Fırat S., İltaş, Y., B.F. Yılmaz. (2016). Ruhsal ve Hukuki Yönleriyle Çocuk İstismarı. Akademisyen Yayınları No.43, 3-4 s., Ankara.

Hergüner, S. (2011). Duygusal İstismar ve İhmal. Mücahit Öztürk (Ed.). Çocuk Hakları Açısından Çocuk İhmali ve İstismarı kitabı içinde (bölüm 3, sayfa 41-55). Çocuk Vakfı Yayınları: İstanbul.

Özcan, Ö, Elyas, Z. Çocuk ve Ergenlerde Ruhsal Bozukluklar. Alim Kaya (Ed.). Eğitim Psikolojisi kitabı içinde *(*bölüm 7, sayfa 193-228). Pegem Akademi: Ankara.

Polat, M. (2014). Çocuk Sorunları. Yener Şişman (Ed.) Sosyal Sorunlar kitabı içinde (bölüm 7, sayfa 186-211). Anadolu Üniversitesi Yayınları: Eskişehir.

Saltalı, N.D., (2015). Çocuk İhmali ve İstismarı. S. Sunay Yıldırım Doğru (Ed.). Çocuk Hakları ve Koruma kitabı içinde (bölüm 3, sayfa 61-107). Eğiten Kitabevi: Ankara.

Seyyar, A. & Genç, Y. (2010). Sosyal Hizmet Terimleri. Sakarya Yayıncılık No:6, 143-200 s. Sakarya.

Şeker, A. (2013). Sosyal Hizmete Gir iş. Anadolu Üniversitesi Yayınları No. 1209, 101 s., Eskişehir.

Topçu, S. (1997). Çocuk ve Gençlerin Cinsel İstismarı, Doruk Yayınları No:155, 1 s., Ankara.

Turgut, E. (2017). Çocuk İstismarı ve İhmali. Zihni Merey (Ed.), Çocuk Hakları kitabı içinde (bölüm11, sayfa 205-224). Pegem Akademi: Ankara.

Yenibaş, R. &Şirin, A. (2007). Ailede Çocuğun İstismarı ve Umutsuzluk. Nobel Yayın Dağıtım No:93, 19-21s., Ankara.

Yıldırım, K., & Yıldırım, N. (2007). Sosyal Hizmete Giriş. Sakarya Kitabevi Yayınları No: 54, 206-207 s., Sakarya.

19.Çocuk İhmali ve İstismarını Önleme Öğretmenler ve Aileler İçin Eğitim Kılavuzu URL:http://www.ihddiyarbakir.org/Content/uploads/f971c62f-8f03-4548-85eb-997dd89a8a36.pdf (Accessed May 2018)

20. The Glossary of Terms of Child Abuse and Neglect,
URL:http://www.logosyayincilik.com/logosDATA/userfiles/file/cocukistismar.pdf

Chapter 59

Values and Role of Pre-School Teachers in Early Childhood Education

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INTRODUCTION

Children grow in the society they live in and learn the values of the society they live in during daily life. Thus, a child develops a sense of value by applying the values in his/her daily life that are regarded as correct by the society. A child is shaped by the family which is the primary environment of the child. Values and beliefs of the family play important role for development period of the child and shaping the child's personality. Children learn values which design social life, by taking their parents as models and through experiences. Children gradually start to gain or adopt values upon interpretation of attitudes and behaviours exhibited by them by the environment. Every society or culture has different values. Children are expected to have values that are accepted and expected by the society or culture they live in. Values gained during the process of socialization have directive effects on determining an individual's behaviours and attitudes (Göldağ, 2015). Particularly, values gained during early childhood have significant effects on a person's whole life and shape the individual's personality, beliefs and standards of judgement within the following years (Oktay, 2000).

Education and environment set a basic attitude for a child for determining what is appreciated and what is good beginning from the early years of life. Mission of educational institutions is not only to furnish children with knowledge and skills but also to shape the personality of the child and to gain values through education. A child enters into a new environment by attending an early childhood institution and tries to adapt. The child learns that same values and rules do not apply to every one every time. Those children who grow in a culture of mutual respect and toleration within the family integrate with the group rapidly. The child faces problems in intra-group relations (friendship) if he/she insists on defending only his/her own values and rules. The teachers play important roles in assisting children for overcoming such difficulties in pre-school institutions. Adaptation of the child with the newly started preschool institution, obeying the rules of the group, reliability in relations with other children, fairness and integrity all have importance.

In this study, importance of values education in early childhood period is addressed and importance of duties and responsibilities of the teachers who play roles, after parents, in this period in forming personality structure of the child and in learning rules and values within the society are highlighted.

Value and Values Education

The term value is a concept used in many disciplines. Value is defined as a feature which determines humanitarian importance of events and objects as well as the features of the facts and objects which are specifically important to an individual in Philosophy Dictionary (Hançerlioğlu, 2002). Values are principles of different importance levels and intended goals that enlighten a person throughout lifetime (Schwartz, 1994). Values are good and desired things, principles that direct behaviours, increase terminal behaviours and enable and facilitate decision making (Schaefer, 2012). Values, as well as having universal dimensions, have the feature of varying from one society to another in terms of the importance attached to them. Values which are of importance for some societies may be less important for some others. As well as varying from society to society, values may vary within the same society over time or among individuals. Even some characteristics which were valuable just a few years ago, may now be repellent (Singh and Lu, 2003). Recent increase in violence, weakening of families, increase in ordinary offences, decrease in business ethics, changes in structures of social environment of the youngsters have all led to the need for values education. Many students and teachers are damaged due to psychological and physical violence in schools (Aydın, 2012). It is known that values are not innate. It is not easy for children to learn the values randomly by experiencing, in other words, it is not easy for them to change their attitudes and behaviours by themselves by recognizing the consequences of their unwanted behaviours (Alpöge, 2011).

Values education is given in two types, being directly and indirectly: Teaching values to children by directly influencing them by demonstrating that some behaviours are positive and correct whereas some others are negative and false. However, the most effective way is indirect teaching. Parents unconsciously act as a model for successful application of values or design a suitable environment for learning desired values (Stein, 2017). It is important to furnish people with humanitarian, moral, cultural, psychological, social and universal sensitivity through values education (Yaman, 2012). Values education is based on establishing a deliberate and planned learning environment in order to furnish an individual with properties that ensure self-awareness, being at peace with oneself and consistency in ideas and actions. Children are enabled to develop internal motivation, comment on the correct and turn it into behaviour through a quality values education (Akbaş, 2008). Revealing the best inherent side of the child, supporting every aspect of his/her personality, lighting the way for reaching the perfect, protecting the individual and the society against moral deprivation and furnishing them with morality are among the significant objectives of values education (Aydın and Gürler, 2013). In early childhood period, the ground for knowledge on values is set. It is targeted to socialize children and equip them with academic skills at early ages at pre-school institutions. A pre-school education program where quality standards are considered, should include objectives such as not only gaining academic success but also such as values education, gaining social-emotional skills and giving place to social values (Greenberg et al. 2003). In examination of scientific studies on values education for children, it is found that behaviour development of children starts at early ages and the basis of the personality of a child is built within the first six years.

Values education, beginning with modeling and imitating parents within the family, is supported by environmental experiences. It is not easy to change behaviours acquired within family environment in the following years; therefore, education in the very first childhood period which leaves a permanent mark on the personality of a child is quite important (Yılmaz, 2010).

Yuvacı (2013) examined activities for values education performed at preschool education institutions in her research, in which she aimed for examining values and activities selected from the schools which applied preschool values education. The research was made in two preschool education institution which applied values education curriculum in 2012-2013 school year in Ankara. Teachers who worked at the institutions included in the research were observed for one month. As a result of the research; it was found that teachers attached particular importance to universal values during values education, and that a higher number of methods should be employed in activities. Demirtaş (2009) examined in her study effectiveness of creative drama in values education provided for vulnerable children at nursery schools. The research, performed with 16 students in total, being 8 girls and 8 boys, of the age group 9-10 at Atatürk Nursery School of Social Services and Child Protection Agency, was carried out in an experimental design. In the study, a values education program based on creative drama was used. As a result, children in the experimental group could evaluate the values as per a higher number of dimensions, presenting more positive and goal-directed statements regarding values. In the study by Thornberg and Oğuz (2013) which was carried out in a qualitative research design in Sweden and Turkey, opinions of teachers on values education and approach of teachers to values education were examined. As a result of the research performed with participation of 52 teachers, it was put forth that teachers developed a positive perspective towards values education and that using being a good role model for values education as the main method increased daily interactions with students. Furthermore, it was found that values education usually integrated with experiences in daily life and there was lack of professional information on the subject. Domitrovich, Cortes and Greenberg (2007), found as a result of their study for investigating effectiveness of feelings education program in preschool education that feelings education program was an effective program for developing social and emotional skills of children. In the research by Thornberg and Oğuz (2013); in Sweden and Turkey, viewpoints of teachers on values education were analyzed. 52 teachers were interviewed. As a result of the research; it was found that the teachers did not approach values education with a critical perspective, they stated that, as a basic method, they should set a good model for the students during their daily interactions with them, they integrated daily applications with values education and that there was lack of professional information on the subject.

Role of Teachers in Values Education

In preschool education, teachers are the persons who have important roles in acquainting students with certain values. Since teachers are significant role models for the children, they are carefully observed by the children. Behaviours of a teacher guide the children on how they should behave. According to approaches on values education, a teacher is an important role model in values education. It is of importance that teachers set models for children regarding values which are necessary for a democratic

society (Chapin, 2006). According to Deveci (2008), there are some points to take into account in values education:

- Teachers should set models for students in values education.
- A positive school, family and classroom atmosphere should be created.
- Hidden curriculum should be utilized for gaining values.
- Direct or indirect values education approaches should be given place.
- School-family cooperation should be realized effectively.

Coherence and cooperation of the components school, family and teacher is important for values education. The teacher should be in cooperation with the school management, other teachers working at the school and the environment. Teachers play a vital role in reintroducing to the society individuals who have moral awareness to lead the society to the good, to make the life meaningful. Therefore, values must be handled as criteria for professional qualifications of teachers (Edwards, 1996). Teachers must be given pre-service training on values education. It is of great importance for teachers who will be delivering values education at all stages of education system to have sufficient level of information on the subject. In this regard, values education should certainly be included in programs for training teachers, either directly or indirectly (Yaşar and Çengelci, 2007).

Education is the process of raising an individual in the intended direction within the context of pre-determined objectives. Knowledge, skills, attitudes and values gained within the process of education cause differentiation for the character of an individual. A person whose character develops and who gets experienced through knowledge and skills, creates desired changes on the social structure (Akbaş, 2004). In values education, contrary to value realization approaches, teachers try to develop moral character of the students by setting models, they can express their opinions and ideas comfortably and explicitly in moral terms. In other words, they can distinguish between the right and the wrong in the life (Ryan and Bohlin, 1999).

The first thing to do for minimizing problems encountered during values education is to develop a qualified values education program. Schools should partake in the process of program development. And to do that, schools and therefore teachers should answer the following questions (Bishop, 1993):

- "What should the program contain?"
- "How will families be included in values education?"
- "Which values will be taught?"
- "How will it be implemented at schools?"

"Values are learned from interactions between people, from the family and from other social factors, through experiencing and observing. Therefore, values should be taught clearly, methodologically and deliberately (Bishop, 1993)".

Values may change as a result of interaction with the environment. School life of the child has an important place in the process of interaction; because a major part of value achievements of individuals is constituted by the school. Also, school is a living and learning area where values are given particular importance (Turan and Aktan, 2008).

Within the process of education, problems faced during performance of activities concerning values education may be examined in two groups:

- It is difficult to ensure consistent approaches and select appreciated values in all schools. The reason is that the number and type of values at schools to be gained by children is high. Only a very little consensus is established on values to be taught at schools.
- At schools usually personal, social, religious, moral and democratic values are taught. Values such as aesthetic, academic and economic values are ignored. While trying to furnish children with values; it should be recognized that there are strong ties between value groups and these ties should not be weakened in educational terms. Otherwise, values education may be enfeebled. Children fall into a conflict between the values they gained outside the school and those gained at school (Halstead, 1996).

According to Ryan, a good or bad moral atmosphere may form in the classroom. The teacher plays a key role in applying morality and enculturation in such kind of an atmosphere. The answers to the questions such as "Does the teacher respect students? Do the students respect their friends? What are the expectations of the teacher with regard to classroom rules? Does the teacher apply rules quickly?" indicate the role of the teacher in teaching values (Akbaş, 2004). Teachers, due to their positions, have available roles for enabling students to take positive decisions within the process of values education (Suh and Traiger, 1999). According to Halstead and Taylor (2000), since teachers form the core of values education, even if they do not want to demonstrate values as a part of their own roles; students are certainly effected by value judgements of their teachers. Methods and techniques used in the classroom by the teacher have a facilitating function for furnishing the children with desired values. Methods and techniques to be most widely used in values education are discussion-based approach and active learning strategies with the students put in the center, drama, project works, applied activities, cooperative learning, group study and educational games (Halstead, 1996).

Teachers perceive themselves as instructors, facilitators, models and skill developers in values education. In short, experiences and studies of value educators have shown that teachers have undertaken values education (Kirschenbaum, 1995). Can a teacher really structure a student's character? The answer to this question is yes. In order for a teacher to be successful, he/she should be well-balanced concerning moral life of the student and abstain from dull morality and being over-didactic. The teacher should exhibit his/her own professional responsibilities and regular performance. The teacher should exhibit the foregoing through actions, start the lesson preparedly and on time, immediately distribute corrected notes, support colleagues, be available for the students when they have academic and personal needs (Ryan and Bohlin, 1999).

A teacher is the organizer of the education process. The teacher does not confine himself/herself to teaching the assigned content of the class but also influences mental, emotional and social sides of the students as well. Research showed that the elements which ensure effective education at school are the teachers and the students. Size of the classroom, teaching strategies, physical facilities are secondarily effective (Balcı and Yanpar-Yelken, 2010). It has been observed that teachers who are warm, keen on, enthusiastic about their students, who are business-oriented, tidy, who use different materials and impose an adequate level of discipline have positive impacts on student success. During activities aimed at values education, children recognize the issues

which are approved, attached importance and appreciated by their teachers (Welton and Mallan, 1999).

Kirschenbaum (1995) stated that a teacher has the power to teach students basic values such as developing classroom rules, problem solving in classroom meetings, conduct discussions on values and moral issues, respecting students, conferring responsibilities upon them, being a good listener, democracy, self-confidence and problem solving skill. In a quality values education, all teachers bear moral responsibility to control behaviours of the students who are under their supervision. The teacher should demonstrate the good and the bad behaviour to children in the classroom. While doing so, it is the teacher's responsibility to give examples, state if he/she approved the beaviours of the students and explain the reasons hereof. This is also supported by previous research on the subject. 78% of adult people think that a teacher can set a good example for the student (Halstead and Taylor, 2000). Model usage is an internationally agreed method. The only way for disciplining a person who is far from discipline is perhaps his/her admiration and aping to a person of discipline. The teacher has to be a model for the behaviours expected from the student. Setting a model is not enough solely. Values must be supported with other activities (literature, film, theatre etc.) at the school. A teacher must do the following to set an effective model (Leming, 1993).

- The teacher should be perceived as a person having a high level of control, status and competition on resources.
- The teacher should be perceived as a caretaker and raiser.
- The model and behaviours should be perceived as if belonging to one of us; not to a stranger.
- Useful consequences arising from being a model should be indicated clearly.
- Behaviours that have become models should be shared and repeated by people who lead others.

It is not enough to set good models for the students; it is also necessary to explain why correct behaviours and decisions are correct. The saying of teachers, "do as I say, not as I do" should not be preferred in teaching values (Gordon, 1998). It is impossible that moral views and attitudes of a teacher have not yet been shaped as an adult individual; however personal moral viewpoints of teachers are controversial. The teacher may try to hide his/her own values, may ignore moral issues or continuously refrain from confusing questions. Value classification approaches may be recommended for such cases. In this way, the teacher will remain natural and will not be an imposer (Ryan and Bohlin, 1999). Lickona (1991) gave the following advices to teachers for succeeding in values education:

- The teacher should actually undertake being a model and a raiser as a duty.
- The teacher should create a morality community in the classroom.
- The teacher should keep discipline in hand by conferring responsibilities.
- The teacher should create a democratic classroom.
- Values education should be carried out by means of education programs.
- Cooperative learning should be employed.
- The teacher should support students for their moral reflections.
- How disputes should be resolved should be taught.

- Positive models should be used also out of the classroom for rapid development.
- A positive moral culture should be maintained at the school.
- Good relations should be established with the students' parents.

According to Ryan and Bohlin (1999), a teacher teaching values should provide his/her students with consultancy and guiding services, and activate them by encouraging them. On the other hand, for a successful guidance, it is necessary to be aware of the interests of the students and encourage them by telling them they can do. Furthermore, the teacher should live his/her own values, make a habit of them and reflect these features in relations with the parents and students and during in-school relations. Kirschenbaum (1995) stated that a teacher could not be engaged in values education when he/she is on the edges concerning authoritativeness and overpermissiveness in the classroom. In order for a teacher to be successful in teaching values, it is required to have defined values and to demonstrate these values through behaviours. Being a good model, a teacher may play a directive role within teaching process, at school and within the society. A teacher is provided with different activities and strategies apart from those mentioned above, while teaching values. Activities used in values education are collected under four headings. An understanding where students are provided with only cognitive and psychomotor achievements during their education would cause individuals comprising the society not to attain affective achievements like values, attitudes etc. Therefore, it may be difficult, even impossible, to ensure social integrity and determine common objectives. This reveals the compulsion for performance of values education in our schools in a systematical and effective manner. And this can only be ensured by internalization of concepts and topics concerning values education by teachers (Yazıcı, 2006). The fact that how to gain values is not clearly specified in education programs should not be construed as nonperformance of values education at schools. In fact, the culture created by teachers at school and in classrooms, to what they attach importance, what they perceive as good and bad constitutes values education for students in a hidden form. It is also necessary to give this education through planned learning experiences, as a part of formal education (Doğanay, 2006). According to Hill (2004), it is a weak possibility that teachers who indispensably serve as role models hide their real values from the people they interact with. According to Cereasy (2008), a teacher's modeling the principle of "treat people in the way how you wish them to treat you" by showing patience and courtesy to the children, may demonstrate how a good person should be. The reason for this is that teachers are always "open" to their students. The teachers are expected by the society to be experts in their fields, in order for them to communicate their knowledge of their fields in a manner to enable children to reach such knowledge. Another expectation from the teachers is to have a good character and humor. The reason for expecting them to be morally good is that they inevitably influence moral development of students who are under their responsibility. In other words, it is accepted that actions of teachers, as moral examples and models, have direct effects on moral development of students (Osguthorpe, 2008). Glasser (1992) on the other hand, indicates as follows, the perspective of a student by which he/she assesses his/her teacher within daily interactions: "Your beliefs and values and the reasons for adopting them are infinite sources of wonder for your students. Students begin creating their own opinions by

means of people, like you, whom they respect." Çakmak (2010) stated that the effect to be caused by teachers on the students by being taken as examples by the students is directly proportional to the love and respect children feel for their teachers. There are many factors which effect character development or value development of a child during preschool period such as the family, school, educators, peers, media etc. The important thing is to be aware of the effects of each factor and to make necessary regulations for the high welfare and benefit of all children (Uyanık Balat, 2012).

Conclusion

Individuals gain knowledge, skills, attitudes and values during the process of education. They cause social changes within this period, as well. A human, a social being, continues his/her life and fits into the society by obtaining values, attitudes, beliefs of the society he/she lives in and by gaining the values of the society lived in.

Preschool period which occupies an important place in one's life, is a critical period for gaining values. Openness of children at preschool education institutions to gaining values such as respecting each other, being tolerant and sharing, undertaking responsibilities, being helpful, being successful, and to learning social rules brings relevant duties and responsibilities of preschool teachers to mind.

Since preschool teachers are important role models for children, they are carefully observed by children. Behaviours of the teacher guide the behaviours of children. Teachers have vital importance in raising individuals who contribute to the goodness of the society, add meaning to their lives, and develop awareness in terms of morality. Teachers who will carry out values education at all steps of education system should have information about approaches on values education. In order for a teacher to be successful in teaching values, he/she needs defined values and should demonstrate these values through behaviours. In this regard, values education should be a part of programs designed for educating teachers.

REFERENCES

Akbaş, O. (2004). Türk Milli Eğitim Sisteminin Duyuşsal Amaçlarının (Değerlerinin) İlköğretim II. Kademedeki Gerçekleşme Derecesinin Değerlendirilmesi. Yayımlanmamış Doktora Tezi. Ankara: Gazi Üniversitesi Eğitim Bilimleri Enstitüsü.

Akbaş, O. (2008). Sosyal Bilgilerde Değerler ve Öğretimi. İçinde B. Tay ve A. Öcal (Edt.) Özel Öğretim Yöntemleriyle Öğretimi (s.335-360). Ankara: Pegem Akademi Yayıncılık.

Alpöge, G. (2011). Okul Öncesinde Değerler Eğitimi. Ankara: Bilgi Yayınevi.

Aydın, M. Z. (2012). Ailede Ahlak Eğitimi. İstanbul: Timaş Yayınları.

Aydın, M. Z. ve Gürler Ş. (2012). Okulda Değerler Eğitimi. Ankara: Nobel Yayıncılık.

Balcı, A. ve Yanpar-Yelken, T. (2010). İlköğretim öğretmenlerinin değer kavramına yüklediği anlamlar. *Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 39*, 81-90

Bishop, C.Diane (Edit). (1993). Report of the Task Force on Values in Education for the State of Arizona, Arizona Department of Edu-cation. www.eric.ed.gov, ERİC Document: ED 386 270.

Chapin, J. R. (2006). Elementary Social Studies. Boston: Pearson Education and Bacon.

Çamlıbel Çakmak, Ö. (2010). Okul Öncesi Eğitim Kurumlarında Aile Katılımı. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü Dergisi. 2010(1): 1-20.

Demirtaş, S. (2009). *Çocuk yuvasında kalan korunmaya muhtaç çocukların değer eğitiminde yaratıcı dramanın etkililiği.* Doktora Tezi, Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü İlkögretim Doktora Programı, Ankara.

Deveci, H. (2008). Sosyal Bilgilerde Bilgi, Beceri ve Değerlerin Kazandırılması. (Ed. Ş. Yaşar.) Hayat Bilgisi ve Sosyal Bilgiler Öğretimi İçinde. Eskişehir: Anadolu Üniversitesi Açıköğretim Fakültesi Yayınları.

Doğanay, A. (2006). Değerler Eğitimi, *Hayat Bilgisi ve Sosyal Bilgiler Öğretimi Yapılandırmacı Bir Yaklaşım*, (Ed. Cemil Öztürk). Ankara: Pegem Akademi.

Domitrovich, C. E., Cortes, R. & Greenberg, M. T. (2007). Improving young children‟s social and emotional competence: a randomized trial of the preschool "paths" curriculum. *The Journal of Primary Prevention*, 28 (2).

Edwars, J. (1996). Planning for Values Education in the School Curriculum. In J. M. Halstead and M. J. Taylor (Eds.). Values Education and Education in Values. (p. 167-179). New York: Roudledge Farmer.

Glasser, W. (1992). The quality school: managing students without coercion. NewYork: Harperperennial.

Göldağ, B. (2015). Öğrencilerin şiddet eğilimi düzeyleri ve değer algıları. Tübav Bilim Dergisi. 8(4): 1-15.

Greenberg, M. T., Weissberg, R. P., Zins, J. E., Fredericks, L., Resnik., H., & Ellias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning, *American Psychologist*, 58 (6/7): 466-474.

Halstead, J. M. ve Taylor, M. J. (2000). "Learning and Teaching about Values: A Review ofRecent Research" *Cambridge Jurnal of Education*. 30, 2: 169-202.

Halstead, M. (1996). Values in Education and Education in Values. *Values and Values Education in Schools*. London: The Falmer Press.

Hançerlioğlu, O. (2002). Felsefe Sözlüğü. İstanbul: Remzi Kitabevi.

Kirschenbaum, H. (1995). Enhance values and morality in schools and youth settings. Allyn & Bacon Company, Massachusetts.

Leming, J. (1999). Teaching Values in Social Studies Education, Past Practices and Current Trends. 22. .04. 2016 tarihinde internetten erişilmiştir. http://www.usoe.k12.ut.us/curr/char_ed/fedproj/hist/teaching.htm

Lickona, T. (1991), Educating for Character: How Our Schools Can Teach Respect And Responsibility, New York, Bantam Books.

Naylor, D. T. and Diem, Richard (1987). Elementary and Middle School Social Studies. New York: Random House.

Oktay, A. (2000). Yaşamın Sihirli Yılları: Okulöncesi Dönem. (2. Baskı). İstanbul: Epsilon Yayıncılık.

Osguthorpe, R. D. (2008). On the reasons we want teachers of good disposition and moral character. *Journal of Teacher Education*, 59(4), 288-299.

Ryan, K. ve Bohlin, K. (1999). Building Character in Schools,. Jossey-Bass İnc, California.

Schaefer, M.P. (2012). *Determining methods for teaching character education in elementary schools.* Doktora Tezi, Northcentral University, Arizona.

Schwartz, S. H. (1994). Are there üniversal aspects in the structure and content of human values? *Journal of Social Issues*, 50 (4), 19-45.
Singh, M. & Lu, M. (2003). Exploring th efunction of heroes and heroines inchildren'sliterature. ERIC Document No: ED 477609.
Stein, M. (2017). Werteerziehung als Aufgabe der Familie - ein aktuelles Thema. *Roczniki Pedagogiczne* 9 (2). DOI: http://dx.doi.org/10.18290/rped.2017.9.2-4.
Suh, B. K., Traiger, J. (1999). Teaching values through elementary social studies and literature curricula. Education, 119(4): 723.
Thornberg, R., & Oğuz, E. (2013). Teachers' views on values education: A qualitative study in Sweden and Turkey. International Journal of Educational Research, 59, 49–56.
Turan, S. ve Aktan D. (2008). Okul Hayatında Var Olan Ve Olması Düşünülen Sosyal Değerler. Türk Eğitim Bilimleri Dergisi, 6 (2), 227-259.
Uyanık Balat, G. (2012). Okul Öncesinde Değerler Eğitimi. Okul Öncesi Değerler Eğitimi Ve Etkinlik Örnekleri. Ankara: Pegem Akademi Yayınları
Welton, D. A. and Mallan, J. T. (1999). Children and Their World, Houghton Mifflin Company, Boston.
Yaman, E. (2012). Değerler Eğitimi, Eğitimde Yeni Ufuklar. Ankara: Akçağ Yayınları.
Yaşar, Ş. ve Çengelci, T. (2007). Values Education for the 21st Century and Reflections to Teacher Education. (Ed.). In N. P. Terzis. Education and Values in the Balkan Countries. (p. 379-384). Greece: Publishing House Kyriakidis Brothers S. A.
Yazıcı, K. (2006). Değerler Eğitimine Genel Bir Bakış. Türklük Bilimi Araştırmaları, 19, 499-522.
Yılmaz, H. (2010). Çocuğun ailede kazanacağı önemli bir değer: Kanaatkârlık. *Eğitime Bakış Dergisi*, (18), 55-58.
Yuvacı, Z. (2013). Okulöncesi Değer Eğitimi Uygulayan Okullardan Seçilen Değerlerin Ve Etkinliklerin İncelenmesi. Dumlupınar Üniversitesi, Eğitim Bilimleri Enstitüsü, İlköğretim Anabilim Dalı, Yayımlanmamış Yüksek Lisans Tezi, Kütahya.

Chapter 60

Preventive and Protective Intervention Studies Performed in Turkey and Other Countries for Child Abuse

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INTRODUCTION

From the moment of their birth children need care, love and protection of their parents. In this process of care and protection parents may commit some negligent or abusive actions against their children, whether knowingly or not. While they carry highest order of responsibility for protecting their children from risk factors causing neglect and abuse, parents can many times turn into foremost malefactors in neglect and abuse of children. Reasons for this include poverty of parents, or parents lacking knowledge in regard of what are the needs and requirements of children are and how should they meet these, or their lack of informed awareness. In this context, it is necessary to raise awareness both in children and their parents before any neglect or abuse incident occurs. Therefore, preventative and protective intervention activities carry great importance.

Children facing situations obstructing their development in all aspects (physical, emotional, intellectual or sexual) or damaging their physical and mental health due to actions of people responsible for their care, particularly their parents, or other adults can be defined as "child abuse and neglect"(Şahin, 2015).

Child abuse is examined under four main titles: physical, sexual and emotional abuse and neglect (Human Rights Association, 2008). In both cases of abuse and/or neglect development of a child facing these can be negatively affected. Therefore, taking preventative and protective actions in regard of this important social problem carries great importance for implementing necessary measures before emergence of potential problems and minimising negative affects after any such incidents.

Children are negatively affected by experiences of ill treatment, abuse and neglect (Cicchetti & Blender, 2006). Such violent experiences in childhood causes significant negative effects on development of their self-control (McCoy, 2013) and in their later mental health problems (Jonson-Reid, Kohl & Drake, 2012). Therefore, programmes aimed towards decreasing costs and increasing effectiveness of intervention programmes should be started as early as possible, since these carry great importance for both children and families (Arruabarrena & Paúl, 2012).

Protective measures against child abuse are examined on various levels (Geeraert, Van den Noortgate, Grietens & Onghena, 2004).One kind of distinction in protective

measures classify them as primary, secondary and tertiary prevention (Browne and Herbert, 1997; Cohn-Donnelly, 1197; Newman and Lutzker, 1990; as cited in Geeraert et al., 2004), while another, more recent type of distinction makes classifications as universal (population oriented), selective and specified levels (O'Connell, Boat & Warner, 2009).

Primary prevention (universal level prevention) includes all efforts against social causes (violence, approval of physical violence as a discipline method, poverty, etc.) underlying the child abuse and neglect. Secondary prevention (selective level) focuses on a number of groups (e.g. families) determined to be under risk of ill treatment/abuse and works to alleviate effects of risk factors (bad parenthood, social isolation, personality disorders of parents). Tertiary prevention (specified level) includes strategies aimed towards one-on-one groups like families exposed to child abuse. Main purpose of these programmes is to stop abuse and minimise negative consequences of abuse for the child, the family and the society. Whatever the protection level, it is important to assess quality of these programmes (Geeraert et al., 2004).

Preventative and Protective Actions against Child Abuse in Turkey

While there are actions toward preventing child abuse and neglect in Turkey, there is no educational programme directly standardised for this purpose for benefit of families or children. However, it is seen that various institutions and organisations have taken actions in this regard. Preventative and protective actions taken by various institutions and organisations Turkey can be summarised as follows:

Ministry of National Education (MoNE-MEB): While the Ministry of National Education (MEB) employs a holistic approach regarding psycho-social risks, it is seen that specific activities regarding abuse and neglect are also conducted. Activities conducted in this direction and practices in scope of these activities will be summarily mentioned herein, which can be listed as follows:

1. Actions to Prevent Violence against Children

a. Guidance Counsellor's Handbook on Prevention of Violence against Children

b. Strategy and Action Plan for Prevention and Minimisation of Violence in Educational Environments

2. Counselling Measure Practices Handbook

3. Counselling and Psychological Consultation Services in Schools

4. Guide on Counselling and Psychological Consulting Services in Schools

5. Guide on Counselling and Supervision in Pre-school Education Institutions

6. Psycho-social Intervention Services

a. Intervention Teams

b. Practice Guides and Publications

7. Child-friendly School, Guide on Child Victims of Abuse and Neglect

Actions on Prevention of Violence against Children: Run by the General Directorate of Special Education and Counselling Services unit under the Ministry of National Education and conducted in partnership with many other ministries and units, this project aims to protect children against any kind of violence (physical, emotional, verbal and psychological) for the welfare of children and to provide children with a safe and healthy education environment. The work in scope of this EU-supported project

started in 2013 and practices were run for 26 months in 10 pilot provinces. Goals of the project included strengthening the capacity of prevention and monitoring services regarding violence against children, to develop a school model comprising self-confident students with well-developed life skills, and to prevent violence against children in all environments outside school, including family violence and all other types of violence. In this scope educational activities covering measures that can be taken to intervene in and prevent violence against children were organised and various materials (family programmes, public announcements, handbooks, brochures, etc.) and spot video were prepared to increase social awareness in regard of violence against children (Directorate General of Special Education and Guidance Services, 2015).

Guidance Counsellor's Handbook on Prevention of Violence against Children is also developed in scope of the prevention of violence project. This handbook developed for teachers providing guidance and psychological consulting services in schools covers titles like definition of violence, classification of violence, types of abuse and neglect, physical and behavioural indicators of each type of abuse and neglect, behaviour of people responsible for care of the child (mother, father, caretaker, etc.), relevant provisions of the Child Protection Law, which authorities to contract in the event of any abuse or neglect, and a guide to institutions and organisations working to prevent violence against children in Turkey (Directorate General of Special Education and Guidance Services, 2015).

Strategy and Action Plan for Prevention and Minimisation of Violence in Educational Environments: Another study towards prevention and minimisation of violence is the "Strategy and Action Plan for Prevention and Minimisation of Violence in Educational Environments (2006-2011+)" organised with UNICEF support, with the General Directorate of Special Education and Counselling Services unit under the Ministry of National Education acting as coordinator unit (MEB & UNICEF, 2006). Preparation of this action plan has become imperative due to the fact that management processes have determinative effect on rendering relationships and practices in and around education environments into constructive, reparative, peaceful and supportive relations and therefore elements like the student, the teacher, the family and close vicinity of these bodies must work in harmony and coordination to strengthen a lasting and beneficial management approach in order to prevent and minimise violence in education environments (Adana Governorship Provincial Directorate of National Education, 2013). In this action plan fields of intervention are defined under five titles comprised of management processes, teachers and managers, students, education environments and their vicinity, and families, and activities to be performed under these fields are defined. In scope of the Strategy and Action Plan for Prevention and Minimisation of Violence in Educational Environments the Ministry of National Education has planned on-the-job trainings for managers, teachers, inspectors and guidance counsellors. Planned on-the-job trainings will include discussions on definition of violence in education, types, affects and reasons of violence in education, and measures that can be taken to prevent and minimise violence in education environments (MEB & UNICEF, 2006).

Counselling Measure Practices Handbook: This handbook is prepared to strengthen the capacity of services provided for children for whom counselling

measures are implemented in scope of the Child Protection Law by guidance counsellors employed under the Ministry of National Education. This handbook was first developed in scope of the "Children First-Provincial Level Modelling Project for Child Protection Mechanisms" and later was reviewed by Demircioğlu (2015) in scope of the "Technical Support Project for Prevention of Violence against Children" and published by the General Directorate of Special Education and Counselling Services unit under the Ministry of National Education. Protective measures and support services are implemented in scope of the Counselling Measure Practices for children in need of protection or children driven to delinquency. The counselling measures handbook systematically approaches the child in need of protection or delinquent child together with his family and people responsible for care and education of the child, covering risk factors and support services assessing protective actions against risk factors in order to prevent reoccurrence of crime and exposure. In addition, services aimed at supporting physical, mental, psycho-social and emotional development of children are also provided and families are provided with counselling services including parenthood training, family counselling, family treatment, etc. in this context. Fourth module of the handbook discusses "Sexual Abuse" in eight sessions, in which families are provided with counselling and guidance on issues like what to do to protect their children against sexual abuse, how to communicate about sexual abuse, raising parent awareness about sexual abuse, education of parents on what can they do to help children who suffered sexual abuse, how to take measures against sexual abuse, etc. The Ministry of Family and Social Policies (ASPB), the Ministry of National Education (MEB) and local governments are responsible for implementation of counselling measure practices (MEB General Directorate of Special Education and Counselling Services, 2015).

Counselling and Psychological Consultation Services: These services organised as a part of school organisations provide a number of services for students, teachers and guardians. These services aimed to protect children against and prevent child abuse and neglect include determination of children in risk groups, determination of conditions threatening the child by various methods of assessment, provision of individual and group psychological support for students who are exposed to abuse and neglect and to other students in the school, raising student awareness in regard of issues like violence and bullying and counselling services aimed to develop students' skills to overcome such issues, starting and implementing family training programmes to raise awareness of parents and providing counselling services for guardians of students, organising seminars on child abuse and neglect for both teachers and other school personnel and guardians of student, providing protection, prevention and intervention services in psycho-social context, starting legal process for students exposed to abuse and neglect, and counselling services provided for students, teachers and guardians of students with collaboration of students, teachers and guardians of students in order to prevent and minimise violence (TBMM, 2016).

Guide on Counselling and Psychological Consulting Services in Schools: Protective and preventative actions conducted in scope of counselling services, which have an important place in the education system, endeavour to prevent many problems. The guide developed in this scope is prepared for guidance counsellors working in all types of schools and it includes, in addition to counselling service practices, information and process steps on services that must be implemented in risk situations that might be

encountered in schools in scope of the psycho-social intervention services. In this context, the guide contains information on process steps related to services intended for students exposed to sexual abuse, students exposed to neglect, and students exposed to violence (MEB, 2015).

Guide on Counselling and Supervision in Pre-school Education Institutions: Prepared by the Counselling and Supervision Department under the Ministry of National Education, this guidebook covers education and instruction activities in scope of guidance and supervision services, and touches on issues of how school employees should communicate with the children, how communication between school employees and children should be supervised, and how the trainings on child abuse and neglect should be provided under the heading of training activities aimed at school employees (Counselling and Supervision Department, 2016).

Psycho-social Intervention Services: Psycho-social intervention comprises preventative, protective and supportive psycho-social activities aimed at teachers, other school personnel, students and families in regard of various issues involving risk of trauma or crises in order to prevent negative effects of a crisis or psychological trauma on individuals and to help individuals to return their pre-trauma levels (TBMM, 2016).

"Psycho-social Intervention Unit" is a unit formed in the body of the General Directorate of Special Education and Counselling Services unit under the Ministry of National Education. The main purpose of this unit to take preventative and protective measures against events like abuse, neglect, violence and any type of natural disaster, and to support psycho-social development against such events. The General Notice No. 2002/11 on Psycho-social Intervention Services published by the General Directorate of Special Education and Counselling Services is it emphasized that necessary measures should be taken to ensure students in the school environment are not exposed to difficult life experiences like abuse, neglect or emotional or physical violence, and if there is any individual who was exposed to such events opinion and support of the Psycho-social Intervention Units should be acquired in regard of available services and applicable methods of intervention (MEB, 2002). All services available in this context will be practiced by psycho-social intervention teams on province/county level, and by the psychological counselling and guidance services on the school level.

Intervention Teams: Crisis intervention teams are formed at province/county/ school levels for the counselling services under MEB. Crisis intervention teams are responsible to determine the internal and external risk factors at schools and to provide Provincial Directorates of National Education with reports on measures needed to be taken against such risks and prevention and minimisation of violence in education environments. Each school must have a crisis intervention team and a crisis intervention plan to eliminate negative effects of such crises as soon as possible and to return the institution to its normal flow in case these institutions face any crisis situation.

Practice Guides and Publications: There are a number of publications prepared in scope of the Psycho-social School Project developed by MEB and UNICEF partnership in scope of the psycho-social prevention, protection and intervention services. These include the Normal Post-trauma Reactions (Psycho-education Handbook), Difficult Life Experiences and Their Effects, Psychological Briefing and Interpretation Observing Critical Events, Trauma and Losses, and the Child-friendly

School, Child Victims of Abuse. Among these, the Normal Post-trauma Reactions (Psycho-education Handbook) is a 2003 publication distributed across the country through educators, prepared in order to provide knowledge on methods for taking protection and prevention for measures before traumatic events like disasters and critical events and the reactions shown after such events, normalising these reactions and revealing the positive coping mechanisms individuals natural possess and/or developing new coping mechanisms in cooperation with individuals (Publications on Psycho-social Protection, Prevention and Intervention Services, 2012).

The book titled Child-friendly School, Child Victims of Abuse and Neglect is a 2003 publication/module prepared by MEB-UNICEF partnership in scope of the Child-friendly School Project, covering forms of handling reasons and effects of child abuse and neglect in school (Child-friendly School, Child Victims of Abuseand Neglect, 2013).

The Book Child-friendly School, Child Victims of Abuse: This book falls under the heading of publications related to Guidance and Psychological Counselling Services by the General Directorate of Special Education and Guidance Services under the Ministry of National Education. It is a module prepared by MEB-UNICEF cooperation in scope of the Child-friendly School Project which covers subjects like reasons of child abuse and neglect, effects on exposed children, and methods of handling these issues.

Similarly, there is a number of preventative and protective intervention services practiced under the umbrella of the Ministry of Health. The content of services provided under the umbrella of the ministry in this context can be listed as follows:

1. Provincial Public Health Directorates under the Ministry of Health
2. Other Units under the Ministry of Health
3. Child Observation Centres

Provincial Public Health Directorates under the Ministry of Health: Training programmes in scope of primary prevention level under titles like "Child Abuse and Neglect", "Sexual Abuse Awareness Training", etc. are provided under the Mental Health Programmes Bureaus of the Provincial Public Health Directorates in accord with instructions of the Ministry of Health. These trainings are organised in the form of briefing seminars aimed at health workers (doctors, nurses, etc.) who are greatly important for correct identification and treatment of child abuse as well as their approach to following process and reference to relevant units in the following process (“Sağlık Çalışanlarına Cinsel İstismar Eğitimi,” 2015), aimed at Police personnel to inform them about how to communicate with children exposed to abuse in case of any abuse incident (“Polise Çocuk İstismarı Dersi,” 2014) and aimed at teachers in occupational groups with a high incidence rate of encountering child abuse incidents (homeroom teachers, guidance counsellors, special education and pre-school teachers, etc.).

Another service provided by Public Health Directorates is trainings aimed at the medical personnel (obstetrics nurses, medical nurses and doctors working at the primary level) in scope of the "Programme for Supporting Psycho-social Development of 0-6 Age Group Children" (ÇPDG) (TBMM, 2016). This programme includes methods of supporting psycho-social development of 0-6 age group children in the primary level medical services in order to support development of children in the most rapid

development phase in pregnancy and 0-6 age period, to identify risk factors that might affect development as early as possible to provide special support and early intervention for children who might be under risk (Program for Supporting the Child's Psychosocial Development, 2015).

Implementation of and reporting on medical measure decisions regarding child victims of abuse and neglect are also under responsibility of the Ministry of Health. In scope of the Medical Measures Practice implemented by collaboration between the Ministry of Health and the Ministry of Justice provides regular controls in medical system for children in need and the reports generated in these controls are submitted to relevant courts by intervals specified in the applicable regulations. According to information provided by the Mental Health Programmes Bureau of the Turkish Public Health Authority, medical measure observation services were provided for 4142 children across Turkey in the year 2015 (TBMM, 2016).

Other Units under the Ministry of Health: Information on the subject is also provided under the heading of "Findings Indicating Abuse" in the "Infant and Child Observation Protocol" published by the General Directorate of Maternal and Child Health and Family Planning under General Directorate of Health Information System of the Ministry of Health. Indications pointing at abuse and neglect of the child in medical complaints or history of the child or behaviour of the parents and findings that give rise to suspicion of physical and sexual abuse in medical examination of the child are defined in this scope (Baby and Child Monitoring Protocol, 2017).

The "Medico-Social Service Practices Training" provided by the "Department of Patient Rights and Medico-Social Services" under the General Directorate of the Ministry of Health also includes group studies for increasing awareness in medical personnel regarding child abuse and neglect (Medico-Social Service Practices Training, 2017).

Child Observation Centres: Another institution working in this field in Turkey is the Child Observation Centres (ÇİM). General Notice No. 2012/20 refers to operation and importance of ÇİMs as"*It is found necessary to establish Child Observation Centres (ÇİM) in body of hospitals/institutions under the Ministry of Health and to coordinate operations of these centres under authority of the Ministry of Health in order to prevent child abuse, to provide informed and effective intervention services for children exposed to abuse, and particularly to minimise secondary damage suffered by children exposed to sexual abuse, and to ensure judicial and medical processes related to such events are performed as a single centre and in a single instance by personnel trained in this field* (What is the Child Monitoring Center/ by Wikia, 2017).

As mentioned in the general notice in question, Child Observation Centres (ÇİM) are separately established in each province in body of hospitals attached to the Ministry of Health and the Ministry assumes responsibility for operation of these centres. The "Child Observation Centres Coordination Board" is found to establish ÇİMs, regulate their operation and meet their needs (“Tıbbi Sosyal Hizmet Uygulamaları Eğitimi,” 2017). Field of activity of these centres include diagnosis, treatment and observation services for children exposed to abuse and neglect (What is the Child Monitoring Center/ by Wikia, 2017).

In addition trainings aimed to raise awareness about this subject are organised by Child Observation Centres for personnel of public institutions and offices who are

likely to encounter children exposed to sexual abuse (Homeroom Teachers, Medical Personnel, Gendarmerie Child Bureau Personnel, etc.) (TBMM, 2016).

In addition to the Ministry of Health, another ministry contributing to this field by activities aimed to prevent abuse and neglect is the Ministry of Family and Social Policies.

Ministry of Family and Social Policies: In Turkey protecting children against all types of abuse and neglect and to help children develop in a healthy manner is among the duties of the Ministry of Family and Social Policies (ASPB). In addition to various duties like determining and coordinating national family and social policies and strategies, governing social service and support activities aimed at children, families and society, etc. the ASPB also assumes responsibility for regulating protection and support measures for counselling and care activities aimed to protect children in need (TBMM, 2016).

The "General Directorate of Child Services" unit under the Ministry of Family and Social Policies is determined as the "Coordinating Authority" responsible for implementation and oversight of the Children's Rights Agreement protecting rights of all children (Okur, İnce & Bilir, 2017). General Directorate of Child Services unit works under the Ministry of Family and Social Policies in scope of activities related to children's rights.

In addition to the Ministry of National Education, the Ministry of Health and local governments, the Non-Governmental Organisation also contribute to preventative and protective activities and services aimed towards preventing of abuse and neglect. These units and the activities they contribute in are summarised below.

Mother and Child Education Foundation (AÇEV): Founded to educate mothers and children, this organisation has gone beyond its initial aim and today also provides education for fathers, childless women and families (Mother and Child Education Foundation- by Wikia, 2017). As the first educators in the life of children parents should be kept away from any event, attitude or behaviour that might negatively affect their children or development of their children and to this end the parents must be educated on what supports and what hinders child development. Accordingly, AÇEV provides family education programmes aiming to educate parents in regard of child development and education, to provide them with necessary support, and to strengthen the communication and bonds between the child and the parents. In this context, family education programmes are provided in two forms comprised of mother support programmes and father support programmes. The Mother Support Programme (ADP) aiming to educate mothers regarding child development and to increase their self-confidence also includes the heading of "Child Abuse." In the session titled "How to decrease bad behaviour of children?" a general definition of child abuse is provided as well as types of abuse (physical, emotional, sexual and economic). Furthermore, mothers are also instructed on what to do if they discover presence of abuse. As another leg of family education, the Father Support Programme (BADEP) covers many subjects including "Sexual Abuse." In the session titled "Physical and Sexual Development" fathers are educated regarding what constitutes sexual abuse. In addition, fathers are instructed how to teach their children to distinguish between sexual abuse and a normal touch of affection (Yılmaz İnal, 2009).

Foundation for Supporting Child Protection Centres (ÇOKMED): With main offices located in Istanbul, the Foundation is "*Founded to conduct activities aimed towards preventing child abuse and neglect, protecting children by improving services intended for children exposed to abuse and neglect, and to develop and support child protection centres and similar services established for these purposes* (ÇOKMED - Child Protection Centers Supporting Association). It is one of the many foundations involved in activities aimed toward prevention of child abuse and neglect by developing strategies regarding children exposed to abuse and neglect as well as their families and social circles, determining the risk factors that might lead to child abuse in the society and to organise publicity meetings, trainings and counselling services to raise awareness and sensitivity in public regarding these issues, in collaboration with the child protection, practice and research centres established in the body of many universities across Turkey (Gazi, Erciyes, Marmara, Cumhuriyet, Kocaeli, Çukurova, Mersin and Karadeniz Universities) (Child Services Social Rehabilitation Services Department, 2017).

Turkish Society for Prevention of Child Abuse and Neglect: The Society aims to ensure individuals can grow in a healthy manner in all development stages starting from prenatal stage and to prevent any type of abuse (physical, emotional or sexual). The Society intends to gather knowledge on child abuse and neglect through scientific approach and method, to disseminate knowledge on prevention of child abuse and neglect, to provide an environment wherein workers can share their knowledge, experience and know-how regarding child care, and to provide child care workers with counselling regarding prevention of child abuse and neglect as well as treatment of children exposed to abuse and neglect. The society also works in collaboration with other institutions and organisations working to protect and defend children's rights, and provides trainings on "protection against abuse" for children with their "youth branch" activities involving university students (ISPCAN XIX International Child Abuse and Neglect Congress, 2012).

As a subject increasingly gaining importance in public eye in Turkey, activities against child abuse and neglect are not limited to the units mentioned above and the services and programmes they provide. In addition to these organisations, non-governmental organisations like Child and Teenager Substance Abuse Research and Treatment Centre (ÇEMATEM), Child Protection Centres (ÇKM), Society for Fight against Child Abuse (ÇİMDER), etc. also engage in activities in this field, like the "1 in 5 Project" which called attention to the fact that one in every five children is exposed to some form of sexual abuse. In addition to these, comprehensive studies are conducted in the study titled "Child Abuse and Domestic Violence Research" examining viewpoints of both victims and perpetrators of ill treatment with qualitative and quantitative approaches under coordination of the Social Services Child Protection Institution (SHÇEK) and support of UNICEF (Oral, Engin & Büyükyazıcı, 2010).

Preventative and Protective Activities against Child Abuse outside Turkey

When we turn to international activities, interventions in this context are grouped as the interventions to prevent exposure to child abuse according to type of abuse and the interventions to prevent re-exposure to child abuse and to prevent negative consequences of abuse.

Interventions to prevent exposure to child abuse according to type of abuse: When we consider this type of intervention we see they include home visit programmes like Nurse-Family Partnership and Early Start Programme in scope of physical abuse and neglect, parent education programmes like Triple P-Positive Parenting Programme intended to encourage healthy child rearing and developing parenting skills to eliminate risk factors, education programmes related to head trauma leading to abuse risk, and child care programmes developed for families under risk.

In scope of sexual abuse programmes curriculum-based school education programmes providing critical information on sexual abuse and teaching protective measures, are implemented as developed for children from pre-school age to high school level, especially as implemented in USD and Canada.

In the context of emotional abuse, therapeutic counselling intervention programmes are implemented, covering subjects like bonding-based intervention, parenthood awareness and unsafe infant bonding. Similarly, domestic violence prevention intervention are also conducted in order to prevent introduction of domestic violence and to protect children against domestic violence (MacMillan et al., 2009).

In addition to these, there is intervention programmes intended to prevent abuse and neglect in general. The Adults and Children Together against Violence: Parents Raising-ACT and Safe Care programmes covering subjects like parenting skills, conflict management, prevention of violence, etc. for benefit of all families without any risk level distinction are only a couple of such programmes.

Interventions to prevent re-exposure to child abuse and to prevent negative consequences of abuse: This intervention group includes family education programs related to parent-child interactions in context of physical abuse and neglect (Parent-Child Interaction Therapy (PCIT) and Webster-Stratton Incredible Years Programme) and programmes specified to abuse cases (peer training, imaginary play training, therapeutic daily education, etc.).

Therapeutic child and family counselling for sexual abuse (using cognitive-behavioural therapy method) and programmes for child abusers (surgical castration, chemical treatments and psychological treatments) are developed and implemented.

In case of emotional abuse interventions include therapeutic counselling interventions using group oriented cognitive-behavioural therapy method specifically designed for parents and caregivers who emotionally abuse children.

Moreover, Trauma-Focused Cognitive Behavioural Therapy (TT-CBT), Children with Problematic Sexual Behaviour Cognitive-Behavioural Treatment Program: School-age Program and Multi-Systemic Therapy (MST) are some other intervention methods used to minimise consequences after exposure to abuse.

In programmes designed to prevent reoccurrence of domestic abuse the main idea is to minimise reoccurrence of domestic abuse against women in order to minimise domestic violence against children, and interventions are implemented to increase life quality of women, placement of prohibitions on husbands, and treatment programmes against violent behaviour. In addition to these programmes, psychological treatment methods for parents and children are implemented, like the mother-child therapy used to minimise behavioural problems and symptoms internalised and reflected by children in families exposed to domestic violence.

When we consider large scale interventions in place in this context we see foster

family programs, family protection programs and relative care programs. In addition, there are also intervention programs for young caregivers in scope of multi-dimensional treatment programmes for foster families (MacMillan et al., 2009).

When we consider international efforts regarding abuse and neglect, we see there are many intervention programmes established and implemented in various countries, as well as institutions and organisations like The National Centre on Child Abuse and Neglect (NCCAN) of USA and the International Society for the Prevention of Child Abuse and Neglect (ISPCAN).

CONCLUSION AND SUGGESTIONS

While the public awareness regarding abuse and neglect has shown a rise in recent years, there is no intervention program sufficient to eliminate risk factors and to meet needs and requirements of the society in this regard. While activities to prevent child abuse and neglect are conducted in Turkey, these are generally developed for benefit of school personnel and guidance units, and only a limited number of training and education programs are available for raising awareness and sensitivity of parents in this regard. As the people with most frequent contract with the children it is believed that parents having knowledge on their children and the needs and characteristics of development stages of their children will contribute to early discovery and prevention of abuse incidents, as well as having a minimising effect on abuse and neglect behaviours committed by parents.

When we consider preventative and protective activities conducted in Turkey against abuse and neglect, we believe more school-family interaction based intervention programmes requiring cooperation between school and family should be developed and implemented. It is our opinion adaptation of programmes implemented and proven to be effective in foreign areas can provide a starting basis in this field until a solution specifically designed for our culture is developed. Even though there are calls to adapt intervention programmes from foreign jurisdictions, it should be taken into account that each country and even each society may face different risk factors in scope of their unique cultural values, and therefore it is advisable determine these unique risk factors and to prepare unique programmes for these.

As in the case of any type of intervention, training and information of people in constant contact with children can provide preventative and protective services in the field of abuse and neglect which can lead to many negative effects on individuals, thus providing a core solution to the problem. Therefore, it is our opinion public awareness and particularly awareness of families and personnel and units working with children should be raised in regard of abuse and neglect in order to protect children against exposure to such events and to minimise damaging consequences for those who become exposed.

REFERENCES

Adana Valiliği İl Milli Eğitim Müdürlüğü. (2013). Eğitim Ortamlarinda Şiddetin Önlenmesi ve Azaltılması Strateji ve Eylem Planı (2013 – 2014) (pp. 1–17). Adana.

Anne Çocuk Eğitim Vakfı - Vikipedi. (2017). Retrieved June 15, 2017, from http://www.wiki-zero.net/index.php?q=aHR0cHM6Ly90ci53aWtpcGVkaWEub3JnL3dpa2kvQW5uZ

V_Dh29jdWtfRcSfaXRpbV9WYWtmxLE
Arruabarrena, I., & Paúl, J. de. (2012). Early Intervention Programs for Children and Families: Theoretical and Empirical Bases Supporting their Social and Economic Efficiency. *Psychosocial Intervention*, *21*(2), 117–127. http://doi.org/10.5093/in2012a18
Bebek ve Çoçuk İzlem Protokolü. (2017). Retrieved June 13, 2017, from http://sbu.saglik.gov.tr/Ekutuphane/Yayin/420
Cicchetti, D., & Blender, J. A. (2006). A multiple-levels-of-analysis perspective on resilience: Implications for the developing brain, neural plasticity, and preventive interventions. *Annals of the New York Academy of Sciences*, *1094*, 248–258. http://doi.org/10.1196/annals.1376.029
Cinsel İstismar Semineri. (2013). Retrieved June 13, 2017, from https://www.haberler.com/cinsel-istismar-semineri-verildi-5349214-haberi/
Çocuğun Psikososyal Gelişimini Destekleme Programı (ÇPGD). (2015). Retrieved May 30, 2018, from http://www.corumhaber.net/guncel/aile-degisirse-toplum-degisir-h43672.html
Çocuk Dostu Okul İhmal İstismar Mağduru Çocuklar. (2013). Retrieved June 13, 2017, from https://orgm.meb.gov.tr/meb_iys_dosyalar/2013_09/18151251_ocukdostuokulhmalistismarmaduruocuklar.jpg
Çocuk Hizmetleri Sosyal Rehabilitasyon Hizmetleri Daire Başkanlığı. (n.d.). Retrieved June 13, 2017, from http://cocukhizmetleri.aile.gov.tr/teskilat-yapisi/baskanliklarimiz/sosyal-rehabilitasyon-hizmetleri-dbsk
Çocuk İzlem Merkezi Nedir | Yenişehir Wiki | FANDOM powered by Wikia. (n.d.). Retrieved June 13, 2017, from http://tr.yenisehir.wikia.com/wiki/Çocuk_İzlem_Merkezi_Nedir
ÇOKMED - Çocuk Koruma Merkezlerini Destekleme Derneği. (n.d.). Retrieved June 13, 2017, from http://cokmed.org/?/hakkinda/tuzuk
Demircioğlu, H. (2015). Danışmanlık Tedbiri Uygulamaları El Kitabı (pp. 1–172). MEB Özel Eğitim ve Rehberlik Hizmetleri Genel Müdürlüğü.
Geeraert, L., Van den Noortgate, W., Grietens, H., & Onghena, P. (2004). The Effects of Early Prevention Programs for Families with Young Children at Risk for Physical Child Abuse and Neglect: A Meta-Analysis. *Child Maltreatment*, *9*(3), 277–291. http://doi.org/10.1177/1077559504264265
İnsan Hakları Derneği. (2008). Çocuk İhmali ve İstismarını Önleme:Öğretmenler Ve Aileler İçin Eğitim Kılavuzu. Ankara: Berkay Ofset.
Jonson-Reid, M., Kohl, P. L., & Drake, B. (2012). Child and Adult Outcomes of Chronic Child Maltreatment. *Pediatrics*, *129*(5), 839–845. http://doi.org/10.1542/peds.2011-2529
MacMillan, H. L., Wathen, C. N., Barlow, J., Fergusson, D. M., Leventhal, J. M., & Taussig, H. N. (2009). Interventions to prevent child maltreatment and associated impairment. *The Lancet*, *373*(9659), 250–266. http://doi.org/10.1016/S0140-6736(08)61708-0
McCoy, D. C. (2013). Early violence exposure and self-regulatory development: A bioecological systems perspective. *Human Development*, *56*(4), 254–273. http://doi.org/10.1159/000353217

Ministry of National Education (MEB) (2002). Psikososyal Müdahale Hizmetleri Genelge 2002/11 (pp. 1–4). Ankara.
Ministry of National Education (MEB). (2015). Okullarda Rehberlik ve Psikolojik Danişma Hizmetleri Kılavuzu (pp. 1–86). Ankara.
Ministry of National Education (MEB) & Başkanlığı, R. ve D. (2016). Okulöncesi Eğitim Kurumları Rehberlik ve Denetim Rehberi. Ankara.
Ministry of National Education (MEB) & UNICEF. (2006). Eğitim Ortamlarında Şiddetin Önlenmesi ve Azaltılması Hizmet-İçi Eğitim Eğitimci Kitabı (pp. 1–76).
O'Connell, M. E., Boat, T., & Warner, K. E. (2009). *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington, D.C: National Academies Press.
Okur, A., İnce, B., & Bilir, M. (2017). Çocuk Hakları İl Yetişkin Temsilcisi Rehberi. Retrieved June 13, 2017, from https://cocukhizmetleri.aile.gov.tr/data/54ad4cd6369dc5dac028bda2/cocuk_haklari_kitapcik.pdf
Oral, Ü. K., Engin, P., & Büyükyazıcı, Z. (2010). Türkiye' de Çocuk İstismarı ve Aile İçi Şiddet Araştırması. Ankara: Başbakanlık Sosyal Hizmetler Çocuk Esirgeme Kurumu.
Özel Eğitim ve Rehberlik Hizmetleri Genel Müdürlüğü. (2015). Çocuğa Yönelik Şiddetin Önlenmesi Projesi Rehber Öğretmen El Kitabı (pp. 1–24). Ankara: Özel Eğitim ve Rehberlik Hizmetleri Genel Müdürlüğü. Retrieved from http://siddetinonlenmesi.meb.gov.tr
Polise Çocuk İstismarı Dersi. (2014). Retrieved June 13, 2017, from http://www.hamlegazetesi.com.tr/polise-cocuk-istismari-dersi/
Psikososyal Koruma, Önleme ve Müdahale Hizmetleriyle İlgili Yayınlar. (2012). Retrieved June 13, 2017, from https://orgm.meb.gov.tr/meb_iys_dosyalar/2012_11/20153116_ozel_egitim_tanitim1.png
Sağlık Çalışanlarına Cinsel İstismar Eğitimi. (2015). Retrieved June 13, 2017, from http://agrihsm.gov.tr/saglik-calisanlarina-cinsel-istismar-egitimi/
Şahin, F. (2015). Çocuk İstismarına ve İhmaline Yaklaşım Temel Bilgiler. In O. Derman & K. Karataş (Eds.). Ankara: Çocuk İstismarını ve İhmalini Önleme Derneği.
Türkiye Büyük Millet Meclisi (TBMM) (2016). Başta Cinsel İstismar Olmak Üzere Çocuklara Yönelik Her Türlü İstismar Olaylarının Araştırılarak Alınması Gereken Önlemlerin Belirlenmesi Amacıyla Kurulan Meclis Araştırması Komisyonu Raporu (pp. 1–480). Ankara.
Tıbbi Sosyal Hizmet Uygulamaları Eğitimi. (2017). Retrieved June 13, 2017, from http://www.hasta.saglik.gov.tr/TR,5151/tibbi-sosyal-hizmet-uygulamalari-egitimi.html
XIX. ISPCAN Uluslararası Çocuk İstismarı ve İhmali Kongresi / 2012. (n.d.). Retrieved June 13, 2017, from http://brosgroup.net/ispcan2012/tr/about_tspcan.asp
Yılmaz İnal, S. (2009). Aile Eğitim Programları (AÇEV) Çocuk İstismarını ve İhmalini Önleme Kongresi (pp. 1–10). Ankara.

Chapter 61

Decision Making Process on Communication Options in the Re/habilitation of Children with Hearing Loss

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In this chapter, family participation will be discussed due to the decision-making process on communication options in the re/habilitation of children with hearing loss. The primary goal is to share information about frequently used communication options for children with hearing loss and parents' roles and perspective in the decision-making process.

Newborn hearing screening programs help identify babies as early as possible. Babies who are diagnosed with permanent hearing loss can lead to early intervention programs(Beauchaine, Hoffman, & Sabo, 2016). Afterward, parents need to decide appropriate amplification options which are presented by audiologists and choose the communication options. At this stage, parents should be determined the communication option for their newborn and these decision-making process usually make them feel anxious and stressful. The role of pediatric audiolog is to inform parents' about communication options and respect their decisions (Tharpe & Seewald, 2016). The responsibility of choosing the appropriate approach to communicate with their children belongs to parents.

Studies and clinical follow-ups have shown that 90-95% of children with hearing loss have normal hearing parents (Blackwell, 2007; Fitzpatrick, Stevens, Garritty, & Moher, 2013; Garcia & Turk, 2007). For this reason, parents often prefer communication approaches that support verbal language. Sign language or total communication approaches are preferred in children with Deaf parents. In this section, four communication approaches will be mentioned: sign language, auditory-verbal approach, cued speech and total communication. Besides these approaches, there are less commonly used communication methods such as finger spelling and alternative communication technologies which are not widely used in Turkey.

1. Sign Language

Sign language is a complex language that uses facial expressions, body position, and hand signs(Aran et al., 2007). The sign language changes from country to country. Although there are similar characteristics, each sign language has its own structure and signs. The foundation of using the sign language includes the idea that visual cues are beneficial in the exchange of information for hearing loss individuals.

Babies and children with hearing loss learn sign language as primary language or second language. Mostly, children of Deaf parents are taught by their parents to communicate with the sign language in the family (Meier, 2016). Children with hearing parents learn sign language with external support from their parents. As in other

language-learning skills, the choice of the sign language approach in the early period encourages children to be more competent in using sign language (Hall, 2017).

Although the sign language approach is preferred, the amplification systems such as hearing aids or assistive hearing devices continue to be used for the use of the residual hearing aid. Gürboğa and Kargın (2003) found that 70-75% of adults with profound hearing loss prefer to use sign language when communicating in Turkey. Recent studies showed that the sign language is accompanied by verbal language as a second language, contrary to the previous studies that the sign language is used only in a daily basis (Kemaloğlu & Kemaloğlu, 2012).

2. Cued Speech

It is an auditory - verbal communication approach (Cornett & Daisey, 2001). It can be explained as supporting natural speech depending on hand cues, or in other words visualizing phonemes with hand cues (LaSasso, Crain, & Leybaert, 2010). For a syllable, handshapes indicate consonants and hand placements indicate vowels. Thus, visual cues of all phonemes are presented along with auditory information.

Speech reading can be used for speaking and auditory communication. It helps support literacy skills. It is emphasized, in particular, that phonological awareness, discrimination, and speaking skills are enhanced with cued speech (Rees, Fitzpatrick, Foulkes, Peterson, & Newton, 2017; Trezek, 2017). It is easy to learn because it is made up of uncomplicated, and sound-compatible cues. It is only necessary to gain speed by practicing. Many languages have cued speech. The first study for Turkish – cued speech was found in a dissertation in the late 80's (Bal, 1983). However, it was ignored because it did not become widespread later and was not used in other studies.

Families are also should be encouraged to learn and use the cued speech in their daily routines. It is emphasized that auditory stimulation plays an important role in this approach, which is a prerequisite for early utilization of amplification technologies. However, it is preferable to use verbal language together when there is difficulty in following the conversation and difficult to understand the noise.

3. Auditory – Verbal Approach

Auditory-Verbal approach is only encourages the development of the verbal language through audition (Eriks-Brophy, 2004). With appropriate amplification technologies, the child is aimed to acquire auditory-verbal communication through individualized therapies. Early on, children who are beginning to use appropriate amplification and benefit from early intervention programs are often observed to have acquired verbal language without the need for visual cues (Estabrooks, 1994; Rhoades, 2006). It has been reported that they often perform expressive and receptive language development performance consistent with their normal hearing and typically developing peers (Kaipa & Danser, 2016; Percy-Smith et al., 2018).

Especially auditory - verbal approach is preferred in the education of children with hearing loss whose parents have normal hearing (Kaipa & Danser, 2016; Rosenzweig, 2017). The parents choose to teach their own mother tongue to their children and do so through natural teaching methods (Rosenzweig, 2017). Parents' intent is that their children should be attended in a normal school in their academic life and be able to adapt to society.

Additionally, when the auditory-verbal approach is acquired by children, parents

need to participate in therapies and support auditory perception and language development in daily life. It is expected that the family will be able to provide the optimal listening environment for their children. In Turkey, the auditory-verbal approach is one of the most preferred communication methods because most of the children with hearing impairment have normal hearing parents. For another reason, it is reported that the dominance of the verbal communication in Turkey until the beginning of the 1980s may be influenced by the preference of many experts and the retention of other communication approaches (Kemaloğlu & Kemaloğlu, 2012).

4. Total Communication

Total communication is an approach which includes verbal language, speech reading, using fingerspelling, natural gestures, and residual hearing (Williams & Mayer, 2015). It acts as a bridge to both the hearing society and the deaf community to communicate with the child. The child itself determines the approach needed to communicate. During communication process, the essential part is receiving and sharing the message. Especially in the educational settings, total communication provides teacher to use all modalities for explaining the subjects. On the other hand, its implementation makes most of the professionals believe that total communication is a philosophy (Stewart, 1992).

The use of amplification technologies is supported to provide the best benefit without hearing. Parents are expected to offer options for choosing the most appropriate communication approach to the child through anticipated therapists and teachers. It is suggested to learn different communication approaches and extend communication skills.

Conclusion

The widely chosen communication modes in Turkey for children with hearing impairment are auditory-verbal method, speech reading, lip-reading and sign language. Although there has still discussions about which communication approach is beneficial for children with congenital or prelingual hearing loss, a consensus has been reached on importance of individual needs and uniqueness of family (Erbasi, Hickson, & Scarinci, 2017). However, it should not be forgotten that it is critical to increase the options available to families and to provide adequate and accurate information.

Through newborn hearing screening programs, hearing loss is diagnosed within 3 months and early intervention programs began within 6 months (Yoshinaga-Itano, 2003). Early intervention provides significant progress in language development (Moeller, 2000; Yoshinaga-Itano, Sedey, Coulter, & Mehl, 1998). However, as Meadow-Orlans and colleagues have stated that language development may continue to be delayed, despite the early intervention on auditory input and language stimuli (Meadow-Orlans, Mertens, & Sass-Lehrer, 2003). The researchers' suggestion was more professionals' needs to take part in early intervention programs and pay attention to parent-child interaction.

There are two main variables contribute to choosing the communication approach: (1) the language used by the family and (2) the residual hearing of the child. Another important factor, on the other hand, is whether the child has additional difficulties with hearing loss. Although hearing loss is diagnosed early, additional difficulties such as learning difficulties and physical limitations can lead to assistive devices or alternative

communication methods (computer program, audio tools, etc.). One-third of hearing-impaired children have special needs besides hearing loss, so specialists have an important role to provide information about the advantages and disadvantages of communication modes.

As a result, the parents of children with a hearing loss may not have adequate or accurate information for their children's communication goals and impact of hearing loss on their communication skills. Audiologists and early intervention specialists may need to show parents what they can do to support their communication skills and enrich the child's developmental skills. In some cases, it can be observed that especially parents with normal hearing have difficulty in communicating with children. In this case, caregiver interactions with the child can be assessed by clinical observation, recording parent-child interaction and watching the video during the session. The results can be shared with the family and the family can be informed about the communication approach that is most appropriate for the child. In addition, communication problems between parent and child are revealed and solutions are discussed. If there are communication problems observed in the parent-child interaction- especially between mother-child-, and feedback should be given to parents to support the child's attention and psychosocial skills. Thus, these skills will develop faster as well as language development.

REFERENCES

Aran, O., Ari, I., Guvensan, A., Haberdar, H., Kurt, Z., Turkmen, I., Akarun, L. (2007). *A database of non-manual signs in Turkish sign language*. Paper presented at the Signal Processing and Communications Applications, 2007. SIU 2007. IEEE 15th.

Bal, S. (1983). *İleri Derecede İşitme Özürlü Olan 4-5 Yaş Grubu Çocukların Dil Gelişimi Eğitimlerinde Dudaktan Okuma ve Cued Speech Tekniklerinin Karşılaştırılması. Comparison of Lip Reading and Cued Speech Techniques in Language Development Training of 4-5-Year-Old Children with Hearing Impairment.* (Master), Hacettepe University, Ankara.

Beauchaine, K. L., Hoffman, J. K., & Sabo, D. L. (2016). Newborn Hearing Screening Program Implementation: Early Hearing Detection and Intervention. *Comprehensive Handbook of Pediatric Audiology*, 413.

Blackwell, R. (2007). *Predicate acquisition: Is there an advantage for children learning British Sign Language?* : University of London, University College London (United Kingdom).

Cornett, R. O., & Daisey, M. E. (2001). *The Cued Speech Resource Book For Parents Of Deaf Children*: National Cued Speech Association Cleveland, OH.

Erbasi, E., Hickson, L., & Scarinci, N. (2017). Communication outcomes of children with hearing loss enrolled in programs implementing different educational approaches: A systematic review. *Speech, Language and Hearing, 20*(2), 102-121.

Eriks-Brophy, A. (2004). Outcomes of Auditory-Verbal Therapy: A Review of the Evidence and a Call for Action. *Volta Review, 104*(1).

Estabrooks, W. (1994). *Auditory-verbal therapy: For parents and professionals*: Alex Graham Bell Assn for Deaf.

Fitzpatrick, E. M., Stevens, A., Garritty, C., & Moher, D. (2013). The effects of sign language on spoken language acquisition in children with hearing loss: a systematic

review protocol. *Systematic reviews, 2*(1), 108.
Garcia, R., & Turk, J. (2007). The applicability of Webster-Stratton Parenting Programmes to deaf children with emotional and behavioural problems, and autism, and their families: annotation and case report of a child with autistic spectrum disorder. *Clinical child psychology and psychiatry, 12*(1), 125-136.
Gürboğa, Ç., & Kargin, T. (2003). İşitme Engelli Yetişkinlerin Farklı Ortamlarda Kulandıkları İletişim Yöntemlerinin/Becerilerinin İncelenmesi. *Ankara University, Journal of Faculty of Educational Sciences, 36*(1-2).
Hall, W. C. (2017). What you don't know can hurt you: The risk of language deprivation by impairing sign language development in deaf children. *Maternal and child health journal, 21*(5), 961-965.
Kaipa, R., & Danser, M. L. (2016). Efficacy of auditory-verbal therapy in children with hearing impairment: A systematic review from 1993 to 2015. *International journal of pediatric otorhinolaryngology, 86*, 124-134.
Kemaloğlu, Y. K., & Kemaloğlu, P. Y. (2012). The history of sign language and deaf education in Turkey. *Kulak Burun Boğaz İhtisas Dergisi, 22*(2), 65-76.
LaSasso, C. J., Crain, K. L., & Leybaert, J. (2010). *Cued Speech and Cued Language Development for Deaf and Hard of Hearing Children*: Plural Publishing.
Meadow-Orlans, K., Mertens, D., & Sass-Lehrer, M. (2003). Parents' early experiences with deaf and hard of hearing children: Washington, DC: Gallaudet University Press.
Meier, R. P. (2016). *Sign Language Acquisition*: Oxford Handbooks Online.
Moeller, M. P. (2000). Early intervention and language development in children who are deaf and hard of hearing. *Pediatrics, 106*(3), e43-e43.
Percy-Smith, L., Hallstrøm, M., Josvassen, J. L., Mikkelsen, J. H., Nissen, L., Dieleman, E., & Cayé-Thomasen, P. (2018). Differences and similarities in early vocabulary development between children with hearing aids and children with cochlear implant enrolled in 3-year auditory verbal intervention. *International journal of pediatric otorhinolaryngology, 108*, 67-72.
Rees, R., Fitzpatrick, C., Foulkes, J., Peterson, H., & Newton, C. (2017). Can explicit training in cued speech improve phoneme identification? *Deafness & Education International, 19*(1), 13-21.
Rhoades, E. A. (2006). Research outcomes of auditory-verbal intervention: is the approach justified? *Deafness & Education International, 8*(3), 125-143.
Rosenzweig, E. A. (2017). Auditory Verbal Therapy: A Family-Centered Listening and Spoken Language Intervention for Children with Hearing Loss and Their Families. *Perspectives of the ASHA Special Interest Groups, 2*(9).
Stewart, D. A. (1992). Initiating reform in total communication programs. *The Journal of Special Education, 26*(1), 68-84.
Tharpe, A. M., & Seewald, R. (2016). *Comprehensive handbook of pediatric audiology*: Plural Publishing.
Trezek, B. J. (2017). Cued Speech and the Development of Reading in English: Examining the Evidence. *The Journal of Deaf Studies and Deaf Education, 22*(4), 349-364.
Williams, C., & Mayer, C. (2015). Writing in young deaf children. *Review of Educational Research, 85*(4), 630-666.

Yoshinaga-Itano, C. (2003). From screening to early identification and intervention: Discovering predictors to successful outcomes for children with significant hearing loss. *Journal of deaf studies and deaf education, 8*(1), 11-30.

Yoshinaga-Itano, C., Sedey, A. L., Coulter, D. K., & Mehl, A. L. (1998). Language of early-and later-identified children with hearing loss. *Pediatrics, 102*(5), 1161-1171.

Chapter 62

Overview of the Attachment Process

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INTRODUCTION

Attachment refers to the bond we have with people who are special for us and this bond leads to satisfaction, feeling of happiness during our interaction with them and safety or comfort we feel as a result of proximity when we are anxious or stressful (Berk, 2012). Attachment is not limited to childhood only and continues throughout life. Mother-child relationship, which is the primary relationship, is a prototype for the subsequent relations and therefore, it is very important.

Attachment is a topic which has been studied and contemplated by strong theoretical approaches. Psychoanalytical approach considers nurture as the central context that caregivers and the infants establish in this affectional bond. Behavioural approach emphasizes the importance of nurture on the basis of other reasons and stipulates that the infants learn to prefer the soft, warm embrace and nice words of their mothers as this provides comforting and satiation of their hunger. The terms of attachment and nurture are considered together very frequently on this subject. In fact, nurture is an important bond for establishment of close relationships. However, attachment does not depend solely upon satiation of hunger. We see this in the experiments conducted by Harlow and Zimmerman in 1950 (Surrogate mother experiments). Based on the results of this test, Harlow has concluded that the need for tactile comfort is even more powerful than curiosity and that psychological tensions occur in the event of absence of tactile comfort (Harlow & Zimmerman, 1956; Soysal *et al*., 2005; Jarette, 2013).

Ideas shaping the attachment theory have a long developmental history. Attachment theory, coined by Bowlby, was developed by Ainswoth et al. (Ainsworth *et al*., 1978; Bretherton, 1992).

ATTACHMENT THEORY AND BOWLBY

"Ethological attachment", which considers the affectional bond of an infant with the caregiver as an evolutionary response that contributes to survival, is the most widely accepted approach. The first person who applied this to the bond of the infant-caregiver is Bowlby. Bowlby, who graduated from Cambridge University in 1928, performed volunteer work at a school for maladjusted children. This experience on the effects of early family relations on personality development leads to Bowlby focusing on child psychiatry in his career. Bowlby studied at the British Psychoanalytic Institute simultaneously with his studies in medicine and psychiatry, and was influenced by the thoughts of Melanie Klein during this process. While basing his opinions on the approach of object relations in psychoanalysis, he developed substantial reservations on

the characteristics of Kleinian approach aiming at child psychoanalysis with emphasis on early relations and pathogenic loss. He established his opinions on this subject with his subsequent studies (Bowlby, 1988; Bretherton, 1992; Hazan & Shaver, 1994; Thompson, 2002).

Bowlby published the article titled, "*Forty-four Juvenile Thieves: Their Characters and Home-life*" in 1944. This was his first empirical work based on the case notes at the London Child Guidance Clinic. In 1950, the World Health Organization (WHO) invited Bowlby to deliver a paper on the mental health of homeless children in London. This invitation is important as it constitutes the starting point for development of Bowlby's attachment theory (Bowlby, 1988; Hazan & Shaver, 1994).

Bowlby created an interesting synthesis of psychoanalytical and biological approaches. He defends that roots of human personality originate from the early childhood relations. Serious failure or trauma experienced in these relations will affect the child's development permanently. It has a very important effect on the sense of basic trust and establishing secure relationships with others.

Especially the instinct study of Konrad Lorenz on geese and other precocial birds attracted the interest of Bowlby as this study claimed that social bond level did not necessarily depend on nurture. Bowlby believed that, just like other animals, human infants are born with a series of innate behaviours that keep their caregiver close for protection from dangers, exploration of the environment and establishing dominance over the environment (Water & Cumming, 2000). Close relationship with the caregiver also guarantees the nurture of the infant but this is not adequate for attachment on its own. On the contrary, it is understood optimally in the evolutionary context that attachment is of great importance in evolutionary terms for survival of species through safety and efficiency.

According to Bowlby's attachment theory, infants have certain behaviours that facilitate interaction with the caregiver (sucking milk, gazing, smiling, crying, touching). These behaviours of the infant gradually develop as a result of regular and consistent interaction with the caregiver. Attachment occurs in four stages;

1. *Pre-attachment (0-6 months)*. At this stage, the infant uses the behaviours (sucking milk, gazing, crying, touching) for relieving and establishing close contact with other people. Infant can distinguish the smell, voice and face of the mother/caregiver in these months. However, the infant is not attached to the mother/caregiver yet because he/she does not react to being left with an unfamiliar adult.

2. *Attachment-in-the-making (6 weeks-6/8 months)*. In this stage, the infant gives different reactions to a person who is providing regular care than an unfamiliar person. However, one cannot still speak of a complete attachment. Infant displays behaviours of establishing proximity with several people but no one has become a secure base yet. The infant who is separated from the mother/caregiver does not display any anxiety and is not afraid of strangers.

3. *Clear Cut Attachment Stage (6/8 months to 24 months)*. Attachment to familiar mother/caregiver becomes apparent in this stage. According to Bowlby, real attachment only occurs when the infant is 6 months old. Infants get upset when they are separated from the mother/caregiver and show separation anxiety. This is also the period in which the object permanence understanding is developed (objects and people continue to exist

even when they are not seen) and infants experiencing separation anxiety is an evidence of this. Separation anxiety may not occur at all times and its occurrence depends on the infant's temperament and the existing conditions. When toddlers are separated from their parents they try to make their parents stay with them in addition to their responses. When children start to discovering their environment for the first time, they use the person who is most important for them as the secure base.

4. *Formation of reciprocal relationship (18 months* - 2 years and older). At the end of the second year, the infant shows a rapid development in terms of both language and intellect, which leads to the infant understanding the conditions that affect the coming and going of the mother/caregiver and the estimation that they will return. Lower level of reaction is shown towards separation in this case. Negotiations related with separation are observed with the mother/caregiver in this stage. For instance, the infant may request reading of a book before the mother leaves for work. Actually, this is helpful in terms of coping with separation. Other related behaviours are also observed with the development of apparent attachment of the child. One of these is social referencing. Infants use their ability to distinguish various facial expressions and the secure base behaviour as a guide, and they shape their behaviours by checking the facial expressions of the mother/caregiver when experiencing new situation.

Bowlby's first three phases of attachment correspond to Freud's oral phase while the stage defined as initiative versus guilt by Erikson corresponds to the fourth phase.In addition to these four stages related with attachment, Bowlby (1980) states that infants develop a permanent affectional bond that they can use safely in the absence of their mothers/caregivers. This bond is named the internal working model, which functions as a group of expectations such as accessibility to the person to be attached, possibility of support in the event of stress and mutual interaction with these persons. Internal working model becomes an inseparable part of personality by serving as a guide for all close relationships in the future. After the internal working models are established, they start to shape and explain the experiences, and affect memory and attention. While children notice and remember the experiences compliant with their models, they miss or forget the non-compliant ones. More importantly, this model affects the behaviours of the child. According to the theory, two primary schemes of the mental model develops in a confirmatory and complementary way to one another in the mother-child interaction process. "Valuable self" and "trustworthy her/him". These two schemes are related with the attachment anxiety experienced in close relationships, and keeping distance and avoidance (Bretherton & Munholland, 1999; Bee & Boyd, 2009).

SECURE AND INSECURE ATTACHMENT

Nearly all attachment theorists agree that the first attachment relationship affects the internal working model of the child the most. Mary Ainsworth emphasizes that five characteristics are required in a relationship for the first emotional relationship between the infant and the primary caregiver to be considered as an attachment. These are;

1. Continuity of the bond between the caregiver and the infant,
2. Non-transferability of this affectionate bond to another person or persons and this bond generally being towards one person,
3. Importance of the emotions experienced through this relationship,
4. Desire of the person to continue the relationship with the person with whom an

affectionate bond is established and experience of stress in the event of separation,

5. Perception of sense of trust and comfort within this relationship by the infant.

The "Strange Situation Experiment", used by Mary Ainsworth and colleagues, is the experiment that is used most commonly to assess the characteristic of attachment. Differences seen in the first attachment relationship are nearly explained universally with the Mary Ainsworth's category system (Ainsworth *et al*., 1978). In the strange situation experiment, the attachment behaviour of 12-18 months old infant is studied with two types of observations. Firstly, the infant prefers to direct social reactions to the caregiver rather than other persons and secondly, the infant shows meaningful reactions in the event of separation from and reunion with the caregiver. Strange situation experiment subjects the infant to eight episodes in which separation and reunion with the caregiver are realized (Table 1).

Table 1. Strange Situation Experiment

Episode	Events	Observed Attachment Behaviour
1	Experimenter introduces the room to the mother/caregiver and the infant	
2	Parent sits while the infant plays with toys.	Parent as a secure base
3	Stranger enters the room, sits and speaks with the caregiver/mother	Reaction to unfamiliar adult
4	Mother/caregiver leaves the room Stranger responds to the infant and tries to comfort her/him if upset.	Separation anxiety
5	Mother/caregiver returns, greets and comforts the infant, if necessary. Stranger leaves the room.	Reunion reaction
6	Mother/caregiver leaves the room	Separation anxiety
7	Stranger enters the room and provides comfort.	Comforting ability by a stranger
8	Mother/caregiver returns, greets the child and offers comfort if necessary, and tries to draw the infant's attention to the toys.	Reunion reaction

Note: *1st episode is 30 seconds and the other episodes are approximately 3 minutes. If the infant is very upset, the separation phase is shortened. If the child needs more time to calm down and return to the game, reunion episodes will be extended (Ainsworth, et al., 1978).*

Based on observations of the reactions by the infants during these episodes, the researchers have defined the secure attachment pattern and three insecure attachment patterns while classification could not be made in a few infants. Although separation

anxiety may display differences among these groups, the reactions of the infant to reunion determine the characteristic of attachment to large extent (Ainsworth *et al*., 1978; Barnett & Vondra, 1999; Main & Solomon, 1990; Thompson, 2006).

1. *Secure Attachment:* These infants always use their mothers as a secure base. A reaction is shown when the mother leaves but calms down easily when the mother returns. Development of secure attachment requires that the infant has a continuous caregiver, who is accessible at all times and who gives consistent reactions.
2. *Anxious/Ambivalent Attachment:* These infants are children who are not certain that their mother will respond or help them when they call their mother. Thus, they show resistance towards separation and do not calm down when the mother returns. They have concerns related with displaying exploratory behaviours to satisfy their curiosity. In this attachment pattern, the mothers of children are mostly not consistent in their reactions and use threats of leaving for control purposes.
3. *Avoidant Attachment:* These infants do not trust that their mothers will help them. They seem unresponsive to the presence of their mothers. They are generally not stressful when they are separated from the mother and they display reactions similar reactions to strangers as the ones they show towards their parents. These children mostly have mothers who are refusing and rejecting.

Afterwards, *Disorganised Attachment Pattern* was added by Main and Solomon to these attachment patterns. This pattern represents the most insecure attachment in infants. These infants show disorganized and conflicting behaviours such as looking away when the mother holds them or approaching the mother with dull and depressive emotions during reunion with the mother. It is reported that these mothers are ones that apply physical abuse or negligent behaviour with high probability of having psychiatric problems, who have not solved their problems with their own attachment objects. It is reported that fear of the caregiver is the underlying reason of disorganized attachment pattern (Barnett & Vondra, 1999; Kesebir *et al*., 2011).

Different attachment types have certain characteristic features. Whether a child cries or not when separated from the mother cannot be used to understand his/her attachment security. One should not only assess one reaction, and pattern of reactions given to the strange environment must be evaluated as a whole for this purpose (Bee & Boyd, 2009).

ATTACHMENT STABILITY AND LONG TERM CONSEQUENCES OF ATTACHMENT

Attachment is not unique to infants and it is a behavior pattern that covers childhood, adolescence and adulthood (Ainsworth et at., 1978; Hendrick, 2003). Bowlby claims that the attachment styles established in the early years of life are transferred to the subsequent periods of life without substantial change. An alternative model shows that variables are effective over the continuity of attachment patterns. It is reported that the continuity of attachment patterns in childhood are related with the attitude and behaviors of the caregiver of the child. Continuity of the attitudes and behaviors of the caregiver determines the continuity of the attachment patterns of the child (George & Soloman, 1999; Zimmermann & Becker-Stoll, 2002).

Discontinuity of the attachment patterns may have two reasons. First of these is the interpersonal stressful life events. Based on interpersonal stressful life events,

individuals changing from insecure attachment to secure attachment do not experience any changes or experience more periodical or chronic stress events compared to those changing to secure attachment from insecure attachment. Interpersonal stress factors (conflict with the person with whom strong affectionate bonds are established, separation or loss of a romantic partner etc.) are effective in the change of the attachment patterns. Based on psychopathological indicators, individuals changing from secure attachment to insecure attachment style display unchanged psychopathological symptoms or more psychopathological symptoms than those changing from insecure to secure attachment (Davilla *et al*., 1997). The second reason of the discontinuity in the attachment patterns is the insecure attachment style. Accordingly, discontinuity in attachment styles is seen mainly in individuals with insecure attachment (Zimmermann & Becker-Stoll, 2002). 3Attachment classification system of Ainsworth has been useful in terms of foreseeing much behaviour of both the toddlers and older children. Different findings have been revealed in numerous studies conducted on the stability of attachment patterns. Some studies have shown that reactions of 70 to 90 percent of children towards their parents have remained the same (Carlson *et al*., 2003; Thompson, 2006). It has been reported that in addition to positive reactions towards parents, the children with a secure attachment to their mothers during infancy are more sociable, and display more positive behaviours towards people around them and are less independent, less aggressive and destructive, and emotionally more mature in their approaches towards environments other than school and home (Elicker *et al*., 1992; Sroufe, 2002; Sroufe *et al*., 2005).

Some other studies have shown that reactions of children towards their parents have changed at a rate of 30 to 40 percent. Studies on determining children, whose reactions have changed and remained the same, have reported that the characteristic of attachment has been secure and constant in infants of families of middle socioeconomic level who have positive life conditions. Individuals, who have become a mother before being ready in psychological terms, have adapted this role better by changing over to secure attachment from insecure attachment with positive social support (family, friends etc.).

On the contrary, attachment moves away from being secure or changes over to other pattern from insecure attachment pattern in families with low socioeconomic level, who are subjected to daily stress and have very little social support (Vondra *et al*., 2001; Fish, 2004). In a longitudinal observational study of a poverty-stricken sample, it was determined that numerous infants with secure attachment changed over to having insecure attachment when re-evaluated at adulthood (Weinfield *et al*., 2000; Weinfield *et al*., 2004).

It is observed that adolescents, who experienced a secure attachment in infancy or who were classified as having secure attachment in the recent interviews, have greater tendency for establishing close friendships, are considered as leaders and have higher self-esteem (Black & McCartney, 1995; Lieberman *et al*., 1995; Ostoja *et al*., 1995). In insecure attachment and especially in avoidant attachment, in addition to lower level of positive and supportive friendships, it is seen that sexual activity starts earlier with greater risks in these relationships. The results of this study show that children with secure attachment have continued their situation at a greater rate than children with insecure attachment (Hesse & Main, 2000; Weinfield *et al*., 2004). Some researchers

believe that secure attachment in infancy will provide for developed cognitive, emotional and social competence in the subsequent years.

ATTACHMENT IN INFANCY AND CHILDHOOD PERIOD

Although it is not proven conclusively, it is claimed that the first attachment between the mother and the infant is established before birth (Bloom, 1995). It is reported that a twenty-six week old fetus has the abilities of perception, responding and capturing information heard, and thus, they are capable of responding to the affections of the mother before birth (Kaplan *et al*., 1994; Altuğ & Özkan, 1996). In this case, acceptance of the changes occurring in the body by the expectant mother before birth and transfer of positive feelings to the unborn baby, in fact, constitutes the basis of attachment. Feeling the baby and accepting the baby by the expectant mother touching her abdomen during pregnancy is very important in terms of attachment relationship. Mother feeling the baby sensually by touching her abdomen establishes a draft regarding the fetus. If the mother has established a secure attachment relationship with her parents, this will be reflected to her relationship with the child and her marriage. Sensitivity of the caregiver is a critical point in terms of development of the baby and strengthening of the existing bond. Similarly, sensitivity in the relationship of the parents is important in terms of self-expression and manifestation of the infant. In the infant-mother relationship, the quality of the emotional communication will increase at the rate of responses to the feelings by both the mother and the infant.

Primary attachment figure is generally the mother. Primary attachment relationship, of which the basic function is protection in evolutionary terms, develops around the seventh month and becomes evident with proximity seeking and ends with the notion of secure base. In the secure base notion, there is a reciprocal relationship between attachment behaviour and exploration behaviour and it is a process progressing towards mutual regulation and emotional autonomy. In the mutual regulation phase, the infant continues to invoke the caregiver even if the caregiver misses the signal of the infant. Effectiveness of self-regulation, which follows the periods of coregulation and mutual regulation, is parallel to the effectiveness of the first periods. Accessibility of the caregiver and responses that may be given can be foreseen with the established cognitive schemes. The child learns to wait and adjusts the behaviours accordingly. Complete shaping process of attachment extends to the second and third years. Differences occur in expectations related with attachment as the child grows. For example, while a scared child needs physical contact of the mother to be comforted, establishing eye contact from a distance with the mother may even relieve the fear in further years (Antonucci, 1994). Moreover, while the attachment relationship is only limited to what is done by the child and the caregiver in early childhood, it starts to be related with what is said as of the period in which the child starts to speak (Kobak & Duemmler, 1994). **4** Other factors affecting attachment in this process are the mother's social support, mother-father relationship, traditional role of the father and cultural differences (Bowlby, 1996; Lamb, Teti & Bornstein, 2002; Thompson, 2002; Keklik, 2011).

Although, the primary attachment figure is mostly the mother, basic attachment occurs with the father in numerous infants. Care of the infants by the father occurs in a complex system, which entails family attitudes and relationships. When both the

mothers and fathers believe in the baby raising capacity of males, fathers allocate more time to the care-giving process (Beitel & Parke, 1998). Especially fathers, who are supported by the mothers, have a high probability of developing a secure attachment with their babies. Attachment type of the father and the infant and the contents of the relationship differ based on the mother. If both the mother and the father are a stimulation source, establishment of a secure attachment by the infant is possible with both the mother and the father. Perceptions of the infant are effective in realization of this. The father is different, compared to the mother (voice tone, clothes, responses given, smell and touch). As a result of these differences, the infant learns that the mother and the father are two different persons. When either the mother or the father leaves, the infants feel comfortable as they know that another source of affection is with them. In this period, the infants prefer their mother when they are hungry or tired and their father for active playing (Biller, 1993; Feldman, 2003).

ATTACHMENT IN ADOLESCENCE AND YOUNG ADULTHOOD

Attachment theory is the theory of survival and adaptation. Attachment styles, which are developed as a necessity of adaptation to close relations in infancy, continue their effect in other periods of life of the individual. However, attachment behaviours are not identical in every developmental phase. Just like other developmental concepts, these behaviours continue by evolving within the developmental process. While the most important function of attachment is protection of the child in need of care from dangers and thus ensuring physical survival in the infancy period, the physical threats lose their importance as the years pass. Thus, the need for an attachment figure for this purpose is very rare in adolescence. Attachment is mainly for regulation of emotions in this period (Allen & Manning, 2007). After the strategies for regulation of affections and establishing relationships with the individuals in their environment are shaped, these generally tend to continue themselves and thus, they are strengthened inside the developmental process.

As it is the case in most subjects, adolescence is a transition period in terms of attachment also. In this period, the adolescent strives for autonomy from the parents, who are the primary attachment figures and weakens the relationship with them. People who are considered of equal or even greater importance as the parents, with whom romantic relationships can be experienced, enter the life of the adolescent at this point. And, this leads to expansion of their social circles even further. As a result, while there are teenagers who break their attachment with the parents on the one hand, there are those who are still in attachment with their parents and who cannot direct their behaviours for attachment with others, on the other hand. In between these two extreme ends, there is a crowded group of adolescents who continue to have strong attachments with their parents and who consider attachments with others important also. In fact, the efforts aiming at independence from the parents in adolescence and young adulthood should not be interpreted as the bonds with the parents being less important. Although adolescents desire independence from their parents, they also would like to know that their parents will be with them at all times when they are needed (Bugental & Goodnow, 1998; Lee, 2011). Despite the results of studies, which indicate that adolescents prefer to spend time with their peers compared to their parents and that they are peer-oriented in proximity seeking (Hazan & Zeifman, 1994); certain studies have

shown that some adolescents continue to be parent-oriented for some attachment needs and that secure attachment with the parents affect the well-being of the individuals until young adulthood (Furman & Buhrmester, 1992, Nikerson & Nagle, 2005).

The adolescent tends to become more distant to attachment relationships with the parents as they reach the young adolescent period. Because the bonds between the young individual and the parents are seen as restrictive attachments rather than secure bonds for safety. For this reason, the purpose of a young individual is to find his/her own path in the world without being dependent on anyone. Selection of friends as an attachment figure is an effort to be independent of the parents. Transfer of trust from parents to friends is very important in the life of the adolescent, which is a struggle at the beginning. However, this is important in terms of supporting the adolescent attachment types. Young individuals may establish long term relationships, which involve romantic attachment relations which can ultimately turn into a complete attachment relationship, with their friends. It is possible that attachment relationships, which turn into the romantic attachment, become lifelong relationships. These relationships are not only created due to the need for attachment but also for the survival of the species (Lee, 2011).

Every attachment type is related with different personality characteristics and interpersonal problems of different types and different levels. While young individuals with secure attachment are more self-confident people who are in greater harmony with their families and friends, and experience less social problems, those with insecure attachment are more maladjusted, less capable of regulating their emotions and have lower capacity of coping with stress. The results of the studies set forth various findings on this subject. For instance, Reich and Siegal (2002) state that those with secure attachment are more advantageous in terms of ego personality development compared to other attachment styles. On the other hand, adolescents with insecure attachment, who are not sure that they can use their family as an "exploratory base" and a "safe haven", strive to realize their autonomy actions with concerns related with abandonment, loneliness and uncertainty in terms of their roles (Sümer, 2006). Similarly, Hazan and Shaver (1987) have stated that individuals with insecure attachment carry out less research regarding their identity structures and distance themself from starting romantic relationships. In summary, adolescents with a secure attachment towards their parents have a healthier transition by using their parents as a safe base/haven in their search for identity, which is an important development of this period.

As represented in the intellectual models, the attachment experiences of a young individual in childhood, determine the success in social relationships and adjustment to the difficulties of life (Willemsen & Marcel, 2011). Interpersonal problems mostly reflect the conflict between the fears of the individual regarding displaying a certain behaviour and the consequences of displaying that behaviour. These types of conflicts partially stem from the individual's history of attachment and learning interpersonal relationships. For example, individuals who have suffered disappointment as a result of the experiences with people in the past may start to not trust people and may abstain from establishing close relationships with other people (Horowitz *et al*., 1993). Bowlby mentions "affectionless psychopathy" in fragmented families. According to this concept, children developing insecure attachment in mother deprivation do not develop

empathy skills and psychopathy occurs (Decety & Cacioppa, 2011). According to the results of some studies, the rate of individuals who have suffered physical/sexual abuse or negligence is higher in the backgrounds of psychopathic individuals. It is found that this situation is related with violence behavior. Individuals, who do not develop an organized attachment, tend to take greater risks to achieve their targets, and they have impulsive behavior and lower frustration threshold. Repetitive nature of self-harm is also found to be higher in adolescents who experience insecure attachment (Decety & Cacioppo, 2011; Glazebrook *et al*., 2015). Boys, who have greater tendency towards violence in evolutionary terms, have greater tendency towards developing antisocial behavior in the event of disorganized attachment. Children who chronically experience the feelings of abandonment and not being wanted, experience the emotions of anxiety, fear and anger together. Continuation of this ambiguity for a long time, creates damages in self-confidence, empathy and respect which are difficult to recover. It is known that children, who have suffered ill-treatment, display overreaction when faced with anger behavior (Decety & Cacioppo, 2011).

Adolescent tends to become more distant to attachment relationships with the parents as they reach the young adolescent period. A new attachment style starts to emerge during youth. This new attachment style is an indicator of the attachments in the future in the form of attachments with one's own children or spouse.

ATTACHMENT AND TEMPERAMENT

Temperament may be expressed as individual differences that can be observed in emotions, behaviors and attention processes during very early periods of life. Temperament characteristics are of biological origins and are not affected much from environmental factors (Thomas & Chess, 1977; Rathbart & Bates, 1998). The individual's attachment style is affected by the individual characteristics of the child as well as the individual characteristics of the mother and the nature of the mother-child relationship. At this point, it may be said that the temperament of the mother and the child is one of the determinants of attachment style of the child. It is considered that temperament is the ability to foresee attachment as secure or insecure rather than being related with a unique attachment style (Mangelsdorf & Frosch 1999). However, relationship with the parent cannot be excluded from this foresight.

There are different approaches regarding the connection between nature of the attachment relationship and the child's temperament characteristics and parents' behaviors. According to one of the approaches, sensitivity and parents' behaviors is the main factor responsible for the differences in secure attachment relationship. In other words, no matter what the temperament characteristics are, the parents, who can fulfill the needs of the child and who can adapt their behaviors to the individual characteristics of the child, may establish secure attachment relationship. Supporters of this approach have claimed that when appropriate care conditions are provided, children with difficult temperament will establish secure attachment relation, and that similarly, children with an easy temperament will form insecure attachment relationship when subjected to insensitive and unfavorable behavior (Sroufe, 1985).

Another approach claims that secure and insecure attachment relationship types are actually a reflection of temperament characteristics of the child. According to this opinion, behaviors displayed by children in the strange situation experiment are nothing

but a reflection of temperament. For example, a child, who is said to have an insecure and avoidant attachment, not having great concern during separation from the mother and displaying avoidance behavior during reunion is a reflection of calm temperament. However, more comprehensive studies conducted in future years have shown that temperament and attachment style are different concepts. Accordingly, attachment, which is a characteristic of bilateral relationship, should not be reduced down to temperament, which is an individual behavior pattern (Campos *et al.,* 1983; Kagan, 1982).

Another approach is Differential Susceptibility. According to differential susceptibility approach, certain temperament characteristics that may be considered risky, are more open to the effects of the environment. Risky characteristics have been defined in the form of being reactional, timid/fearful, fragile or carrying the drd4 genetic allels. According to this approach, a child who displays high level of emotional reactiveness is affected at a greater rate and in a negative manner from unfavorable parent behaviors (insensitivity and show of strength), compared to another child who displays medium level of reactiveness. However, based on the over-reactivity resulting from his/her temperament, the same child will acquire greater benefit from positive parent behaviors and a supportive environment compared to his/her peers. According to this approach, the emotional reactiveness of the child exposes the child to all kinds of effects of the environment, and when supported with the positive attitude of the parent, this child will display ideal development characteristics no less than other children. Moreover, the Susceptibility approach does not only state that the temperament characteristics that are defined as "difficult" are actually not a risk element, but also indicates that these may have protective characteristics at the same time. However, without a doubt, this protective characteristic is only possible if the environmental characteristics are very positive (Belsky *et al*., 2007; Belsky, 2011).

Conceptual discussions between attachment and temperament have merged at the point that the warmth and sensitivity of the parent and their sensitive and consistent behaviors for fulfillment of the characteristics and needs of the child, create the necessary basis for secure attachment (Kochanska, 1998).

ATTACHMENT AND CULTURAL DIFFERENCES

Intercultural studies have shown that attachment patterns may be interpreted in different forms and that there could be influencing. This could be applicable even for different regions of the same country. One reason of this is the Strange Situation Experiment not being a suitable attachment style security measurement for all cultures. For example, nearly all infants in the Dogon community in Mali, Africa do not display an avoidant attachment behaviour (True *et al*., 2001). Primary caregiver of the infants is the grandmother in the Dogon community while mothers are always close to their babies and fulfil their needs in the event of hunger and stress. Similarly, avoidant attachment is rarely seen in Japanese babies. Instead, the Japanese babies mainly show anxious/ambivalent attachment pattern. Japanese mothers hardly ever leave their babies in the first years of the infant's life. For this reason, being alone may be more stressful for Japanese babies, compared to other infants who are frequently separated from their mothers, in the Strange Situation Experiment (Takahashi, 1990). Furthermore, most

Japanese mothers expect their babies to be upset in the reuniting phase of the Strange Situation Experiment. They consider seeking attention, which is an element of anxious/ambivalent attachment, as a normal indicator of the effort to fulfil the dependence and normal trust needs of the infant (Rothbaum *et al*., 2007).

Those thinking otherwise state that behaviours such as mother-oriented proximity seeking or avoidance differ in a small number of cultures, in the comparison of responses of toddlers in the Strange Situation Experiment. This alleges that Strange Situation Experiment results in similar processes in children examined in numerous cultures (Sagi *et al*., 1991). Another point of view is that different meanings may be attributed to attachment patterns in different cultures. For example, German babies show a dramatically higher avoidant attachment pattern than the American babies. This is due to German mothers having a more evident preference towards their babies being more autonomous rather than the disinterest of German mothers (Grossmann *et al*., 1985). On the other hand, a study conducted in Israel (Sagi, 1990), has shown that the attachment classification made with the Strange Situation Experiment is similar to the samples in USA to a great extent in terms of social skills of the infant in the following years, and thus, that the classification system is valid for both cultures. Despite the cultural variations, the studies conducted show that secure attachment pattern is still the most common attachment type in all societies.

REFERENCES

Ainsworth M.D.S., Blehar M.C., Waters E., and Walls S. (1978). Patterns of attachment: A psychological study of the strange situation. Hillsdale, Lawrence Erlbaum.

Allen J.P., and Manning N. (2007). From safety to affect regulation: Attachment from the vantage point of adolescence. New Direction Child and Adolescent Development, 117, 23-29.

Altuğ B.F., and Özkan I. (1996). Development of cognitive processes. Psychiatric Association of Turkey Bulletin, 4(2), 58-64.

Antonucci, T.C. (1994). Attachment in adulthood and aging, attachment in adults: Clinical and developmental perspectives. (Eds.) Berman, W.H., Sperling M.B., New York: The Guilford Pres.

Barnett D., and Vondra J.I. (1999). Atypical attachment in infancy and early childhood among children at developmental risk. I. Atypical patterns of early attachment: theory, research and current directions. Monographs of the Society of Research in Child Development, 64, 1-24.

Bee H., and Boyd D. (2014). The developing child. Thirtheenth Edition. Pearson New International Edition. ISBN: 10:1-292-02080-6

Beitel A. H., and Parke R. D. (1998). Paternal Involvement in Infancy: The role of maternal and paternal attitudes. *Journal of Family Psychology, 12*(2), 268-288. Doi:10.1037/0893-3200.12.2.268

Belsky, J., Bakermans-Kranenburg, J., and Van IJzendoorn, H.M. (2007). Differential susceptibility to enviromental influences. Current Directions in Psychological Science, 16(6), 300-304.

Berk L.E. (2012). Infants and children, prenatal through middle childhood. Seventh Edition, 526 pp., Allyn & Bacon. ISBN: 0205831915.

Biller H.B. (1993). Fathers and families paternal factors in child development. London, Auburn House.
Bloom K.C. (1995) The development of attachment behaviors in pregnant adolescents. Nursing Research, 44(5), 284-289.
Boccio M., Laudenslager M.N., and Reite M.L. (1994). Intrinsic and extrinsic factors affect infant responses to maternal separation. Psychiatry, 57: 43-50.
Bowlby J. (1988). A Secure Base: Clinical Applications of Attachment Theory. London, Routledge.
Bowlby J. (1980). Attachment and Loss: Sadness and Depression, New York, Basic Books.
Bowlby J. (1979). The Making and Breaking of Affectional Bonds. London, Tavistock Publications.
Bowlby J. (1969). Attachment and Loss, 1st Ed. London, Hogarth Press.
Bowlby J. (1958). The Nature of the Child's Tie to His Mother. International Journal of Psychoanalysis, 39:350373.
Bretherton I. (1992). The Origins of Attachment Theory: John Bowlby and Mary Ainsworth. Developmental Psychology, 28, 759-775.
Bretherton I., and Munholland K. A. (2008). Internal Working Models in Attachment Relationships: Elaborating A Central Construct in Attachment Theory. In J. Cassidy & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications*, pp. 102-127, New York, NY, US: Guilford Press.
Bugental D. B., and Goodnow J. G. (1998). Socialization Processes. In N. Eisenberg (Vol. Ed.), Handbook of child psychology: Vol. 3. Social, emotional, and personality development, pp. 389–462, New York: Wiley.
Carlson E.A., Sampson M.C., and Sroufe L.A. (2003). Implications of attachment theory and research for developmental-behavioral pediatrics. Journal of Developmental and Behavioral Pediatrics, 24(5), 364-379.
Campos, J.J., Campos, R.G., and Caplovitz Barrett, K. (1983). Emergent themes in the study of emotional development and emotion regulation. Developmental Psychology, 25(3), 394-402.
Davila, J., Burge, D., and Hammen, C. (1997). Why does attachment style change? Journal of Personality and Social Psychology, 73(4), 826-836.
Decety, J., and Cacioppo, J. T. (2011). The Oxford Handbook of Social Neuroscience. New York, Oxford University Press.
Demirdağ M.F. (2017). The Origins of Attachment Theory: John Bowlby and Mary Ainsworth. Journal of Düzce University Faculyt of Teology, 1(2), 76-90.
Elicker J., Englund M. M., and Sroufe L. A. (1992). Predicting peer competence and peer relationships in childhood from early parent-child relationships: Modes of Linkage. In R. Parke, & G. Parke (Eds.), *Family-peer relationships: Modes of linkage*, pp. 77-107, Hillsdale, NJ: Erlbaum.
Feldman R. (2003). Infant-mother and infant-father synchrony: The coregulation of positive arousel. Infant Mental Health Journal, 24, 1-23.
Fish M. (2004). Attachment in infancy and preschool in low socioeconomic status rural Appalachian children: stability and change and relations to preschool and kindergarten competence. Development & Psychopathology, 16, 293- 312.
Furman W., and Buhrmester D. (1992). Age and sex differences in perceptions of

networks of personal relationships. Child Development, 63(1), 103-115
Glazebrook K., Townsend E., and Sayal K. (2015). The role of attachment style in predicting repetition of adolescent self-harm: a longitudinal study. Suicide Life Threat Behaviour, 45:664-78.
Goodfriend M.S. (1993). Treatment of attachment disorder of infancy in a neonatal intensive care unit. Pediatrics, 1, 139-142.
Grossmann K., Grossmann K.E., Spangle, G., Suess G., and Unzner L. (1985). Maternal sensitivity and newborns' orientation responses as related to quality of attachment in Northern Germany. Monographs of the Society for Research in Child Development. 72(1-2), 1452-1456.
Harlow F.H., and Zimmermann R.R. (1959). Affectional responses in the infant monkey. Science, 130(3375), 421-432.
Hazan C., and Shaver P.R. (1994). Attachment as an organizational framework for research on close relationships. Psychological Inquiry, 1, 1-22.
Hazan C., and Zeifman D. (1994). Sex and the psychological tether. In K. Bartholomew & D. Perlman (Eds.), Advances in personal relationships (Vol. 5, pp. 151-178). London: Jessica Kingsley.
Hazan C., and Shaver P. (1987).Romantic love conceptualized as an attachment process. Journal of Personality and Social Psychology, 52(3), 511-524.
Hendrick, S.S. (2003). Understanding Close Relationships. 1 Edition, Pearson. ISBN: 0205349854
Hesse E., and Main M. (2000). Disorganized infant, child, and adult attachment: collapse in behavioral and attentional strategies. Journal of the American Psychoanalitics Association, 48(4), 1097-1127. Doi: 10.1177/00030651000480041101
Horowitz L.M., Rosenberg S.E., and Bartholomew K. (1993). Interpersonal problems, attachment styles, and outcome in brief dynamic psychotherapy. Journal of Consulting and Clinical Psychology, 61(4), 549-560.
Kagan J. (1982). Psychological research on the human infant: An evaluative summary. New York: W.T. Crant Foundation.
Kaplan H.I., Sadock B.J., and Grebb J.A. (1994). Synopsis of Psychiatry. Baltimore Maryland. pp. 161-165.
Keklik İ. (2011). Relationships of attachment styles and gender, personal meaning, depressiveness and trait-anxiety among college students. Eğitim ve Bilim, 36(159):84-95.
Kesebir S., Kavzaoğlu Özdoğan S., and Üstündağ M.F. (2011). Current approaches in psychiatry, 3(2), 321-342, eISSN: 1309-0674 pISSN:1309-0658
Kobak R., and Duemmler S. (1994). Attachment and Conversation: Toward a Discourse Analysis of Adolescent and Adult Security, Advances in Personal Relationships. Attachment Processes in Adulthood. (Ed.) Bartholomew, K, Perlman, D. London and Bristol, Pennsylvania: Jessica Kingsley Publishers, (5), 121-150.
Kochanska G. (1998). Mother-child relationship, child fearfulness, and emerging attachment: a short-term longitudinal study. Developmental Psychology, 34(4), 480-490.
Lamb M.E., Teti D.M., and Bornstein M. (2002) Developmental phases: infancy. In Child and Adolescent Psychiatry, 3ed Ed. (Ed M Lewis), 293-323. Philadelphia,

Lippincott Williams Wilkins.
Lee E.J. (2011). The attachment system throughout the life course: Review and criticisms of attachment theory. http://www.personalityresearch.org/papers/lee.html
Lieberman M., Doyle A.B., and Markiewicz D. (1999). Developmental patterns in security of attachment to mother and father in late childhood and early adolescence: associations with peer relations. Child Development, 70(1), 202-213.
Main M., and Solomon J. (1990). Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In M. T. Greenberg, D. Cicchetti, & E. M. Cummings (Eds.), *The John D. and Catherine T. MacArthur Foundation series on mental health and development. Attachment in the preschool years: Theory, research, and intervention* (pp. 121-160). Chicago, IL, US: University of Chicago Press.
Mangelsdorf C.S., and Frosch C. (1999). Temperament and attachment: one construct or two? Advences in Child Development and Behavior. 27, 181-220. Doi: 10.1016/S0065-2407(08)60139-1
Nickerson A.B., and Nagle R.J. (2005). Parent and peer attachment in late childhood and early adolescence. The Journal of Early Adolescence, 25(2), 223-249. Doi: 10.1177/0272431604274174
Ostoja E., McCrone E., Lehn L., Reed T., and Sroufe L. A. (1995). Representations of close relationships in adolescence: Longitudinal antecedents from infancy through childhood. Poster presented at the biennial meeting of the Society for Research in Child Development, Indianapolis, IN.
Pasco Fearon R.M. and Belsky J. (2011). Infant- mother attachment and the growth of externalizing problems across the primary school years. Journal of Child Psychology and Psychiatry and Allied Disciplines, 52(7), 782-791. Doi: 10.1111/j.1469-7610.2010.02350.x
Reich W.A., and Siegel H. (2002). Attachment, ego identity development and exploratory interest in university students. Journal of Social Psychology. 5, 125-134.
Rothbart M. K., and Bates J. E. (1998). Temperament. In W. Damon (Series Ed.), & N. Eisenberg (Vol. Ed.) (Eds.), Handbook of Child Psychology: Vol. 3. Social, emotional and personality development (5th ed., pp. 105-176). New York: Wiley.
Rothbaum F., Kakinuma M., Nagaoka R., and Azuma H. (2007). Attachment and amae: Parent- child closness in the United States and Japan. Journal of Cross-Culturel Psychology, 38, 465-486.
Sagi A., Van IJzendoorn M. H., and Koren-Karie N. (1991). Primary appraisal of the Strange Situation: A cross-cultural analysis of preseparation episodes. Developmental Psychology, 27(4), 587-596. doi:10.1037/0012-1649.27.4.587
Sagi A. (1990). Attachment theory and research from cross-cultural perpspective. Human Development, 33, 10-22.
Solomon J., and George C. (2008). The measurement of attachment security and related constructs in ınfancy and early childhood. J. Cassidy ve P. R. Shaver, (Ed.), Handbook of Attachment Theory, Research, and Clinical Applications (2. Baskı) içinde (383-415). New York: The Guildford Press.
Soysal A.Ş., Özçelik A., Arhan E., İşeri E., and Gücüyener K. (2009). Revision of reactive attachment disorder by a case presentation. Türkiye Klinikleri Journal of Pediatrics, 18(3), 248-252.

Soysal A.Ş., Ergenekon E., and Eroğlu D. (2000). Bebekleri tanı açısından yüksek-standart risk altında olan annelerin duygu durumlarının kısa süreli yardım grupları ile değerlendirilmesi. Psikiyatri Psikoloji Psikofarmakoloji (3P) Dergisi, 8(2),106-111.

Sroufe A.L. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood, Attachment and Human Development, 7(4), 349-367, DOI: 10.1080/14616730500365928

Sroufe L. A. (1985). Attachment classification from the perspective of infant-caregiver relationships and infant temperament. Child Development**,** 56(1), 1-44.

Sümer N. (2006). Categorical and Dimensional Comparison of the Adult Attachment Measures. Journal of Turkish Psychology, 21(57), 1-22

Takahashi K. (1990). Are the key assumptions of the strange situation procedure universal? A view from Japanese research. Human Development, 33, 23-30.

Thomas A., and Chess S. (1977). Temperament and development. Oxford, England: Brunner/Mazel.

Thompso, R. A. (2006). The development of the person: Social understanding, relationships, self, conscience. In W. Damon & R. M. Lerner (Series Eds.) &N. Eisenberg (Vol. Ed.), Handbook of Child Psychology. Vol.3. Social, emotional, and personality development (6th ed., pp. 24–98). Hoboken, NJ: Wiley.

Thompson R.A. (2002). Attachment theory and research. In Child and Adolescent Psychiatry, 3rd Edition (Ed. M Lewis), pp. 164-172. Philadelphia, Lippincott Williams Wilkins.

True M.M., Pisani L., and Oumar F. (2001).Infant-mother attachment among the Dogon of Mali. Child Development, 72(5), 1451-1466.

Van de Rijt-Plooij H.C., and Plooij P.X. (1993). Distinct periods of mother infant conflict in normal development: sources of progress and germs of pathology. Journal of Child Psychology and Psychiatry, 34, 229-245.

Vondra J.I., Shaw D.S., Swearingen L., Cohen M., and Owens E.B. (2001). Attachment stability and emotional and behavioral regulation from infancy to preschool age. Development & Psychopathology, 13(1), 13-33.

Waters E., and Cummings E.M. (2000). A secure base from which to explore close relationships. Child Development, 71(1), 164-172.

Weinfield S.N., Sroufe L.A., and Egeland B. (2000). Attachment from infancy to early adulthood in a high-risk sample: Continuity, Discontinuity, and Their Correlates. Child Development, 7(3), 695-702.

Weinfield E., Whaley G.J., and Egeland B. (2004). Continuity, discontinuity, and coherence in attachment from infancy to late adolescence: sequelae of organization and disorganization. Attachment and Human Development, 6(1), 73-97. DOI:10.1080/14616730310001659566

Willemsen E., and Marcel K. (2011). Attachment 101 for attorneys: Implications for infant placement decisions. http:// www.scu.edu/ ethics/publications/ other/ lawreview/attachment101.html

Zeanah C.H., Boris N.W., and Larriey J.A. (1997). Infant development and developmantal risk: A review of the past 10 years. Journal of American Academic Child Adolescent Psychiatry, 36, 165- 178.

Zimmermann P., and Becker-Stoll F. (2002). Stability of attachment representations

during adolescence: The influence of ego-identity. Journal of Adolescence, 25, 107-124. Doi: 10.1006/jado.2001.0452.

Chapter 63

Internet Mothers

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INTRODUCTION

Nowadays, many people have come to a position to utilise the benefits of internet further with each passing day. The internet which is an important tool in sharing information in the globalising world has gained a great importance since the 90s in terms of providing and facilitating access to information in almost all fields (Kuzu, 2011). While 43% of homes in Turkey have internet access (cited in Ayas and Horzum, 2013) according to TUIK (2011) data, the number of Internet subscribers was found approximately 68 million according to TUIK (2017) data. The fact that internet is a very powerful tool brings people together through both positive and negative features. Sharing information on the internet enables cultural change and growth, but it also creates an audience who is not satisfied due to the effect of commercials (Vineet, 2011). The internet is a tool that can affect all of the different ages in a short period of time in parallel with features such as providing access to many information at the same time, facilitating communication and interaction among people, and performing entertainment and rest. Of course, these features of the Internet have also effects on mothers (Limilia and Bona, 2018). Sessions about child-rearing are organized in social blogs on the internet built by mothers and they share their many experiences with their children in the mentioned websites (Gürçayır-Teke, 2014; McDaniel et al., 2012). This situation is seen as the destruction of the traditional motherhood and the success of a small number of women. Because mothers obtain information about child-raising, children's health and communication with children from their own parents or books and magazines in traditional motherhood, now they can access such information with a single key in shorter time period, obtain scientifically correct information more easily and find solution to their problems faster (Masullo-Chen, 2013). The studies have showed that these mothers who use the internet for this purpose have a professional profession and their numbers are increasing each passing day (Petersen, 2014; Yazıcı and Özel, 2017).

Groups formed by the mothers are carried out by social media. Social media which emerge in parallel with the developments in the internet is a tool containing computers, tablets, smart phones and blogs and making its effect feel more and more people every day (Tosyalı andSütçü, 2016). The social networks in social media enable people to move from a passive position to an active role and have ongoing mutual communication and interaction, allowthem to establish their own web pages and make it easier to meet and communicate with people from all over the world (Binark, 2007; Dağıtmaç, 2015; Gürsakal, 2009; Hughes et al., 2012; Kara and Coşkun, 2012; Tektaş, 2014; Vural and

Bat, 2010). It is stated that a great majority of mothers use facebook, twitter and instagram in social media every day (Limilia and Bono, 2018; Yazıcı and Özel, 2017). When the reasons of using social networks by mothers are examined, the subjects of getting personal care and cleaning needs of their own or their children and learning recipes come into the first place (Cavanagh, 2014). These needs are observed to be followed by child education prepared by experienced mothers and the purpose of sharing information and experiences about child care (Masullo- Chen, 2013; Yazıcı and Özel, 2017).

Today, changes experienced in social sense have caused the nuclear family structure to take place the traditional family structure. In the nuclear family structure, women both take part in business life and undertake all responsibilities of child raising. Being able to overcome these responsibilities becomes possible by accessing information that is more accessible and supported by scientific resources. Accessing these information facilitates to meet the needs within a short time. This purpose can lead to the desire of learning the internet and the information provided to women on the internet and thus making the social media a part of their daily lives. Mothers who are deprived of their parents' opinions about child raising and child health or do not believe the accuracy of these opinions meet their learning needs through the websites and transform what they learn into behaviours (Gurcayir- Teke, 2014; Lopez, 2009; Masullo-Chen, 2013). Recently, content and messages about children education by a group of mothers called as Instagram mothers are produced in Turkey as in the whole world and it is aimed with these personal shares made by Instagram mothers to provide emotional or scientific support to their followers.

Sharing knowledges by mothers may lead private lives to be shared, as well (Gülbahar et al., 2010). Although this started with a good intention and sharing experience has the goal of supporting mothers in difficult situation, it also brings with the risk of deviating from its purpose. Not knowing by whom the shares are made in the Instagram or social media or not knowing the identity of the person in the other end constitute another distinct problem. Because even though sharings are made by professional people, sometimes sharings with extensions and fake identities can also be a part of them (Yazıcı and Özel, 2017). The involvement of these fake identities may also lead to cyber bullying.

The cyber bullying which is also expressed as an internet fraud made by anonymous or false names including insults and threats through sound and images (Arıcak, 2009) can cause great damage to the other person in material and spiritual sense (Agotston et al., 2007; Belsey, 2007; Patchin and Hinduja, 2006; Strom and Strom, 2005). Frequently encountered cyber bullying on the internet (Eroğlu et al., 2015) confronts us as a situation requiring the mothers to be careful in terms of both themselves and their sharings. Otherwise, all kinds of information, image, and sounds given without trusting the website or the social network can be used, although mothers try to prove that these information, images and sounds do not belong to them, they fail to do so and it may eventually cause many problems such as frequent occurrence of psychological problems, personality problems and domestic problems (Ayas and Horzum, 2013; Dönmez and Akbulut, 2016; Kuzu, 2011). It is important and essential for the mothers to be careful about this issue but it is also equally important and essential not to share the photos and videos of their children without asking them.

Because such behaviours lead to child neglect and abuse.

Recently, in Turkey as well as in the world there are examples indicating that the blogger mothers, namely internet mothers are punished due to such behaviours. Because mothers share the images, videos and photos of their children, they can be sued for abuse, their children can be taken away from them or they can get fined. For example, a 16-year-old child in Italy sued his mother who shared his photos on the internet and the court decided to fine the mother by acknowledging the child to be right (URL, 2018a).Another example also took place in Turkey. As a result of the law suit filed by the father to the mother who constantly shared their children's images and photos on the social media, the mother lost the custody of the children but later she gained the custody again but sentenced to fines (URL, 2018b). The punishment of the mothers in both cases can be explained with the behaviours starting with a good intention but being examples for the violation of the Convention on the Rights of the Children. While Article 27 of the Convention on the Rights of the Children requires taking social measures that will ensure the physical, mental, spiritual, moral, and social development of child, Article 19 states the necessity of taking all measures required for protecting the child from mental or physical assault along with neglect and abuse (Kızılırmak, 2015). Article 12 of the Convention on the Rights of the Children states the necessity of informing the child about the issues that concern him/her and listening the child in judicial proceedings that may affect the child (Akyüz, 2001). When assessed in this context, sharing information and images of the child is a violation of children's rights and requires criminal sanctions. Also, this situation can be also evaluated within the scope of abuse and neglect. The reason is that in the abuse and neglect, it is also a matter of using the child in the situation and environments where the child does not accept and he/she is not developmentally ready (Durmusoglu-Saltali, 2015). Since performing a situation, which will probably never be accepted by the child, by the mother even with a good intention means neglecting their children, it is necessary to show required sensitivity in this manner.

CONCLUSION

The internet is a tool that is used frequently by many people today, facilitates access to information, and supports interaction and communication between people. Mothers also get information about child education through the internet and share their knowledge and experiences through the websites they have built. However, these sharings may also make the images and information of their own and their child open to public without thinking. This not only means violating the most fundamental rights of children, but also passing of these images and information to the hands of abusive people as well as dragging the child into an unintended situation which causes the child to be exposed to neglect and abuse. This situation can be prevented as a result of the fact that mothers pay attention to the sites visited by them and both the mothers and children do not share the images and photos or they make minimum shares in safe websites.

Consequently, it can be recommended for the health and peace of the children as well as the family, to use internet suitable for its purpose,pay utmost attention internet use, and not share images, photos, and videos of the child without asking the him/her.

REFERENCES

Agotston, P.W., Kowalski, R. & Limber, S. (2007). Student's Perspective o Cyber Bullying *Journal of Adolescent Health, 41(6),* 59-60.

Akyüz, E. (2001). Çocuk Hakları Sözleşmesinin Temel İlkeleri Işığında Çocuğun Eğitim Hakkı *Milli Eğitim Dergisi, 151,* 3-24.

Arıcak, O.T. (2009). Psychiatric Symptomatology as a Predictor of Cyberbullying among University Students *Eurasian Journal of Educational Research, 34,* 167-184.

Ayas, T. & Horzum, M.B. (2013). İlköğretim Öğrencilerinin İnternet Bağımlılığı ve Aile İnternet Tutumu *Türk Psikolojik Danışma ve Rehberlik Dergisi, 4(39),* 46-57.

Belsey, B. (2007). Cyber Bullying: A Real and Growing Threat *ATA Magazine, 88(1),* 14-21.

Binark, M. (2007). *Yeni Medya Çalışmaları* Ankara: Dipnot Yayınları.

Cavanagh, M. (2014). *Mothers of Invention: Commercial Content on Mother Blogs and Perceptions of Credibility A Pilot Study.*Unpublished Doctorate, Thesis, University of Ottawa,
https://ruor.uottawa.ca/bitstream/10393/30671/1/Horrall_Caitlin_2014_thesis.pdf. Erişim Tarihi: 28. 04.2018.

Dağıtmaç, M. (2015). *Sosyal Medya Bizi Neden Kullanır?* İstanbul: Onur Akademi Yayınları

Dönmez, O. & Akbulut, Y. (2016). Siber Zorbalık Çalışmalarında Sosyal Beğenirlik Etmeni *Eğitim Teknolojisi Kuram ve Uygulama, 6(2),* 1-18.

Durmuşoğlu- Saltalı, N. (2015). Çocuk İstismarı ve İhmali S.S. Yıldırım-Doğru (Ed.) *Çocuk Hakları ve Koruma* İçinde (s. 61-107). Ankara: Eğiten Kitap.

Eroğlu, Y., Aktepe, E., Akbaba, S., Işık, A. & Özkorumak, E. (2015). Siber Zorbalık ve Mağduriyetin Yaygınlığının ve Risk Faktörlerinin İncelenmesi *Eğitim ve Bilim, 40(177),* 93-107.

Gülbahar, V., Kalelioğlu, F. & Madran, O. (2010). *Sosyal Ağların Eğitim Amaçlı Kullanımı* XV. Türkiye'de İnternet Konferansı, 2-4 Aralık 2010.http://orcun.madran.net/yayinlar/sosyal_aglarin_egitim_amacli_kullanimi.pdf. Erişim Tarihi: 28. 04.2018.

Gürçayır- Teke, S. (2014). Dönüşen Anneliğe Yönelik Netnografik Bir Analiz: Blogger Anneler *Milli Folklor Dergisi, 26(103),* 32-47.

Gürsakal, N. (2009). *Sosyal Ağ Analizi* Bursa: Dora Yayıncılık.

Hughes, D.J., Rowe, M., Batey, M. & Lee, A. (2012). A Tale of Two Sites: Twitter vs. Facebook and the Personality Predictors of Social Media Usage Computers *Human Behavior, 28,* 561-569.

Kara, Y. & Coşkun, A. (2012). Sosyal Ağların Pazarlama Aracı Olarak Kullanımı: Türkiye'deki Hazır Giyim Firmaları Örneği *Afyon Kocatepe Üniversitesi İİBF Dergisi, 14(2),* 73-90.

Kızılırmak, K. (2015). *Ankara İl Merkezinde Yaşayan 61-72 Aylar Arasında Çocuğu Olan Annelerin Çocuk Hakları ve Anne Olmaya İlişkin Bilgi Düzeyleri Arasındaki İlişkinin İncelenmesi* Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi Çocuk Gelişimi Eğitimi Ana Bilim Dalı, Ankara.

Kuzu, A. (2011). İnternet ve Aile, *Aile ve Toplum 7(27),* 9-31.

Limilia, P. & Bono, B.P. (2018). Information Access Skills in Mothers as Containment

of Internet Negative Impact *Journal the Messanger 10(1),* 72-82.
Lopez, L.K. (2009). The Radical Act of "Mommy Blogging", Redefining Motherhood Through the Blogosphere *New Media &Society, 11(5),* 729-747.
Masullo-Chen, G. (2013). Don't Call Me That: A Techno-Feminist Critique of the Term Mommy Blogger *Mass Communication and Society, 16,* 510-532.
McDaniel, B.T., Coyne, S.M. & Holmes, E.K. (2012). New Mothers and Media Use: Associations between Blogging, Social Networking and Maternal Well-Being *Maternal and Child Health Journal, 16,* 1509-1517.
Patchin, J.W. & Hinduja, S. (2006). Bullies Move beyond the School Yard: A Preliminary Look at Cyber Bullying *Youth Violence and Juvenil Justice, 4(2),* 148-169.
Petersen, E.J. (2014). Redefining the Workplace: The Proofessionalization of Motherhood through Blogging *Journal of Technical Writing and Communication, 44(3),* 277-296.
Strom, P. & Strom, R. (2005). When Teens Turn Cyberbullies *The Education Digest, 71(4),* 35-41.
Tektaş, N. (2014). Üniversite Öğrencilerinin Sosyal Ağları Kullanmalarına Yönelik Bir Araştırma *Tarih Okulu Dergisi (TOD), 7,* 851-890.
Tosyalı, H., & Sütçü, C.S. (2016). Sağlık İletişiminde Sosyal Medya Kullanımının Bireyler Üzerindeki Etkileri *Maltepe Üniversitesi İletişim Fakültesi Dergisi, 3(2),* 3-22.
TUIK (2017). *Türkiye İstatistik Kurumu: Konularına Göre İstatistikler* www.tuık.gov.tr. Erişim Tarihi: 28. 04.2018.
URL, (2018a).https://wwwhurriyet.com.tr/dunya/cocugunun-fotografini-paylasan-anneye-ceza-40703848. Erişim Tarihi: 28. 04.2018.
URL, (2018b).https://www.breakingnews.com.tr/blogger-anne-mahkemede-cocuklarini-kaybetti/. Erişim Tarihi: 28. 04.2018.
Vineet, K. (2011). Globalisation and Media *Journal of Mass Communication and Journalism 1(105),* doi104172/2165-79121000105.
Vural, B.A. & Bat, M. (2010). Yeni Bir İletişim Ortamı Olarak Sosyal Medya: Ege Üniversitesi İletişim Fakültesine Yönelik Bir Araştırma *Yaşar Üniversitesi Dergisi, 20(5),* 3348-3382.
Yazıcı, T. & Özel, M. (2017). Sosyal Medyada Anneliğin Eğitim ve Etkileşim Boyutu Instagram Üzerine Bir İnceleme *International Journal of Social Sciences and Education Research, 3(5),* 1715-1730.

Chapter 64

Examination of Ninja Turtles Animated Films Comparatively In Terms of Changing Violence Factors*

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INTRODUCTION

In changing world conditions, children are under the influence of visual media and tools such as television, cinema, cartoons as well as interacting with their parents and peers and the social environment they are in. Children's television viewing time in Turkey has been subject to various investigations and tests have shown that the average duration ranged from one to two and a half hours (December & Aktas, 1997). Taking this into consideration, the impact of television, a powerful tool visually and audibly, on the development of children's cognitive, language, social-emotional, humor and ethics becomes even more apparent. These studies show that children are affected by behaviors and attitudes from the models they are exposed to during television or film watching and they also learn negative labeling (Fouts et al. 2006; Bilgin Ülken, 2011).

In addition to television and televised programs, the rapid development of technology in recent years has resulted in a growing place in the life of children as a result of emotional introductions of long-running films and characters made in the ever-developing and important animated film industry. The beginning of the ease with which movies can be watched at cinemas and shown of the movies shortly afterwards on television increase the viewing rates of movies. In fact, many animated films have been watched by adults as well as children, and although the primary appeal of animated films has been children, it has become increasingly appealing to adults. However, because of this wide audience, in the certain animation movies do not care children's cognitive development.

Cognitive competence develops over time. In the first years of life, the child is egocentric and looks at life from his own world and generalizes his reality. In time, s/he starts to think more abstract and hypothetical and this is only seen after 11-13 years of age (Berk, 2007; Yıldırım, Güneri, & Hatipoğlu Sumer, 2009). In this sense, children can not distinguish truth or wrong, dream or reality like an adult cognitively when their level of development is considered. Children learn by imitating the behavior of the person they choose as a model. This model person can be a real familiar person or an imaginary hero (Bandura, 1961) It has been proven through various investigations that they are more selective against aggressive behaviors and attitudes exhibited while imitating this person (Bandura, Ross, & Ross, 1961; Bandura, 1977).

* This study was preseneted at EJER held on 11-14 May, 2017 in Denizli

Based on the increased numbers of the animation movies, in this study, violence items are analyzed by comparing two different version of Teenage Mutant Ninja Turtles.

LITERATURE REVIEW

Imitation is one of the children's learning ways. In 1941, imitative learning is researched by Miller and Dollard. In their experiments, they found that if the behavior is reinforced positively, this behavior is repeated regardless of the conditions. In these experiments, a model chose a box of two boxes and gained a reward and after the model, when observes chose the same box, they also gained a reward. In this way, observers learned to follow the model and reaction of model. (Miller & Dollard, 1941)

After these experiments, in the 1950s, behaviorist approach was emerged. According to Skinner, if a behavior is reinforced, people are tendency to repeat this behavior (Skinner, 1953). However, this theory could not explain some behaviors of people such as being silent or asking for permission by waiting his/her turn (Bayrakçı, 2007). These situations, which were not explained by behavioral theory, led to the emergence of a new view which is social learning theory. According to Bandura (1971), social learning theory is much more than just the stimulus-response process and involves some cognitive processes such as perception, thinking and planning. In the social learning theory, giving attention to the behavior and person is important and indirect situations are effective in the learning processes (Bandura, 1971; Bayrakçı, 2007; Goddard, 2017). At the same time, according to Bandura (1977), children choose people who are strong and self-sufficient to imitate. Because of this reason, children do not reflect every behavior that they saw. They mostly reflect the behaviors of their models and the behaviors that take their attention.

Social learning actualize in two ways which are imaginal or verbal (Bandura, 1971). In the imaginal learning, observer looks at the model by analyzing the behavior. In verbal learning, children consider verbal coding with cognitive processes and adapt it to different situations, but it is important that these verbal cues are visually supported. For example, children do what their parents do rather than what they say.

In the Bobo Doll experiment conducted by Bandura et al. (1961), the behaviors of the children observing the aggressive behaviors of the role models were observed by comparison with the control group and it was revealed that the children can imitate by observing aggressive behaviors. Two years later from that experiment, children who were watching a movie with aggressive behavior through television rather than watching role models were examined in two groups. One group observed rewarding as the result of aggressive behavior, the other followed the punishment, and the behavior of both groups after the experiment was observed. As a result of aggressive behavior, it was observed that the children following the rewarding act showed aggressive behaviors while the other group refrained from showing aggressive behaviors. However, when asked to show children what they watched in the film, both groups reflected similar behaviors (Bandura, Ross, & Ross, 1963). In other words, although children reflect their behavior in the light of the consequences of aggressive behavior, they learn without discriminating aggressive behavior as good or bad.

In recent years, young generation waste their times with media instead of studying or resting and in addition to take place of daily routines, media has significant impact

on thoughts and behaviors of youth (Strasburger, Jordan & Donnerstein, 2010). As it is stated in social learning theory, if the screen to be watched by children and teenager appear like factual and rewarded, it is found out by beholding and imitating (Bandura, Ross & Ross, 1961; Bandura, 1971).

When the media and children's interactions with the media are taken into consideration, a lot of work has been done in recent years on this issue. These studies have proved the negative effects of violent publications on children's behavior. According to a master thesis which is done with 500 students in Turkey, Kırıkkale, students are affected by the domestic series they watched (Pınar, 2006). In this study, male and female students in high school have stated that television is harmful, media has some influence on attitudes and behaviors, violent films and programs are bad examples for young people. Also, according to results of questionnaire, students want to solve their problems with the methods used by characters in the series (Pınar, 2006). In a case study, which is done in Ankara Training and Research Hospital, Turkey, two cases are analysed (Yalaki et al. 2012). In a case, 4-years-old girl took a drug because in a movie, which she watched female protagonist took drugs without getting harm. In the other case, 7-years-old girl came to the hospital because she hanged herself with a play rope to the bed. When it is asked to her why she did it, she said that a girl in a movie was doing that. In these cases, it is seen that movies can be harmful for children because they think that if detrimental behaviors do not damage the characters in the movies, these do not damage to them (Yalaki et al. 2012).

In a different study conducted with 516 students in the 3-6 age group in Çorum, it is aimed to investigate the frequency of watching television of children and the effect of television violence on children's behaviors using by using questionnaire (Özakar & Koçak, 2012). In the study which is done by Yousaf, Shehzad and Hassan (2015), in order to understand the effects of specific cartoons (Ben Ten, Doramaan) on children's behaviors and aggression. Survey and questionnaire were used in this study conducted with 100 children. As a result of this study, researchers found that cartoons have a strong effect on children's behaviors and aggression.

Finally, in a meta-analysis study conducted by Bushman and Huesmann (2006), 431 studies were examined, and the sample group of 167 studies was worked with adults while 264 of these studies worked with children. In this meta-analysis study, the main criterion was violent media types such as television, movies and games. At the end of the study, it is found that short-term effect of the violent media on children can be seen as an increase in aggressive behaviors. However, long-term effects of violent media can be much more effective on children and aggressive behaviors occur on children life.

In addition to that, according to cognitive development theory, it is explained that cognitive abilities for each developmental step specify the situation of comprehending media matter. One of example which explain the cognitive situation is incomprehension of children under the age of eight though convincing intention in commercial (Strasburger, Wilson & Jordan, 2009 as cited in Strasburger, Jordan & Donnerstein, 2010). Executive function involves programming, arranged analysis, impulsive control and purposive steps. That is to say, executive functions enable linking between cognitive and neuropsychological analysis (Welsch, Pennington & Groisser, 1991) and the example abilities could be attention, working memory and problem solving.

Although there is few study about instant effect of television on executive function, it is known that children spend huge periods for watching television and this situation is correlated with long-term attention problems (Lillard & Peterson, 2011). The research which is conducted by Lillard and Peterson (2011) study out negative effect of watching nine minutes of rapid fantastical television program on children in the age of 4 in terms of executive function.

According to Ward (2000), the definition of the animation or animated cartoons has been changed as animated films in years. The reason of this change is technological development in film industry. Thanks to the developing technology, production has been increased by saving time and money in animated films. While more production brings more distribution and display, the drawings have also improved and have become more striking and impressive. Production, distribution and exhibition of films is expanded the audience of animated films (Ward, 2000). By this means, at the present time, animated films are also watched by adults as much as children. According to Samancı (2004), some animated films, which are highly popular with adults, show that many effects can be created with animations. Because of this reason, animated films can be evaluated as real by people and also play an impressive role on adults (Özgökbel Bilis, 2014).

According to literature review, different studies and researchers indicate that media has strong influence on children, mostly negative direction, so the parents are recommended to show attention about narrowing down harmful media matter (Strasburger, Jordan & Donnerstein, 2010).

METHODOLOGY

Research Design: Animated films gradually moving away from the children with masses of speech, which are emerging in the forefront with their visual and auditory wisdom and developing technology, constitute the starting point of this research. It has become necessary for factors of violence, which children tend to be able to easily imitate, to find frequently in animated films and to investigate the changing characteristics of animated films in research that show their effects on children. In the research, an animated film was previously filmed is selected to observe how the violence factors changed at what rate with the developing technology. In the scope of this study, it is planned to compare the first film of the series titled Teenage Mutant Ninja Turtles, originally named Ninja Turtles, which broke rating records and was released in three films in 1990, 1991 and 1993, with the first film of the series series which was shooted again in 2014 and 2016 and the third film which is expected to be filmed.

Data Collection: Qualitative research method is used to obtain appropriate data concerning the research prepared for this purpose. In this study, 'Checklist for Examination of Ninja Turtles with regard to Psychosocial' is prepared in the light of information obtained through literature review by researchers and the data is gathered by using the checklist. In the control list, psychosocial factors such as communication, violence and bullying, sexual abuse are examined under specific themes and, if necessary, detailed with sub-elements. The specified themes are evaluated in compliance with minutes to be seen in the film, content, detailed description of the situation and frequency. After the checklist has been prepared, the films are

independently watched by the researchers and then, the obtained data is evaluated comparatively using the content analysis method.

Throughout preparing checklist for examining films, the researchers benefit from related literature in order to determine characteristic and border of violence types. WHO subclassifies the violence as physical, sexual psychological and deprivation or neglect (Krug et al., 2002). First of all, it appears that a question has been asked to describe physical violence. An example of this type of question is whether a physical attack experience (kick, threaten with a gun) toward the individual is realized in recent months or not (Schlack, Rüdel, Karger & Hölling, 2013). Correspondingly, any behavior involving any type of physical attack is treated as physical violence in current study. Secondly, emotional violence in the present study could be associated with psychological violence, and emotional abuse and neglect. Attitudes and behaviors which are not physical, which affect the health and psychology of the individual in a negative way, cause him / her to feel stressed and threatened are considered within the context of psychological violence (Tutar, 2004 as cited in Şahin & Türk, 2010). In broader perspective, emotional abuse and neglect are the totality of behaviors which involve relationships that will harm even without physically contact (Glaser, 2002). Connected with these definitions, situations which tumble feelings of individual are determined as emotional violence. Lastly, sexual violence is designated. According to Basile and Smith (2011), sexual violence comprise of not only rape or other hard abuse but also verbal harassment which include physical contact or do not involve. In other words, any sexual act carried out or attempted without the consent of the victim falls within the definition of sexual violence (Basile et al., 2014). Depending on these definitions, acts which involve physical contact or verbalisation aimed at sexuality are accepted as sexual violence in the films.

Data Analysis: One of the methods to investigate the content, understanding and representation in the written instruments is content analysis. The document which could be involved as a context is visual elements, words, themes, etc. and these might be founded in films, books, photographs and other things. In order to performing process of content analysis, a frame of subjects are determined and methods are originated depending on particular situations for enrolment. In the next step, counting the frequency of words or themes is taken part (Neuman, 2014). In other words, the process of content analysis comprises regarding determined elements in the context and analogising with others depending on frequency (Mayring, 2014).

For the analysis of study, researchers evaluate the data by using 'Checklist for Examination of Ninja Turtles with regard to Psychosocial'. The scenes and dialogues in the film which have been categorized depending on certain themes are watched. The themes for using content analysis are emotional, physical and sexual violence factors aimed at individual, and physical violence factors aimed at object. After that, films in 1990 and 2014 are examined by dividing into ten minutes sections and the scenes and dialogues in each ten minutes which involve violence factors are shown by using frequency. The result of frequency is demonstrated with the help of a graph which is defined as evaluation of 1990 and 2014 films in terms of violence factors. Moreover, in order to compare these two films, researchers state differences between frequency of two films by use of percentile method so that comparison of violence factors could get easy.

RESULTS and DISCUSSION

When the results of analysis are examined;

- In the first film in 1990, 43.1% of the violence aimed at individual is found to involve physical violence. At the same title, it is seen as 56.8% in the film made in 2014. In both films, there are scenes that could be examples of physical violence. In the film made in 1990, the attempt of a bag to be attacked could be accepted as physical bullying. The sounds of hitting and screaming in the dark, and then to be said that we have a good fight report that they have done a positive job. Addition to these significant scenes related to physical violence, after the scenes with physical violence, the characters in the film are not injured. To illustrate, although they hit each other with sticks and swords, no physical damage appears. They go directly to the foot and fight or continue their routine. In the film made in 2014, taking a woman hostage is realized by using the weapon. It is seen that the surrounding objects are broken and poured in the fighting scenes. Furthermore, there is a scene where a man has been fainted by gas. As physical abuse, the blood of Ninja turtles is forcibly taken. Additionally, there are many scenes in the film where the physical punishment is given and the injurious tools are involved.

-The emotional violence aimed at individual is 33.3% in the first film of 1990, whereas it is 66.6% in the film made in 2014. In the film made in 1990, they use insulting words like idiots, chump and cretin. The expression of 'sustaining a defeat' is used for negative results in fights. End of the film, Ninja turtles describe themselves as brave, weird and dangerous depending on their physical power and fight talents. Different from this type of emotional violence, is is seen as a necessity to exhibit negative behaviors in order to be a member of a gang which is composed of children. On the other hand, similar scenes related to emotional violence are found in the film made in 2014. Ninja Turtles again use insulting words like stupid and idiot. Furthermore, Ninja Turtles think that woman look them like they are a freak. Different from these kind of statement, Ninja Turtles verbalise that they have to protect the city. This expression could be related feeling necessity and constraint.

-When the sexual violence aimed at individual is examined, sexual violence is found to be 33.3% in 2014 while a rate of 66.6% is seen in the film made in 1994. In the film made in 1994, Ninja Turtles use the statement of 'beautiful' for the woman who they rescue, because of this, it could be stated that the film indicate the woman as an object. This woman wear short shorts on the scene and a movie shooting is made that the legs of woman are on the front. Moreover, in one of scenes, the man massage the woman's shoulders and in the meantime, the background music which evokes sex plays. In the film made in 2014, woman transform to a sexy woman with her clothes and the camera focus the body of woman during a scene and the purpose of this change is breaking man's concentration.

-Finally, physical violence aimed at object is found at 23.8% in the film made in 1994 and 76.1% in the first film in 2014. In the film made in 1990, Ninja Turtles slice pizza by using sword and masked men break into the house by breaking down windows. In the film made in 2014, there are also scenes of breaking objects using swords and the house of ninja turtles is blown. The laboratory is burned down and the door is broken by using car more than one time. Apart from these, several scenes which involve physical

violence aimed at object play part in the film. The car is exploded with bomb and Ninja Turtles distributed the stones with a sword. Additionally, as a negative example, children have a gang and child members of the gang behave like an adult. They smoke, gamble, fight and girls wear like adult female. When a child has a right to being member of this gang, s/he wears a mask. One of children expresses themselves as a family in one of scene.

Table 1: Frequency of violence types

		1990	**2014**
		f	**f**
Violence factors aimed at individual (targeting the person)	***Physical Violence***	22	29
	Emotional Violence	4	8
	Sexual Violence	2	1
Violence factors aimed at object (targeting the objects)	***Physical Violence***	5	16

According to the findings, 32% of physical violence factors aimed at individual and 100% of the emotional violence factors are seen to increase. In light of this information, it can be said that the film which has more of physical and emotional violence factors come in a similar scenario after a quarter century. Teenage Mutant Ninja Turtles movie which is made in 2014 is followed by 329 904 people only in Turkey (Teenage Mutant Ninja Turtles, n.d.). Considering the signified number, it can be stated that the number of people who are affected by the aspects of psychosocial risk factors is not low. Films containing violence factors are an important source for attempts to prove the predictions of those who see violence as a solution, not as a violation, through their own inferences.

From this point of view, it can be predicted that Ninja Turtle Films, which show an increase in physical and emotional violence through the 1990 and 2014 versions, may affect the audience's view of violence factors and it can be predicted that they could think that provider of justice is themselves rather than system in an institutional context.

Even though it appears to be a 50% reduction in the factors of sexual violence, even the presence of only one scene of the woman as a sexual object can be expressed as an exploitation of the woman's right to exist and equality. According to the findings, violence aimed at object increase in the ratio of 320%. In the light of this information, it can be stated that there is a threefold increase in the number of cases in which there is an object-damaging undertaking whether or not it belongs to itself. When the factors of violence aimed at object in the film are assessed, it seems that the factors of action are very dominant, considering that they can not control the anger and have the right to harm any object (distinguishing intention in the background). When the possibility that these factors may be justified by the watcher is kept in the foreground, it may be

assumed that there may be roughness in achieving the desired success in the solution phase of conflicts between individuals or groups. When a similar problem is encountered, regardless of whether it is true or not, the most recent and most successful method is used. This situation could be explained with Guthrie's Contiguity Theory. Guthrie (1952 as cited in Homme, 1966) stated that the action of a person could be identified (determined) depending on repeated behaviors lately in all probability. Put it differently, a more current process and getting response to this process induce gaining strength for preferring to same process (Homme, 1966). In this context, it can be said that one of the causes that may cause the increase of factors like vandalism may be movies. Furthermore, Premack (1965 as cited in Homme, 1966) indicate that possible answerback consolidate the less possible one so, it could be interpreted that the frequency of behaviors in the film and how the results of these behavior are reflected could play significant role on choices of viewers.

REFERENCES

Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *The Journal of Abnormal and Social Psychology, 63*(3), 575-582. http://dx.doi.org/10.1037/h0045925

Bandura, A., Ross, D. & Ross, S. A. (1963). Imitation of film-mediated aggressive models. Journal of Abnormal and Social Psychology. 66(1), 3- 11.

Bandura, A. (1977) *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Basile, C. B., & Smith, S. G. (2011). Sexual violence victimization of women: Prevalence, characteristics, and the role of public health and prevention. *American Journal of Lifestyle Medicine, 6 (6),* 407-417.

Basile, K. C., Smith, S. G., Breiding, M. J., Black, M. C., & Mahendra, R. (2014). *Sexual Violence Surveillance: Uniform Definitions and Recommended Data Elements.* Atlanta (GA): National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Berk, L. E. (2008). *Child development* (8th ed.) Boston: Pearson Education.

Bilgin Ülken, F. (2011). Televizyon izlemede anne-baba aracılığı ile çocukların saldırgan davranışları arasındaki ilişki. *Anadolu Üniversitesi Sosyal Bilimler Dergisi, 11(1),* 195 - 216.

Bushman, B. J., & Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Arch Pediatr Adolesc Med.*, 160(4), 348–352. doi:10.1001/archpedi.160.4.348

Fouts, G., Callan, M., Piasentin, K. & Lawson, A. (2006). Demonizing in children's television cartoons and Disney animated films. *Child Psychiatry Hum Dev, 37,* 15-23.

Glaser, D. (2002). Emotional abuse and neglect (psychological maltreatment): A conceptual framework. *Child Abuse & Neglect, 26,* 697–714.

Homme, L. E. (1966). Contiguity theory and contingency management. *The Psychological Record, 16,* 233-241.

Krug, E. G., Dahlberg, L. L., Mercy, J. A., Zwi, A. B., & Lozano, A. R. (2002). *World report on violence and health.* Switzerland: World Health Organization.

Lillard, A. S. & Peterson, J. (2011). The immediate impact of different types of television on young children's executive function. *Pediatrics, 128 (4),* 644-649.

Mayring, P. (2014). *Qualitative content analysis: theoretical foundation, basic procedures and software solution.* Retrieved from [https://www.ssoar.info/ssoar/handle/document/39517].

Miller, N. E. & Dollard, J. (1941) *Social Learning and Imitation.* New Haven, CT: Yale University Press.

Neuman, W. L. (2014). *Social Research Methods: Qualitative and Quantitative*. USA: Pearson Education.

Özakar, S. & Koçak, C. (2012) Kitle iletişim araçlarından televizyonun 3-6 yaş grubundaki çocukların davranışları üzerine etkisi. *New Symposium Journal, 50(1),* 31-39.

Özgökbel Bilis, P . (2014). Rol modelleri ve toplumsal değerler açısından "uçaklar" adlı animasyon filmi üzerine bir inceleme. *Selçuk Üniversitesi İletişim Fakültesi Akademik Dergisi*, 8 (3), 201-227. Retrieved March, 2018 from http://dergipark.gov.tr/josc/issue/19029/200855

Pınar, N. (2006) *Görsel medya ve şiddet kültürünün orta öğretim öğrencileri üzerine etkisi* (Master's thesis). Retrieved March, 2018 from http://acikerisim.selcuk.edu.tr:8080/xmlui/bitstream/handle/123456789/8425/192663.pdf?sequence=1&isAllowed=y.

Samancı, Ö. (2004). *Animasyonun önlenemez yükselişi*, İstanbul Bilgi Üniversitesi Yayınları, İstanbul.

Schlack, R., Rüdel, J., Karger, A., & Hölling, H. (2013). Physical and psychological violence perpetration and violent victimisation in the German adult population. *Bundesgesundheitsblatt, 56*, 740–748.

Skinner, B. F. (1953). *Science and Human Behavior*. New York, NY: Free Press.

Strasburger, V. C., Jordan, A. B., & Donnerstein, E. (2010). Health effects of media on children and adolescents. *Pediatrics, 125 (4),* 756-767.

Şahin, S., & Türk, M. (2010). A study on perception of psychological violence among employees and woman employees. *Çukurova Üniversitesi İİBF Dergisi, 14 (2),* 1-9.

Teenage Mutant Ninja Turtles. (n.d.). Retrieved from [https://boxofficeturkiye.com/film/ninja-kaplumbagalar-2011369].

Wand, P. (2000). Defining ''animation'': The animated film and the emergence of the film bill, *Scope: An Online Journal of Film Studies*, Available online at [http://www.nottingham.ac.uk/film/journal/articles/defining-animation.htm]

Welsch, M. C., & Pennington, B. F., & Groisser, D. B. (1991). A normative-developmental study of executive function: A window on prefrontal function in children. *Developmental Neuropsychology, 7(2),* 131-149.

Yalaki, Z., Potur, E. D., Ercan, S., Arıkan, F. İ., Tıraş, Ü., & Dallar, Y. (2012) Televizyondaki şiddet çocuklarımızı ne kadar etkiliyor?. *Medical Journal of Bakırköy*, 8(2), 85-88.

Yousuf, Z., Shehzad, M., & Hassan. A. H., (2015). Effects of cartoon network on the behavior of school going children (A case study of Gujrat City). *International Research Journal of Interdisciplinary & Multidisciplinary Studies (IRJIMS)*, 1(1), 173-179.

Yıldırım, A., Güneri, O. Y. & Hatipoğlu Sümer, Z. (2009) *Development and learning* (2nd ed.). Ankara: Seçkin Yayıncılık.

Chapter 65

The Role of Child Temperament in Education

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INTRODUCTION

Regarding the child's behavior, the "temperament" that often emphasized by parents as from the birth and by the teachers after the start of the school; is very important in understanding the child, in approaching to the child, in the child's learning process and in his/her relationships with others.

After reviewing the related literature, it has been observed that a wide variety of variables have been taken into consideration in the study of children's interactions in the educational environment. A number of studies have focused on the aspects of individual characteristics such as intelligence and personality. Others have assessed environmental variables related to teacher-student interactions, school environment, teachers' beliefs about the competences of their students, or the teacher's teaching experience. Besides that the effect of parents' attitudes and the importance of the socioeconomic level of the family on school success have been studied (Fernández-Vilar & Carranza, 2013).

In this study, it is aimed to draw the attention to the role of the temperament in child education. In this context, the studies that examine “temperament”, "the factors affecting temperament”, "the relationship between temperament and adaptation to school", “the relationship between temperament and school achievement”, “the relationship between temperament and teacher relationship” and “the relationship between temperament and peer relations” will be discussed here.

DEFINITION OF TEMPAREMENT

Temperament concerns the early emerging, stable individuality in a person’s behavior, and this is what distinguishes temperamental individuality from more transient moods, emotions or other influences on the developing child. Temperamental characteristics are constitutional in nature. Temperament is biologically based and derives from the interaction of genetic predispositions, maturation, and experience (Thompson et al., 2011).

Although the thoughts of temperament were based on old times, children's temperament traits were first investigated by Thomas and Chess. In this study, 133 children from 84 families living in New York, most of whom were children of educated families, were observed from 3 months to adulthood; resulting in nine temperament dimensions (Zentner & Bates, 2008).

These dimensions are as follows: activity level (eg, physical activity), rhythmicity (e.g., the regularity of the child's physiological needs), shyness (e.g., initial response to a new stimulus), adaptability (e.g., adaptation to peripheral stimuli), intensity of reaction (e.g., the strength of the reactions), threshold of responsiveness (e.g., intensity

of stimuli needed in order to provoke a response) mood (e.g., comparison of positive and negative emotions), distractibility (e.g., how much a stimulus hinders the behavior of the child), persistence (e.g., how much attention can be sustained on a given task) (Carey, 2009). Three types of temperament (easy, difficult, and slow-to-warm-up) have emerged from the further analysis of scores from each dimension. In their study, Thomas and Chess had emphasized the interaction between the baby's temperament and his/her environment, considering that babies who are the members of "hard" temperament type are at high risk for psychological problems, but that the concept of "hard" depends on their parents' values and childrearing attitudes. Accordingly, besides the child's temperament, there must be caregivers who adapt to these temperament traits. (Mathewson et al., 2012).

The temperament doesn't describe the reason of the behavior which is related to talent and motivation; it defines how the behavior is (Thomas & Chess, 1977). Temperament traits are relatively stable biologically-based behavioral tendencies observed in the early stages of life (Goldsmith et al., 1987) and influenced by genetic factors (Keller et al., 2005). It is thought that the temperament is a basis for personality development. Temperament and experience together form "personality". Personality includes the development of the child's knowledge about himself, others, the physical and social world, values, attitudes, and coping strategies. The temperament is defined as individual differences in emotional, motor, and attention reactions measured by processes such as violence, orienting sensitivity, self-regulation and effortful control (Rothbart, 2007). Although Rothbart's model was developed to identify the temperament in the first years of life, it has been expanded in terms of method and scope later by examining different age groups. In the temperament scales applied in age groups such as infancy, preschool period, school period, puberty, adolescence and adulthood, it is stated that the structure of temperament is grouped in three factors. These factors are described as: effortful control, negative affect and surgency/extraversion (De Pauw & Mervielde, 2010).

Temperament significantly contributes to children's social-emotional development and adaptation levels (Kiff et al., 2011). It is known that there are direct and indirect relationships between temperament and social cohesion and mental health. It is determined that fear, which is one of the components of the temperament, increases the risk of anxiety disorder and panic disorder while attentional focusing facilitates social cohesion. Besides the direct relations that are mentioned, indirect relations are also presented. For example, it has been observed that there is a relationship between high intensity pleasure, one of the temperament's components, and running away from home and early marriage; between attentional focusing and increase in school success; between discomfort and negative attitudes of parents; between negative affect and anger (Rothbart & Bates, 2006).

Whether the temperament changes over time is one of the questions that often come to mind. In their longitudinal studies; Putnam et al., (2008) assessed children in three periods, which are infancy, toddlerhood and age five, by getting information from their mothers to see if the temperament changes over time. In the assessment results, there appeared to be continuity between the three evaluations in terms of temperament. The levels of extraversion and negative affect that are among the temperament factors did not change in the three measurements. Effortful control, which is the other factor of

temperament, didn't changed in the measurements that were taken in recent times.

THE FACTORS AFFECTING TEMPERAMENT

The word "temperament" forms a genetic basis for individual differences in personality. Wachs & Bates (2001) found that identical twins showed more similar results in terms of temperament and personality than fraternal twins. It is known that about half of the individual differences are caused by genetic properties. Heritability is more predictive of negative emotions than positive emotions. It is known that genetics is more active in infancy than childhood and adulthood in which the temperament becomes more stable. Environmental factors on temperament are quite strong. For example, it is known that nutrition and emotional deprivation negatively affect the temperament. It has also been observed that those exposed to such deprivations during infancy cannot easily cope with stressful life events in later periods (Berk, 2013).

According to Hanley et al., (2013) and Patterson (2006), diseases, intense stress, alcohol, substance and drug use during pregnancy influence neurochemical, anatomical or immune system negatively and affect postnatal temperament traits (Kagan, 2014). The combination of different environmental factors and different temperament profiles reveals so many different personality profiles. These important experiences include socialization experiences with parents, relationships with siblings, successes or failures in school, and quality of peer relations. The social class in which the child is born is also important for his personality. In the cohort study of Werner (1993), it has been found that the personality traits of people, who they observe from birth to age 40, are most influenced by early childhood temperament traits and the social classes they belong to in their adulthood. It is known that those born in highly educated families and those who are calm in their infancy have fewer school failures, fewer involvement in crime, less physical and mental health risks (Kagan, 2001).

Educational surveys on the role of child temperament began in the 1980s. In particular, academic achievement and school adjustment were among the first variables examined in educational environments. The importance of understanding the child's temperament in relation to the school is explained by the concept of goodness of fit (Al-Hendawi & Reed, 2012).

THE RELATIONSHIP BETWEEN TEMPERAMENT AND SCHOOL ADJUSTMENT

School adjustment is defined as the adaptations necessitated for maximizing the educational fit between the students' qualities and the multidimensional character and requirements of learning environments (Spencer, 1999). When the relevant literature is reviewed, it is seen that there is a strong relationship between temperament and school adjustment. It has been observed that *Extraversion*, which is one of the temperament traits, is an important criterion in terms of school adjustment (Zupancic & Kavcic, 2011). Besides that, it has been indicated that there is an increase in school adjustment of the children with special education needs in their early childhood ,who have a high level of *Persistence*, and children with low levels of negative affect, inhibitory and activity (Reed-Victor, 2004; Al-Hendawi & Reed, 2012).Likewise, the teachers of children whose parents indicated that their negative affect traits were intense also reported problems with school adjustment during the third grade (Nelson et al., 1999). It has been observed that one of the temperament traits *Reactivity* predicts a negative

effect on the school adjustment (Yoleri, 2014). In the studies of Kaya & Akgün (2016), it has been observed that there is a negative relationship between the level of school adjustment of the pre-school children and rhythmicity level of temperament traits. They also observed that the ratio that explains school adjustment level is very low.

THE RELATIONSHIP BETWEEN TEMPERAMENT AND SCHOOL SUCCESS

School success has a wide range of consequences throughout the school years of the person and throughout his or her whole life. School success requires positive achievements in two subfields which are academic achievement and socially appropriate interpersonal behaviors (Keogh, 2003). Temperaments of children influence the way they react to the experiences and environments provided by their caregivers since infancy. When children are in school age, the classroom, teacher, academic environment and circumstances are experienced according to the child's developing temperament, and children react accordingly. Although the relationship between children's temperament and academic achievement is largely unexplored (Coplan et al., 1999), research suggests that distractibility and activity level components of temperament may be related to children's academic achievement (Martin & Holbrook, 1985).Studies show that high persistence, adjustment and moderate level of activity level components of temperament are important in helping children to benefit from normal classroom experiences (Newman et al., 1998). In their study, Al-Hendawi & Reed (2012) found that temperament traits persistence and activity level correlate positively with school success. Studies in this area have shown that high level of effortful control, one of the components of temperament, increases academic achievement (Kendall, 1993; Alexander et al., 1993; Blair & Razza, 2007; Valiente et al., 2010) and low level of poor attention decreases academic achievement (Finn et al., 1995, Veldman & Worsham, 1983).

THE RELATIONSHIP BETWEEN TEMPERAMENT AND TEACHER RELATIONSHIP

Teacher-child relationship includes conflict areas in which there are intimacy and open communication including closeness, anger and frustration. High-quality relationships between the teacher and the child are defined by the low level of conflict and the high level of intimacy (Pianta, 1999). It has been found out that effortful control is significant for the relationship between the conflict that pre-school children have experienced with their teachers and their effortful control, anger and shyness components; and as the level of children's effortful control increases, the number of conflicts between teachers and children decreases (Rudasill et al., 2016). It has been also determined that temperament characteristics such as attention, behavioral control of children influence teacher-child relationships in a positive way (Myers & Pianta, 2008). It has been observed that children with high levels of approach tend to interact with teachers more in comparison with their shy peers and thus develop closer relationships (Rimm-Kaufman et al., 2002, Rimm-Kaufman & Kagan, 2005). It is stated that children with high levels of approach in their infancy have a closer and conflicting relationship with their teachers at school; children with high persistence have a more close, less conflicted relationship; and children with high levels of reactivity develop more distant and conflicting relationships with their teachers (Cheryl & Walker, 2014). It has been

found that there is a positive correlation between effortful control and kindergartners' participation in class activities, school liking and relationships with teacher; and there is a negative relation between effortful control and impulsivity and anger (Valiente et al., 2012).

It has been observed that shyer children have less teacher-child conflicts and more teacher-child closeness; children with low levels of effortful control are more likely to have teacher-child conflicts and those with higher levels of effortful control have more teacher-child closeness (Birch & Ladd, 1997; Rudasill & Rimm-Kaufman, 2009). Increase in shyness led to a decrease in the closeness with the teacher and an increase in anger increase the number of the conflicts with the teacher (Justice et al., 2008). Another longitudinal study found that children who are more anxious and shy during the preschool period have higher academic achievement during adolescence; children with dependent and conflicting teacher-student relationships have lower academic achievement in adolescence (DiLalla et al., 2004). It is also reported that one of the child's temperament traits, anger, is also an important factor in relationships with his or her teacher. In her study, Howes (2000) observed that children with higher levels of anger developed a lower level of closeness and a higher level of conflict in their relationships with their teachers.

THE RELATIONSHIP BETWEEN THE TEMPERAMENT AND PEER RELATIONS

Building healthy peer relations is important as it constitutes important components of lifelong psychological adjustment, happiness and social attachment (Carbery & Buhrmester, 1998). When the related literature is examined, it is seen that there is a significant relationship between temperament and peer relationship. Higher levels of effortful control, which is one of the temperament traits, seem to lead to more interaction with peers, less problematic communication, and less conduct problems (David & Murphy, 2007, Frick & Morris, 2004, Spinrad et al., 2006).

It is reported that children with high activity level, which is one of the factors of temperance, have less participation in games among friends, less interaction and difficulty in establishing close relationships with their friends (Dunn & Cutting, 1999). High level of activity level in pre-school and middle childhood predicted more problematic communication in boys compared to girls (Prior et al., 2000). The low level of attentional focusing component measured at one to three years of age in longitudinal studies predicted problematic peer relationships in males in pre-school and middle childhood. There is a positive relationship between attentional focusing component of temperament and peer relations of children; while inhibitory control and attentional focusing components of temperament are negatively related to their conflicts with peers (Acar et al., 2015).Children who are active and energetic create more opportunities for communication and relationship than children who are more passive and less dynamic. Besides the high level of activity, having impulse control problems causes trouble in peer relations (Van Hecke et al., 2007). High levels of negative affectivity component of children's temperament lead to negative peer relations (Benish-Weisman et al., 2009). Shyness, one of the components of the temperament, also poses a risk to peer relationships (Gazelle & Ladd, 2002). It has been also observed that shyness, which has a negative relationship with peer relations, indirectly affects the psychological well-

being (Bowker & Raja, 2011; Coplan & Arbeau, 2008).

Impulsivity, one of the temperament factors, is also important in peer relations. It has been found that the impulsivity at the moderate level is positively correlated with early childhood peer relations with respect to low or high levels. Eisenberg et al. (2002) found that the impulsivity at the moderate level of pre-school and primary school children have a positive relationship with flexibility in peer relationships.

Peer acceptance is also important in peer relations. Peer acceptance means likability; the degree of being considered a valuable social companion by a group of peers, such as a child's classmates (Berk, 2015). It has been observed that the children rejected by their peers have higher levels of activity level and distractibility, lower levels of persistence than popular children; rejected and neglected children show more negative mood and less adaptability (Walker et al., 2001). In the study of Szewczyk-Sokolowski et al. (2005) in which they examine temperament, attachment and peer acceptance, it has been found that temperament has a stronger role in peer acceptance than the attachment. The temperament is very much related to social behavior. It has been observed that preschool children with high activity level have a high likelihood of getting into a social relationship with their peers, but they are also more likely to have a conflict than children with less activity. However, it has been seen that shy children observe their friends, avoid interaction, not participate in game activities and talk less (Henderson et al., 2004).

CONCLUSION AND RECOMMENDATIONS

It is very important for educators to get information about the temperament of a child. They should behave being aware of that children's behavior is not only about environmental factors it also has biological basis. The fact that children behave differently from their peers does not mean they are not "normal". In the studies, it is observed that educators are increasingly able to understand that the children with disabilities have different temperament traits as well as the "healthy" children (Gosling et al., 2003). Educators should consider that children who grow up in the same environment gain different experience according to their individual characteristics (Rothbart et al., 1994).

As it is stated in this study, it is known that the effortful control component consisting of attentional focusing, inhibitory control etc. has a high level of positive relationship between academic achievement and school adjustment, teacher and peer relations. It is important to approach children who have problems such as focusing attention and impulsivity in the classroom environment without negative labeling. Therefore, it is very important for the children who are experiencing such problems to be directed to activities aiming at increasing the attentional focusing, persistence and control components.

It is very important for the curriculum to include social-emotional development support activities as well as academic achievement in order to prevent the difficulties that children with problems such as shyness and reactivity can live in their educational lives. Responsibilities suitable to the child's age and physical and emotional characteristics should be given a child in order to prevent the dependent relationships by the individuals who get in touch with the child, especially teachers in the school environment. This is really important to improve the feeling of self-confidence and

raising individuals who are independent and have sense of responsibility. It is also important for children who have high feelings of anger and frustration in the context of reactivity and who have communication problems with their teachers and peers for that reason to be included in educational programs such as anger control and problem solving in order to improve the communication skills and the school adjustment.

When the related literature is reviewed, it has been found that the interventions in treatment have positive effects on the academic achievement and social skills of children with temperament traits that are predisposed to negative feelings such as shyness or anger. The aim of a temperament-based intervention is not to change the child directly, but to improve the adaptation of the child to environment by helping parents and teachers to develop the child (McClowry, 2003; Melvin, 1995).

Teacher training and vocational development programs can be strengthened by emphasizing individual differences in temperament and how these differences affect children's adaptation (Keogh, 2003). Teachers should be informed about the temperament which is an important factor in the individual differences of the student in the education system. It is important for the teacher to evaluate his/her own temperament to learn how the teacher-student relationship and the education process are affected from it. Each learning style and environment may not be appropriate for every student. Some children are active, some are calm, some are fun and some enjoy a calm environment. For example, in noisy or fast-paced activities in a classroom environment, some children may be disturbed and affected more quickly than other peers. Feelings of disturbance during a lesson at the school may affect interaction and learning. However, children with high positive affect can become excited for positive events and can have more learning experience than children with other temperament dimensions (Rothbart & Jones, 1998).

In temperament-based classroom management, teachers set strategies in accordance with the child's temperament. Temperament-based classroom management takes place in three stages: considering the child's temperament, the teacher's evaluation of his/her own perceptions in a different / new way, and reacting in ways that enhance adjustment to environment (McClowry, 2014). Redefining child behavior is one of the best experiences that can be applied to the interaction with the child, facilitating the teacher's handling of stress that may arise in classroom management (Klassen & Chiu, 2010, Jennings & Greenberg, 2009). Redefining child behavior means creating opportunities for goodness-of-fit in interacting with children rather than seeing compelling child behavior as a challenge for their authority (Collins & O'Connor, 2016; Rudasill & Rimm-Kaufman, 2009). Every child is valuable and special. Therefore, in education system it is important to approach children in accordance with their temperament.

REFERENCES

Acar, İ.H., Rudasill, K.M., Molfese, V., Torquati, J. & Prokasky, A. (2015). Temperament and Preschool Children's Peer Interactions. Early Education and Development, 2, 479-495.

Alexander, K. L., Entwisle, D. R., & Dauber, S. L. (1993). First-Grade Classroom Behavior: Its Short and Long-Term Consequences for School Performance. Child Development, 64, 801-814.

Al-Hendawi, M. & Reed, E. (2012). Educational Outcomes for Children At-Risk: The Influence of Individual Differences in Children's Temperaments. The International Journal of Special Education, 27(2), 64-74.
Benish-Weisman, M., Steinberg, T., & Knafo, A. (2009). Genetic and Environmental Links between Children's Temperament and Their Problems With Peers. Israel Journal of Psychiatry and Related Sciences, 47, 144-151.
Berk, L. (2015). Bebekler ve Çocuklar. Doğum Öncesinden Orta Çocukluğa. (N.Işıkoğlu-Erdoğan, Çev.) Nobel, Ankara.
Berk, L. (2013). Child Development. Pearson, USA.
Birch, S. H., & Ladd, G. W. (1997). The teacher–Child Relationship and Children's Early School Adjustment, Journal of School Psychology, 35(1), 61-79.
Blair, C., & Razza, R. P. (2007). Relating Effortful Control, Executive Function, and False Belief Understanding to Emerging Math and Literacy Ability in Kindergarten. Child Development, 78, 647-663.
Bowker, J. C., & Raja, R. (2011). Social Withdrawal Subtypes During Early Adolescence in India. Journal of Abnormal Child Psychology, 39, 201-212.
Bruni, O., Ferini-Strambi, L., Russo, P. M., Antignani, M., Innocenzi, M., Ottaviano, P., Valente, D., & Ottaviano, S. (2006). Sleep Disturbances and Teacher Ratings of School Achievement and Temperament in Children. Sleep Medicine, 7, 43-48.
Carey, W.B. (2009). Normal individual differences in temperament and behavioral adjustment. In William B. Carey, Allen C. Crocker, William L. Coleman, Ellen Roy Elias, Heidi M. Feldman (Eds.) Developmental-Behavioral Pediatrics, pp. 74-86, Elsevier, UK. http://www.sciencedirect.com/science/article/pii/B9781416033707000079
Carbery, J. & Buhrmester, D. (1998). Friendship and Need Fulfillment during Three Phases of Young Adulthood. Journal of Social and Personal Relationships, 15, 393-409.
Cheryl, T.S.L., Walker, S. (2014). Child-Related Factors That Influence Teacher–Child Relationships Using an Australian National Sample. Australasian Journal of Early Childhood, 39 (2), 51-59.
Collins, A., & O'Connor, E. (2016). Teacher-Child Relationships and Child Temperament in Kindergarten Achievement. Journal of Educational and Developmental Psychology, 6(1), 173-195.
Coplan, R. J., & Arbeau, K. A. (2008). The Stresses of a "Brave New World": Shyness and School Adjustment in Kindergarten. Journal of Research in Childhood Education, 22, 377-389.
Coplan, R. J., Barber, A. M., & Lagace-Seguin, D. G. (1999). The Role of Child Temperament as a Predictor of Early Literacy and Numeracy Skills in Preschoolers. Early Childhood Research Quarterly, 14, 537-553.
David, K.M., Murphy, B.C. (2007). Interparental Conflict and Preschoolers' Peer Relations: The Moderating Roles of Temperament and Gender. Social Development, 16, 1-23.
Deater-Deckard, K., Mullineaux, P., Petrill, S. A., & Thompson, L. A. (2009). Effortful Control, Surgency, and Reading Skills in Middle Childhood. Reading and Writing, 22, 107-116.
De Pauw, W.S.S., & Mervielde, I. (2010). Temperament, Personality and

Developmental Psychopathology: A Review Based on the Conceptual Dimensions Underlying Childhood Traits. Child Psychiatry Hum Dev, 41, 313-329.
DiLalla, L.F., Marcus J.L., & Wright-Phillips M.V. (2004). Longitudinal Effects of Preschool Behavioral Styles on Early Adolescent School Performance. Journal of School Psychology, 42, 385-401.
Dunn, J., & Cutting, A. L. (1999). Understanding Others, and Individual Differences in Friendship Interactions in Young Children. Social Development, 8(2), 201-219.
Eisenberg, N., Spinrad, T. L., & Morris, A. S. (2002). Regulation, Resiliency, and Quality of Social Functioning. Self and Identity, 1, 121-128.
Fernández-Vilar, M.A., Carranza, J. A. (2013). Temperament in the School Context: A Historical Review. European Journal of Psychology of Education 28(3), 923-944.
Finn, J. D., Pannozzo, G. M., & Voelkl, K. E. (1995). Disruptive and Inattentive-Withdrawn Behavior and Achievement among Fourth Graders. The Elementary School Journal, 95, 421-434.
Frick, P. J., & Morris, A. S. (2004). Temperament and Developmental Pathways to Conduct Problems. Journal of Child Clinical and Adolescent Psychology, 33, 54-68.
Gazelle, H., & Ladd, G. W. (2002). Interventions for children victimized by peers. In P. A. Schewe (Ed.) Preventing violence in relationships: Interventions across the life span. pp. 55–78, American Psychological Association, Washington, DC.
Goldsmith, H. H., Buss, A. H., Plomin, R., Rothbart, M. K., Thomas, A., Chess, S., et al. (1987). Roundtable: What is Temperament? Four Approaches. Child Development, 58, 505-529.
Gosling, S. D., Rentfrow, P. J., & Swann, W. B., Jr. (2003). A Very Brief Measure of the Big Five Personality Domains. Journal of Research in Personality, 37, 504-528.
Hanley, G. E., Brain, U., & Oberlander, T. F. (2013). Infant Developmental Outcomes Following Prenatal Exposure to Antidepressants, and Maternal Depressed Mood and Positive Affect. Early Human Development, 89(8), 519-524.
Henderson H.A., Marshall P.J., Fox N.A. & Rubin K.H. (2004). Psychophysiological and Behavioral Evidence for Varying Forms and Functions of Nonsocial Behavior in Preschoolers. Child Dev. 75, 251-63.
Howes, C. (2000). Social-emotional Classroom Climate in Child Care, Child-Teacher Relationships and Children's Second Grade Peer Relations. Social Development, 9, 191-204.
Jennings, P., & Greenberg, M. (2009). The Prosocial Classroom: Teacher Social and Emotional Competence in Relation to Student and Classroom Outcomes. Review of Education Research, 79(1), 491-525.
Justice, L. M., Cottone, E. A., Mashburn, A., & Rimm-Kaufman, S. E. (2008). Relationships between Teachers and Preschoolers Who Are at Risk: Contribution of Children's Language Skills, Temperamentally Based Attributes and Gender. Early Education & Development, 19, 600-621.
Kagan, J. (2001). Personality development and temperament. In Neil J. Smelser, Paul B. Baltes (Eds.) International Encyclopedia of the Social & Behavioral Sciences, pp. 11287-11290. Elsevier, UK.
http://www.sciencedirect.com/science/article/pii/B0080430767023263
Kagan, J. (2014). Temperamental contributions to the development of psychological profiles: I. basic issues. In Stefan G. Hofmann and Patricia M. DiBartolo (Eds.)

Social Anxiety, pp. 377-418. Elsevier, UK.
http://www.sciencedirect.com/science/article/pii/B9780123944276000133
Kaya, Ö.S. ve Akgün, E. (2016). Okul Öncesi Dönemdeki Çocukların Okula Uyum Düzeylerinin Çeşitli Değişkenler Açısından İncelenmesi. İlköğretim Online, 15(4), 1311-1324.
Keller, M. C., Coventry, W. L., Heath, A. C., & Martin, N. G. (2005). Widespread Evidence for Non-Additive Genetic Variation in Cloninger's and Eysenck's Personality Dimensions Using a Twin Plus Sibling Design. Behavior Genetics, 35, 707-721.
Kendall, P. C. (1993). Cognitive-Behavioral Therapies with Youth: Guiding Theory, Current Status, and Emerging Developments. Journal of Consulting and Clinical Psychology, 61, 235-247.
Keogh, B. K. (2003). Temperament in the Classroom. Understanding Individual Differences. Brookes, New York.
Kiff, C., Lengua, L. J., & Zalewski, M. (2011). Nature and Nurturing: Parenting in the Context of Children's Temperament. Journal of Clinical Child and Family Review, 14, 251-301.
Klassen, R., & Chiu, M. (2010). Effects on Teachers' Self-Efficacy and Job Satisfaction: Teacher Gender, Years of Experience, and Job Stress. Journal of Education Psychology, 102(3), 741-756.
Li, I., Onaga, E., Shen, P. S., & Chiou, H. H. (2009). Temperament Characteristics and Science Achievement: A Longitudinal Study of Elementary Students in Taiwan. International Journal of Science Education, 31, 1175-1185.
Martin, R. P., & Holbrook, J. (1985). Relationship of Temperament Characteristics to the Academic Achievement of First-Grade Children. Journal of Psychoeducational Assessment, 3, 131-140.
Mathewson, K.J. Miskovic, V. & Schmidt, L.A. (2012). Individual differences in temperament: definition, measurement, and outcomes. In V.S. Ramachandran (Ed.) Encyclopedia of Human Behavior, pp. 418-425. Elsevier, UK. http://www.sciencedirect.com/science/article/pii/B9780123750006002032
McClowry, S. G. (2014). Temperament-based Elementary Classroom Management Rowman & Littlefield, New York.
McClowry, S. G. (2003). Your Child's Unique Temperament: Insights and Strategies for Responsive Parenting. Research Press, Champaign, Illinois.
Melvin, N. (1995). Children's Temperament: Intervention for Parents. Journal of Pediatric Nursing, 10, 152-159.
Myers, S. S., & Pianta, R. C. (2008). Developmental Commentary: Individual and Contextual Influences on Student-Teacher Relationships and Children's Early Problem Behaviors. Journal of Clinical Child and Adolescent Psychology, 37, 600-608.
Nelson, B., Martin, R. P., Hodge, S., Havill, V. & Kamphus, R. (1999). Modeling the Prediction of Elementary School Adjustment from Preschool Temperament. Personality and Individual Differences, 26, 687-700.
Newman, J., Noel, A., Chen, R., & Matsopoulos, A. S. (1998). Temperament, Selected Moderating Variables and Early Reading Achievement. Journal of School Psychology, 36, 215-232.

Patterson, P. H. (2006). Pregnancy, Immunity, Schizophrenia, and Autism. Engineering & Science, 10, 11-21.
Pianta, R. C. (1999). Enhancing Relationships: Between Children and Teachers. American Psychological Association, Washington, DC.
Prior, M., Sanson, A., Smart, D. & Oberklaid, F. (2000). Pathways from Infancy to Adolescence: Australian Temperament Project 1983-2000. Australian Institute of Family Studies, Melbourne.
Putnam, S.P., Rothbart, M.K., & Gartstein, M. (2008). Homotypic and Heterotypic Continuity of Fine-Grained Temperament During Infancy, Toddlerhood, and Early Childhood. Infant and Child Development, 17(4), 387-405.
Reed-Victor, E. (2004). Individual Differences and Early School Adjustment: Teacher Appraisals of Young Children with Special Needs. Early Child Development and Care, 174, 59-79.
Rimm-Kaufman, S. E., Early, D. M., Cox, M. J., Saluja, G., Pianta, R. C., Bradley, R. H., et al. (2002). Early Behavioral Attributes and Teachers' Sensitivity as Predictors of Competent Behavior in the Kindergarten Classroom. Journal of Applied Developmental Psychology, 23, 451-470.
Rimm-Kaufman, S. E., & Kagan, J. (2005). Infant Predictors of Kindergarten Behavior: The Contribution of Inhibited and Uninhibited Temperament Types. Behavioral Disorders, 30, 331-347.
Rothbart, M.K. (2007). Temperament, Development, and Personality. Current Directions In Psychological Science, 16, 207-212.
Rothbart, M. K., & Jones, L. B. (1998). Temperament, Self-Regulation, and Education. School Psychology Review, 27, 479-491.
Rothbart, M.K. & Bates, J.E. (2006). Temperament. In W. Damon, R. Lerner, & N. Eisenberg (Eds.) Handbook of Child Psychology: Vol. 3. Social, Emotional, and Personality Development (6th ed.), pp. 99- 166, Wiley, NewYork.
Rothbart, M. K., Ahadi, S. A., & Hershey, K. L. (1994). Temperament and Social Behavior in Childhood. Merrill–Palmer Quarterly, 40, 21-39.
Rudasill, K.M., Hawley, L., Molfese, V.J., Tu, M. X., Prokasky, A. & Sirota, K. (2016). Temperament and Teacher–Child Conflict in Preschool: The Moderating Roles of Classroom Instructional and Emotional Support. Early Education and Development, 27 (7), 859-874.
Rudasill, K.M., & Rimm-Kaufman, S.E. (2009). Teacher-Child Relationship Quality: The Roles of Child Temperament and Teacher-Child Interactions. Early Childhood Research Quarterly, 24, 107-120.
Spencer, M. B. (1999). Social and Cultural Influences on School Adjustment: The Appplication of an Identity-Focused Cultural Ecological Perspective. Educational Psychologist, 34 (1), 43-57.
Spinrad, T. L., Eisenberg, N., Cumberland, A., Fabes, R. A., Valiente, C., Shepard, S. A., Guthrie, I. K. (2006). Relation of Emotion-Related Regulation to Children's Social Competence: A Longitudinal Study. Emotion, 6, 498–510.
Szewczyk-Sokolowski, M., Bost, K. K., & Wainwright, A. 8. (2005). Attachment, Temperament, and Preschool Children's Peer Acceptance. Social Development, 14, 379-397.
Thompson, R. A., Winer, A. C. and Goodvin, R. (2011). The individual child:

temperament, emotion, self and personality. In M. E. Lamb & M. H. Bornstein (Eds.) Social and Personality Development, pp.217-258, PsyPress, New York.
Thomas, A., & Chess, S. (1977). Temperament and Development. Brunner/Mazel, New York.
Valiente, C., Swanson, J. & Chalfant, K. L. (2012). Kindergartners' Temperament, Classroom Engagement, and Student- Teacher Relationship: Moderation by Effortful Control. Social Development, 21, (3), 558- 576.
Valiente, C., Lemery-Chalfant, K., & Swanson, J., & Reiser, M. (2010). Prediction of Kindergartners' Academic Achievement From Their Effortful Control and Emotionality: Evidence for Direct and Moderated Relations. Jounal of Educational Psychology, 102(3), 550-560.
Van Hecke, A. V., Mundy, P. C., Acra, C. F., Block, J. J., Delgado, C. E. F., Parlade, M. V., et al. (2007). Infant Joint Attention, Temperament, and Social Competence in Preschool Children. Child Development, 78, 53-69.
Veldman, D. J., & Worsham, M. (1983). Types of Student Classroom Behavior. Journal of Educational Research, 76, 204-209.
Wachs, T.D., & Bates, J.E. (2001). Temperament. G. Bremner & A. Fogel (Eds.) In Blackwell handbook of infant development (pp. 465-501). Blackwell, Oxford, UK.
Walker, O.L., & Henderson, H.A. (2012). Temperament and Social Problem Solving Competence in Preschool: Influences on Academic Skills in Early Elementary School. Social Development, 21 (4), 761-779.
Walker, S., Berthelsen, D., & Irving, K. (2001). Temperament and Peer Acceptance in Early Childhood: Sex and Social Status Differences. Child Study Journal, 31, 177-192.
Werner, E. E. (1993). Risk, Resilience, and Recovery: Perspectives from the Kauai Longitudinal Study. Development and Psychopathology, 5,503-515.
Yoleri, S. (2014). The Effects of Age, Gender, and Temperament Traits on School Adjustment for Preschool Children. E-International Journal of Educational Research, 5 (2), 54-66.
Zentner, M., Bates, J.E. (2008). Child Temperament: An Integrative Review of Concepts, Research Programs, and Measures, Eur. J. Dev. Sci., 2, 7-37.
Zupancic, M., & Kavcic, T. (2011). Factor of Social Adjustment to School: Child's Personality, Family and Preschool. Early Child Development and Care, 181(4), 493-504.

Chapter 66

Child and Game in Hospital

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INTRODUCTION

Having an important place in children's lives, game has many definitions. According to Schiller, game is "spending excessive energy aimlessly"; according to Dewey, game is "actions taken unwittingly"; according to Montessori, game is "the most important work of the child"; according to Gross, game is "instinctive actions forming the basis of future life and without a definite purpose" (Kuykendall, 2009; Lindberg, 2012). Considered as a waste of time by adults, game is the most active learning environment in which children are able to express their emotions, improve their abilities, use their creative potential and able to improve skills towards developmental fields. In general terms, game is the most effective learning process that is towards a specific objective or not, that is conducted with or without rules, in every case, in which child is included willingly and joyfully. Game is a part of child's life. Child and game are two integral parts of a whole (Kaytez & Durualp, 2014; Şen, 2010; Tugrul, 2014).

Children need playing games as much as they need nutrition and sleep for being healthy in terms of developmental. Game improves children's physical health and their movement skills. Game is also the most natural learning tool for a child (Aksoy & Dere-Çiftçi, 2014). Child learns information, skills and habits required for him/her in game by doing and living. Games are more effective compared to other learning techniques especially due to passing children from passive state to active state. Thus, game is an important tool of education for child. Children learn concepts, numbers etc. more easily while playing with objects having different characteristics. Game is a language and type of expression that the child uses to communicate with his/her surrounding. Children may arrange their social relationships and interactions better through game, and they find more opportunities to practice in terms of producing social problems and produce solutions to these problems (Runcan et al., 2012).Children are able to express their emotions and needs actually while playing games and they obtain self-solution ability. Game supports personal development and development of senses of responsibility and confidence. Children learn about themselves, learn how to decide, bear the consequences, feel happiness and excitement, their imitation ability enhances, and their imagination improves (Sevinç, 2009; Silva, et al., 2017; Tuğrul, 2014).

Game is also an effective tool in treatment process of ill children. Hospitalization is a difficult situation for the child to accept (Baykoç, 2006). Child's movement area is limited, and his/her autonomy is taken under control. Children have to struggle against not only the illness, side effects of treatment and painful procedures, but also the anxiety of separation from their family, game peers and school community. An

unknown environment in the hospital, strange healthcare personnel, noisy operating equipment and monitors, applied medical methods and feelings of pain, lack of mother around children, inability to play whenever they want, good or bad hospital experiences in the past all lead to an intense stress and anxiety among children (Beyazıt & Bütün Ayhan, 2015; Bumin-Aydın, et al., 2017; Caleffi, 2016). This intense stress and anxiety brought along with illness and treatments adversely affect children's developments. In cases where children's interactions with their environment is prevented or where they cannot play games in the hospital, problems may emerge such as depression, commitment, sleep and nutrition problems, retardation in growth, development and learning. Since biological, psychological and social factors are important in children's developments, only physical treatment should not be included in treatment of these problems, other treatments to assist in children's relaxation and adaptation should also be included. One of the most important factors that may assist child's treatment process is game. Game both facilitates and accelerates children's treatment process (Atay, et al., 2011; Koukourikos, 2015; Kylie, 2008).

Game is an important tool for reducing fear and anxieties that children feel regarding hospital experiences. Game relieves hospitalized children but also it is a useful tool in terms of understanding their feelings and thoughts (Kennedy et al., 2004; Kerimoğlu & Boztepe, 2014). Therefore, children should be provided with opportunities to play games in hospital environment, game fields and toys must be provided to them, and help should be given in their playing. Provision of a place to play and game opportunity to children in hospital environment ensure that children feel themselves secure and spend their energy. Children are relaxed while playing games in playroom in the hospital, they do not feel pain, even for the limited period of time, and they live in their game world that is away from troubles and concerns (Gültekin & Baran, 2005; Haitat, 2003; Öktem, 2011; Ünivar, 2011).

While game at the hospital provides direct benefit to children, it provides benefits indirectly to parents. While children play games in the hospital, parents can spare time for themselves even for a short period of time, they can meet their various special needs and they can meet other families with ill children. Games also help medical personnel. Game servers as a bridge between children and health care personnel. Game facilitates children's process of preparation for surgery, and it ensures that surgical attempts towards children are carried out more easily (Li et al., 2016; Stulmaker, & Ray, 2015). Giving information to children about operations to be conducted through game and toys decreases level of anxiety and relieves children. Children's feeling of relaxation helps health care personnel in doing their works faster and easier. Therefore, it is quite important for hospitals to have games and playrooms (Yayan & Zengin, 2017; Yiğit, 1997). According to Çelebi et al. (2015), game is an effective method in reducing negative feelings of hospitalized children, game relieves children both physically and emotionally and contributes to their recovery. To provide integrated and quality care to children, game should necessarily be used in hospital.

Therapeutic Game

Children may face many acute or chronic diseases during their developments. As a result, children may need hospitalization. Together with hospitalization of children, children may face negative emotional states such as anxiety, fear and pain, and they

react in face of these negative experiences. Although these reactions are disease-specific, some of them are generally seen in all children (Caleffi, 2016; Kıran et al., 2012). Hospitalization results in trauma among children in connection with physiological, emotional and behavioral problems. At this point, it is important to reduce negative effects of hospitalization (Yayan and Zengin, 2018).

With a view to reduce stress emerging with children's experiences related to hospital and diseases, concept of "curative game" or "therapeutic game" has been developed. ***Therapeutic play*** is a supportive, constructive and relaxing game method in which children can express themselves sincerely without feeling threatened. Therapeutic game can be used at any stages starting from preparation of children for hospitalization to discharge process. With the therapeutic game method, children can learn to cope with physical and psychological stresses caused by hospitalization. Therapeutic games help in development of positive attitudes and reduce the stress that resulted from hospitalization (Caleffi, 2016; Gürbüz et al., 2015; Kuğuoğlu & Tanır, 2006).

For a game played with children to be identified as "therapeutic game", it must contain at least one of the features including encouraging expression of emotions (for instance, revitalization of experiences while playing with dolls), provision of education related to children's hospital experiences, being a game towards providing physiological benefit (for instance, blowing foam or inflating balloon to improve lung functions). Therapeutic game is discussed under three groups including energy consumption game, dramatic game and creative game (Yayan and Zengin, 2018; Zahr, 1998).

Energy consumption game, is a type of game that helps children in learning how to use their physiological skills in face of new situations. Children show their aggressive feelings, anger and anxiety by exhibiting behaviors such as screaming, punching and running. In hospital, suitable fields should be established for the purpose of children's coping with such emotions. Therefore, such an environment may help reduction of children's levels of aggressive emotions, anger and anxiety. One to three year-old group children's hitting a wooden nail with a plastic hammer can be given as an example for such games (Gürbüz et al., 2015).

Dramatic game, in this type of game, children are allowed to show their emotions related to events that are important for them in hospital environment. Children play the role of another person during game and behave like that person. Applying medicine to a baby as a nurse or applying dress-up as a physician can be given as examples to dramatic game. During games, possibility to use real and harmless tools such as stethoscope, needle-less injector and mask just like from children's experiences may be more effective in reducing stress and allowing children to express their emotions (Caleffi, 2016; Kuğuoğlu & Tanır, 2006).

Creative game, in creative game type, the aim is to collect information about children's inner world by using methods such as drawing, sentence completion and three wishes etc. In drawing technique, child is requested to draw a human portrait and tell a story about it. With this technique, children's emotions and thoughts on experiences such as disease, treatment and interventions can be revealed. In sentence completion test, children are made to complete incomplete sentences (What upsets me..., If I could... Etc.) with words coming to their minds first. In this way, it becomes

possible to reveal children's emotions related to disease that cannot be shown directly by asking questions. In three wishes games, after establishing a connection with children based on trust, the aim is to reveal children's emotions and thoughts by asking questions such as "If you had three things in the world, what would they be?" (Gürbüz et al., 2015; Kıran et al., 2012; Yayan and Zengin, 2018; Zahr, 1998).

Hospital Playrooms

In recent years, hospitals increasingly use game as a psychological aid tool towards children in advanced societies. All children are exposed to disease experiences in varying degrees in a stage of their lives. While diseases can sometimes be treated with outpatient treatment, sometimes they may require long-term hospitalization or continuous round-trips between house and hospital. Game serves as a treatment tool either at home or in hospital or at school for sick children. Especially, sensitivity should be shown to sick children's game requirements and symbolic interactions in hospitals, because game facilitates life in hospital (Bekmezci & Özkan, 2015; Clark- Dell, 2003). Children are ready to play in all conditions. Game can be played in any way and any places even in Intensive Care Unit. Game in hospital can be played alone bedside, also it can be played in a separate game environment arranged according to this purpose. These environments in many hospitals are defined as playrooms. (Bilir & Dönmez, 1995; Çavuşoğlu, 2008; Er, 2006).

Researchers have studied adverse effects of hospitalization and medical interventions on children's emotional states for many years (Burger et al., 2013). Kargı and Akın (2005), in their study in which hospitalized children's game and toy needs were examined, have determined that both physical conditions and types of quality of toys in hospital playrooms are not sufficient. In the study, it was indicated that some factors should be considered while preparing playrooms in hospitals.

To benefit from playrooms most efficiently, playrooms should be arranged by necessarily considering children's interests and needs. While arranging playrooms, the very first factor to be considered is environment. Playroom environment should be arranged by considering children's physical and psychological needs, and children should experience feeling of house in playroom. (Çelebi et al., 2015; İnan- Emiroğlu & Pekcanlar- Akay, 2008). Architectural structure, color, lighting system, furniture and pictures on the walls etc. in the playroom should necessarily be planned by considering children's age and developmental characteristics. Children should be provided with spaces that are not scary and that are in styles children are familiar. Pictures of walls of playrooms should be selected carefully and they should be cute. According to Baykoç (2006), selection of colors to be used in playroom walls by children facilitates their adoption of this room. Playroom should be designed by considering which type of toys children will play. These games may include dramatic games, active games, table games, art and creativity games (Karaarslan et al., 2015; Kylie, 2008; Şişman & Özyavuz, 2010).

Studies conducted on hospitalized children suggest that drawing, mixing and playing with sand and water relieves children. Materials such as crayons, paper, water, sand, salt ceramics etc. are important materials for relaxing games. In addition, blocks are also game tools that relieve children and support their creativity. Dolls are particularly useful and valuable for hospitalized children. That is because children often

identify themselves with their dolls and easily express their emotions and situations that they leave at hospital. Therefore, toys to be added to playroom should include toys such as dolls, various utensils, carpenter tools, cars and trucks (Emiroğlu- İnal & Akay, 2008; Koukourikos, 2015).

Having a children's library in hospital or having a book section in a corner of playroom is very helpful for children in the hospital. Therefore, there should a book corner in playroom, and books for different age groups should be added. These books may include touch books, story books, atlases, child novels etc. Similarly, game cards (putting in order, pairing etc.), toy blocks, dockable and detachable toys should be placed in playrooms to support children's cognitive skills. According to studies conducted, long-term hospitalized children feel anxiety when they stay away from their homes and families for a long time. Therefore, playrooms should be arranged as place where parents can interact with children. Interaction between children and their families decrease level of anxiety among both children and their families (Clark- Dell, 2003; Kusch, 2000).

It is crucial to have an educator in playrooms who can establish correct communication with children, who is friendly and caring, patient and who loves his/her job. This person can be a child development expert, pedagogue, psychologist or teacher. Having somebody who regularly takes care of children and children's connection with that person frequently are important in terms of children's trust in hospital (Dündar, 2011; Gönener & Görak, 2009).

While playrooms in hospitals bear many benefits, they also carry some risks. Toys found in playroom may pose a risk of infection. These toys used by many children are an important factor in carrying infections. Therefore, keeping toys and materials clean in playrooms is very important. Toys should be sterilized regularly, and playroom should be cleaned regularly (İnal-Emiroğlu & Pekcanlar-Akay, 2008).

Activities in Playroom

Activities carried out in hospital playrooms relieve children and distract them from the stress of treatment given even for a short period of time. Activities carried out in hospital playrooms are as follows in general (Clark- Dell, 2003).

Music is one of the most effective activities that positively affect children's treatment process. During music activities, children's psychomotor skills, cognitive, social and emotional developments are supported by accompanying songs, remembering songs played and trying to adapt to the rhythm. In a study, it was determined that babies who listened to lullaby for 20 minutes before and during interventions in hospital improved faster and gained weight. Babies listening to music began to have better sleep pattern and duration, and healed stress status. Through music, children can improve their different skills, also distract from negative emotions. Music helps in transforming negative emotions and behaviors such as insecurity, shyness, aggression and fear into positive emotions and behaviors (Dündar, 2011; Öztürk, 2008; Sığırtmaç, 2005).

Art events such as creative drama and art therapy are reported to relieve intense stress in sick children according to many studies conducted. Majority of hospitalized children have difficulty in expressing their emotions verbally. During art events, children reflect their inner world to their activities, and they provide tips on some

problems they experience. Non-verbal expression can be revealed by a method like art. Art events support children's developments, and children have fun during these events (Baykoç, 2006; Burger et al., 2013).

Animation works are activities carried out to educate children, give messages and entertain them. Animation activities are one of the most effective educational methods that allow children gain experience by doing-living and enjoying (Görker, 2001). While animation works ensure that children learn with fun, they allow supporting their creativity, also provide opportunities for children to actively participate in activities. Animation activities such as face painting, pictures, sand and dough games, music and creative dance, dramatization and drama, improvisation, puppet shows, cartoons and pantomime are suitable for children. These activities performed in play rooms of hospitals are effective in reducing anxiety and stress felt by children in hospital. Studies conducted so far have revealed that children experience intense anxiety before surgery and hospital clowns are effective in reducing children's level of anxiety (Baykoç, 2006; Beyazıt & Bütün Ayhan, 2015; Koç, 2011).

Conclusions and Recommendations

Game is not only a tool in which children spend their spare times but also a way of learning life (Şişman and Özyavuz, 2010). Game is universal activity of childhood and form of self-expression (Öktem, 2011). Game is the most natural learning environment for children. In addition to children's physical, mental and spiritual development, game is an effective tool in children's learning how to learn reconciliation, sharing and adaptation to social life (Baykoç, 2006). Being children's most important occupation and the most basic structure of their development, game is a much bigger requirement for hospitalized children. In particular, children who receive treatment in the hospital for a long time due to chronic diseases need games more. Therefore, it is necessary to meet children's game requirements in hospital environment (Kuykendall, 2009; Lindberg, 2012).

Illness and hospital environment are important sources of stress for children. Many children visit hospitals due to some reasons during certain periods of their lives. Although each child has different reactions to hospital and diseases, most children experience intense anxiety and fear in face of this situation. This situation arises from children's entrance to a strange environment that they have never visited before. In this process, children have to separate from their families, friends and daily life and especially from games (Karaarslan et al, 2015; Koukourikos et al., 2015). These mandatory separations negatively affect children's emotional state. Game is a very effective tool to relieve hospitalized children during their disease processes and to ensure that they can express their feelings and thoughts. Game supports both medical treatment and psychological support in hospital environment, also it can shorten recovery duration. Game also allows children to feel better and distract from their diseases partially. Therefore, children need game materials and playrooms where they feel most comfortable with a view to minimize adverse effects of diseases and hospital environment and to facilitate recovery process. Game should be emphasized in hospitals to meet such needs among children (Burger et al., 2013; Öktem, 2011; Sevinç, 2009). Game should be used in all fields within hospital environment with the aim of benefiting from advantages of games provided to children, family and health care

personnel, to support children's development and to reduce psychological effects of hospital environment and interventions applied (Clark- Dell, 2003; Kusch, 2000).

Playrooms and game materials should be sufficient enough to meet children's needs. Playrooms should be prepared in a way to offer a colorful and warm, wide environment. Separate playrooms should be designed for children in different age and disease groups. Playrooms should be planned in such a way that children who cannot stand can enter these places with a wheelchair or on a stretcher. Playroom should be bright; its floor must be covered with anti-bacterial materials. In playrooms, there should be puppets, doctor sets, dolls, cars, drama materials (hats, capes, playing house toys, configuration toys, wooden blocks that are unpainted, without toxic substances and made off natural products, and domino games) for drama games, and there should be art materials (brushes, paints, play doughs, beads, buttons, and papers with various types, colors and sizes etc.). In playroom areas, only people who are trained in the field of child development should be appointed. Health care personnel working in hospital and in pediatric services should be informed about effects of game on children.

REFERENCES

Aksoy, B. A. & Dere Çiftçi, H. (2014). Oyun Alanı Materyal ve Oyuncaklar, Her Yönüyle Okul Öncesi Eğitim. Okul Öncesi Eğitimde Oyun (Ed.: A. B. Aksoy), Ankara: Hedef Yayıncılık.

Atay, G., Eras, Z. & Ertem İ. (2011). Çocuk Hastaların Hastane Yatışları Sırasında Gelişimlerinin Desteklenmesi. Çocuk Dergisi, 11(1):1-4.

Baykoç, N. (2006). Hastanede Çocuk ve Genç**.** Ankara: Gazi Kitabevi.

Bekmezci, H. & Özkan, H. (2015). The Effect of Games and Toys on Child Health. Journal of Dr. Behcet Uz Children's Hospital, 5(2), 81–87.

Beyazıt U. & Bütün Ayhan A. (2015). Hasta Çocukların Gelişimi ve Eğitimi. Hasta Çocukların Ruhsal Özellikleri ve Hasta Çocuğa Yaklaşım (Ed: A. Bütün Ayhan). Eskişehir: Anadolu Üniversitesi Yayınları.

Bilir, Ş. & Dönmez, B. (1995). Hastanede Oyun Yaş Gruplarına Göre Hastanede Yatan Çocuklar. Çocuk Ve Hastane, Ankara: Sim Matbaacılık.

Bumin Aydın, G., Yüksel, S., Ergil, J., Polat, R., Akelma, F. K., Ekici, M.& Odabaş, Ö. (2017). The Effect of Play Distraction on Anxiety Before Premedication Administration: A Randomized Trial. Journal of Clinical Anesthesia, 36, 27–31.

Burger, Y., Kenke, M., Aucamp, N. & Le Roux, M. (2013). Design Aspects of a Hospital Playroom to Aid The Well-Being of Hospitalised Oncology Children - A Case Study. Interim: Interdisciplinary Journal, 12(4), 1-8.

Caleffi, C. C. F., Rocha, P. K., Anders, J. C., Souza, A. I. J. de, Burciaga, V. B., & Serapião, L.S. (2016). Contribution of Structured Therapeutic Play in a Nursing Care Model for Hospitalised Children. *Revista Gaucha De Enfermagem,* 37(2), 1-8.

Clark-Dell, C (2003). In Sickness and in Play. Children Coping with Chronic Iliness. London: Rutgers University Press, New Brunswick, New Jersey.

Çavuşoğlu H. (2008). Hastaneye Yatmanın Çocuk ve Aile Üzerindeki Etkileri. Çocuk Sağlığı Hemşireliği (Ed.: Çavuşoğlu H). Ankara: Sistem Ofset Basımevi.

Çelebi, A., Aytekin, A., Küçükoğlu, S., & Çelebioğlu, A. (2015). Hastanede Yatan Çocuk ve Oyun. Journal of Dr. Behcet Uz Children's Hospital, 5(3), 156–160.

Dündar S.A. (2011). Pediatri Kliniğindeki Hemşire ve Doktorların, Müziğin Klinikte Kullanımı Hakkındaki Düşünceleri. ADÜ Tıp Fakültesi Dergisi, 12(3),11-5.
Emiroğlu- İnal N. & Akay, P.A. (2008). Kronik Hastalıklar Hastaneye Yatış ve Çocuk. Dokuz Eylül Üniversitesi Tıp Fakültesi Dergisi, 22: 99-105.
Er, M. (2006). Çocuk, Hastalık, Anne-Babalar ve Kardeşler. Çocuk Sağlığı ve Hastalıkları Dergisi, 49,155-168.
Görker, I. (2001). Çocuklarda Oyun Tedavi Grubu: Bir Grup Çocuk ile Yapılan Oyun Tedavi Grubunun Değerlendirilmesi. Yeni Symposium, 39 (1), 39-44.
Gültekin, G., & Baran, G. (2005). Hastalık ve Çocuk. Aile ve Toplum, 2(9), 61–68.
Gürbüz, P., Yetiş, G., & Yakupoğulları, A. (2015). Evde Bakım ve Terapötik Oyun. İnönü Üniversitesi Sağlık Hizmetleri Meslek Yüksek Okulu Dergisi, 3(1), 17–21.
Gönener, D. & Görak, G. (2009). Okul Yaş Grubu Çocukların Hastane ve Hastalığı ile İlgili Bilgilendirme Durumlarının Endişe Kaynakları İle İletişimi. Gaziantep Tıp Dergisi 15(1), 41-48.
Haitat, H., Bar-Mor, G. & Shoctat M. (2003). The World of the Child: A World of Play Even in the Hospital. Journal of Pediatric Nursing, 18(3), 209-214.
İnal-Emiroğlu, F. N, Pekcanlar-Akay, A. (2008). Kronik Hastalıklar, Hastaneye Yatış ve Çocuk. Dokuz Eylül Üniversitesi Tıp Fakültesi Dergisi, 22(2), 99-105.
Karaaslan, T., Beyazıt, U. & Bütün Ayhan, A. (2015). Gelişimsel Dönemler Açısından Hasta Çocuklar ve Hastane Ortamının Düzenlenmesi. Hasta Çocukların Gelişimi ve Eğitimi, (Ed: A. Bütün Ayhan). Eskişehir: Anadolu Üniversitesi Yayınları.
Kargı, E., & Akın, Y. (2005). Playand Toy Needs Children's with Chronic IIlness in Hospital. V. National Child Culture Congress: Popular Culture and Child. 12-14 October, Ankara, Türkiye.
Kaytez, N. &Durualp, E. (2014). Türkiye'de Okul Öncesinde Oyun ile İlgili Yapılan Lisansüstü Tezlerin İncelenmesi. Uluslararası Türk Eğitim Bilimleri Dergisi, 2,110-22.
Kennedy, C., Kools, S., Kong, S.K.F., et al. (2004). Behavioral, Emotional and Family Functioning of Hospitalized Children in China and Hong Kong. International Nursing Review, 51, 34-46.
Kerimoğlu, G. & Boztepe, H. (2014). Çocuğa Oyunla Yardım ve Hemşirenin Rolü. Sağlıkla Hemşirelik Dergisi, 13,44- 45.
Kıran, B., Çalık, C. & Esenay, F.I. (2012). Terapotik Oyun: Hasta Çocuk ile İletişimin Anahtarı. Ankara Sağlık Bilimleri Dergisi, 2(1-2-3), 1-10.
Koc, S. (2011). Hastane Palyaçolarının Ameliyat Öncesi Dönemdeki Çocuklar ve Ebeveynlerinin Anksiyete Düzeylerine Etkisinin Belirlenmesi. Journal of Education and Research in Nursing 2011, 8(3), 26-32.
Koukourikos, K., Tzeha, L., Pantelidou, P., & Tsaloglidou, A. (2015). The Importance of Play During Hospitalization of Children. Materia Socio Medica, 27(6), 438-441.
Kuğuoğlu, S. & Tanır, M.K. (2006). Gelişim Dönemlerine Göre Oyunun Terapötik Kullanımı. Ege Üniversitesi Hemşirelik Yüksekokulu Dergisi, 22(1):293-304.
Kusch, M., Labouvie, H., Ladisch, V., Fleischhack, G., & Bode, U. (2000). Structuring Psychosocial Care in Pediatric Oncology. Patient Education and Counseling. 40: 231 -45.
Kuykendall J. (2009). Selecting Toys for Children. Early Child Development Series, 1-4.

Kylie, T. (2008). Essential of Pediatric Nursing. Philadephia: LWW Publishing
Li, W. H. C., Chung, J. O. K., Ho, K. Y., & Kwok, B. M. C. (2016). Play Interventions to Reduce Anxiety and Negative Emotions in Hospitalized Children. *BMC Pediatrics,* 16(1),36.
Lindberg, E. N. A. (2012). Çocuk Oyunlarında İki Kuşakta Görülen Değişim. International Online Journal of Educational Sciences, 4(2), 395-410.
Öktem, F. (Ed.) (2011). Ben Hasta Değilim İstanbul: Nobel Tıp Kitabevleri.
Öztürk, A. (2008). Okulöncesinde Müzik Eğitimi. Eskişehir: Anadolu Üniversitesi Açıköğretim Fakültesi Yayınları.
Price, D.L & Gwin, J.F. (2008). Pediatric Nursing. China: . An Introductory Text.
Runcan, P.L., Petracovschi, S. & Borca, C. (2012). The importance of play in the Parent-Child İnteraction. Procedia-Social and Behavioral Sciences, 46, 795-9.
Sığırtmaç, D. A. (2005). Okul Öncesi Dönemde Müzik Eğitimi. İstanbul: Kare.
Sevinç, M. (2009).Erken Çocukluk Gelişimi ve Eğitiminde Oyun: Hastanede Oyun. İstanbul: Morpa Kültür Yayınları.
Silva, R. D. M., Austregésilo, S. C., Ithamar, L., & Lima, L. S. (2017). The Rapeutic Play to Prepare Children for Invasive Procedures: A Systematic Review. Jornal de Pediatria, 93(1), 6–16.
Stulmaker, H. L., & Ray, D. C. (2015). Child-Centered Play Therapy with Young Children Who Are Anxious: A Controlled Trial. Children and Youth Services Review, 57, 127–133.
Şen, M. (2010). Erken Çocukluk Eğitiminde Oyun ve Önemi. Erken Çocukluk Eğitimi (Ed.: Diken, İ). Ankara: Pegem Akademi.
Şişman, E. E. & Özyavuz, M. (2010). Çocuk Oyun Alanlarının Dağılımı ve Kullanım Yeterliliği: Tekirdağ Örneği. Tekirdağ Ziraat Fakültesi Dergisi, 7 (1), 13-22.
Tuğrul B. (2014). Oyun Temelli Öğrenme. Okul Öncesinde Özel Eğitim Yöntemleri (Ed.: Zembat, R). Ankara, Anı Yayıncılık.
Ünivar, P. (2011). Hastanede Yatarak Tedavi Gören Çocukların Eğitsel Açıdan Desteklenmesi (3-7 Yaş İçin örnek Çalışma).Elektronik Sosyal Bilimler Dergisi, 35(35),31-44.
Yayan, H.E. & Zengin, M. (2018). Çocuk Kliniklerinde Terapötik Oyun. Gümüşhane University Journal of Health Sciences, 7(1), 226-233.
Yiğit R. (1997). Hastaneye Yatmanın Çocuk ve Aile Üzerine Etkileri. Türk Hemşireler Dergisi, 17(1), 21-28.
Zahr, L.K. (1998). Therapeutic Play for Hospitalized Preschooler in Lebanon. Pediatric Nursing, 23,449-454.

Chapter 67

Are Gifted Children Alone?

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INTRODUCTION

As the problems we face in our world are getting harder and harder, we need to use our intelligence in the most effective way. One of the most economical methods of this situation can be achieved by people realising their potential. Within them, the concepts of gifted and ability need to be best defined. There are various concepts related to intelligence in literature. When the definitions of day-to-day intelligence from the past are examined, there is a transition towards educational definitions whilst measurement-based concepts and classifications are front-line (Kamphaus et al.., 2005). Whilst intelligence tests aim to identify the intelligent and the non-intelligent, they are now diversified by the development of the concept of intelligence and their definition from one-dimensional to multidimensional (Clark, 2002). Stanford-Binet defined top-intelligence as the best 1% level of general intelligence as a result of superior intelligence, intelligence scales, or a similar measuring instrument (Stephens and Karnes, 1990), first expressed by the American Psychologist Lewis Terman as "talented" When social emotional development of gifted and talented children who differ according to their age is examined, some of the difficulties of giftedness can be found, and one of them can experience their peers' relationship. In this study, gifted and talented children have problems with peer relationship development and social emotional development.

GIFTED AND TALENTED DEFINITION

The intelligence and ability of abstract concepts are not limited to cognitive skills. If also includes general mental ability, special abilities, creativity and various senses (Yılmaz, 2015). Scientists working in different fields define intelligence according to their field; neuroscientists and describe intelligence in accorndanece to the brain and its functions (Siegel 2012) educators define if as reasoning and problem solving skills (Clark, 2002). Talent is defined as the ability to transform a specific area from birth to a potentially special skill (Gagne, 1999). Although they seem to be separate from each other, there is a strong link between the concepts of intelligence and ability, and therefore they need to be defined together (Gagne, 1985).

In the Congress of Educational Changes in the United States (1970), the definition of gifted and talented children was used in the phrase "children who have a brilliant intellectual ability or creative ability, who need special activities or services that are not

normally provided by local educational institutions in their development". Marland (1972) described gifted and talented children as individuals who were professionally trained by competent people and who had a high level of capacity in any performance area. These children need a different education from those given in regular classes, and they can contribute to themselves and the collective with differentiated education. (Renzulli, 2012). They have been described as children who have at least one extraordinary potential in the general mental, special academic, creative-productive, leadership, artistic or psychomotor fields, or who have at least one exceptional success in these areas. Tannenbaum (1983) explains the superior intelligence with the model consisting of five factors; general ability, special ability, extra-intellectual factors, environmental factors and luck. They have also attached importance to the existence of all these factors and their interaction with each other. Renzulli (1984), on the other hand, besides having the features such as ability, duty-consciousness and creativity above the average; defnines as people who can use these features to perform a useful field application. Sternberg (1990) emphasized that the IQ score alone is insufficient and intelligence should not be studied in one dimension in order to understand gifted intelligence. One of the interactive models is Milgram's model. Milgram expressed giftedness in his model in four different categories in 4x4 model. Two of them are about intelligence, the other two are about thinking skills. In addition, the model considers environmental conditions and individual differences (Milgram, 1991). Similar considerations are explained by Gardner (1999), supported by multiple intelligence theory, and emerging from seven distinct and independent areas, with the individuality of intelligence as the foreground.

PEER RELATIONS THEORY

From the first years of life, the individual needs socialization. In this process, he saw the need to communicate with his family members, friends and others around him. It is known that when this need is met in a healthy way, the individual also gains psychosocial (Trawick Smith, 2013), emotional (Wang et al., 2016), psychological and language development (Gülay, 2010). Peer relationships are a common aspect of people's social lives from early childhood to old age. The effects of peer relations at first on personality development are surprisingly high (Reitz et al., 2014). As children grow up, they become involved in social environments and their sharing increases. For this reason, peer relationships are an important process affecting the child's development and accommodating cognitive and emotional states that have lasting effects (Hay et al., 2008). The preponderance of peer relations makes you feel more like a changing society. Factors such as the increase in the number of mothers working in recent years, core family structures, isolated life in big cities have also been reflected in peer relations (Gülay, 2010). Peer relationships are influential in the development of problem solving skills in cognitive skills in children's psychosocial development (McLane, 1998) and academic achievement (Cohen et al., 2006) (Reitz et al., 2014). The peer associations to which such important gains are provided have a more complex structure with the progressive age (Gülay and Akman, 2009).

When the researches on peer relations were examined, they focused on three general social behavior categories; being able to move with peers, move against peers, and get away from peers (Cohen et al., 2006). When peer relations are examined in

childhood and adolescence, there are many possible reasons for this. These may be listed, including maternal - child relationship, psychosexual development, social attachment, genetic - biological considerations and social effects (Rubin et al., 2011). The influence of peer relations on child development has been studied for a long time with different theories and approaches. Each approach and theory was researched with the qualities of having peer relations. These approaches influence each other and futher each other (Gülay, 2010). The development of peer relations can be grouped into various aspects when examined with different theories and approaches. This grouping of theories is explained as cognitive development, social learning, ecological system as classical developmental, group socialization and child and environment models as alternative theories (Hay et al., 2008).

SOCIAL EMOTIONAL DEVELOPMENT OF GIFTED AND TALENTED CHILDREN

When examining social - emotional development characteristics, which is another development field, cognitive development is the most prominent developmental area used in the education and identification of gifted and talented children. These children are trying to improve their cognitive abilities and they are referred to as gifts for the community (Roeper, 1996). The success of gifted and talented individuals is directly proportional to the self-realization of the child, which is mainly attributed to the field of social emotional development (Subotnik et al., 2011).

Gifted and talented children have a desire to make friends with older people and strive to influence them with their sophisticated humour and strong adaptive abilities (Özsoy and Eripek, 1998). In addition, it can be said that there are more advanced moral development, self-criticism and empathic thinking tendencies, which are concerned about universal problems and have leadership characteristics (Clark, 2002). Since sentiments of justice have developed, they may become more sensitive on world affairs and in global events from early ages (Jost, 2006). The high sensitivity, and intense empathy experienced by having superior intelligence are the most distinct personality traits of these children. They may be hypersensitive to the emotions and reactions of the people around them, and as a result they may develop extreme sensitivity (Clark, 2002; Baykoç - Dönmez, 2010).

It appears that they may also experience problems in social emotional areas due to intense emotions such as extreme sensitivity, anxiety, and strong empathetic emotions in the social emotional area (Saranlı and Metin, 2012). In fact, there is a desire to remain socitice (Moon, 2007) or to chat with older people (Ersoy and Avci, 2004). In this case, they may have difficulty in social adaptation due to their social emotional development. The strangeness of their thoughts by their peers suggests that they can not be understood by their peers because of their little commonalities in terms of mental ability and emotional maturity (Aral and Gursoy, 2007). Because of these reasons, they enjoy spending time with older adults (Renzulli et al., 2002).

Studies conducted when gifted and talented children have a chance to recognize and enrich their talents at an early age, have found that children can improve their cognitive and emotional areas of development (VanTassell- Baska et al., 1982). There is a need for early opportunities and stimuli for success. These stimuli alone however are not enough to reveal their potential in gifted and talented children (Clark, 2002) and

will be necessary on behalf of their ability to hide their talents (Silverman, 1998). Gifted and talented children have cognitive, emotional and socially distinct characteristics, both in relation to others and among themselves. In addition to these qualities, similar personality traits can help to understand the giftedness (Clark, 2002, Colangelo and Wood, 2014, Yilmaz, 2015). It is essential in order to know the characteristics of gifted children in terms of their ability to understand a number of problems resulting from the characteristics of gifted children at the same time and to see that some behaviors that are regarded as problems can only be caused by their giftedness (Webb et al., 2005). Gifted children with different developmental characteristics compared to their peers are neglected to be diagnosed at an early stage and to prepare for appropriate educational opportunities (Koshy and Robinson, 2007). With early detection and appropriate training interventions, it is possible to reduce the social emotional problems most likely to be experienced in the future by increasing the likelihood of gifted and talented children to succeed (Pfeiffer and Stocking, 2000).

PROBLEMS RELATED TO SOCIAL EMOTIONAL DEVELOPMENT OF GIFTED AND TALENTED CHILDREN

Those who want to make friends with gifted children, must be an a similar intellectual level. This leads to selectivity due to differences in criteria and diversity of interests (Colangelo and Peterson, 1993). These children feel themselves differently than their peers with the label "Outstanding Intelligence" they have. This difference can be negative (Coleman, 1985) as well as a positive (Neihart 1999). When we look at the negative effects, it can be said that they will isolate themselves from their peers. Gifted children can see their loneliness as a result of their own life choices. They may choose loneliness as the reason for preference as a result of the conflict between mental age self-esteem, individual needs and society's oppression (Davaslıgil, 2004).

The difference between the chronological age he possesses and the immature age he possesses; unbalance, loneliness and impatience (Terrassier, 1985, Csikszentmihalyi et al., 1993). Particularly in the pursuit of sincerity among the peers of superior adolescents, it can be thought that they should not be accepted by their peers and conceal their abilities. Perhaps because of the inconsistency between their mental and social skills, talented adolescents keep themselves at a low level in terms of social self-esteem (Bireley and Genshaft, 1991). It is seen that creative superior adolescents admire a role model similar to those who are idol in science or art rather than care for popular and famous people as their peers (Shelton, 2010). Gifted children know from their early ages that they are different from their peers. This can have negative consequences for them, including interpersonal dilemmas and emotional difficulties. In addition to repressive perceptions and negative labeling processes, talented children may experience difficulties due to unrealistic high social (parent, teacher, peer) performance expectations, over-exaggerated and social pressures. These children may experience instability or discomfort in identifying their peer group. This disturbance can then adversely affect their social self (Roedell, 1986).

Children who believe they are competent by their peers feel more positive about themselves and feel less threatened than those who believe they are less competent than their peers. In this direction, it can be concluded that peer rejection is also effective in the field of self-realization of children (Zeidner and Schleyer, 1999). Gifted and

talented children in adolescence are more vulnerable when compared to their peers because of the cognitive skills they have according to their peers, and this can lead them to loneliness (Rizza and Reis, 2001). The main problem can be seen in environments such as school, neighborhood and family friendships, where social skills of gifted and talented children need to be developed as they can not be realized in the society where different age groups take place and social skills are not developed even in the family. In such situations, it is necessary to develop peer relations of gifted and talented children by taking the necessary interventions (Robinson et al., 2007).

RELATIONSHIP BETWEEN CHILDREN WITH GIFTED AND TALENTED CHILDREN

The main aim of educational programs for gifted and talented children is to provide educational services for children with advanced cognitive ability. However, it is necessary to identify and support the capabilities that are measured and developed, as well as their abilities. Other features that these children have should be developed. One of these characteristics may be the ability to communicate positively with peers (Curby et al., 2008). Gifted children can have many purposes throughout their lives. Some of these are to establish friendship associations that understand their own feelings, can mentally have common expressions, and can work together or alone. However, these friendships are often searched by cognitive abstraction rather than by physiological age or appearance (Coleman and Cross, 2005).

As skills and developments in school are progressed rapidly compared to their peers, the differences became more evident are observed by their peers (VanTassel - Baska, 2015). Although the concept of superior intelligence, which begins with the establishment of differences, tries to express a positive meaning as understood by its name, it is experiencing complex emotional, social and academic effects that giftedness has given (Öpengin and Sak, 2012). The emphasis on check can lead to insecurity and loneliness in social relations (Saranlı and Metin, 2012; Sak, 2011), and expectations in academic environments (Öpengin and Sak, 2012). These children have to use different methods according to their ages in the subjects they need, and they get ahead of their peers as they work faster. This situation is negatively criticized and labeled by their peers (Helt, 2008).

Gifted and talented people want to be understood, accepted, and socialize with peers like their friends. If these environments are not adequately provided, they may prefer to stay alone in their inner world (Davaslıgil, 2004; Jost, 2006). Even after a long time, these children are seen to be introverted and left alone (Csiksztmihalyi et al., 1993).

In order gifted and talented children to spend more time with their peers; (Johnson and Johnson, 1989), through peer-modeling, based on collaborative work with children who have similar minder user as themselves and have a cause got of related wound be useful goals. These exchanges can have positive effects on time and peer communication, one of the drawbacks of the enrichment method or source room usage (VanTassel- Baska, 1994). Due to the non-synchronized developmental characteristics of gifted children, they need to be able to meet their needs at the social level according to their developmental areas in different activities. For example, they can spend time with a group of friends in a chess club and with other groups of friends in a ski club

(Robinson et al., 2007)

In the development of peer relations, teachers need to create environments to communicate with their peers. These may include individual counseling, focus group work, group work focused on solutions to problems. With these and similar strategies, teachers can find solutions to problems that will improve peer relations (VanTassel - Baska, 1994).

CONCLUSION AND RECOMMENDATIONS

It is necessary for the gifted child to interact with his or her peers. If this does not happen, they will not be able to interact with their peers and gain the skills to socialize and resulting in incompatibility (Davaslıgil, 2004). With individual counseling, gifted children can overcome their social emotional vulnerabilities. This counseling should make them aware of their own abilities, family members, peers, teachers and other adults. When these counseling services are implemented patient become aware of their talents and there is an increase their motivation. This is reflected in their academic achievement and their long and short-term personal relationships. Advisors and teachers in the field believe that gifted and talented children have a different criteria where it comes to counseling methods in comparison to their peers. Areas include peer relations, perfectionism, failure, depression, school dropout and suicide (Milgram, 1991). Group counseling can lead to negative thoughts towards these children if they are discriminated from their peers (the gathering of gifted talents) who are differentiated by education. Instead of these isolated groups, they are motivating each other when they are directed to work together in academic fields such as mathematics and literature. The same can be found across all including academic fields, being top at in solving the chronic problems of giftedness. The talented, prefer to excel in the sense have by their talents hide their stresses and fears. They understand that they are not alone with group counseling, and they may overcome these problems with courage from other superiors who have similar problems. It is also a chance to meet with their peers and discover them (Silverman, 1993).

One of the techniques to support social and emotional development of gifted and talented children and indirectly develop peer relations is Video therapy. Films can often be used to counsel gifted and talented children and effectively develop in their social emotional development. Collins et al. (1983) they were used in the past to help people to lose weight, in the prevention of juvenile delinquency, and in family therapies (Fine and Mcintosh, 1986). Through the use of films in counseling of gifted and talented children; (Akt: Henry and Reis, 2000), as well as helping to anticipate life, to diversify life expectancies, to pre-determine needs, and at the same time to solve problems of behavior.

With the social skills training program that will be applied to improve peer relations of gifted and talented children; peer groups, chess clubs, ski clubs, in to on physical and mental needs will be met (Robinson et al., 2007). The personal characteristics of these children do not belong to a single group, because of their differences in intelligence level, the level of jurisdiction, social relations, perspectives on the world are different. For this reason, gifted children become more selective needs of friends (Sak, 2010). Therefore, the development of gifted and talented children should be considered as a whole and the environments that improve peer relations, one

of the areas of social emotional field, need to be developed.

REFERENCES

Aral N., Gürsoy F. (2007). Özel Eğitim Gerektiren Çocuklar ve Özel Eğitime Giriş, Morpa Kültür Yayınları İstanbul.

Baykoç- Dönmez N. (2010). Edt Öğretmenlik Programları İçin Özel Eğitim. Ankara: Gündüz Eğitim Ve Yayıncılık.

Bıreley M., Genshaft J. (1991). Understanding the Gifted Adolescent: Educational, Developmental, and Multicultural Issues. Teachers College Press, New York.

Clark B. (2002). Growing Up Gifted, Pearson Education. New Jersey.

Cohen R., Hsueh Y., Zhou Z., Hancock Mh. and Floyd R. (2006). Respect, Liking, and Peer Social Competence in China and the United States. New Directions For Child And Adolescent Development, Wiley Periodicals, Inc. Published Online in Wiley Interscience, Available at: www.interscience.wiley.com /(accessed: 05 Temmuz 2017)

Colangelo N., Wood S.M. (2014). Counseling The Gifted: Past, Present, And Future Directions. Journal of Counseling and Development, 93,133-142.

Coleman L.J., Cross, T. L. (2005). Being gifted in school: An introduction to development, guidance, and teaching (2nd ed.). Waco, TX, US: Prufrock Press.

Coleman M.J., Ann F.B (1985). Special-Class Placement, Level Of Intelligence, And The Self-Concepts Of Gifted Children: A Social Comparison Perspective, 6,1, 7-12.

Collins J.K., Mccabe M.P., Jupp J.J. and Sutton J.E (1983). Body Percept Change in Obese Females After Weight Reduction Therapy. Journal Of Clinical Psychology, 39,4, 507- 511.

Csikszentmihalyi M., Rathunde K., Whalen S. (1993). Talented Teenagers. The Roots Of Success And Failure. Cambridge: Cambridge University Press.

Curby T.W., Rudasill K.M, Rimm-Kaufman S.E. and Konold T.R. (2008). The Role of Social Competence İn Predicting Gifted Enrollment. Psychology in the Schools, 45(8), 729-744.

Davaslıgil Ü. (2004). Üstün Çocuklara Sahip Ailelerin Eğitimi. Türkiye Üstün Yetenekli Çocuklar Kongresi Seçilmiş Makaleler Kitabı. Çocuk Vakfı Yayınları, İstanbul.

Ersoy Ö., Avcı N. (2004). Üstün Zekalı Ve Üstün Yetenekliler, Özel Gereksinimi Olan Çocuklar ve Eğitimleri. 'Özel Eğitim', Yapa Yayın Pazarlama, İstanbul.

Fine M., Mcintosh D.K. (1986). The Use Of Interactive Video To Demonstrate Differential Approaches To Marital And Family Therapy. View Issue Toc, 12, 1.

Gagne F. (1985). Giftedness and Talent: Reexamining A Reexamination Of The Definitions. Gifted Child Quarterly, 29, 103-112.

Gardner H. (1999). Frames Of Mind. Basic, Books New York.

Gülay H. (2010). Okul Öncesi Dönemde Akran İlişkileri. Pegem Akademi, Ankara.

Gülay H., Akman B. (2009). Okul Öncesi Dönemde Sosyal Beceriler. Pegema Yayıncılık. Ankara.

Hay D.F., Caplan M., Nash A. (2008). The Beginnings of Peer Relations. Handbook of Peer Interactions, Relationships, and Groups, Edited By Kenneth H. Rubin, William M. Bukowski, And Brett Laursen. C. Guilford Publications. ISBN 9781462525010.

Heller K.A (2005). Education and Counselling Of The Gifted And Talented in

Germany. International Journal For The Advancement Of Counselling, 27,2, 191-210.
Helt C.A. (2008). The Role Of Iq And Gender in The Social-Emotional Functioning Of Adolescents. Proquest Dissertations Publishing, University Of Northern Colorado, Colorado, Usa.
Henry J.M., Reis S.M. (2000). Using Video Therapy to Address the Social and Emotional Needs of Gifted Children. Gifted Child Today, Vol 23, 1,10762175.
Johnson D.W., Johnson R. (1989). Cooperation and Competition: Theory and Research, Interaction Book Company. Edina. Mn: USA.
Jost M. (2006). İleri Zekâlı Çocukları Tespit Etmek ve Desteklemek [The İdentification And Supporting Highly İntelligence Children] (A. Kanat, Trans.). İlya Publishing (Original Work Published, 2005), İzmir.
Kamphaus R.W., Wınsor A.P., Rowe E.W., Kim S. (2005). A History of İntelligence Test İnterpretation. In D. P. Flanagan and P. L. Harrison (Eds.), Contemporary İntellectual Assessment: Theories, Tests, And İssues, 2nd Ed., Pp.: 23–38. New York:Guilford.
Koshy V., Robinson N.M. (2007). Too Long Neglected: Gifted Young Children. European Early Childhood Education Research Journal, 14, 2, 113-126.
Marland S.P. (1972). Education of The Gifted And Talented: Report To The Congress of The United States By The U.S. Commissioner Of Education (Vol. 1),. Government Printing Office. Washington Dc: U.S. Available at: https://files.eric.ed.gov/fulltext/ED056243.pdf /(accessed: 27 June 2018).
Mclane M.T. (1998). What General Education Teachers Know about the Social Competence of Students with Disabilities and what are the Sources of This Knowledge, Unpublished Doctoral Thesis, USA: State University of New York.
Milgram R.M. (1991). Edt.Counseling Gifted And Talented Children. Ablex Publishing Corporation. Norwood New Jersey.
Moon S.M. (2007). Counseling Issues and Research. In S. Mendaglio J. Peterson (Eds.), Models Of Counseling Gifted Children, Adolescents, And Young Adults, Waco, Tx: Prufrock Press.
Moon S.M, Feldhusen F.S. and Dillon R.D. (1994). Long –Term Effects Of An Enrichment Program Based On The Purdue Three – Stage Model. Gifted Child Quarterly, Volume 38, 38-48.
Moon S.M,, Hall S.A. (1998). Family Therapy with Intellectually and Creatively Gifted Children. Journal of Marital and Family Therapy, 24, 59-80.
Moon S.M., Tonya R., Brighton C.A, Therine M. and Callahan C.M. (2002). State Standardized Testing Programs: Friend Or Foe Of Gifted Education? Roeper Review, 25,2,49-60. Available at: https://www.tandfonline.com/doi/abs/10.1080/02783190309554199/ (accessed 5 May 2018).
Neihart M. (1999). Impact Of Giftedness On Psychological Well-Being. Roeper Review, 22(1): 123-127.
Oğurlu Ü. (2010). Üstün Zekâlı Ve Yeteneklilerde Sosyal Uyum Ve Arkadaşlık İlişkiler: Literatür Taraması. Çukurova Üniversitesi Eğitim Fakültesi Dergisi, 3(39): 90-99.
Oğurlu Ü., Birben F.Y., Öpengin E., and Yalın H.S. (2016). Üstün Zekâlı Ergenlerde

Yalnızlık ve Yaşam Doyumu İlişkisi. Kocaeli Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 31: 161 – 184.
Öpengin E and Sak U. (2012). Üstün Zekâlı Öğrencilerin Bakış Açısıyla Üstün Zekâ Etiketinin Öğrencilerin Çeşitli Algıları Üzerindeki Etkileri. Türk Üstün Zekâ Ve Eğitim Dergisi, Cilt 2, Sayı 1: 37-59.
Özsoy Y., Özyürek M., Eripek S. (1998). Özel Eğitime Giriş (9. Baskı). Karatepe Yayınları. Ankara.
Pfeiffer SI., Stocking V.B. (2000). Vulnerabilities of Academically Gifted Students. 16,1-2,83-93. Available at: https://doi.org/10.1300/J008v16n01_06/ (accessed 10 April 2018).
Reitz A.K., Zimmermann J., Hutteman R., Specht J. And Neyer F.J. (2014). How Peers Make A Difference: The Role Of Peer Groups And Peer Relationships in Personality Development. 28(3), 279-288.
Renzulli J.S. (1999). What Is This Thing Called Giftedness, And How Do We Develop It? A Twenty-Five Year Perspective. Journal for the Education of The Gifted, 23, 1, 3-54.
Renzulli J.S.,, Smith L.H.,White A.j.,Callahan C.M. and Hartman R.K. (2002). Scale For Rating Behavioral Characteristics Of Superior Students, Erıc. Revised edition. Mansfield Center, CT: Creative Learning Press.
Renzulli J.S. (1984). The Triad/ Revolving Door System: A Research-Based Approach to Identification and Programming for the Gifted and Talented. Gifted Child Quarterly, 28(4):163-171.
Renzulli J.S. (2012). Reexamining the Role of Gifted Education and Talent Development For The 21st Century: A Four-Part Theoretical Approach. Gifted Child Quarterly, 56(3): 150–159.
Rizza M.G., Reis S.M. (2001). Comparing and Contrasting: Stories Of Competition. Gifted Child Quarterly, 45: 54-62.
Robinson A., Shore B.M. and Enersen D. (Eds.) (2007). Best Practices in Gifted Education. Waco, Tx: Prufrock Press.
Roedell W.C. (1986). Socioemotional Vulnerabilities Of Young Gifted Children. J. Children Contemp. Society, 18: 17-29.
Roeper A. (1996). A Personal Statement of Philosophy Of George And Annemarie Roeper. Roeper Review, 19: 18-19.
Rubin H.K., Coplan R., Chen X., Bowker J. and Mcdonald K.L. (2011). Peer Relationships in Childhood. Developmental Science: An Advanced Textbook Edition: 6 Chapter: Peer Relationships in ChildhoodPublisher: Psychology PressEditors: M. H. Bornstein, M.E. Lamb.
Sak U. (2010). Üstün Zekâlılar: Özellikleri Tanılanmaları ve Eğitimleri. Maya Akademi, Ankara.
Sak U. (2011). Üstün Yetenekliler Eğitim Programları Modeli (Üyep) ve Sosyal Geçerliği. Eğitim ve Bilim Dergisi, 36,161.
Saranlı G.A., Metin N. (2012). Üstün Yetenekli Çocuklarda Gözlenen Sosyal-Duygusal Sorunlar. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 45, 1,139-163.
Shelton A. (2010). Creative Students: Sex Differences İn Achievement, Interests, Personality, and Values. Unpublished Masters Thesis, Available at: Http://Kuscholarworks.Ku.Edu/Dspace/Bitstream/1808/8272/1/Sheltonku0099m110

25d Ata 1.Pdf. (Accessed 10 May 2018).
Siegel D. (2012). Growing Up in Open Adoption: Young Adults' Perspectives Families in Society: The Journal of
Contemporary Social Services. 93,2, 133-140.
Silverman L.K. (1993). Edt. Counseling Gifted and Talented. Love Publishing Company, USA.
Silverman L.K (1998). What We Have Learned About Gifted Children, Gifted Development Center, Denver, Co.
Stephens R.K., Karnes A.F. (2000). State Definitions For The Gifted And Talented Revisited. Exceptional Children, 66,2, 219-238.
Sternberg R..J. (1990). What Constitutes A "Good" Definition Of Giftedness? Journal for the Education of the Gifted, 14, 1, 96-100.
Subotnik R.F., Olszewski – Kubilius P. and Worrell F.C. (2011). Rethinking Giftedness And Gifted Education: A Proposed Direction Forward Based On Psychological Science. Psychological Science in The Public Interest, 12(1): 3–54.
Tannenbaum A.J. (1983). Gifted Children: Psychological And Educational Perspectives. Macmillan Publishing Company. New York.
Terrassier J. G. (1985). Dyssynchrony—Uneven Development. In J. Freeman (Ed.), The Psychology Of Gifted Children, Pp.: 256–274. John Wiley. New York.
Trawick – Smith J. (2013). Early Childhood Development: A Multicultural Perspective. (Erken Çocukluk Döneminde Gelişim: Çok Kültürlü Bir Bakış Açısı) B. Akman (Çeviri Ed.), Nobel Yay. Ankara.
Vantassel – Baska J. (2015). Theories of Giftedness Reflections on James Gallagher's Work. Journal For The Education Of The Gifted, Volume 38,1, 18-23.
Vantassel – Baska J., Schuler A., Lipschutz J. (1982). An Experimental Program for Gifted Four Year Olds. Journal for the Education of the Gifted, 5, 45-55.
Wang C., Hatzigianni M., Shahaeian A., Murray E., Harrıson L. (2016). The Combined Effects of Teacher – Child and Peer Relationships On Children's Social- Emotional Adjustment. Journal of School Psychology, 59, 1–11.
Webb JR., Amend E.R., Webb N.E., Goerss J., Beljan P., Olenchak F.R. (2005). Misdiagnosis And Dual Diagnoses Of Gifted Children And Adults: Adhd, Bipolar, Ocd, Asperger's, Depression, And Other Disorders. Great Potential Press. Scottsdale, Az
Yılmaz, D. (2015). Üstün Yetenekliler İçin Psikolojik Danışma ve Rehberlik Uygulamaları. Nobel Yayınevi, Ankara.
Zeidner M., Schleyer E.J. (1999). Test Anxiety İn İntellectually Gifted School Students. Journal Anxiety, Stress, & Coping. An International Journal. 12, 2,163-189

Chapter 68

A Review of Postgraduate Theses in the Field of Environmental Education in Turkey

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INTRODUCTION

In regard of all living organisms including humans, non-living things and all physical, chemical, biological and social elements that affect, or could affect, the actions of living organisms, the environment is the whole of the mutual interaction of living organisms and non-living things. Population types, i.e. humans, animals, plants and microorganisms, constitute the living (biotic) elements of the environment, while the structure of the climate, air, water and earth are the non-living (abiotic) elements. Non-living things have an influence on living organisms and empower their actions, while living organisms affect the locations and structures of non-living things. In other words, the environment is the entirety of the values that constitute the shared existence of humanity. Habitats like air, water and earth, plants and animals, and civilizations that have emerged throughout history are environmental values and components of the environment. Each of these values are biologically and socially indispensable; however, human activities have impacted environmental values, leading to environmental issues (Keleş, *et al*., 2012). Environmental issues are beginning to pose a threat to the Earth and human health. Therefore, environmental education should also encompass an emphasis on the prevention of environmental problems. Environmental education fulfills critical environmental, economic and social functions. Therefore, performing a review of postgraduate theses on environmental education would lead the way for future studies.

The study conducted by Güven et al. (2014) aimed at depicting the present state of environmental education in Turkey through a literature review was limited to studies carried out between 2007 and 2011. The study by Çakır Sümer (2009) investigated the extent of the representation of environmental topics and issues in local administrations literature and recommended conducting further studies on the subject. Numerous postgraduate theses on environmental education have been published since 1988. In this context, it is essential to conduct an in-depth review of these theses and to propose recommendations. In view of the objective of environmental education, this study aimed to investigate postgraduate theses on environmental education published in Turkey, to classify them by year, university, institute, subject and type, and to propose

recommendations for future studies in the field. The study sought to answer the following questions:

What is the distribution of the postgraduate theses published in Turkey by year?

What is the distribution of the postgraduate theses published in Turkey by university?

What is the distribution of the postgraduate theses published in Turkey by institute?

What is the distribution of the postgraduate theses published in Turkey by subject?

What is the distribution of the postgraduate theses published in Turkey by type?

METHODS

This descriptive study adopted a quantitative perspective. In accordance with the study objective, epistemological document analysis was used as the data collection method (Karadağ, 2009).

Study Group

Postgraduate theses published in Turkey since 1988 whose full texts can be accessed at the Council of Higher Education's National Thesis Center website with a search for "environmental education" key phrase were included in the study. In this context, every postgraduate thesis published on environmental education between 1988 and 2017 at Turkish universities were assigned codes and computerized. Figure 1 shows the number of the postgraduate theses computerized and analyzed after the keyphrase search, as well as, their distribution by year.

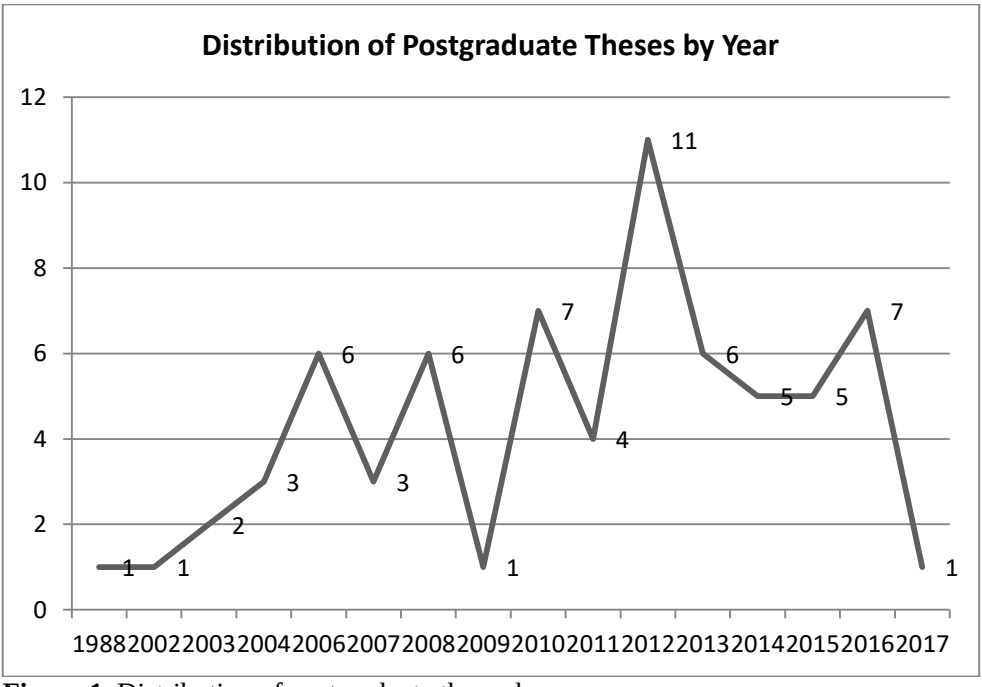

Figure 1. Distribution of postgraduate theses by year

Figure 1 reveals that the postgraduate theses on environmental education whose full texts are accessible begin in 1988 and reach the highest concentration (11) in 2012.

Data Collection

Data collection was conducted by the researchers on theses which included the keyphrase "environmental education" in the title. In order to increase reliability in the study, the search was carried out simultaneously by the researchers. In addition, in order to ensure consistency among the researchers, the theses were digitalized and assigned codes designated for each study question, and the relevant information were saved to a common data file together with these codes (Creswell, 2007; Merriam, 2009).

RESULTS AND DISCUSSION

This study aimed to investigate postgraduate theses on environmental education published in Turkey. The data for the 69 postgraduate theses included in the sample are given below:

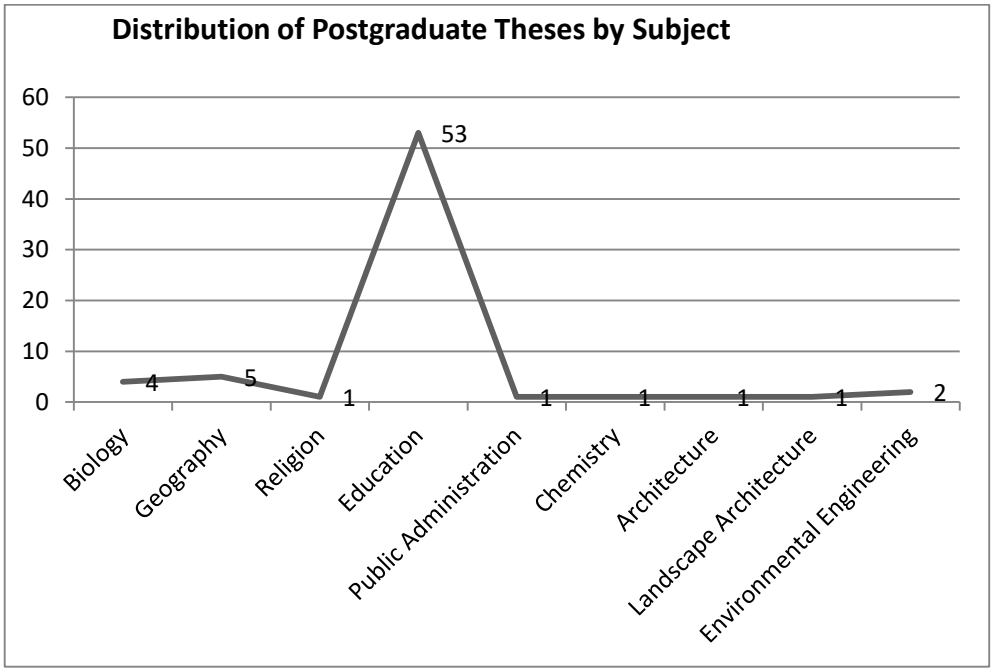

Figure 2. Distribution of postgraduate theses by subject

Figure 2 shows that most of the postgraduate these son environmental education were on the subject of Education (53), followed by Geography (5), Biology (4), Environmental Engineering (2), Religion (1), Public Administration (1), Chemistry (1), Architecture (1) and Landscape Architecture (1). The concentration of the postgraduate theses on environmental education on the subject of Education indicates the lack of interdisciplinary studies. The study by Turna and Bolat (2015) revealed that the number of interdisciplinary theses published in Turkey were quite limited. Considering the association of environmental education with numerous fields, connection with different

topics must be established, other disciplines must conduct studies on the field of environmental education and interdisciplinary studies must be promoted.

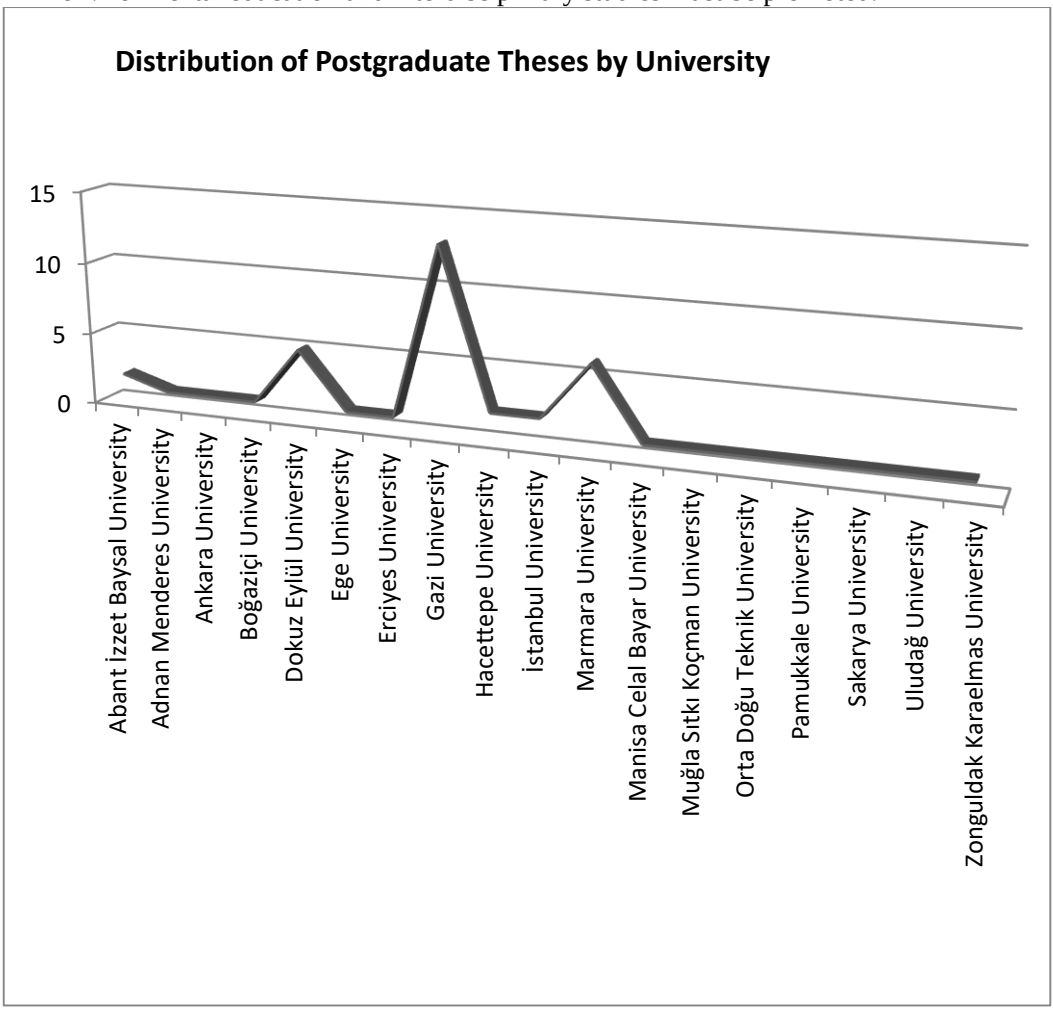

Figure 3. Distribution of postgraduate theses by university

Figure 3 indicates that the majority of the postgraduate theses on environmental education were conducted at Gazi University (13), followed by Marmara University (6), Dokuz Eylül University (5),Abant İzzet Baysal University (2), Hacettepe University (2), İstanbul University (2), Adnan Menderes University (1), Ankara University (1), Boğaziçi University (1), Ege University (1), Erciyes University (1), Celal Bayar University (1), Sıtkı Koçman University (1), Middle East Technical University (1), Pamukkale University (1), Sakarya University (1), Uludağ University (1) and Zonguldak University (1).The data revealed that the highest number of postgraduate studies on environmental education were carried out at Gazi University. The fact that Gazi University, Marmara University and Dokuz Eylül University maintained their

postgraduate activities on environmental education to date might have been effective at this point.

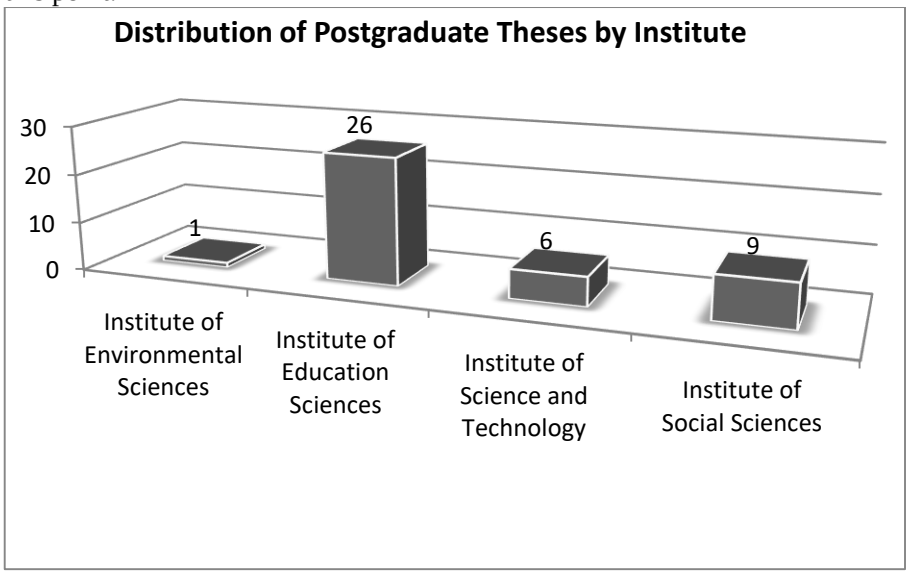

Figure 4. Distribution of postgraduate theses by institute

Investigation of Figure 4 reveals that the postgraduate theses on environmental education were predominantly conducted at an Institute of Education Sciences, while 9 were carried out at an Institute of Social Sciences, 6 at an Institute of Science and Technology and 1 at an Institute of Environmental Sciences. These results may be attributed to the long history of Gazi University's faculty of education. Furthermore, examination of the universities and institutes where the postgraduate theses were conducted indicated that the majority of the theses were conducted at metropolitan universities.

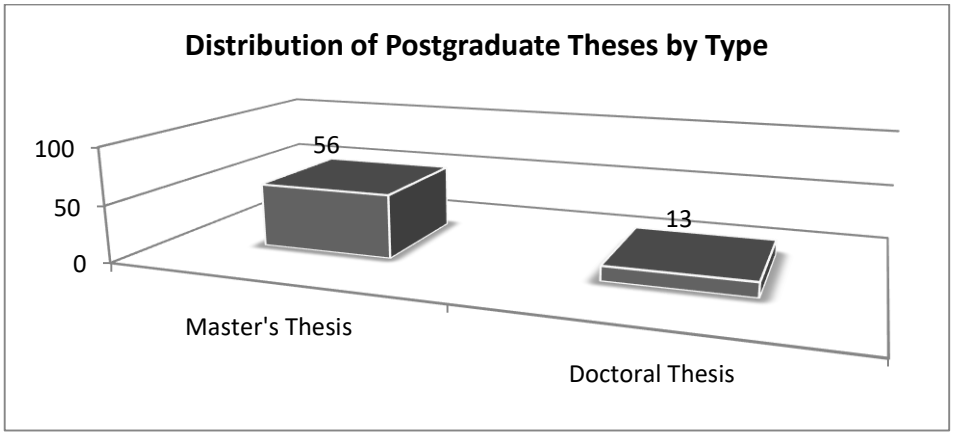

Figure 5. Distribution of postgraduate theses by type

Figure 5 shows the distribution of the postgraduate theses by type. The fact that the great majority of the postgraduate theses were master's theses (56) may be associated with the low rate of enrollment to doctoral education in Turkey after the acquisition of a master's degree. The researchers believe that choosing to study environmental education during doctoral education, an education program aimed at publishing the results of an original study, would contribute to bringing innovation to environmental education, developing new scientific methods and applying conventional methods to a new field.

CONCLUSION AND RECOMMENDATIONS

According to the results of the study aiming to examine postgraduate theses on environmental education, the postgraduate theses on environmental education with accessible full texts began in 1988 and reached the highest concentration in 2012. The majority of the theses were conducted on the subject of Education, at an Institute of Education Sciences, and at Gazi University, Marmara University and Dokuz Eylül University. In addition, most of the theses were master's theses.

In view of the study results, the researchers would like to make the following recommendations:

- Master's and doctoral theses should be opened to access to ensure accessibility to new knowledge.
- Interdisciplinary theses on environmental education should be conducted.
- Postgraduate studies on environmental education should be conducted at every university, not only at metropolitan universities.
- More comprehensive review studies that examine not only theses but also research articles should be conducted.
- Doctoral students should be encouraged to conduct research on environmental education in doctoral education programs.

REFERENCES

Creswell, J. W. 2007. Qualitative inquiry and research design: Choosing among five approaches. Thousand Oaks, CA: Sage.

Güven, E., Kaplan, Z., Varinlioğlu, S., Sungur, K., Hamalosmanoğlu, M., Bozkurt, O. (2014). Çevre eğitimi alanındaki çalışmaların incelenmesi: Türkiye'demevcut durum. *Necatibey Eğitim Fakültesi Elektronik Fen ve Matematik Eğitimi Dergisi*, *8*(2). 1-18.

Karadağ, E. 2009. Eğitim bilimleri alanında yapılmış doktora tezlerinin tematik açıdan incelemesi. *Ahi Evran Üniversitesi Eğitim Fakültesi Dergisi*, 3, 75-87.

Keleş, R., Hamamcı, C., Çoban, A. (2012). Çevre Politikası. Ankara: İmge

Merriam, S. 2009. Qualitative research: A guide to design and implementation. San Francisco, CA: Jossey-Bass.

Sümer, G. Ç. (2009). Türkiye'de Yerel Yönetimler Yazınında Çevre: Lisansüstü Tezler Üzerinden Bibliyografik Bir İnceleme. *CÜ İktisadi ve İdari Bilimler Dergisi*, *10*(2), 57-72.

Turna, Ö., Bolat, M. (2015). Eğitimde Disiplinlerarası yaklaşımın kullanıldığı tezlerin analizi. *Ondokuz Mayıs Üniversitesi Eğitim Fakültesi Dergisi*, *34*(1), 35-55.

Midwifery

Chapter 69

Current Approaches in Hyperemesis Gravidarum Treatment

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INTRODUCTION

Hypermesis gravidarium is a pregnancy complication that can be associated with persistent nausea, vomiting, weight loss, electrolyte irregularity and impaired renal function, and it can have serious effects on the fetus. Nausea and vomiting begin between 4th and 6th weeks of gestation and affect 80% of all pregnancies. Although these symptoms are usually confined to the first 20 weeks of gestation, may also be encountered with persistent cases throughout pregnancy (Cashion, 2013). Although nausea and vomiting occur in more than 80% of pregnancies, hyperemesis gravidarum occurs in 0.3-2% of pregnancies (Gilbert, 2013; Cashion, 2013). The severity of symptoms varies from mild nausea to severe emesis, which affects daily activities. The etiopathogenesis of hyperemesis is multifactorial. Treatment varies widely, ranging from modifying lifestyle and eating habits to psychoanalytic treatment. The purpose of this study is to review current approaches in the treatment of hyperemesis gravidarum in the light of the literature and to share current information.

Etiology and Pathogenesis: The causes of hyperemesis gravidity are pregnancy hormones (Human Chorionic Gonadotropin (hCG), estradiol (E2), progesterone), hyperthyroidism, gastrointestinal system disorders, immune system dysfunction, odor sensation, eating disorders and helicobacter pylori infection (Büyükkurt *et al.,* 2008). Fejzo et al. reported that genetic susceptibility plays an important role in nausea and vomiting in pregnancy (Fejzo *et al.,* 2008). Nausea and vomiting in the pregnancy of the mother or sister is a risk factor for the woman. Psycho-social factors have also been argued to exacerbate the symptoms of hyperemesis gravidarium. It was reported that the most important psycho-social factors causing hyperemesis gravidarium are unintended pregnancies, perceived stress, lack of social support, marital adjustment and acceptance of pregnancy (Gilbert, 2013; Cashion, 2013). In a study conducted by Chou et al., there was a negative correlation between nausea and vomiting in pregnancy and unplanned pregnancy, perceived stress and psycho-social adjustment (Chou *et al.,* 2008).

Diagnosis and Clinical Features: Although diagnosis criteria are not defined for the definitive diagnosis of hyperemesis gravidarium, diagnosis is made by excluding other causes that may cause nausea and vomiting in pregnancy. Dehydration, ketonemia, fluid-electrolyte (hypopotasis) and acid-base disorders, weight loss, irregular heart-beat, high fever, jaundice and resistant nausea and vomiting may occur depending on the severity of the symptoms (Miller, 2002).Clinical manifestations of

hyperemesis gravidarium typically begin between 4th and 8th weeks of gestation and usually end before the 20th gestational week, rarely, persistent cases where the manifestations continue throughout pregnancy may be encountered (Hod *et al.,* 1994). The healing process of hyperemesis gravidarum is slow and often requires relapse in the process, requiring hospitalization. The existence of another underlying pathology should be investigated, especially in the presence of symptoms that continue until further weeks. It has been reported that hyperemesis gravidarium associated with advanced weight loss and electrolyte disturbances, and in cases where these disorders could not be treated, it may be a risk factor for low birth weight, growth retardation and fetal anomalies (Veenendaal *et al.,* 2011).

Treatment modalities: Symptomatic treatment is applied due to the fact that hyperemesis is multifactorial in terms of etiology. The treatment approach is determined by the severity of the disease and any accompanying complications. The methods applied in therapy can be divided into non-pharmacological and pharmacological. Diet and lifestyle modification should be recommended as initial therapy. Nausea and vomiting are first tried to be prevented by nonpharmacological methods. If the symptoms can not be relieved, pharmacological therapy is added. Hospitalization therapy includes IV rehydration and antiemetics for electrolyte imbalance and dehydration (Ismail & Kenny, 2007). An algorithm for the suggested evaluation and management of women with nausea and vomiting of pregnancy is provided in Figure 1.

PHARMACOLOGICAL TREATMENT

Intravenous Fluid Replacement: Replacement of adequate volume of fluid with adequate content is the most important part of the treatment. Intravenous (IV) fluid is given to replace the lost intravascular volume, but there is no standard fluid regime. Rehydration is important. An average of 3 liters of intravenous fluid should be given daily (Tola *et al.,* 2014). Hydration treatment is regulated according to the amount of fluid she has taken and maintenance fluid treatment is provided. Potassium chloride can be added to these fluids if necessary. Antiemetic drugs are often added to IV fluid replacement treatments. Liquid electrolyte treatment regimens should be adjusted to sodium and potassium measurements and the serum levels of other electrolytes and daily intake and withdrawal of fluid and weight should be followed up (Quinlan & Hill, 2003; Cevrioğlu & Koçak, 2004).

Vitamin support

Pridoxin (B6) and thiamine (B1) are the main vitamins used in the treatment of hypermesis gravidarium. In a study by Sahakian et al., 25 mg of vitamin B6 (75 mg / day) taken every eight hours was shown to be more effective than placebo to control nausea and vomiting in pregnant women (Sahakian *et al.,* 1991), [Evidence Level A]. In the literature, studies conducted to treat nausea and vomiting in pregnancy often include comparison of vitamin B6 activity with ginger. Randomized controlled study results are given in Table 1.

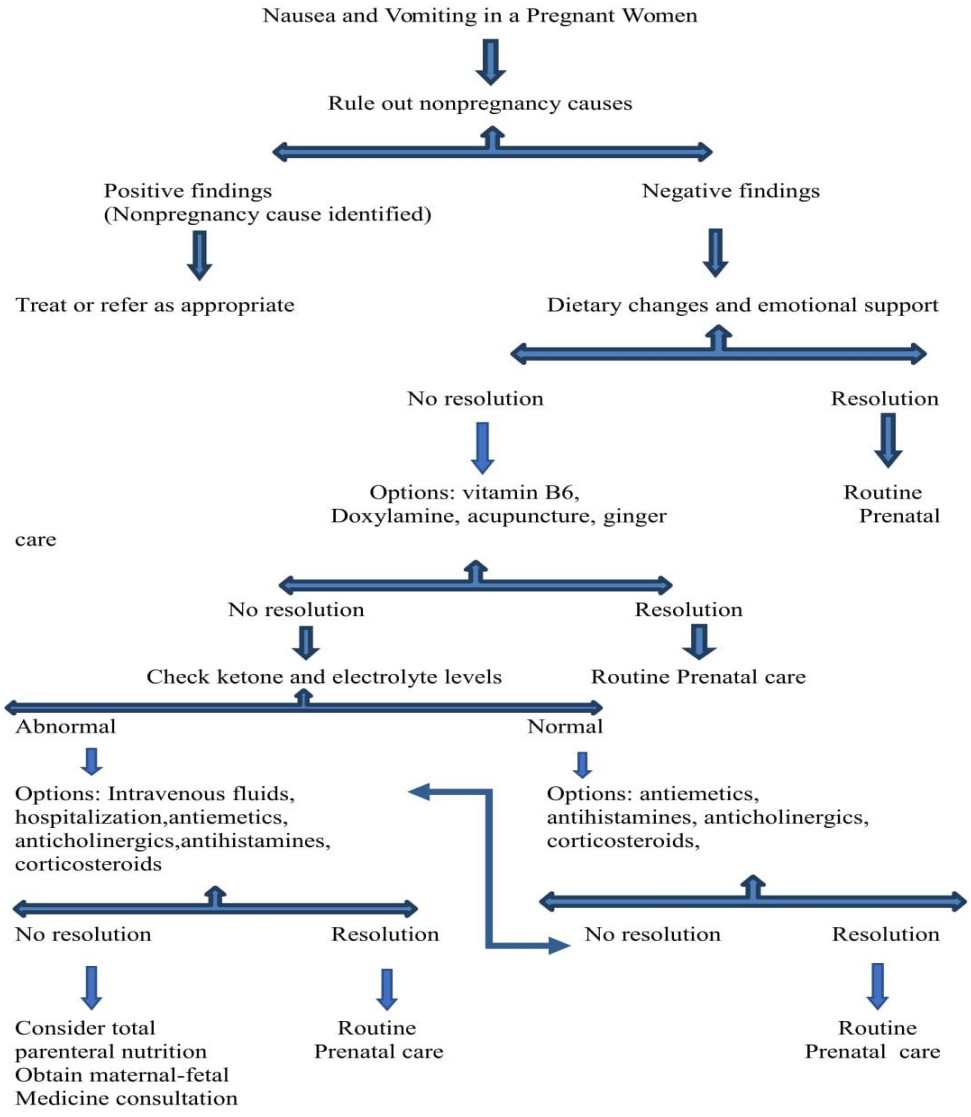

Figure 1. Algorithm for the suggested evaluation and management of women with nausea and vomiting of pregnancy (Quinlan & Hill, 2003).

Antiemetics: It has been reported that antiemetic treatment reduces nausea in early gestation and is superior to placebo. Drug therapy should be avoided before the 12th to 14th week to avoid potential fetal teratogenic effects of antiemetic therapy. Chlorpromazine, prochlorperazine, promethazine, trimethobenzamide, ondansetron, droperidol are the main drugs used in antiemetic treatment. Ondansetron was evaluated as pregnancy category B and other medications as pregnancy category C (Quinlan & Hill, 2003).

Antihistamines and anticholinergic drugs: Antihistamines and anticholinergics

(meclizine, dimenhydrinate and diphenhydramine) have also been shown to be superior to placebo in treating nausea and vomiting (Tan et al., 2009). These medicines are accepted by the Food and Drug Administration (FDA) as group A.

Motility drugs (Metoclopramide): In addition to increasing the sphincter pressure of the lower esophagus, the motility drugs, Metoclopramide, accelerates the transit process of the food through stomach. It has been shown to be more effective in the treatment of hypermesis gravidarium than placebo (Harrington et al., 1983). The pregnancy category of the motility drugs is group B.

Corticosteroids: The mechanisms of reducing nausea and vomiting of corticosteroids are not fully explained. Steroids may be beneficial in patients with hypermesis gravidarium, by making the person feel better, by suppressing the over-immune systemic response and appetizing. It has been shown that oral or parenteral steroid therapy accelerates the healing process of hypermesis gravidarium patients and reduces the number of hospital re-admissions with the same reasons (Nelson-Piercy et al., 2001). However, in a randomized placebo controlled study, pregnant women with hypermesis gravidarium were divided into two groups, the first group has received standard drug treatment and the second group has received standard treatment plus corticosteroid treatment. As a result, there was no significant difference in treatment success found between the two groups (Yost et al., 2003).

Enteral and parenteral nutrition: Although nonpharmacologic and pharmacological treatment regimens are applied intensively, enteral and parenteral nutrition options should be introduced as a last resort in the cases of nausea and vomiting. In this treatment regimen, the patient is given an average of 100 ml per hour of fluid containing electrolyte, protein, fat and carbohydrate to meet the daily calorie needs of the patient (Quinlan & Hill, 2003).

Table 1. Categories of Drugs Used in Nausea-Vomiting Treatment in Pregnancy by FDA Classification (Quinlan & Hill, 2003).

Drug Name classification	**Category according to FDA**
Vitamin B6	A
Promethazine	C
Prochlorperazine	C
Doxylamine	B
Dimenhydrinate	B
Chlorpromazine	C
Droperidol	C
Diphenhydramine	B
Trimethobenzamide	C
Metoklopramid	B
Ondansetron	B
Metilprednizolon	C

NON-PHARMACOLOGICAL TREATMENTS

Non-pharmacological treatment options have also emerged as an alternative due to pregnancy nausea and vomiting are more frequent in first and second trimester cases

when the sensitivity to teratogenic effects of drugs is more (Koch et al., 2003). These are methods such as diet and lifestyle changes, acupuncture, herbal treatment and hypnosis (Matthews et al., 2010). According to the results of the meta-analysis studies conducted by the World Health Organization (2016), it was suggested that ginger, daisy and acupuncture at the low quality evidence level and at the middle quality evidence level B6 vitamin was suggested to reduce nausea and vomiting in pregnancy (WHO, 2016).

Diet and Lifestyle Change: Due to facts that fatty foods delay gastric emptying and lemon and orange juices increase the acid formation, these foods should be avoided as much as possible. Protein-rich diets can also reduce the severity of hyperemesis gravidarium (Jednak et al., 1999). Koch et al. recommended step-by-step diet to be completed in 6 meals for nausea and vomiting in pregnancy. At the beginning, lightly salted chicken juice and vermicelli soups can be increased gradually and salted crackers can be taken with. By taking 30-60 ml of soup each time and by completing fluid amount as 1500 ml per day, 1500 calories intake is provided. In the next stage, foods that can be easily digested and do not disturb the smell such as potatoes, rice, baked chicken breast are often consumed. In addition, during all of these dietary practices, it is recommended to also provide a vitamin preparation that can meet daily necessities (Koch et al., 1990). For diet and lifestyle change in hyperemesis gravidarum treatment;

- Electrolyte-containing beverages are recommended to prevent electrolyte imbalance.
- Frequent and fewer meals should be recommended to the patients. This kind of nutrition significantly reduces moderate nausea and vomiting.
- Light appetizers, nuts, legume, dried and salted biscuits are often recommended foods.
- Before stimulation of antiemetics, stimuli such as vision, sound and smell that can trigger nausea around the patient should be reduced or eliminated.
- Liquid and soft foods should be preferred.
- When nausea occurs, water and liquid foods should not be taken with meals, but should be drunk at least one hour before or one hour after meals.
- Should avoid spicy, very salty, fatty, very sweet or fried food as bad smelling foods.
- Dry foods such as bread, biscuits and crackers should be consumed before getting up in the morning.
- Should not lie down at least 2 hours after meals
- Should pay attention that food to be served is kept warm / cold or in the room temperature.
- Odorless foods should be preferred.
- It was stated that ginger, ginger tea, ginger capsules and ginger-candy drinks are good for the pregnant and in order to prevent the digestive juice from damaging the dental mine, mouthwash with a teaspoon of sodium bicarbonate can neutralize the oral acid (ACOG, 2015).

Table 2. Randomized Controlled Studies and Results Containing Comparing the Effectiveness of Vitamin B6 and Ginger in Treatment of Pregnancy-Induced Nausea and Vomiting

First Author Year of Publication	Design	Sample Characteristics	Application	Measured Values	Results
Vutyavanich *et al.,* 2001	Randomized controlled Double-blind	Women with nausea and vomiting of pregnancy, who first attended an antenatal clinic at or before 17 weeks' gestation Ginger group: 35 Placebo group: 32	70 eligible women gave consent and were randomized in a double-masked design to receive either oral ginger 1 g per day or an identical placebo for 4 days.	* A visual analogue scale for severity of their nausea *At a follow-up visit 7 days later, five-item Likert scales were used to assess the severity of their symptoms.	The visual analog scores of posttherapy minus baseline nausea decreased significantly in the ginger group (2.1 +/- 1.9) compared with the placebo group (0.9 +/- 2.2, P =.014). The number of vomiting episodes also decreased significantly in the ginger group compared with the placebo group.
Sripramote & Lekhyanan da, 2003	Randomized controlled Double-blind	Women with nausea and vomiting of pregnancy at or before 16 weeks of gestation Ginger group: 64 Vitamin B6 group:64	128 women were randomized to receive 500 mg of ginger orally or an identical 10 mg of vitamin B6 one capsule three times daily for three days.	* A visual analogue scale for severity of their nausea *The change of nausea scores and the number of vomiting episodes during three days of treatment.	*The nausea score and the number of vomiting episodes were significantly reduced following ginger and vitamin B6 therapy. *Comparing the efficacy, there was no significant difference between ginger and vitamin B6 for the treatment of nausea and vomiting during pregnancy.
Smith *et al.,* 2004	Randomized controlled	Women with nausea and vomiting of pregnancy at or before 16 weeks of gestation Ginger group: 120 Vitamin B6 group: 115	Women took 1.05 g of ginger or 75 mg of vitamin B6 daily for 3 weeks.	*Rhodes Index of Nausea and Vomiting Form *Differences from baseline in nausea and vomiting scores were measured for both groups at days 7, 14, and 21.	Ginger was equivalent to vitamin B6 in reducing nausea.
Ensiyeh & Sakineh, 2009	Randomized controlled Double-blind	Pregnant women with nausea and vomiting Ginger group: 35 Vitamin B6 group:34	*Over a 3-month period, 70 women were randomised to receive either ginger 1g/day or vitamin B6 40 mg/day for 4 days.	* A visual analogue scale for severity of their nausea *The number of vomiting episodes in the 24 hours before treatment and during 4 consecutive days while taking treatment.	* Ginger is more effective than vitamin B6 for relieving the severity of nausea, and is equally effective for decreasing the number of vomiting episodes in early pregnancy.

Ginger: It is an alternative treatment agent in nausea and vomiting in pregnancy. In randomized controlled trials, it was determined that, ginger given regularly at appropriate doses to pregnant women with severe nausea and vomiting has reducing effect of these discomforts (American Botanical Council, 2001, Vutyavanich et al., 2001; Haji Seid Javadi et al., 2013; Matthews et al., 2010). Teratogenic effects of ginger have not been shown in studies. It has been reported that acid indigestion and dermatitis can be seen with minimal side effect of ginger (Mitzi, 2004). Ozgoli et al. reported that ginger was more effective than placebo in relieving symptoms in pregnant women complaining of nausea and vomiting (Ozgoli et al., 2009).

Acupuncture / Acupressure: Acupuncture is the application of piercing with needles to special peripheral nerves to reduce discomfort associated with painful conditions (Carlsson et al., 2000; Sezen, 2002). The element that is effective in acupuncture treatment is not the needle but the spot where it is immersed and the stimulation of the spot. Acupressure is a treatment method that allows energy channels (blood circulation) to function properly by applying pressure to the acupuncture points on the meridians carrying energy in the body with finger, palm or special stimulation bands (O'Brien et al., 1996, Horasanlı et al., 2008).

The use of acupuncture / acupressure in the treatment of Emezis has been noted in recent years and is thought to be an alternative to antiemetic drugs. In Chinese medicine, stomach discomfort, nausea and vomiting can be treated by applying acupuncture to the perikardium-6 (PC-6) Neiguan point of 4-5 cm (3 fingers) above the inside of the wrist (Carlsson et al., 2000; Sezen, 2002; Horasanlı et al., 2008).

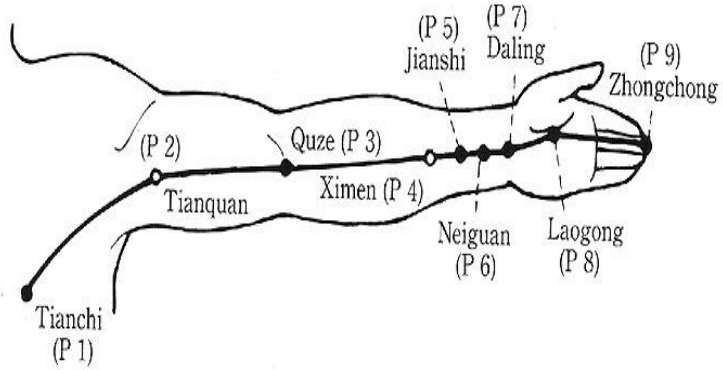

Figure 2. Neiguan (P6) Acupuncture Point Location

(http:/www.itmonline.org/arts/pc6.htm**)**

Rosen et al. reported in their study with 187 patients complaining from nausea and vomiting that the rate of reduction in nausea and vomiting index of acupuncture-treated group was significantly higher than the control group (Rosen et al., 2003). In the study conducted by Koch et al. it was stated that stimulation of P-6 point altered gastric myoelectric activity and restored the stomach to return to normal cyclic activity (Koch et al., 1990). Although randomized controlled trials have shown that stimulation of the P6 point has positive effects on nausea-vomiting (White et al., 2002; Heazell et al.,

2006), there are studies showing that the P6 point has no beneficial effect (O'Brien et al., 1996).

In a systematic review of seven studies, acupressure at the point P6 was found to be beneficial in alleviating morning sickness in pregnancy (Vickers, 1996), whereas in another study acupressure was not helpful in pregnant women (O'Brien et al., 1996). Acupuncture is a non-pharmacological intervention with no known side effects. However, more evidence-based work is needed to determine whether acupressure is a suitable treatment for nausea and vomiting in pregnancy.

Hypnosis

Psychological changes are controlled by hypnosis. Hypnotized patients can control sympathetic tones, vasoconstriction, vasodilatation, heart rate and muscle tone. In order for a hypnosis technique to be successful, as well as the practitioner must be experienced and talented, the patient should believe in the therapeutic effect of the technique. Madrid et al. stated that in their studies, persistent nausea in pregnancy originated from unresolved emotional or psychological problems and that these problems could be solved in a short time by hypnosis (Madrid et al., 2011). As a matter of fact, Madrid et al. reported that four female patients who had nausea during their pregnancies were treated with hypnosis, which was including the psychodynamic investigation of the cause of the problem (Madrid et al., 2011). In a study conducted by Simon and Schwartz, it was reported that hypnosis has made a deep relaxation suppressing the sympathetic nervous system and reduced symptoms by hypnotic suggestion. At the same time, it was stated that the hypnosis could be used as a complementary method in hyperemesis gravidarium treatment (Simon & Schwartz, 1999).

Six studies were examined in a systematic review of studies involving hypnosis in the treatment of hyperemesis gravidarium. Although there were methodological differences between the studies, positive results encouraging hypnosis were found. However, based on studies reviewed in the review, it has been reported that the evidence is inadequate to say that hypnosis is effective in Hypermesis gravidarium treatment (McCormack, 2010).

CONCLUSION AND RECOMMENDATIONS

Hyperemesis gravidarum is a multifactorial disease in which both biological and psychosocial factors play a role. The underlying causes should be investigated at the onset of treatment with hyperemesis patients and treatment options should be individualized for each patient. A holistic approach should be adopted in evaluation and treatment. In addition to the physical treatment of the pregnant woman who is experiencing nausea and vomiting with multidisciplinary team approach, a care plan should be applied to increase the quality of life and to support the power to cope with pregnancy. In hyperemesis gravidarum therapy, it is suggested to increase the awareness of health professionals about non-pharmacological treatment approaches and to obtain evidence by working with randomized controlled and longer time follow-up designed with appropriate methodology.

REFERENCES

ACOG. (2015). Practice Bulletin No. 153: Nausea and Vomiting of Pregnancy. Obstetrics & Gynecology. 126: (3):12-24, 28.
American Botanical Council. (2001). Ginger Alleviates Nausea And Vomiting Of Pregnancy. Herbalgram. 53, 21-22.
Büyükkurt S., Demir S.C., Özgünen F.T., Evrüke İ.C., Kadayıfcı O., Güzel A.B. (2008). Gebelikte Bulantı-Kusma Yakınması Olan Hastanın Değerlendirilmesi ve Tedavi Seçenekleri. Türkiye Klinikleri. 18:(2), 106-16.
Carlsson C.P., Axemo P., Bodin A., Carstensen H., Ehrenroth B., Madegard-Lind I., Navander C. (2000). Manual Acupuncture Reduces Hyperemesis Gravidarum: A Placebo-Controlled, Randomized, Single-Blind, Crossover Study. J Pain Symptom Manage. 20:(4), 273-279.
Cashion K. (2013). Pregnancy at Risk: Gestational Conditions. In: Lowdermilk LD, Perry SE, Cashion K (Eds), Maternity Nursing. 8th ed. Elsevier, 641-643.
Cevrioğlu S., Kocak G. (2004). Hiperemezis Gravidarum: Tanı ve Tedavide Güncel Yaklaşımlar. TJOD Uzmanlık Sonrası Eğitim Dergisi. 8, 203-210.
Chou F.H., Avant K.C., Kuo S.H., Fetzer S.J. (2008). Relationships Between Nausea And Vomiting, Perceived Stress, Social Support, Pregnancy Planning, And Psychosocial Adaptation In A Sample Of Mothers: A Questionnaire Survey. International Journal of Nursing Studies. 45:(8), 1185–91.
Dharmananda S. (1998). Neiguan: Pericardium-6. http:/www.itmonline.org/arts/pc6.htm. (Accessed: 06 May 2018).
Ensiyeh J. and Sakineh M.A. (2009). Comparing Ginger and Vitamin B6 For The Treatment Of Nausea And Vomiting İn Pregnancy: A Randomised Controlled Trial. Midwifery. 25:(6), 649-53.
Fejzo M.S., Ingles S.A., Wilson M., Wang W., Gibbon K.M., Romero R., Goodwin T.M. (2008). High Prevalence of Severe Nausea and Vomiting Of Pregnancy and Hyperemesis Gravidarum among Relatives of Affected Individuals. Eur J Obstet Gynecol Reprod Biol. 141:(1), 13-7.
Gilbert E.S. (2013). Physiologic and Nutritional Adaptations To Pregnancy, In: Manual of High Risk Pregnancy & Delivery. 5th ed. Mosby Elsevier, USA, 18-24.
Haji Seid Javadi E., Salehi F., Mashrabi O. (2013). Comparing The Effectiveness Of Vitamin B6 And Ginger İn Treatment Of Pregnancy-İnduced Nausea And Vomiting. Obstet Gynecol Int. 2013, 927834.
Harrington R.A., Hamilton C.W., Brogden R.N., Linkewich J.A., Romankiewicz J.A., Heel R.C. (1983). Metoclopramide: An Updated Review Of İts Pharmacological Properties And Clinical Use. Drugs. 25, 451-94.
Heazell A., Thorneycroft J., Walton V., Etherington I. (2006). Acupressure for the In-Patient Treatment of Nausea and Vomiting In Early Pregnancy: A Randomized Control Trial. American Journal of Obtetrics and Gynecology. 194, 815-820.
Hod M., Orvieto R., Kaplan B., Friedman S., Ovadia J. (1994). Hyperemesis Gravidarum: A Review. J Reprod Med. 39, 605-12.
Horasanlı E., Usta B., Yeşilay A. (2008). Medikal Akupunktur. Yeni Tıp Dergisi. 25, 70-75.
Ismail S.K. and Kenny L. (2007). Review on hyperemesis gravidarum. Best Pract Res Clin Gastroenterol. 2007; 21(5): 755-769
Jednak M.A., Shadigian E.M., Kim M.S., Woods M.L., Hooper F.G., Owyang C., Asler

W.L. (1999). Protein Meals Reduce Nausea And Gastric Slow Wave Dysrhythmic Activity In First Trimester Pregnancy. Am J Physiol. 277, 855-861.
Koch K.L., Kenneth L., Christine L. (2003). Nausea and Vomiting During Pregnancy. Gastroenterol Clin N Am. 32, 201-04.
Koch K.L., Stern R.M., Vasey M., Botti J.J., Creasy G.W., Dwyer A. (1990). Gastric Dysrhythmias and Nausea Of Pregnancy. Dig Dis Sci. 35: (8), 961-968.
Madrid A., Giovannoli R., Wolfe M. (2011). Treating Persistent Nausea of Pregnancy with Hypnosis: Four Cases. Am J Clin Hypn. 54: (2), 107-15.
Matthews A., Dowswell T., Haas D.M., Doyle M., O'Mathúna D.P. (2010). Interventions for Nausea and Vomiting İn Early Pregnancy. Cochrane Database Syst Rev. (9):CD007575.
McCormack D. (2010). Hypnosis for Hyperemesis Gravidarum. J Obstet Gynaecol. 30: (7), 647-53.
Miller F. (2002). Nausea And Vomiting In Pregnancy: The Problem Of Perception Is It Really A Disease? American Journal of Obstetrics and Gynecology. 186:(5), 182–183.
Mitzi D. (2004). Nausea and Vomiting Of Pregnancy: An Evidence-Based Review. Journal of Perinatal & Neonatal Nursing. 18: (4), 312-328.
Nelson-Piercy C., Fayers P., De Swiet M. (2001). Randomized Double Blind, Placebo Kontrolled Trial Of Corticosteroids For The Treatment Of Hyperemesis Gravidarum. BJOG. 108, 9-15.
O'Brien B., Relyea M.J., Taerum T. (1996). Efficacy of P6 Acupressure In The Treatment Of Nausea And Vomiting During Pregnancy. Am J Obstet Gynecol. 174, 708–15.
Quinlan J.D. and Hill D.A. (2003). Nausea and Vomiting Of Pregnancy. American Family Physician. 68, 121-28.
Ozgoli G., Goli M., Simbar M. (2009). Effects of Ginger Capsules on Pregnancy, Nausea, and Vomiting. The Journal of Alternative and Complementary Medicine. 15:(3), 243-6.
Rosen T., De Veciana M., Miller H.S., Stewart L., Rebarber A., Slotnick R.N. (2003). A Randomized Controlled Trial Of Nerve Stimulation For Relief Of Nausea And Vomiting In Pregnancy. Obstet Gynecol. 102:(1), 129-135.
Sahakian V., Rouse D., Sipes S., Rose N., Niebyl J. (1991). Vitamin B6 Is Effective Therapy For Nausea And Vomiting Of Pregnancy: A Randomized, Double-Blind Placebo-Controlled Study. Obstet Gynecol. 78, 33-6.
Sezen K. (2002). Akupunktur Teorik Ve Pratik. Medical&Nobel Tıp Kitabevleri, İstanbul. 21-51.
Simon .EP., Schwartz J. (1999). Medical Hypnosis For Hyperemesis Gravidarum. Birth. 26:(4), 248-254.
Smith C., Crowther C., Willson K., Hotham N., McMillian V. (2004). A Randomized Controlled Trial Of Ginger To Treat Nausea And Vomiting In Pregnancy. Obstet Gynecol. 103:(4), 639-45.
Sripramote M., Lekhyananda N. (2003). A Randomized Comparison of Ginger and Vitamin B6 in the Treatment Of Nausea And Vomiting Of Pregnancy. J Med Assoc Thai. 86:(9), 846-53.
Tan P.C., Yow C.M., Omar S.Z. (2009). A Placebo-Controlled Trial Of Oral Pyridoxine

In Hyperemesis Gravidarum. Gynecol Obstet Invest. 67:(3), 51-157.
Tola E.N. (2014). Hiperemezis Gravidarumda Tedavi Modaliteleri. SDÜ Sağlık Bilimleri Dergisi. 5:(2), 72-76.
Veenendaal M.V., Van Abeelen A.F., Painter R.C., Van Der Post J.A., Roseboom T.J. (2011). Consequences Of Hyperemesis Gravidarum For Offspring: A Systematic Review And Meta-Analysis. BJOG. 118: (11), 302-1313.
Vickers A.J. (1996). Can Acupuncture Have Specific Effects On Health? A Systematic Review of Acupuncture Antiemesis Trials. J R Soc Med. 89, 303–11.
Vutyavanich T., Kraisarin T., Ruangsri R. (2001). Ginger For Nausea And Vomiting In Pregnancy: Randomized, Double-Masked, Placebo-Controlled Trial. Obstet Gynecol. 97:(4), 577-582.
White P.F., Issioui T., Hu J., Jones S.B., Coleman J.E., Waddle J.P., Markowitz. S.D., et al. (2002). Comparative Efficacy Of Acustimulation Versus Ondansetron In Combination With Droperiodol For Preventing Nausea And Vomiting. Anesthesiology. 97, 1075-1081.
World Health Organization. (2016). Recommendations On Antenatalcare For A Positive Pregnancy Experience. Geneva. 14-85.
Yost N.P., McIntrie D.D., Wians F.H., Ramin S.M., Balko J.A., Leveno K.J. (2003). A Randomised, Placebo-Controlled Trial Of Corticosteroids For Hyperemesis Due To Pregnancy. Obstet Gynecol. 102, 1250-54.

Chapter 70

The Preparation for Cesarean Section and the Postpartum Care in Obese Pregnant Women

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1. OBESITY AND PREGNANCY

Obesity appears as an ever-increasing, important issue affecting the health of the world and Turkey. Obesity affects not only health negatively but also affects life expectancy and quality of life (Dolgun & Yavuz, 2009). According to data of the World Health Organization (WHO), there are approximately 650 million obese individuals in the world (WHO, 2017). The rate of obese individuals in Turkey is 19.6% (TurkStat, 2017). Obesity occurs as a result of too much increase in body fat compared to the ideal (Antipatis, 2002). In addition, it is a risk factor for different diseases (Kopelman, 2007). Obesity is accepted by WHO as one of top 10 risky diseases (The Ministry of Health, 2015).

According to the Body Mass Index (BMI), people having BMI >30 are defined as obese, people having BMI >40 are defined as morbid obese, and people having BMI >50 are defined as super-obese (WHO, 2004; Buchwald, 2005). The most important risk factors for obesity are the decreased physical activity, dietary habits, age, gender, educational level, marriage, parity, and genetics. In addition, income status, psychological problems, smoking and alcohol use, some drugs used, and socio-cultural factors also pose a risk for obesity. Obesity has also inheritance transitivity (The Ministry of Health, 2015). Obesity is a cosmetic problem and it also causes many problems related to respiration, cardiovascular diseases, hormonal diseases, asthma, diabetes, hypertension, some cancer types, musculoskeletal diseases, and physical activities (Coşkun, 2009; Obesity Prevention and Control Program of Turkey, 2010). The quality of life of obese individuals impairs. In addition, the increasing prevalence of obesity leads to an increase in mortality and morbidity rates (Harrington, 2006).

In the treatment of obesity, five methods are used: diet, exercise, behavioral change, pharmacological and surgical treatment methods (Yetkin and Çimen, 2010; The Ministry of Health, 2015). Obesity treatment is a necessary, long and continuous process that requires the individual's determination and effective participation. Obesity prevention is much more important than its treatment. It is necessary to prevent obesity by taking necessary precautions in childhood. Because childhood and adolescent obesity paves the way for adulthood obesity (The Ministry of Health, 2015).

According to the WHO obesity, which has a higher prevalence in women, is

defined as a pandemic occurring together with other comorbidities (WHO, 2017). According to Health Surveys of Turkey (TSI), 23.9% of women were obese and 30.1% were pre-obese in 2016 (TSI, 2017). Obesity affects life from adolescence. While it causes girls to enter puberty early, it paves the way for hyperandrogenism and anovulatory cycle in women. It is stated in the literature that there is a correlation between obesity and female cancers (http://www.huksam.hacettepe.edu.tr).

Obesity causes menstrual irregularities and various complications in pregnancy and postpartum periods in women (The Ministry of Health, 2015). In addition, the infants of the obese women are more likely to have medical obstetric complications during pregnancy and in postpartum period (Apay et al., 2010). In addition, the infants of obese mothers are also at risk of being obese (Whitaker, 2004). Obesity in pregnancy; gestational diabetes, intrauterine growth retardation, and large babies as regards to the gestational age pose a risk for the obstetric interventions and miscarriages. In addition, obesity in pregnancy is among the indications of cesarean section (Schmatz et al., 2010). In the systematic review, it was determined that the cesarean section rate was 11% in the primiparous women with normal Body Mass Index and this rate was higher in the women with BMI ≥30 (%33) and BMI ≥40 (%43) and over (Smid et al., 2017).

2. THE (PREOPERATIVE) PREPARATION BEFORE THE CESAREAN SECTION IN OBESE PREGNANT WOMEN

The presence of obesity in pregnancy is considered as a risk in terms of the primary and recurrent caesarean section with the increasing complications (Zhang et al., 2010; Kominiarek et al., 2010). The decision for a cesarean section may be made as planned or urgently and it may be technically harder compared to the women with normal weight. In both cases, it is important to inform the mother and the family about the cesarean section (Taşkın, 2014; Chodankar, et al., 2018). In postpartum period after cesarean section, obese pregnant women have higher bleeding, reopening of the wound site, infection, and venous thromboembolic risks (Facuette & Metz, 2016). It is important to make the necessary preparation before the cesarean section to minimize these risks.

It is important to clean the incision site in the preoperative period to reduce the risk of maternal infection in women who will deliver by cesarean section. In the previous randomized controlled trial, it was reported that there was no reduction in infection in the incision site between the use of chlorhexidine gluconate and non-antiseptic preparations (Webster & Osborne, 2015), although it has been observed that the antiseptic bath with 4% chlorhexidine gluconate applied in the incision site in preoperative care reduces bacterial colonization (Mangram, et al., 1999) In another meta-analysis study, 16 randomized controlled and non-randomized controlled trials were compared (n = 17.932). As a result of the study, it was determined that the antiseptic bath with chlorhexidine gluconate did not reduce the infection in the incision site, compared to the groups without this bath (Chlebicki et al., 2013). In the randomized controlled trial conducted by Dariouche et al., (2010) on a total of 849 patients applying to colorectal, gastric, biliary, thoracic, gynecology and urology clinics, it was determined that in the group using which chlorhexidine alcohol, the infection risk in the incision site was significantly low compared to the group using povidone iodine (Dariouche et al., 2010).

It is important that the hospital, in which the cesarean section will be performed in obese pregnant women, has an operating theatre with the appropriate equipment. A standard operating table cannot safely carry the patients with an average weight of >226.8 kg. Therefore, in order to perform the cesarean section in the pregnant women over this weight limit, an operating theatre with a bariatric table (weight limit=362.87 kg) and a bariatric toolset should be preferred. An inflatable air mat should be used during the transfer of the woman to her room in the postpartum period (Facuette & Metz, 2016).

The equipment (bedstead, slipper chair for breastfeeding, wheelchair, sleeve of blood pressure monitor, appropriate ultrasound devices, chair scale, transporter for lifting and bedding, surgical scrubs) that the pregnant women will use in the hospital need to be suitable for the sizes of the pregnant women and a safe environment should be prepared for them (Hahler, 2002; Vacek, 2007; CMACE/RCOG, 2010; Usta & Çavdar, 2013). In the study by Singh et al., (2007), it was determined that the equipment (sickbed, toilet paper, and surgical gown) used in the hospitals fell short as the BMI increased (Singh, et al., 2007).

In addition, both verbal and written informed consent of the pregnant women and their husbands should be obtained concerning the reasons of the cesarean section, the characteristics of the operation, the anesthesia type, and possible complications during the operation. Laboratory tests (blood group, Hb, Htc, urine analysis, sleep apnea), electrocardiogram, if necessary, chest x-ray should be taken. It is required for the pregnant woman to be hungry for at least 6 hours before the operation, for her bladder and intestines to be emptied, for vascular access to be established, and for the proper fluids to be administered. In addition, the vital signs of pregnant women and fetal heart rate (FHR) are required to be monitored and the expectant mother should be supported by informing them and their families about the procedures (Ayaz, 2011; Taşkın, 2014).

3. THE (POSTOPERATIVE) CARE AFTER CESAREAN SECTION IN OBESE PREGNANT WOMEN

The most important aim in the postoperative care after the cesarean section is providing postoperative healing rapidly, maintaining the fluid-electrolyte balance and providing supportive physical care with proper nutrition (Taşkın, 2014). Midwives/nurses should have the postpartum women perform deep breathing and coughing exercises (Harrington, 2006) and passive exercises in bed (Taşkın, 2014), in every 1.5-2 hours within the first 24 hours. As it is important to provide early ambulation, the postpartum women need to be mobilized in 8-10 hours after the operation. Early mobilization is important in terms of the onset of bowel movements, early healing of the tissues, and reduced risk of postoperative complications. In this process, midwives/nurses should encourage the postpartum women. The movements outside the bed should be carried out using ancillary equipment, such as a walker, if needed as long as the person can tolerate them. The urinary catheter should not be removed until mobilization (Taşkın, 2014; Usta & Çavdar, 2013).

Post-cesarean wound complication rates in obese women are quite high. In the retrospective cohort study, it was observed that 30% of the pregnant women with BMI 50≥ had wound complications (reoperation, opening at the wound site, and retreatment). In this study, wound complications were accompanied by advanced age,

smoking, diabetes, vertical skin incision, subcutaneous drainage placement and operative blood loss over 1000 ml (Alanis, et al, 2010). In particular, it is important that midwives or nurses working in the service give sufficient information to the mothers on how they will follow up the incision site in terms of infection (redness, swelling, discharge, warm, bleeding etc.) and in which conditions they should apply to a hospital (dizziness, blackout, increased vaginal bleeding), during discharge training provided to mothers, so that they can perform the wound follow-up well in the postpartum period.

As in all cesarean sections, antibiotic prophylaxis is also important in the childbirth of obese pregnant women with high BMI. But there is no consensus about the drug dosage to be administered for this population. In the clinical practice guidelines in Canada, the clinicians are recommend to double the dose of antibiotics in the women with maternal BMI over 35 kg/m^2 (RCOG, 2015; Chodankar et al., 2018).

The risk of postpartum hemorrhage after cesarean or vaginal delivery in the obese pregnant women increases compared to the women with normal BMI. In a retrospective study by Blomberg (2011) (n=1.114.071), a correlation was found between increased maternal BMI induced by uterine atony and postpartum hemorrhage (blood loss over 1000 ml) (Blomberg, 2011). In a study conducted between nulliparous women with normal body mass index and singleton pregnancy and the obese women with normal body mass index and singleton pregnancy, it was found that the risk of postpartum hemorrhage increased about 2 times in the obese group (Fyfe, et al., 2012).

Another risk of maternal obesity is the development of thromboembolism in the postpartum period. In this period, it is important to provide the close follow-up of the woman, early mobilization and, if necessary, the use of elastic varsity socks. In a retrospective case-control study conducted in Sweden, the women with and without the deep vein thrombosis (DVT) or pulmonary embolism (PE) during pregnancy or in the postpartum period (n = 129) were compared. At the end of the study, a significant correlation was found between DVT and the BMI of ≥ 30 (CMACE / RCOG, 2010).

Generally, the females are fed with I.V fluid within the first 24 hours in the postpartum period (average 3000-4000 cc). In this process, midwives/nurses should observe the intake-excretion follow-up of the women and whether or not they urinate spontaneously after the catheter is removed. The fundus height, location, and consistency are followed. The lochia is followed in terms of color, quantity, and smell. The analgesics given due to doctor's order in pain control are administered intramuscularly or intravenously. Due to side effects, postpartum should be followed closely. Midwife/nurse should teach the mothers the hand and facial care, breast care and perineal care with antiseptic solution (Taşkın, 2014; Şirin & Kavlak, 2016).

Breastfeeding during postpartum period makes a great contribution to the mother-infant attachment. The presence of maternal obesity leads to a decrease in the rate of breastfeeding as it affects the initiation and duration of breastfeeding (Amir & Donath, 2007; Mok et al., 2008). Low breastfeeding rate may be affected by many multifactorial factors such as the mother's perception of breastfeeding, the difficulty she experiences while holding the baby in the correct position, and the possibility of impairment of the prolactin response in response to breastfeeding (Rasmussen & Kjolhede, 2004). In the randomized controlled studies with evidence level of 1+, it was observed that providing breastfeeding training to mothers and supporting breastfeeding were related to the initiation of breastfeeding and prolongation of breastfeeding duration (Dyson,

McCormick and Renfrew, 2005; Fairbank, et al., 2000). The fact that midwives/nurses provide breastfeeding training especially to the obese women and support them in the antenatal period will help the women make conscious decisions on the nutrition preferences in the postpartum period. In addition, this special training will also help the mother to overcome the difficulties she may encounter while feeding her baby (CMACE / RCOG, 2010).

REFERENCES

Alanis, M.C.; Villers, M.S.; Law, T.L, et al. (2010). Complications of Cesarean Delivery in the Massively Obese Parturient. Am J Obstet Gynecol, 203:271 e271–271 e277.

Ayaz, P.N. (2011). İlk Kez Sezaryen Olan Hastalar İle Mükerrer Sezaryen Olan Hastaların Ağrı Değerlendirmelerinin Karşılaştırılması. Afyon Kocatetepe Üniverstesi Sağlık Bilimleri Enstitüsü, Yüksek lisans Tezi, Cerrahi Hastalıkları Hemşireliği ABD.Afyon-Kocahisar.

Amir, L.H. & Donath, S. (2007). A Systematic Review of Maternal Obesity and Breastfeeding Intention, Initiation and Duration. MC Pregnancy and Childbirth, 7:9.

Antipatis, V.J. & Gill T.P. (2002). Küresel Bir Sorun Olarak Obezite. In: International Textbook of Obesity. Ed: Björntorp P. 1. Baskı, s. 1-22, and Danışmanlık, İstanbul.

Apay, E.S.; Kılıç, M.; Pasinlioğlu T. (2010). Obez Gebelerde Doğum Eylemi ve Doğum Sonu Dönem, TAF Preventive Medicine Bulletin, 9(2).

Blomberg, M. (2011). Maternal Obesity and Risk of Post-partum Hemorrhage. Obstet Gynecol, 118: 561–568.

Buchwald, H. (2005). Consensus Conference Panel. Bariatric Surgery for Morbid Obesity. Health Implication for Patients, Health Professionals and Third-party Payers. Journal of the American Collage of Surgeons, 200(4): 593-604.

Chlebicki, M.P.; Safdar, N.; O'Horo, J.C.; Maki, D.G. (2013) Pre-Operative Chlorhexidine Shower or Bath for Pre-Vention of Surgical Site Infection: A Meta-Analysis. Am J Infect Control, 41:167–173.

Coşkun, H. (2009). Obezite ve Tanımı. http://www.obezitecerrahisi.com/ Erişim tarihi: 01.05.2018

Chodankar, R.; Middleton, G.; Lim, C.; Mahmood, T. (2018). Obesity in Pregnancy. Obstetrics, Gynaecology & Reproductive Medicine, 28(2): 53-56.

CMACE/RCOG. (2010). Joint Guideline: Management of Women with Obesity in Pregnancy. London: Centre for Maternal and Child En-Quiries and The Royal College of Obstetricians and Gynaecolo- Gists.

Dyson, L.; McCormick, F.; Renfrew, M.J. (2005). Interventions for Promoting The Initiation of Breastfeeding. Cochrane Database of Systematic Reviews, (2):CD001688.

Dariouche, R.O.; Wall, M.J.; Itani, K.M.F.; Mary, F.O; Alexandra, L.W; Matthew, M.C; Harold, J.M; Samir, S.A; Cynthia, T.C; Michael, C.M; Atef, A.; David H.B. (2010). Chlorhexidine-Alcohol Versus Povidone-Iodine For Surgical-Site Antisepsis. N Engl J Med.362:18–26.

Dolgun, E. & Yavuz, M. (2010). Aşırı Şişmanlık Cerrahisinde Hemşirelik Bakımı, Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi, Cilt:3,Sayı:1.

Faucett, A. M. & Metz, T. D. (2016). Delivery of The Obese Gravida. Clinical

Obstetrics and Gynecology, *59*(1), 180-192.
Fyfe, E.M.; Thompson, J.M.; Anderson, N.H.; Groom, K.M.; McCowan, L.M. (2012). Maternal Obesity and Postpartum Haemorrhage after Vaginal and Caesarean Delivery among Nulliparous Women at Term: A Retrospective Cohort Study. BMC Pregnancy Childbirth, 12:112.
Fairbank, L.; O'Meara, S.; Renfrew, M.J.; Woolridge, M.; Sowden, A.J.; Lister-Sharp, D. (2000). A systematic Review to Evaluate The Effectiveness of Interventions to Promote The Initiation of Breastfeeding. Health Technology Assessment, 4(25).
Global Database On BMI [online]. WHO. (2004). http://www.who.int/bmi/index.jsp ?introPage=intro_ 3.html. (erişim:01.05.2018).
Hahler, B. (2002). Morbid Obesity: A Nursing Care Challenge. Medsurg Nurs, 11(2): 85-90.
Harrington, L. (2006). Postoperative Care of Patients Undergoing Bariatric Surgery. Medsurg Nurs, 15(6): 357-363.
Kopelman, P. (2007). Health Risks Associated with Overweight and Obesity, Obesity Reviews, 8 (suppl.1):13-17.
Mangram, A.J.; Horan, TC.; Pearson, M.L. (1999). Hospital Infection Control Practices Advisory Committe. Guidelines for Prevention of Surgical Site Infection. Infect Control Hosp Epidemiol, 20:38.
Mok, E.; Multon, C.; Piguel, L.; Barroso, E.; Goua, V.; Christin, P.; Perez, M.; Hankard, R. (2008). Decreased Full Breastfeeding, Altered Practices, Perceptions, and Infant Weight Change of Prepregnant Obese Women: A Need for Extra Support. Pediatrics, 121(5):e1319-1324.
RCOG. (2015). Reducing The Risk of Thrombosis and Embolism During Pregnancy and The Puerperium. Greentop Guideline 37 A. London.
Rasmussen, K.M. & Kjolhede, C.L. (2004). Prepregnant Overweight and Obesity Diminish The Prolactin Response to Suckling in The First Week Postpartum. Pediatric, 113(5):e465-71.
Singh, N.; Arthur, H.M.; Worster, A.; Gianluca, I.; Sharma, A.M. (2007). Emergency Department Equipment for Obese Patients: Perceptions of Adequacy. JAN Original Research, 59(2):140-145.
Smid, M. C.; Dotters-Katz, S. K.; Grace, M.; Wright, S. T.; Villers, M. S.; Hardy-Fairbanks, A.; Stamilio, D. M. (2017). Prophylactic Negative Pressure Wound Therapy For Obese Women After Cesarean Delivery: A Systematic Review and Meta-Analysis. Obstetrics & Gynecology, 130(5): 969-978.
Schmatz, M.; Madan, J.; Marino, T.; Davis, J. (2010). Maternal Obesity: The Interplay between Inflammation, Mother and Fetus. Journal of Perinatology, 30(7), 441.
Sağlık Bakanlığı, (2015). Sağlık İçin Obezite İle Mücadele**,** https://www.saglik.gov.tr/TR, 11692/obezite.html, Erişim Tarihi: 28.04.2018.
Taşkın, L. (2014). Riskli Doğum Eylemi. Doğum ve Kadın Sağlığı Hemşireliği Kitabı İçinde (Bölüm 15, Sayfa 371-374). Akademisyen Tıp Kitapevi, Ankara.
Türkiye İstatistik Kurumu Haber Bülteni. İstatistiklerle Yaşlılar, 2017. www.tuik.gov.tr/PreHaberBultenleri.do?id=27595. Erişim tarihi: 27.04.2018.
Usta, E. & Çavdar, İ. (2013). ObeziTe Cerrahisinde (Bariyatrik Cerrahi) Hemşirelik Bakımı. Cumhuriyet Hemşirelik Dergisi, 2(2): 71-77.
Vacek, L. (2007). Sensitivity Training for Nurses Caring for Morbidly Obese Patients.

Bariatric Nursing and Surgical Patient Care, 2(4): 251- 253.
Zhang, J.; Troendle, J.; Reddy, UM.; Laughon, S.K.; Branch, D.W.; Burkman,R.; Landy, H.J.; Hibbard, J.U.; Haberman, S.; Ramirez, M.M.; Bailit, J.L.; Hoffman, M.K.; Gregory, K.; Gonzalez-Quintero, V.H.; Kominiarek, M.; Learman, L.A.; Hatjis, C.G.; Veldhuisen, P. (2010). Contemporary Cesarean Delivery Practice in The United States. Am J Obstet Gynecol 203, 326–326.
Yetkin, İ. & Çimen, A.R. (2010). Obezite ve Güncel Tedavi Yöntemleri, Missed: 23–24.
WHO. (2017). Obesity and Overweight, http://www.who.int/en/news-room/fact-sheets/detail/obesity-and-overweight, Erişim tarihi: 10.05.2018.
Webster, J. & Osborne, S. (2015). Preoperative Bathing or Showering with Skin Antiseptics to Prevent Surgical Site Infection. Cochrane Database Syst Rev.2: CD004985.
Whitaker, R.C. (2004). Predicting Preschooler Obesity At Birth: The Role Of Maternal Obesity In Early Pregnancy. Pediatrics 114 (1): e29-36.

Chapter 71

Organization in Midwifery: Students' Point of View

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INTRODUCTION

Profession is defined as a phenomenon that requires a person to have a high level of specialized knowledge and / or skills. Profession is a multidimensional social phenomenon located at the center of the individual and community life, ranging from the determination of an individual's social position to his contribution to the functioning of the social system. In addition, because of its versatility, it has become a subject of interdisciplinary research because it has aroused the interest of science, economics, business, psychology and sociology (İlhan, 2008). The best way for a profession to gain power in many areas is professionals' acting in unison to achieve specific goals. The greatest source of power in this regard is the professional organization. Via the function of the professional organizations, professional roles are defined, moral rules are developed, policies are determined, the forces are united to obtain the professional rights, media organs are established and most importantly, members reach the group (collective) consciousness. Professional organization is necessary to gain professional freedom, to follow the latest developments, to find solutions to problems, to establish social power and to be aware of vision and mission of the profession (Gözüm et al., 2000, Merih & Arslan, 2012).

One of the important functions of professional organizations is to support a professional socially and psychologically in order that he could perform his/her role. Another important task of professional organizations is to develop and strengthen quality standards, education and training standards, professional practice standards, research standards aiming to develop accumulation of knowledge on which the profession is based, or, in short, to develop and strengthen professional standards (Özdelikara et al., 2016).

In many countries midwifery-related professional associations have been founded, and developments in midwifery have been achieved thanks to the efforts of these associations. The International Midwives Union, the largest representative and organization of the midwifery profession in the world, was founded in 1919 and its name was changed to (it was renamed as) The International Confederation of Midwives

(ICM) in 1954. The ICM has 132 midwives associations from 113 countries including Turkey. While the vision of the ICM is to create a world in which every fertile woman can access a midwife for herself and her baby, its mission is to strengthen midwifery associations and to promote the development of the autonomy of the midwives to improve normal birth, reproductive health and newborn services (Aytaç et al., 2014; Lopes et al., 2015; ICM, 2018). Some other international professional associations that carry out works regarding the midwifery profession, produce social policies related to the profession and contribute to the profession areas follows: The European Midwives Association (EMA), Royal College of Midwives (RCM), Association of Radical Midwives (ARM), the Midwives Alliance of North America (MANA), the American College of Nurse Midwives (ACNM) and the National Association of Certified Professional Midwives (NACPM) (Bilgin et al., 2017; EMA, 2018; RCM, 2018; ARM, 2018; MANA, 2018; ACNM, 2018; NACPM, 2018).

The involvement of young people, who are the future of the profession, in the decision-making process in determining the goals of the profession will make a difference in many subjects as well as increase the sense of professional belonging. The Student Midwives Forum (SMF), a representative of each of the four UK countries and sponsored by the RCM, is a good example of the application of student ebbing in professional organizations of the midwifery profession. SMF is a student organization (SMF, 2018) which includes a virtual reference group established by the representation of a student from the midwifery organization of each university under the framework of a professional organization. It is thought that this practice should be an example to other professional organizations in order to communicate effectively with students

The first established professional organization of the midwifery profession in Turkey is the Midwives Association of Turkey. Today, there are three professional organizations operating for the development of professional midwifery in Turkey: the Midwives Association, the Association of Education and Research Development in Midwifery (AERDM) and the Anatolian Midwives Association.

- ✓ The Midwives Association of Turkey was founded in Istanbul in 1954 and is headquartered in Ankara. The number of its members is 3.709. The Association aims to improve women, newborn, family and community health by supporting and empowering the professional midwifery. Nurses having a midwifery diploma and nurses with postgraduate training in gynecology and maternity nursing can become the member ofthe Association (Midwives Association, 2018).
- ✓ The Association of Education and Research Development in Midwifery (AERDM) was founded in İzmir in 2014 and its headquarters is in İzmir too. The Association which has 67 members aims to enable midwives to keep up with current developments, to support research conducted by midwives, increase the number of research and publications that provide reliable information about innovations, to strengthen the quality of education and thus to ensure the quality of midwifery services (AERDM, 2018).
- ✓ The Anatolia Midwives Association (AMA) was founded in Ankara in 2018 and its headquarters is in Ankara too. The Association which has 86 members aims to enable midwives to conduct their midwifery profession with the necessary and up-to-date legal regulations in business environments that are well-equipped with the necessary knowledge and skills to provide for the benefit of society (AMA, 2018).

Given the number of midwives in Turkey is 47,766 in 2016 according to the data released by the Ministry of Health in 2016, the number of the members of midwifery associations is very low (Republic of Turkey Ministry of Health, 2016). Studies conducted on issues such as professionalization in midwifery in Turkey, job satisfaction, and issues relating to autonomy indicate that professional organization is below the desired level and that it should be strengthened (Bilgin et al., 2017; Güner et al., 2015; Şencan, 2014).

One of the main problems for the organization of the midwifery profession in Turkey is that association membership is not mandatory and the membership is on the voluntary basis, which makes it difficult to access midwives.

In this regard, it is recommended to found a professional organization as a "chamber" or "union" having the power of legal sanction and to fulfill responsibilities towards these organizations in order for the profession to carry out its functions (Güner et al., 2015).

In their studies investigating the midwifery system in England, Toker and Aktas (2010) report that there is an organization called the Nursing and Midwifery Council (NMC), which is a legal regulatory body that defines the standards of midwifery and nursing profession, that midwives must be registered with the NMC and that they are supposed to meet the standards set by the NMC. Similarly, Korkmaz Yıldız (2008) reports that in New Zealand, all midwives' competencies and permissions enabling them to work in the profession are controlled by the Midwifery Council of New Zealand and that for a midwife to continue to work in the profession (perform midwifery activities), the Council keeps his/her records and updates the record severy 1 year or every 3years. Research on this subject has demonstrated that these organizations have the power of legal sanction, they make all the internal regulations and audits of the profession by means of the codes they have determined and that they encourage their colleagues to participate in activities likely to contribute to their professional development (Toker and Aktaş, 2010; Korkmaz Yıldız 2008).

The period which is of importance in motivating colleagues to become the members of professional organizations and establishing consciousness on the issue is school years. If professional organization is to be strengthened, its hould not be started after colleagues' participation in professional life; it should be one of the points whose importance is realized during school years and focused on carefully. Students' participating in working life equipped with career awareness can make this awareness grow faster and contribute to the positive development of the profession (Luanaigh 2015, Walker et al., 2015).

Thanks to the efforts of midwifery students receiving undergraduate education at universities and academicians, their struggle to participate in professional organizations has been visible since 2010. Within the course of these efforts, midwifery students applied at the 40th Ordinary General Assembly Meeting of the Midwives Association of Turkey with the petitions they gathered. As a result of these attempts, for the first time, it was decided that the third and fourth year midwifery students at universities could enroll in and could become members of the Association (Çakır Koçak, 2016). In addition, today, there are student organizations which have increased in number over the years, and students can become members of these organizations [Midwifery

Community of Ege University -EGEBET (2011), Istanbul University First Breath Midwifery Club (2013), Atatürk University Small Touches Club (2016)] (Figure 1). It is hoped that these organizations become 'Student midwives Association' and work together with professional organizations and contribute to their individual, professional and social development.

Figure 1. Midwifery Community of Ege University -EGEBET (Çakır Koçak, 2016)

In the present study, which is based on all these considerations, midwifery students' knowledge and thoughts about professional organization and midwifery associations were investigated.

MATERIALS AND METHODS

This cross sectional study was conducted with the final-year midwifery students attending universities located in Turkey's Aegean Region, because they were the potential candidates for the midwifery profession and they were allowed to become members of the association. In this region, there are four universities with a midwifery department in the health schools: Ege University (n=66, 39.3%), Celal Bayar University (n=38,22.6%), Adnan Menderes University (n=36, 21.4 %) and Dumlupınar University (n=28, 16.7 %). The total number of 4thgrade students in the Midwifery Departments of the afore mentioned Health Schools was 223, and they constituted the study population.

In this present study, no sampling method was implemented. All the students who agreed to participate in the study were included in the sample (n=168). Seventy-five point three percent of the study population has been reached.

The study data were collected with a 20-item questionnaire. The items in the questionnaire questioned the participating students' socio-demographic characteristics and their knowledge about the Midwives Association of Turkey, the only professional organization they are allowed to become members.

The written permission from the Health Schools where the study was conducted and the informed consent from the participating students were obtained. To analyze the study data, mean values, numbers and percentages were used.

RESULTS

Table 1. Students' preferences regarding midwifery department and opinions about organization

	Number	%
Preferring midwifery of his/her own free will		
Yes	78	46.4
No	90	53.6
Planning to work as a midwife after graduation		
Yes	130	77.4
No	10	6.0
Undecided	28	16.6
Being a member of an association		
Yes	23	13.7
No	145	86.3
Names of the association (n=23)		
Infertility Nurses Association	12	52.2
Non-health association	11	47.8
Being aware that they are allowed to be the Members of Midwives Association		
Yes	20	11.9
No	148	88.1
Accessing the Midwives Association Web Page		
Yes	81	48.2
No	87	51.8
Having Read the Midwives Association Charter		
Yes	42	25.0
No	126	75.0
Planning to Become a Member of the Midwives Association after Graduation		
Yes	130	77.4
No	3	1.8
Undecided	35	20.8
Being aware of the International Confederation of Midwives (ICM)		
Yes	35	20.8
No	133	79.2
Total	**168**	**100.0**

The analysis of the responses to the item whether the students preferred the midwifery department of their own free will revealed that 53.6% of them did not prefer midwifery of their own free will. However,77.4% of these final grade students wanted to work as a midwife after graduation. Of the participants, 86.3% were not the members of any associations. While 63.7% of the students answered the item that “they are allowed to be members of Midwives Association” as "No", 51.8% did not visit the web page of the Midwives Association and 75.0% did not read the charter of the association. Of the participants, 77.4% planned to be a member of the Midwives Association after graduation. While 79.2% of the participants did not know that there was an international association for midwives (Table 1), all those who knew there was said that it was the International Confederation of Midwives "ICM".

Table 2. Opinions of the students about the development and organizational status of the midwifery profession

	Number	%
Do you think that the midwifery profession is at the desired level in terms of development and organization?		
Yes	12	7.1
No	156	92.9
Opinions and Suggestions on how Professional Organization Reaches the Desired Level*		
Members of the profession should be encouraged to participate in an organization more	52	45.2
The profession should be familiarized more	22	19.1
Students should be allowed to enroll in an association	15	13.0
Students should be informed about organization in school years	7	6.1
Others	19	16.5
Total	**115**	**100.0**

**Those who answered this question*

Of the students 92.9% responded to the question “Do you think that the midwifery profession is at the desired level in terms of development and organization?” as “no”. When they were asked about their suggestions on this issue, 45.2% of them said that "Members of the profession should be encouraged to participate in an organization more”(19.1%), "The profession should be familiarized more" (13.1%), and "Students should be allowed to enroll in an association" (Table 2).

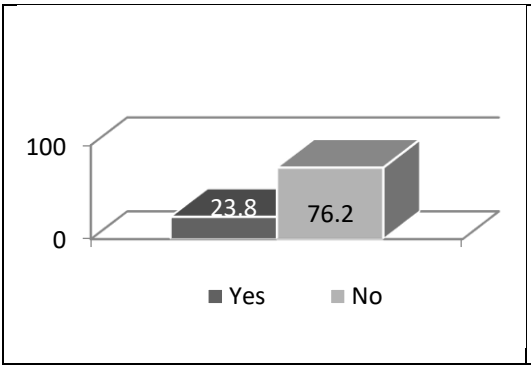

Figure 2. The students’ opinions about whether the Midwives Association adequately supports the development and distribution of information about midwifery

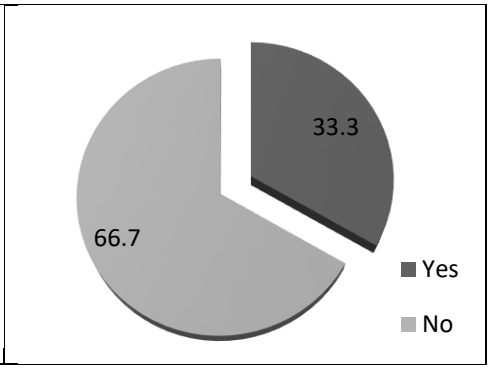

Figure 3. The students’ opinions about whether the Midwives Association adequately works on midwifery and issues related to midwifery

The analysis of the students' opinions about “whether the Midwives Association adequately supports the development and distribution of information about midwifery” demonstrated that 76.2% of the students reported negative opinion (Figure 2) and 66.7% of the students thought that “the Midwives Association does not adequately works on midwifery and issues related to midwifery” (Figure 3).

DISCUSSION

In recent years in Turkey, the number of midwives with bachelor's or master's degree and professional scientific activities has increased. It is considered that as the level of education in midwifery increases, so do the number of midwives planning their future with a more idealist approach, professional awareness and then the development of the sense of belonging, and finally organizational awareness in the profession. Although there are very important positive developments today, in midwifery profession, as in many other professions (Ünsal et al., 2010), there are some barriers to establishing efficient professional organization, and to developing sense of professional belonging, and integrity and cohesion. A concrete example of this is that a midwife's opportunity to work in primary health care is based on the preference of the physician and that they are called not "midwives" but "members of family health".

Acceptance of a profession and its members by the society and the presence of a strong professional organization to gain the appreciation of the society is the evidence of the fact that the occupation is gaining ground on the way to professionalism. In Lopes et al.'s study which included 78% of the member countries and 68% of member associations of the ICM (2015), it was noted that midwives represented by these associations were a key provider group which provided labor force in the management of sexual and reproductive health, and maternal and newborn health. The study also found that midwives associations contributed to policy development and planning, and had a greater capacity to make significant contributions to the achievement of the goals of universal health coverage (Lopes et al., 2015). The examination of the history of midwives' professional organizations in Turkey revealed the fact that more attention should be paid to the issue of professional organization because even the Midwives Association of Turkey, which is the oldest midwives association with the highest number of members, lost its members from 4352 in 2011 (Güner et al., 2015) to 3709 in 2018 [Midwives Association of Turkey, 2018]. Midwifery students, who are to become the midwives of the future, should take part in the professional organization efforts. In their study on the professionalism of nurses and midwives (2000), Hampton and Hampton found that nurses and midwives with bachelor's or master's degree displayed a high level of professional attitude. They also pointed out that these nurses and midwives were members of a professional organization and that they believed in the necessity of the professional organization (Hampton & Hampton, 2000). In a study conducted with practitioner midwives in Turkey, 61% of the participants were knowledgeable about national and international health organizations, 30.5% of them were members of the professional associations and 26.8% of them were the members of the Midwives Association of Turkey (Bilgin et al., 2017). In another study conducted with practitioner midwives and nurses, although 92.1% of the participants indicated that professional organizations are necessary, only about one-third of them (37.3%) were the members of an organization. In the same study, the participants thought that familiarizing public with professional organizations (24.5%) and improving their working conditions (22.7%) would contribute to professional organization and professional awareness (Merih & Arslan, 2012).

Although there are studies that reveal midwifery students' thoughts about professional organization (RCM, 2011; Embo & Valcke, 2015; Bulat et al., 2015; Demir & Karaman, 2017), performing a greater number of studies on the issue is expected to increase awareness of professional organization. With this thought in mind;

it is assumed that students' conscious choice of profession and opinions about their profession will affect their participation in organizations in their professional life and promote their interest in professional activities. With this assumption in their mind, in their study (2014), Yurtsal et al. found that initial thoughts of 30.9% of the midwifery students about the profession were positive and 78.5% wanted to work as a midwife after graduation. On the other hand, in their study (2017), Dinç et al. stated that 76.4% of the midwifery students preferred midwifery of their own free will,42.5% had positive views about midwifery and 95.3% wanted to work as a midwife after graduation (Dinç et al., 2017). In their study, Demir and Karaman (2017) found that 54.5% of the midwifery students preferred to major in midwifery of their own free will. Similarly, in the present study, of the students, 46.4% chose the midwifery profession by their own preference and 77.4% wanted to work as midwives after graduation.

In several studies, it was stated that only half of the midwifery students had positive opinions about midwifery in the first years of their education, but in the following years, three-fourths of them wanted to work in their profession after graduation. However, it should not be overlooked that one-fourth of the students still did not want to work in midwifery profession after graduation.

In a study of RCM conducted with 763 midwifery students (RCM, 2011), it was found that 89.9% of the midwifery students were the members of RCM and only 28.0% were members of a professional network group (RCM, 2011). According to a study conducted with midwifery students in Turkey, 57.0% of them utilized social media to keep up with the activities of the professional organization (Demir & Karaman, 2017). According to another study conducted with students majoring in the field of health sciences, 23.0% of the students became a member of a professional group through social media (Ergün & Keskin, 2018).

In a study investigating students' opinions of professional development after graduation, it was determined that 26.8% of the students would continue their membership in the professional association after graduation. The students stated that maintaining their membership in the association was related to the "independent information search behavior" (Embo & Valcke, 2015). In a study conducted by a group of students in Turkey, it was reported that 85.6% of the students wanted to become members of a professional organization after they graduated (Bulat et al., 2015). In the present study, 77.4% of the students wanted to become a member of Midwives Association of Turkey after graduation. The data about the two groups in which the rates were high were obtained from the students studying in the western region of Turkey. This difference is thought to be due to the difference in the group in which the study was conducted.

Unfortunately, in Turkey, only one study has been conducted on student midwife communities and professional organization. The study conducted in the west of the country determined that 94.6% of the 299 student midwives had heard about the student community before, and that only 33.4% of them were the members of the community. In the study, when the non-member students were asked why they did not enroll in the community, they answered as follows: "I do not know whether there is such a community", "I haven't registered yet", "I am short of time" or "School is almost over". When the member students (n = 57) were asked why they enrolled in the community, their responses were as follows: "I wanted to add a positive value to the midwifery

profession and raise awareness of midwifery" "I wanted to participate in an activity", "Because the teachers recommended", "It is interesting", "I wanted to develop awareness of organization" and "Because being the member of a community is motivating" (Bulat et al., 2015). In their study (2015) conducted to investigate students' opinions of professional organizations, Atasoy et al. determined that of the students, 90.0% knew the Midwives Association, 24.0% were members of an association, and 100% thought that professional organization was necessary.

In the present study, a smaller number of the student midwives (13.7%) were members of an association, and only 36.3% of them knew that they could become members of the Midwives Association when they were students. The vast majority of the students (77.4%).were not members of the Midwives Association but wanted to become a member of the association after graduation, which suggests that in Turkey, students, although their professional organization behaviors are not satisfactory, have begun to develop consciousness about professional organization. The number of students enrolling in professional organizations will increase as they are informed and guided about the issue. It is also envisaged that in Turkey, the number of member students in professional organizations will increase as the number of such organizations increases and as long as these organizations allow students to become members, which is thought to positively contribute to professionalism. In a study conducted by Demir and Karaman in Istanbul province, only 4% of the students were the members of the Midwives Association (Demir & Karaman, 2017).

In the present study, 92.9% of the students thought that the development and organizational status of the midwifery profession was not at the desired level. The reasons underlying these opinions of the students are thought to stem from the inadequacies in education (physical conditions, educational materials, inadequate number of trainees, high number of students, etc.) and application environments (acceptance of a small number of students in the application areas, lack of mentoring system) (Güner et al., 2015; Çakır Koçak et al., 2017). While 19.1% of the students proposed that the profession should be familiarized more to increase professional development, 45.2% suggested members of the profession should be encouraged to enroll in organizations in order to increase the development of professional organization. In the UK, where educational conditions are better than those in Turkey, 90.7% of the students felt competent as expected at the stage of their programme (RCM, 2011).

In a study conducted in Sakarya, a province in the northwest of Turkey, the participating students' problems regarding professional organization were stated as follows: the profession is exclusively the domain of women (10%), leaders are not effective (28%), professional organizations are not adequately familiarized (36%), they are not given sufficient information on rights and responsibilities during the education (34%), and professional consciousness has not been adequately established (50%) (Atasoy et al., 2014). In a study conducted in Istanbul (2017), 96% of the students thought that professional organization was necessary, 55.4% had no knowledge of midwives associations and 58.4% had no knowledge of the ICM (In the present study, 79.2% of the students did not know the ICM). In the present study, while 86.1% of the students thought associations were not adequately familiarized, 81.2% thought that the organizational structure caused communication gap within the professional organization

and among the members (Demir & Karaman, 2017). In Merih and Arslan's study, when midwives and nurses were asked about the reasons leading to in adequate professional organization, they responded as follows: professional consciousness and commitment were not established sufficiently (32.8%), eaders were not sufficiently effective (23.4%) (Merih & Arslan, 2012).

Of the participating students, only 23.8% had positive opinions regarding the development and publication of knowledge on midwifery and 66.7% thought that the Association was not active enough to take necessary steps to promote midwifery and to find solutions to problems related to midwifery. On the other hand, in countries where midwives are well organized, 70% of students are reported to have positive or very positive organizational experiences. The student midwives stated that they highly valued the support of their educators and consultants. It was determined that students preferred to establish midwifery communities and regional student representative groups (RCM, 2011).

CONCLUSION AND RECOMMENDATIONS

The present study revealed that the participating midwifery students were not knowledgeable enough about the Midwives Association of Turkey and international midwifery associations. In order for the professional organization to gain strength, it is necessary to determine the students' knowledge and opinions of the association and organization, if they lack relevant knowledge, they should be equipped with enough information before they graduate and their awareness of students' membership of the association should be raised.

REFERENCES

ACNM, American College of Nurse Midwives http://www.midwife.org/ (Access date: 22.06.2018)

AERDM, Association of Education and Research Development in Midwifery-AERDM [Ebelikte Eğitim Araştırma Geliştirme Derneği (EBEARGE)] http://ebearge.org.tr/ (Access date: 21.05.2018)

AMA, Anatolia Midwives Association [Anadolu Ebeler Derneği]. Meeting Point with the President of the Association, 2018. (Meeting date: 27.06.2018)

ARM, Association of Radical Midwives https://www.midwifery.org.uk/ (Access date: 22.06.2018)

Atasoy, I, Berberoğlu, Y, Korkut SN. Ebelik IV. (2014). Sınıf Öğrencilerinin Mesleki Örgütlenme Konusunda Bilgi ve Düşünceleri. 1. Uluslararası & 5. Ulusal Ebelik Öğrencileri Kongresi, 24-26 Nisan 2014, Eskişehir, Bildiri Kitabı, s. 168.

Aytaç S, Kıvanç M, Ay F. (2014). Dört Avrupa Ülkesinde Ebeliğin Güncel Durumu ve Ebelik Araştırmalarının Gelişimi. Sağlık Bilimleri ve Meslekleri Dergisi 1(1), 77-90. DOI: 10.17681/hsp.20958 http://dergipark.gov.tr/download/article-file/97958

Bilgin Z, Kocabey MY, Yeşilyurt G, Öztürk D. (2017). Ebelerde Örgütlenme ve İş Doyumunun Belirlenmesi. Sağlık Bilimleri ve Meslekleri Dergisi 4(1), 105-11. DOI: 10.17681/hsp-dergisi.287522

Bulat Y, Kırımlı B, Çetiner S, Tarhan İ, Gümüşsoy E, Yıldız G, Çakır Koçak Y, Çeber Turfan E. (2015). Bir Öğrenci Örgütlenmesi Örneği ile Öğrenci Bakış Açılarının Değerlendirilmesi. 2. Uluslararası & 6. Ulusal Ebelik Öğrencileri Kongresi. 27-30 Nisan 2015, İstanbul, Bildiri Kitabı, s. 21.

Çakır Koçak Y. (2016). Ebelik Öğrencileri Ebeliğin Gelişmesi İçin Çalışıyor: 'EGEBET', Bir Ebelik Öğrenci Organizasyonu. E-Sağlık Ebelik Dergisi. Kasım 2016. http://e-vizeyayin.com/

Çakır Koçak, Y, Öztürk Can, H, Yücel, U, Demirelöz Akyüz, M, Çeber Turfan, E. (2017). Türkiye'de Ebelik Bölümlerinin Akademik ve Fiziki Profili. Sağlık Bilimleri ve Meslekleri Dergisi 4(2), 88-97. DOI: 10.17681/hsp-dergisi.293047

Demir, D, Karaman, ÖE. (2017). Ebelik Öğrencilerinin Mesleki Örgütlenme Konusundaki Görüşleri. 3. Uluslararası & 4. Ulusal Ebelik Kongresi, 23-24 Eylül 2017, Ankara, Bildiri Kitabı, s. 259.

Dinç, A, Cangöl, E, Sögüt, S. (2017). Ebelik Öğrencilerinin Mesleki Tercih Hakkında Düşünceleri. Cumhuriyet Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi 2(2), 15-23. http://dergipark.gov.tr/cusbed/issue/33432/372401

EMA, The European Midwives Association (EMA) http://www.europeanmidwives.com/home (Access date: 22.06.2018)

Embo, M, Valcke, M. (2015). Continuing Midwifery Education beyond Graduation: Student Midwives' Awareness of Continuous Professional Development, Nurse Education in Practice. DOI: 10.1016/j.nepr.2015.08.013

Ergün, G, Keskin, B. (2018). Sağlık Yüksekokulu Öğrencilerinin Mesleki Örgütlenmede Sosyal Medya Kullanım Özelliklerinin Belirlenmesi. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi. https://doi.org/10.31067/0.2018.80

Gözüm S, Ünsal A, Demirci P, Birel Ş, Çamuşoğlu S. (2000). Hemşirelerin Mesleki Örgütler ve Dergilere İlişkin Görüşleri. Atatürk Üniversitesi Hemşirelik Yüksek Okulu Dergisi 3(2), 19-28. http://e-dergi.atauni.edu.tr/ataunihem/article/view/1025000094/1025000088

Güner S, Yurdakul M, Yetim N. (2015). Türkiye'de Ebelik Mesleğinin Sorunlarına Akademik Bakışı Yansıtan Nitel Bir Çalışma. Yükseköğretim ve Bilim Dergisi 5(1), 80-87. DOI: 10.5961/jhes.2015.111

Hampton, LD, Hampton, GM. (2000). Professionalism and the Nurse-Midwife Practitioner: an Exploratory Study. Journal of The American Academy of Nurse Practitioners 12(6), 218-225. https://doi.org/10.1111/j.1745-7599.2000.tb00185.x

ICM, Becoming an ICM Member. https://internationalmidwives.org/our-members/becoming-a-member-icm/ (Access date: 21.05.2018)

İlhan S. (2008). Yeni Kapitalizm ve Meslek Olgusunun Değişen Anlamları Üzerine. Dumlupınar Üniversitesi Sosyal Bilimler Dergisi 21, 313-327. https://birimler.dpu.edu.tr/app/views/panel/ckfinder/userfiles/17/files/DERG_/21/313-328.pdf

Korkmaz Yıldız N. (2008). Yeni Zelanda'da Ebelik. Maltepe Üniversitesi Hemşirelik Bilim ve Sanatı Dergisi 1(2), 76-80.

Lopes SC, Titulaer P, Bokosi M, Homer C, Hoope-Bender P. (2015). The Involvement of Midwives Associations in Policy and Planning about the Midwifery Workforce: A Global Survey. Midwifery 31, 1096–1103. DOI: 10.1016/j.midw.2015.07.010

Luanaigh PO. (2015). Becoming A Professional: What is the Influence of Registered Nurses on Nursing Student' Learning in the Clinical Environment? Nurse Education in Practice. DOI: 10.1016/j.nepr.2015.04.005

Merih YD, Arslan H. (2012). Hemşire ve Ebelerin Mesleki Bilinç - Örgütlenmeye Yönelik Görüşlerinin ve İş Doyumlarının Belirlenmesi. Koç Üniversitesi Hemşirelikte Eğitim ve Araştırma Dergisi 9 (3), 40-46. http://www.journalagent.com/kuhead/pdfs/KUHEAD_9_3_40_46.pdf

Midwives Association (Ebeler Derneği) (2011). Ebeler Derneği Tarihçesi. Retrieved from

http://turkebelerdernegi.org/ebeler-dernegi-tarihcesi/ (Access date: 22.06.2018)
NACPM, National Association of Certified Professional Midwives http://nacpm.org/ (Access date: 22.06.2018)
Özdelikara A, Boğa NM, Alkan SA. (2016). Hemşirelik Öğrencilerinde Mesleki Örgütlenme Tutumunun Belirlenmesi. Uluslararası Sağlık Yönetimi ve Stratejileri Araştırma Dergisi 2(3), 58-70. http://dergipark.gov.tr/download/article-file/267188
RCM (Royal College of Midwives). (2011). The Royal College of Midwives' Survey Of Student Midwives. London: RCM.
RCM, Royal College of Midwives https://www.rcm.org.uk/ (Access date: 22.06.2018)
Republic of Turkey Ministry of Health [T.C. Sağlık Bakanlığı]. (2016). Distribution of Health Personel by Service Units, Health Statistics Yearbook 2016. https://dosyasb.saglik.gov.tr/Eklenti/13183,sy2016turkcepdf.pdf?0 (Access date: 22.06.2018)
SMF (Student Midwives Forum). Royal College of Midwives. https://www.rcm.org.uk/reps-and-branches/student-midwives-forum (Access date: 24.06.2018)
Şencan İ. (2014). T.C. Sağlık Bakanlığı Sağlık Hizmetleri Genel Müdürlüğü 2023 Yılı Sağlık İş Gücü Hedefleri ve Sağlık Eğitimi. Sağlık Bakanlığı Yayını No: 958, Ankara.
Walker S, Dwyer T, Broadbent M, Moxham L, Sander T, Edwards K. (2014). Constructing a Nursing Identity within the Clinical Environment: The Student Nurse Experience. Contemporary Nurse 49, 103-12. DOI: 10.5172/conu.2014.49.103
Yurtsal, ZB, Biçer, S, Duran, Ö, Şahin, A, Arslan, M, & Yavrucu, ÖK. (2014). Sağlık Bilimleri Fakültesi Ebelik 1. ve 4. Sınıf Öğrencilerinin Mesleğe İlişkin Görüşlerinin Belirlenmesi. Erciyes Üniversitesi Sağlık Bilimleri Fakültesi Dergisi 2(2), 15-25.

Chapter 72

Globalization, Traditional Practices and Transcultural Midwifery in Turkey

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INTRODUCTION

The concepts of health, illness and care are integral parts of general cultural values, beliefs and practices. Individual health behaviors are embedded in patterns of cultural exchanges and are usually passed down from generation to generation. Therefore, culture becomes an active concept that contains dissimilarities and changes. With its changing nature, human culture serves some of the aims of globalization in today's world (Thurston, 2014).

The importance of culture on health care services was emphasized in 1961 in Turkey with a law (number 224) about the socialization of health care services (The Law of Socialization of Health Services, 1961). However, this has not been adequately reflected in all health care services that are given or in midwifery care, in particular. In recent years the concept of transcultural midwifery began to be used in Turkey, as it was in other countries, as a byproduct of globalization (Ozgur et al. 2008).

Globalization also affects the healthcare sector because it is in many sectors that cause cultural changes (Globalization 101). Midwives who are important representatives of health, are reporting studies about coping with this effect in professional journals, congresses and symposiums.

Economic, political, social, cultural and health areas have been influenced by the fact of globalization. Culture is the means by which the transfer of globalization is made to other areas (Globolization 101). Culture is defined as a lifestyle that arises from individuals adapting to the society in which they live. Individuals receive assistance from midwives to adapt to situations they find themselves in during an illness (Ozgur et al. 2008).

Traditional Practices

Cultural values, such as attitudes and beliefs, affect the lifestyles and health conditions of individuals. Unlike rapid changes in technology, changes in belief are quite slow. Today, many traditional beliefs and practices influence parts of life from birth to death. Some of them vary from region to region, family to family and person to person, but they are still of great importance. The World Health Organization has

identified several health problems, including nausea, pain and asthma, which can benefit from acupuncture or moxibustion (Zhang, 1991). Traditional health practices, such as rubbing olive oil over the abdomen and perineal area to make the birth canal slippery to facilitate deliveries were common in the USA in the late 1890s; these practices are still commonly practised in underdeveloped countries (Leavitt & Walton, 1984). Health workers should recognise people's reactions, attitudes and cultural values towards health services in order to provide an active and effective health service (Center for Substance Abuse Treatment (US), 2014).

Traditional medicine is generally referred to as "home treatment" and is derived from the belief systems and practices of societies. Traditional procedures have stemmed from the relations with nature and the attitude of early humans towards nature. They have been passed down from generation to generation. Many health-related traditional procedures in our society are derived from shamanism, the oldest religion among Turks, to which some practices derived from Islamic values and rules and some experiences have been added. Even though the use of these procedures is decreasing as a result of urbanization, the influence of education and the changing structure of the society, they are still in practice and this is due to the inability to provide modern medical services and experiences in these regions, and the inability to communicate with the community in a way that fits in with their beliefs and traditional life. The behavior and attitudes of individuals are influenced by religious beliefs and their interaction with their natural surroundings as well as by the people they are in close contact with (Aliefendioglu et al. 2009).

Postpartum period traditional practices

In Turkish society, as in every society, traditional applications are commonly used in the post-partum. This is because individuals try to find solutions to the problems by using such applications due to their insufficient income, transportation difficulties and the health care center's being far from where they live, their not having social security, and their misperception of the post-partum period challenges (Okka et al. 2016).

In Turkey, mothers come out of hospital 12-24 hours later after a normal delivery and 3-5 days later after a c-section as long as they do not have any health problems. If they come out of hospital at an earlier than expected time, it is possible for them to experience severe health problems. It's a common fallacy that most of the women think their health problems during post-partum period are normal and they will not be helped and supported by anybody. All these conditions cause women to accept traditional applications without questioning them (Egri & Golbaşı, 2007).

In Anatolian culture, there are many beliefs, taboos and behaviors relating to women and babies in the postpartum period. In Turkey, as in other societies, women are advised to abstain from sexual intercourse for about 40 days after birth. Postnatal women are believed to be dirty and weak in this period. It is believed that postnatal women are more vulnerable to evil forces. It is considered that 'the grave of women who have just given birth is open for 40 days' (i.e. Postnatal women can easily die in 40 days). In addition, many women have superstitions such as 'alkarısı'. 'Alkarısı' refers to a woman believed to possess malevolent powers that can cause harm to postnatal women or babies. The harm by 'alkarısı' is known as 'albasması'. 'Albasması' is in fact a puerperal fever or childbed fever. According to Turkish traditions, women are

confined to home for at least 40 days after childbirth. Both the woman and her baby should not be left alone at home in order to be protected from 'alkarısı', and a needle, bread, knife and onion are put under their pillows to protect them against 'alkarısı' (Egri & Golbaşı, 2007; Geckil et al.2009).

In order to keep new mothers warm, a heated stone wrapped in cloth is applied to their abdomen, and they are encouraged to sit on heated soil covered by cloth. Many women adhere to traditions of food restrictions and prescriptions during the postpartum period. Women are generally encouraged to eat sweet foods (e.g.'bulamac-' made with flour, fat and sugar), and are not given any water to drink for 2–3 days after the birth (Egri & Golbaşı, 2007; Geckil et al.2009).

Some of these applications are good, yet some of them are bad for health. And some of them have no effect on it at all. Especially risky applications could lengthen the process of regaining health, prevent the person from being treated effectively and properly, result in another illness, disability or even death.

New-born/Child care traditional practices

Most of the traditional applications which are child health- and illnesses-oriented may delay the treatment process, or may lead to the death of child (Egri & Golbaşı, 2007).

Turkish mothers have traditional child care practices concerning first bathing, first nail cut, breastfeeding, jaundice, removal of the umbilical cord, swaddling, the evil eye and "kırk basması" (Beser et al. 2010).

It is possible to say that almost all the babies in Turkey are breastfed during the first months after the delivery. According to the report of TDHS 2013, this rate decreases to 92% in the sixth month and to 78% in the twelfth month. A growing interest and awareness about the effects of breastfeeding on health has been occasionally reported. Despite the high rates of breastfeeding in Turkey, it is estimated that mothers have been inadequately informed about breastfeeding duration, giving colostrum and effective methods of breastfeeding, and that effective methods of breastfeeding vary according to sociodemographic characteristics and cultural regions (Hacettepe University Institute of Population Studies. 2014). Waiting for at least three calls for prayer to breastfeed after birth used to be a common approach, but it is used less often today as it may lead to delayed secretion of maternal milk and cause hypoglycemia in the baby (Aliefendioglu et al. 2009). Turkey's most hospitals are baby-friendly and the importance of breastfeeding is stressed and mothers are encouraged to breastfeed right after birth (UNICEF-Turkey).

In rural areas, it is still observed that swaddling with soil will keep babies warm, and salting babies' bodies will prevent them from smelling bad when they grow up (Geckil et al. 2009). Swaddling was the most commonly used procedure (Aliefendioglu et al. 2009). Swaddling was reported to have some advantages such as keeping the baby's body straight, decreasing crying, and enabling longer sleep, and it is used especially in Turkey, Russia, and China. However, many harmful effects such as hyperthermia could lead to an increase in respiratory system infections, dislocation of the hip, and sudden infant death syndrome (Aliefendioglu et al. 2009).

"Evil eye" (when it is directed at a person, the person can get injured or have bad luck) is another common belief in Turkish culture. If that eye is directed at a baby,

numerous applications are performed to heal the baby. For instance; taking the baby to a reverend and having him written some sayings from the holy book Quran (Egri & Golbaşı, 2007; Kahriman et al. 2011).

There are some other traditional applications to protect the baby from getting jaundice, such as, pinning gold to the baby's clothes and not giving the baby colostrum. Two different studies from the west and east of Turkey have reported that 35% and 41.8% of the mothers would use this gold or a yellow piece of cloth to prevent and treat newborn jaundice (Biltekin et al. 2004; Ozyazıcıoglu & Polat, 2004). Although these methods do not harm the baby, delayed admission to hospital for hyperbilrubinemia could have detrimental effects on the baby's health as a result of bilirubin toxicity. As for preventing canker, baby's mouth is cleaned with baking soda or breastmilk or sugar. Likewise, as for the treatment of diaper rash, applying powder, olive oil, cream or breastmilk is commonly used (Egri & Golbaşı, 2007).

Child care is closely related to the beliefs, traditions, and behaviors of the community, and traditional methods are therefore used widely in child care. These beliefs and methods can be logical or illogical, and may even have harmful consequences (Bornstein, 2012). The soil put under the baby is called "holluk". Holluk is a special kind of soil that is red and sand-like and is burned for a while and does not become muddy when wet. It is a method that is used when it is difficult to wash diapers and when disposable diapers cannot be used. Holluk lets the urine filter through and therefore keeps the baby dry. It could be useful in very cold climates. However, it can lead to fatal infections due to microorganisms living in the soil especially tetanus if it is not burned before use (Aliefendioglu et al. 2009; Egri & Golbaşı, 2007). Some newborn babies may have breast enlargement or milk coming from their breasts because of the hormones transferred from mother to child (U.S. National Library of Medicine). This is a physiological event and it spontaneously disappears. However, some misguided mothers may express the milk. Older members of the family play an important role in the use of these methods. This behavior is seen more commonly when there are grandmothers in the house and it may lead to breast abscess formation (Aliefendioglu et al. 2009; Egri & Golbaşı, 2007). Traditional practices in relation to the disposal of the umbilical cord are also common. The umbilical cord is often hidden in a special place with ash, olive oil or coffee applied to the umbilical stump (Geckil et al. 2009). Although the use of traditional methods varies from region to region depending on the local culture, it may be reflected intensively in social life in some regions (Aliefendioglu et al. 2009; Egri & Golbaşı, 2007).

As it is seen, a great deal of traditional practices are being followed in the Turkish society too as they are being made in all societies of the World. Even if all of such practices in respect of mother and baby are being used with good faith, majority of such practices may give harm to the health of mother and baby. Due to the fact that people believe many problems during post-partum period are not accepted to be illness but brought about by supernatural beings, mothers are taken to healers or entombed saints, monasteries instead of hospitals, medical institutions and tried to be treated this way (Egri & Golbaşı, 2007).

The fact that modern mothers use these traditional methods less commonly indicates that their educational level is increasing steadily, and perhaps the healthcare institutions and media are making it easier for mothers to access correct information

about child care. In conclusion, traditional beliefs of a community can significantly influence the behavior of its members. With advances in science, protection and treatment methods have been developed and a scientific approach has taken the place of traditional applications. It is very important for these scientific advances to be communicated to the community. It is important to note that supporting procedures can benefit the babies, and stopping those can be harmful. National policies for baby care need to be developed and families should be trained regularly through programs developed according to their social structure. The very first thing to do is to determine the traditional beliefs that may have a negative impact and to plan direct education attempts accordingly (Aliefendioglu et al. 2009).

Midwifery Roles

Health is a state of physical, emotional and social wellness. This definition includes making diagnoses, valuing, and practicing culturally (Raingruber, 2012). The nature and meaning of health varies from culture to culture. For this reason, midwives need to know the culture, subcultures, and styles and ways a society cares that have an effect on health (Ozgur et al. 2008).

The more midwives and nurses know about the values, beliefs and traditional postnatal practices of women, the better they will be able to meet the needs of these women and enlist their co-operation. In Turkey, few studies of traditional practices relating to the postpartum care of a woman and her baby have been conducted (Ayaz, Efe, 2008). Therefore, the present study sought to address this gap in knowledge, gain an understanding of traditional practices and investigate the factors influencing such practices. It can be suggested that culture and health beliefs should be taken into account when training programs are prepared to change traditional child care practices and to promote health behaviors. Public health nurses and midwives should consider the traditional practices with no harmful effects as a part of culture and should not be prejudiced about them in order to maintain communication with individuals from different cultures and to gain their confidence (United Nations High Commissioner for Human Rights).

Midwives work with individuals and families who have different cultural characteristics in many environments (Greene, 2007). Therefore, midwives should be aware of traditions, customs, attitudes and values of the individuals and families for whom they provide care. Especially midwives should be careful about reflections of cultural faiths and practices of the individuals and families on health. Such approach holds importance in terms of including individuals in their care and preventing negative effects of harmful practices on health by supporting useful practices (Roudsari et al. 2015).

Midwives have great responsibility in terms of developing protection of women's health (The Royal College of Midwives, 2014). Particularly, with regard to preventing the problems related to fertility, care provided by midwives during pregnancy, delivery and postpartum is extremely important (Beigi et al. 2011). With the purpose of making such care provided by midwives effective and appropriate for the need, it is significant to deal with and evaluate the environment in which a woman lives and the characteristics of this environment as a whole. It is important to know and use such cultural factors in this care philosophy, which is called total care, as culture of an

individual is an integrated part of his/her life and therefore of midwife care (Walker et al. 2014).

The fact that being aware of traditional beliefs and practices of individuals during pregnancy, delivery and postpartum will also be a guide in terms of determining the priorities regarding health services to be provided to families during these periods (Higginbottom et al. 2013).

Midwifery is directly applied from human to human, and a midwife must perform a duty wherever a human being exists (Nursing Midwifery Council, 2013). Individuals are handled with a holistic view in midwifery. An individual is considered an integrated part of his/her environment in holistic care approach. Beliefs, ethical values, lifestyle of an individual are important factors in his/her existence. All of these factors create his/her culture and is an inseparable part of care. Getting care according to their cultures is important right of individuals.

Problems regarding midwifery in Turkey

Midwife in health system in Turkey is a member who has the most duty and responsibility by working at an extreme point, but is the loneliest key staff member. Therefore, he/she must be very strong in terms of knowledge and skill. However, inadequacies to be handled in midwifery job have reached a crucial point. Particularly, professional inadequacies with regard to basic training and education and also not providing enough regular and effective inservice training trigger problems. Midwives work in hospitals under the supervision of a headnurse like other nurses. They use the rooms and spaces belonging to nurses such as nurse's room and nurse's table in hospitals. This has always been the situation, and no progress has been made to change this.

Turkey has an obligation to take up and implement European legislation in the fields of occupational health and safety, and public health (including provision for surveillance and control of communicable diseases). In addition, the Turkish Government has a duty to take appropriate steps for the promotion of access to good quality health care, and a general improvement of the health status of the population (Artvinli, 2016). The International Code of Ethics for Midwives (ICM Code) acknowledges women as individuals with human rights. The ICM Code seeks 'justice for all people and equity in access to health care'. It also stresses the importance of basing all relationships between health professionals and those they care for on mutual respect, trust and the dignity of all members of society (ICM, 2005). The ICM Code put respect for patients' rights at the heart of the caring relationship (International Confederation of Midwives, 2014).

In Turkey, however, there has been neither a specific code nor general legislation relevant to midwifery covering the issue of patients' rights. Turkey has one general practitioner for every 557 people, one nurse for every 515 people and one midwife for every 1483 people (Turkish Statistical Enstitute, 2013). Midwives work under the line management of physicians, in accordance with Turkish laws and directives. A midwife employed in the public sector is not allowed to practice in the private sector at the same time. Health care services are more likely to be found in urban areas than rural areas, and almost half of all physicians are employed in the country's largest cities (European Commission Screening Report Turkey, 2007). In rural areas where doctors are not

available, midwives seem to be working.

The midwifery profession has a duty to gain the appropriate knowledge and develop the necessary awareness and sensitivity. Midwives are crucial members of the health care team. Their role in the implementation of patients' rights cannot be ignored and are in a particularly appropriate position to protect and promote the rights of their patients (World Health Organization, 2013).

Conclusion

Culture is the most indispensable part of health care. Due to the effect of cultural values, faith, practices and attitudes on health, midwife should take such values and factors into consideration while meeting the requirements of individuals to whom she/he provides care. While providing care, midwife should answer the question "To what extent culture of the individual is different from mine?" If midwife does not have sufficient information about the group to whom he/she provides service and care, he/she may fail to meet the requirements of them, and communication between the individual and him/her may be negatively affected. If midwife does not know the characteristics of different cultures and misunderstands any attitude which is different from his/her culture, this situation may affect the quality of care (Celik et al. 2012). While providing care to the individuals, taking their cultural characteristics into consideration increases care quality and broadens midwives' point of view. Therefore, it is important and necessary to collect basic cultural data with regard to individual and the environment in which he/she lives (Australian Nursing Federation, 2009).

Providing cultural care increases environment of trust between care provider and receiver, and causes care provided to be accepted easily by the individual. Midwife who has the knowledge of cultural characteristics of an individual treats him/her more sympathetically and harmoniously and thus, he/she causes individual to take maximum advantage of the service provided (Roudsari et al. 2015). Cultural care cause individuals to recover from illness, obtain optimal health level and gain a new and healthy lifestyle in accordance with their cultures. Midwives, with regard to cultural practices, should avoid being in conflict with individuals to whom they provide care against harmful things in terms of health, and should act together and guide them on the way to develop a healthier lifestyle (Working Together to Safeguard Children, 2009).

Care which is provided according to cultural characteristics of individuals helps them cultural adaptions more easily, and thus increases the quality of service provided (Saha et al. 2008). It is extremely important in terms of theoretical development of midwifery science and its applications, of being accepted more by society and of being a guide for other health sciences regarding cultural care.

As a result, in Turkey midwives have to improve themselves on the complex dimensions of culture they need to understand, internalize the holistic approach, understand cultural differences, be able to change their beliefs in the superiority of their own race, be able to make cultural analyses, improve communication skills, understand cultural differences and similarities, be able to associate health behaviors with cultural characteristics and be able to show respect for individuals' sociocultural diversity. Today, even though the theoretical information in midwifery education includes cultural care very little, it cannot be considered enough.

In Turkey, health services have been socialized since 1961, but traditional

practices are still used for maintaining health and treating several diseases. The use of traditional practices is more prevalent in the East than in the West, and in villages than in cities. The new socialized health services require one health centre to be established per population of 5000 in rural areas and per population of 10,000 in urban areas. Integrated health services are provided by a team composed of a medical doctor, a nurse and a midwife per population of 2500. Most of the nurses and midwives work together in health care areas in Turkey; hence they play a primary role in caring for healthy and sick individuals.

Conflict of Interest

The authors have no conflicts of interest to disclose.

REFERENCES

Aliefendioglu D, Hizel S, Mısırlıoglu ED, Sanli C, Albayrak M, Oktay A. (2009). Traditional Child Care Procedures in An Anatolian City. Gazi Medical Journal; 20(1):17-20.

Artvinli F. (2016). The Ethics of Occupational Health and Safety in Turkey: Responsibility and Consent to Risk. Acta Bioeth. 2016; 22(1): 111–118.

Australian Nursing Federation. (2009). Primary Health Care in Australia A Nursing and Midwifery Consensus View. Available at: https://anmf.org.au/documents/reports/PHC_Australia.pdf Accessed: 12 September 2017

Ayaz S, Efe SY. (2008). Potentially Harmful Traditional Practices during Pregnancy and Postpartum. The European Journal of Contraception and Reproductive Health Care;13(3):282–288.

Beigi M, Javanmardi Z, Khani B, Safdari F. (2011). The Effect of Using Maternal Care Log Book on Pregnancy Outcome in Clients Referred to Private Gynecologists and Midwives Offices. Iran J Nurs Midwifery Res.;16(3):222–226.

Beser A, Topcu S, Coskun A, Erdem N, Gelisken R, Özer D. (2010). Traditional Child Care Practices Among Mothers with İnfants Less Than One Year Old. DEUHYO ED; 3(3):137-145.

Biltekin O, Boran OD, Denkli MD, Yalcınkaya S. (2004). Naldöken Sağlık Ocağı Bölgesinde 0-11 Aylık Bebeği Olan Annelerin Doğum Öncesi Dönem ve Bebek Bakımında Geleneksel Uygulamaları (Traditional Practices in Prenatal Period and Baby Care for Mothers Who Have 0-11 Month Old Babies in Naldoken Primary Health Care Center Region). STED;13(5):166-167.

Bornstein MH. (2012). Cultural Approaches to Parenting. Parent Sci Pract;12(2-3):212–221. doi:10.1080/15295192.2012.683359.

Celik AS, Capık A, Engin R. (2012). Erzurum'da Gebelik Ve Doğum Sonu Dönemde Yapılan Geleneksel Uygulamaların Belirlenmesi (Determining The Traditional Practices During Pregnancy and Postpartum Period in Erzurum). Journal of Anatolia Nursing and Health Sciences; 15(4):262-267.

Center for Substance Abuse Treatment (US). (2014). Improving Cultural Competence. Rockville, MD: Substance Abuse and Mental Health Services Administration (US); 2104. Treatment Improvement Protocol (TIP) Series, No. 59. Available from: https://www.ncbi.nlm.nih.gov/books/NBK248431/ Accessed: 13 November 2017.

Egri G. Golbaşı Z. (2007). Traditional postnatal ınfant-care practices of 15-49 years old married women. TAF Prev Med Bull.; 6(5):313-320.

European Commission Screening Report Turkey. (2007). Chapter 3 – Right of Establishment and Freedom to Provide Services. Available at: https://ec.europa.eu/neighbourhood-enlargement/sites/near/files/pdf/turkey/screening_reports/screening_report_03_tr_internet_en.pdf Accessed: 10 November 2017

Geckil E, Sahin T, Ege E. (2009). Traditional Postpartum Practices of Women and Infants and The Factors Influencing such Practices in South Eastern Turkey. Midwifery; 25:62–71.

Globolization 101. Culture and Globalization. A Project of SUNY LEVIN Institute. Available at: http://www.globalization101.org/uploads/File/Culture/cultall.pdf Accessed: 10 November 2017.

Greene MJ. (2007).Strategies for Incorporating Cultural Competence into Childbirth Education Curriculum. Journal of Perinatal Education;16(2):33–37.

Hacettepe University Institute of Population Studies. (2014). "2013 Turkey Demographic and Health Survey". Hacettepe University Institute of Population Studies, T.R. Ministry of Development and TUBITAK, Ankara, Turkey.

Higginbottom GMA, Safipour J, Mumtaz Z, Chiu Y, Paton P, Pillay J. (2013). "I have to do what I believe": Sudanese Women's Beliefs and Resistance to Hegemonic Practices at Home and During Experiences of Maternity Care in Canada. BMC Pregnancy and Childbirth; 13:51

International Confederation of Midwives (2014). International Code of Ethics for Midwives. Available at: http://internationalmidwives.org/assets/uploads/documents/CoreDocuments/CD2008_001%20V2014%20ENG%20International%20Code%20of%20Ethics%20for%20Midwives.pdf Accessed: 20 October 2017

Kahriman I, Topbas M, Can G. (2011). Traditional Baby Care Practices among Mothers with Children Aged 6-12 Months in the Turkish Province of Trabzon. TAF Prev Med Bull; 10(1): 61-7

Leavitt JW, Walton W. (1984). Down to Death's Door: Women's Perceptions of Childbirth in America. In J. W. Leavott (Ed.), Women and health in America. Historical readings. pp. 155–165. Madison, WI: The University of Wisconsin Press.

Nursing Midwifery Council. (2013). Raising and Escalating Concerns: Guidance for Nurses and Midwives. Available at: https://www.qub.ac.uk/elearning/media/Media,259945,en.pdf Accessed: 12 October 2017

Okka B, Durduran Y, Kodaz ND. (2016). Traditional Practices of Konya Women during Pregnancy, Birth, The Postpartum Period, and Newborn Care. Turkish Journal of Medical Sciences; 46:501-511. doi:10.3906/sag-1504-120

Ozgur G, Bilge A, Senol S, Genc RE. (2008). Globalization, Culture and Nursing. 1st European Transcultural Nurses' Association (ETNA) International Conference, Oral presentation, Izmir, Turkey.

Ozyazıcıoglu N, Polat S. (2004). 12 Aylık Çocuğu Olan Annelerin Bazı Sağlık Sorunlarında Başvurdukları Geleneksel Uygulamalar **(**Traditional Applications that The Mothers with 12 Month-Child Applied for Some Health Problems). University

of Ataturk Nursing High School Journal; 7(2): 30-38. Avaible from: http://e-dergi.atauni.edu.tr/ataunihem/article/view/1025000266/1025000261

Raingruber, B. (2012). Health Education, Health Promotion, and Health: What do These Definitions Have to Do with Nursing? In B. Raingruber (Ed.), Contemporary Health Promotion in Nursing Practice (pp. 1–24). Jones & Bartlett. Available at: http://samples.jbpub.com/9781449697211/28123_CH01_Pass2.pdf Accessed: 10 October 2017.

Roudsari RL, Zakerihamidi M, Khoei EM. (2015). Socio-cultural Beliefs, Values and Traditions Regarding Women's Preferred Mode of Birth in The North of Iran. IJCBNM; 3(3):165-176.

Saha S, Beach MC, Cooper LA. (2008). Patient Centeredness, Cultural Competence and Healthcare Quality. J Natl Med Assoc.;100(11):1275–1285.

The Law of Socialization of Health Services. (1961). Available at: http://www.saglik.gov.tr/TR,10388/sayisi224--rg-tarihi12011961--rg-sayisi10705-saglik-hizmetlerinin-sosyallestirilmesi-hakkinda-kanun.html Accessed: 10 October 2017

The Royal College of Midwives (2014). High Quality Midwifery Care. Available at: https://www.rcm.org.uk/sites/default/files/High%20Quality%20Midwifery%20Care%20Final.pdf Accessed: 9 November 2017.

Thurston C. (2014). Essential Nursing Care for Children and Young People: Theory, Policy and Practice. Cultural Aspects for Children and Young People. Routledge.

Turkish Statistical Enstitute. (2013). Number of Individuals per Healthcare Personnel, 1928-2015. http://www.turkstat.gov.tr/Start.do Accessed: 10 November 2017.

UNICEF-Turkey. The Facts That Relation with Breast Milk Available from: https://www.unicef.org/turkey/ir/_mc29.html Accessed: 10 November 2017

United Nations High Commissioner for Human Rights (OHCHR). Harmful Traditional Practices Affecting the Health of Women and Children. Fact Sheet. No.23 Available at: http://www.ohchr.org/Documents/Publications/FactSheet23en.pdf Accessed: 10 October 2017

U.S. National Library of Medicine. MedlinePlus. Hormonal Effects in Newborns. Available at: https://medlineplus.gov/ency/article/001911.htm Accessed: 10 October 2017

Walker D, Lannen B, Rossie D. (2014). Midwifery Practice and Education: Current Challenges and Opportunities" OJIN: The Online Journal of Issues in Nursing;19(2).

World Health Organization. (2013). WHO Nursing and Midwifery Progress Report 2008–2012. Geneva, Switzerland. Available at: http://www.who.int/hrh/nursing_midwifery/progress_report/en/ Accessed: 12 September 2017

Working Together to Safeguard Children. (2009). A Guide to Inter-Agency Working to Safeguard and Promote The Welfare of Children. Available at: https://www.education.gov.uk/consultations/downloadableDocs/Working%20Together%20to%20Safeguard%20ChildrenV2.pdf Accessed: 12 November 2017

Zhang X. (1991). Acupuncture: Review and Analysis of Reports on Controlled Clinical Trials. Traditional Medicine and Modern Health Care. Progress report by the Director-General. Geneva, World Health Organization. (Unpublished document A44/10).

Chapter 73

Life Quality of Interfile Couples and the Role of Health Professionals

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INTRODUCTION

Infertility is defined by the World Health Organization as the absence of clinical pregnancy after unprotected sexual intercourse for 12 months or longer (Zegers-Hochschild *et al.,* 2009). Infertility is not only a physiological problem, but also a life crisis with psychological, familial and social problems and cultural aspects. Infertility is an unexpected loss for a woman and her family. It is a process that brings about the problem of adapting to a childless life, and it is a process that needs to cope with difficulties (Ozan, 2013).

Infertility is an important public health problem in the world, affecting 9% of reproductive couples (Boivin *et al.,* 2007). While the incidence of infertility varies from region to region and from country to country, approximately 20% of couples seeking obstetric care are infertile (Olshansky & Garner, 2008). Both the infertile condition and the treatment applied affect the quality of life, satisfaction and well-being of the individual negatively by introducing a negative psychological burden on the couple (Zegers-Hochschild *et al.,* 2009).

Infertile couples have a high level of anxiety and depression and this situation leads to problems such as mariatl problems and divorce. The quality of life, marital adjustment and sexual life of nearly 40% of couples receiving Assisted Reproductive Techniques (ART). While it is generally stated that marriage relationship of the couples receiving treatment is complicated and problematic, in some studies it is stated that this situation strengthens the relationship between couples. It was found that young women and women in menopause transition period have more complaints (lack of sexual desire, arousal / orgasmic disorders) (Winkelman *et al.,* 2016). It was stated that the infertile women have low spirituality, religion, personal belief and self-esteem, high pain and discomfort (Xiaoli *et al.,* 2016).

In a study, it was stated that economic, emotional, sexual, physical and psychological effects were lower among women living in rural areas. Financial resources have also been associated with higher quality of life among infertile couples, especially those with high income and university education (Namdar *et al.,* 2017). Infertile patients experience two important stresses due to the clinical situation, apart from the physical problems they experience. The first is the interpersonal (social, interpersonal, marital) experiences and the second is the importance of parenting in the life of the couple (Donarelli *et al.,* 2015).

Infertility is a life crisis that negatively affects the social lives of spouses, marital

relationships, emotional states, plans for the future, sexual lives, body image and self-esteem. Infertility therapy is an emotionally stressful, economically expensive, physically painful process that forces compliance mechanisms. It has psycho-social-cultural effects on the people, causing the couple's sexual life to be affected and the quality of life to decrease.

1. PSYCHO-SOCIAL EFFECTS OF INFERTILITY

As a public health problem, infertility affects quality of life because of psychosocial and cultural consequences, leads to depression, anxiety, social isolation, deprivation, marital problems, loss of background, gender identity loss, mood disorders and self-accusation (Maroufizadeh *et al.,* 2015; Maroufizadeh *et al.,* 2017). Couples who are diagnosed with infertility may experience a crisis because they have not experienced such a situation in marriage (Atay, 2017).

Stages of Infertility Crisis;

- Stages of shock, disbelief and denial
- Anxiety, and loss of control
- Loneliness and alienation
- Guilt and anger
- Depression and mourning
- Acceptance and compliance
- Resolution

Couples may experience loss of control during infertility treatment. Examinations can be expensive and complicated, and because of the interventional procedures, couples may feel that their private life is being violated. Because, the sexual life and body of the individuals who live in this sitation are put under the microscobe (be put under the microscobe).

Infertility can be a major social stressor and can be accompanied by many psychological and social problems such as depression, anxiety, social isolation, and sexual dysfunction. Infertile couples may experience psychological distress and deterioration in health-related quality of life. Depression is most often seen in infertile couples (Zegers-Hochschild et al., 2009). In a study conducted with 130 infertile women in China, it was stated that the ratio of depression and anxiety was 83.8% and the ratio of moderate and severe symptoms was 52%. It was found that ratio of anxiety and depression in the study conducted in Hong Kong was 33%, in the study conducted in Iran the ratio of depression was 40.8% and anxiety was 86.8% and anxiety ratio in the study conducted in Spain was 67%. In a multicenter study in the Netherlands, Belgium and France, depressive mood, memory / concentration, and anxiety prevalences were common in infertile women (Xiaoli *et al.,* 2016). Among women in the study with 112 infertile women in Taiwan; anxiety (23%), major depression (17%) and dysthymic disorder (10%) were observed. A meta-analysis evaluating 14 studies published between 1980 and 2009 found that infertile women had significantly lower quality of life scores on mental health, social functioning, and emotional behavior than those of fertile control groups (Chachamovich *et al.,* 2010).

Many diseases that were once untreatable have now become treatable with the advancement of the scientific studies. Approximately, one-three of the infertile individuals are female, one-three are male, and one-three are both female and male.

Unfortunately, infertility is still considered a female issue in developing countries (Van den *et al.,* 2010). For example, the social consequences of divorce, remarriage and separation as a result of infertility in Iranian culture lead to serious mental strain in infertile women (Karami *et al.,* 2001). Psychological disorders as side effects of infertility cause many bio-psychosocial disorders. For this reason, attention should be paid to the mental health and social problems of individuals with infertility treatment. In a variety of studies, sexual dysfunction, eating disorders, depression and psychiatric disorders are more common in infertile couples than women who have a healthy reproductive system. Sexual desire and arousal are also lower in infertile women (Seyedi *et al.,* 2016).

The desire to become a parent causes infertile women to live stress. Depressed and anxiety levels of infertile women are much higher than that of fertile women. After an unsuccessful fertility treatment, the stress situation is more severe. It has been stated by the World Health Organization that female infertility and an unsuccessful fertility treatment have a negative impact on quality of life. In this process, the living standards of couples are influenced by individual expectations, goals, anxieties, value systems and culture (Xiaoli *et al.,* 2016).

In their study, Maroufizadeh et al. (2018) found that women had higher levels of depression than their spouses and that women were more affected than males by the infertility problem. Thus, the quality of life of women is more affected because of infertility problems. Correlation analysis showed high correlation coefficients between male and female scores.

Many different methods have been developed to treat psychological problems in infertile couples. For example, interpersonal psychotherapy, cognitive-behavioral therapy, supportive psychotherapy, as well as emotion-oriented and problem-oriented coping strategies are some useful methods. Moreover, positive psychology is a new approach that emphasizes the strengths of the individual, including positive emotions of individuals, positive individual characteristics and positive institutions. Positive psychology is also applied as an intervention technique to support positive experiences, positive behaviors or positive cognitions (Sin & Lyubomirsky 2009). It was stated that this treatment method is particularly effective in those who do not respond positively to drug treatment, in effective cost factor, when there is a short time to improve the positive emotional mood, and when there are stigmatization and adverse side effects. Positive psychotherapy and interventions were found to be effective on happiness and depression, and to improve quality of life and satisfaction (Layous *et al.,* 2011).

SOCIO-CULTURAL EFFECTS OF INFERTILITY

In the society, the child is a factor that includes psychological, economic and social values. While the child is thought as an assurance of aging and care for the people, it is seen as a work force for societies whose economy is based on agriculture. Being able to have child in some societies is also an important factor that gives people reputation and privilege. All of these situations have led to couples who can not have children to be under psychological pressure due to the influence of the community they live in (Albayrak & Günay, 2007). The inability to reproduce is perceived as embarrassing and creates a social stigmatization.

For woman, childlessness means loss of control over the function of giving birth

and body, insufficiency, to feel out of women's society, to be alone (not having support of a child), despair, lack of social security (having no one to provide care in old age), lack of social role (mother, woman, puerperant, mother-in-law, grandmother) and decrease in self-worth. For man, childlessness means inability to function as masculine, insufficiency (failure to satisfy fatherhood motive), to be alone (in old age), lack of support in business life, inability to provide the continuation of the descent, lack of social role (father, father-in-law, grandfather) and lack of social security (Ozan, 2013).

Infertility is also a crisis period for all family members. The responses of the parents to infertility can be harmful as well as supportive. In many African countries, such as Nigeria, it was reported that due to women are mostly considered as responsible for infertility, in marriages without children, men are under pressure to have another marriage by their parents. According to result of a study conducted with 192 infertile couples in China, it was determined that 37% of the women and 20% of the men were thinking that "infertility is embarrassing for women". More than 50% of the couples stated that they were under pressure during sexual intercourse, and 60% said that they felt constant pressure (Lau *et al.*, 2008).

Infertility also causes women to be exposed to domestic violence and deterioration of long-term friendships. The point of view of the society and constant talks about these issues cause the couples to stay away from their circles and friends, and to experience social isolation (Atay, 2017).

SEXUAL EFFECTS OF INFERTILITY

In the literature review, four types of relationship between infertility and sexuality come into prominence.

1) Female or male infertility following sexual dysfunction

2) The effect of treatment and tests on sexual functions

3) The effect of infertility on sexual focus and various emotions (guilt, aggression, inferiority, passiveness) and infertility-related depression, stress and anxiety

4) Sexual and psychological interactions

Since infertility treatment takes a long time, such as months or years, the relationship of the couple can be affected negatively. Because of the need to have sex regularly, many couples begin to perceive sex as a mechanical event that must be done with certain frequencies. Thus, the measure of success and failure is regarded as an action for the child rather than pleasure. As a result, playing with the spontaneous nature of the spontaneous sex can lead to sexual problems such as frijydite, anorgasm, impotence (Atay, 2017).

It was stated that marital adjustment and quality of life were lower among infertile women. Sexual activity is also influenced by psychological presure such as forced sexual intercourse during ovulation period and efforts to become pregnant (Monga *et al.*, 2004). For example, the relationship between level of stress level and quality of life is also due to socioeconomic status and other non-medical reasons. Changes in quality of life may vary due to infertile populations, gender, and ethnicity. For this reason, it is very important to identify the factors affecting quality of life and to conduct scientific studies in the infertile population (Namdar *et al.*, 2017).

ROLES OF THE HEALTH PROFESSIONAL

Although it is known that stress, depression, anxiety and low quality of life are

common among the infertility population, healthcare providers are neglecting to address these issues. In a questionnaire survey conducted with 414 women, only one-third of doctors stated that they were questioning the mental health of the patients (Hoff *et al.,* 2015). Healt professionals should develop simple or more complex measures in clinics to improve the quality of life of the patients, to reduce stress and mood disorders and to improve patient care. For a simple precaution, it is necessary to screen for the presence of stress and make recommendations for it when beginning treatment of infertility. The Stress Scale Related to Infertility was developed to describe patients who need extra support during infertility therapy (Casu & Gremigni, 2016). The expected time between embryo transfer and pregnancy test in IVF treatment is considered as the most stressful period. It is especially appropriate at this time to introduce stress management and coping strategies to infertility patients. Several recent studies have reported that self-administered coping methods are useful tools for reducing patient stress (Rooney & Domar 2016).

In a randomized controlled trial, it was found that cognitive coping and relaxation attempts positively affected the psychological status in patients with infertility. Patients who use the method have a lower probability of discontinuing treatment, the methods of coping are more positive and the existence of a better quality of life. However, no significant difference was found in pregnancy rates (Domar *et al.,* 2015). In many studies, it was emphasized that social support is an important influence on infertility patients. Social support is provided by spouses or by group support. Patients who think they do not get social support have worse quality of life. Increased social support can increase patient self-esteem and reduce mental symptoms (Wong *et al.,* 2015). It has been suggested that infertility is related to the bio-psychosocial crisis and it is stated that the stress which causes the majority of the psychological disorders is the side effect of infertility. For this reason, in addition to infertility treatment, the individual's mental health and social problems should be addressed (Seyedi *et al.,* 2016). A new definition for the fertility quality of life (FertiQOL) is used in the literature to assess the effects of fertility problems, especially at different dimensions of life (Dural *et al.,* 2016).

In a systematic review, 39 meta-analyzes of psychological interventions and evaluation of the effectiveness of pregnancy rates for patients using reproductive technologies were discussed. The study concludes that psychosocial interventions addressing cognitive behavioral therapy are effective in reducing psychological distress and are associated with a significant increase in pregnancy rates. Cognitive-behavioral therapy has been described as an effective way to reduce distress and improve clinical pregnancy rates (Frederiksen *et al.,* 2015).

A patient-centered care model can increase patient experience, quality of life, and overall well-being. Another recommendation is to include a mental health professional in the infertility treatment team so that the negative symptoms that occur during treatment can be addressed correctly. This not only improves patient care, it can also provide an easier working environment for health personnel (Castells-Ayuso *et al.,* 2015, Rooney&Domar 2016).

REFERENCES

Albayrak E., Günay O. (2007). State and Trait Anxiety Levels of Childless Women in Kayseri, Turkey. Eur J Contracept Reprod Health Care. 14, 1-6.

Atay Y. (2017). İnfertilite Tedavisi Gören Kadınların Cinsel Yaşam Kalitesi, İlişkilerindeki Mutluluk Düzeyi ve Etkileyen Faktörler. Yüksek Lisans Tezi, İstanbul.

Boivin J., Bunting L., Collins J.A., Nygren K.G. (2007). International Estimates of İnfertility Prevalence and Treatment-Seeking: Potential Need and Demand For İnfertility Medical Care. Hum Reprod. 22(6), 1506-1512.

Castells-Ayuso P., Berenguer-Labaig C., Sanchez-Martın P., Sanchez-Martın F. (2015). Nurses As a Support to Improve the Quality of Life During Assisted Reproduction. Enferm Clin. 25, 110-116.

Casu G., Gremigni P. (2016). Screening for Infertility-Related Stress at the Time of Initial Infertility Consultation: Psychometric Properties of a Brief Measure. J Adv Nurs. 72, 693-706.

Chachamovich J.R., Chachamovich E., Ezer H., et al. (2010). Investigating Quality of Life and Health-Related Quality Of Life İn İnfertility: A Systematic Review. J Psychosom Obstet Gynaecol. 31(2), 101-110.

Domar A.D., Gross J., Rooney K., Boivin J. (2015). Exploratory Randomized Trial on the Effect of a Brief Psychological Intervention on Emotions, Quality of Life, Discontinuation, and Pregnancy Rates in Vitro Fertilization Patients. Fertil Steril. 104, 440-451.

Donarelli Z., Gullo S., LoCoco G., et al. (2015). Assessing Infertility-Related Stress: The Factor Structure of the Fertility Problem Inventory in Italian Couples Undergoing İnfertility Treatment. J Psychosom Obstet Gynaecol. 36, 58-65.

Dural O., Yasa C., Keyif B., et al. (2016). Effect of Infertility on Quality of Life of Women: A Validation Study of the Turkish FertiQoL. Hum Fertil. 19(3), 186-191.

Frederiksen Y., Farver-Vestergaard I., Skovgard N.G., et al. (2015). Efficacy of Psychosocial Interventions for Psychological and Pregnancy Outcomes in Infertile Women and Men: A Systematic Review and Meta-analysis. BMJ Open. 5(1), E006592.

Hoff H.S., Crawford N.M., Mersereau J.E. (2015). Mental Health Disorders in Infertile Women: Prevalence, Perceived Effect on Fertility and Willingness for Treatment for Anxiety and Depression. Fertil Steril. 104(3), 357.

Karami Noori R., Akhoondi M.M., Bahjati Ardekani Z. (2001). Psychosocial Aspects of Infertility in View of Iranian Physicians. J Reprod Infertil. 2(7), 13-26.

Lau J.T, Wang Q., Cheng Y., Kim J.H., Yang X., Tsui H.Y. (2008). Infertility Related Perceptions and Responses and Their Associations with Quality of Life Among Rural Chinese Infertile Couples. J Sex Marital Ther. 34(3), 248-67.

Layous K., Chancellor J., Lyubomirsky S., Wang L., Doraiswamy P.M. (2011). Delivering Happiness: Translating Positive Psychology İntervention Research for Treating Major and Minor Depressive Disorders. J Altern Complement Med. 17(8), 675-683.

Maroufizadeh S., Ghaheri A., Amini P., Samani R.O. (2017). Psychometric Properties of the Fertility Quality of life Instrument in Infertile Iranian Women. Int J Fertil Steril. 10(4), 371-379.

Maroufizadeh S., Hosseini M., Foroushani A.R., Ormani-Smani R., Amini P. (2018). The Effect of Depression on Quality of Life in İnfertile Couples: An Actor-Partner İnterdependence Model Approach. Health and Quality of Life Outcomes. 16(73), 1-7.

Maroufizadeh S., Karimi E., Vesali S., Omani Samani R. (2015). Anxiety and Depression after Failure of Assisted Reproductive Treatment among Patients Experiencing İnfertility. Int J Gynaecol Obstet. 130(3), 253-256.

Monga M., Alexandrescu B., Katz S.E., Stein M., Ganiats T. (2004). Impact of Infertility on Quality of Life, Marital Adjustment, and Sexual Function. Urology. 63(1), 126-130.

Namdar A., Naghizadeh M., Zamani M., Yaghmaei F., Sameni M.H. (2017). Quality of Life and General Health of Infertile Women. Health and Quality of Life Outcomes. 15(139), 1-8.

Olshansky E., Garner C. (2008). Infertility. In: Fogel CI, Woods NF, editors. Women's health care in advanced practice nursing. New York: Springer Publishing Company. 371-384.

Ozan Y.D. (2013). Watson'ın İnsan Bakım Kuramına Temellendirilmiş Hemşirelik Bakımının İnfertilite Tedavisi Gören Kadınların, Anksiyete, Baş Etme ve İnfertilite Etkilenme Durumlarına Etkisi. Doktora Tezi, İzmir.

Rooney K.L., Domar A.D. (2016). The Impact of Stress on Fertility Treatment. Current Opinion in Obstetrics and Gynecology. 28(3), 198-201.

Seyedi S.T., Sadeghi K., Bakhtiari M., Ahmadi S.M., Nazari Anamagh A., Khayatan T. (2016). Effect of Group Positive Psychotherapy on İmprovement of Life Satisfaction and the Quality of Life in İnfertile Woman. Int J Fertil Steril. 10(1), 105-112.

Sin N.L., Lyubomirsky S. (2009). Enhancing Well-Being and Alleviating Depressive Symptoms with Positive Psychology İnterventions: A Practice-Friendly Meta-Analysis. J Clin Psychol. 65(5), 467-487.

Van den Broeck U., Emery M., Wischmann T., Thorn P. (2010). Counselling in Infertility: Individual, Couple and Group İnterventions. Patient Educ Couns. 81(3), 422-428.

Winkelman W.D., Katz P.P., Smith J.F., Rowen T.S. (2016). The Sexual Impact of Infertility Among Women Seeking Fertility Care. Sex Med. 4(3), 190-197.

Wong J.M., Lawson A., Lanham M., et al. (2015). A cry for help: the relationship between perceived social support and quality of life in infertility patients. Fertil Steril, 104(3), 360.

Xiaoli S., Mei L., Junjun B., Shu D., Zhaolian W., Jin W., et al. (2016). Assessing the Quality of Life of İnfertile Chinese Women: A Cross-Sectional Study. Taiwanese Journal of Obstetrics & Gynecology. 55, 244-250.

Zegers-Hochschild F., Adamson G.D., de Mouzon J., et al. (2009). International Committee for Monitoring Assisted Reproductive Technology, World Health Organization. The international committee for monitoring assisted reproductive technology (ICMART) and the world health organization (WHO) revised glossary on ART terminology, 2009. Fertil Steril. 92(5), 1520-1524.

Chapter 74

The Importance of Oocyte and Embryo Cryopreservation in Fertility Preservation

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INTRODUCTION

Techniques for sustaining fertility and for the treatment of infertility provide more options for women who want to postpone gestation for various reasons. One of these options is the medical egg freezing technique. The medical egg freezing technique is a form of treatment that gives women the chance to get pregnancy in the future with their own eggs (Waldby, 2015). Developments in assisted reproductive techniques have also increased the popularity of oocyte and embryo freezing methods. The first baby after embryo cryopreservation was born in 1986. From this date on, new techniques such as vitrification have increased success rates and have enabled the inclusion of cryopreserved oocyte and embryo cryopreservation processes in IVF (In Vitro Fertilizasyon) clinics around the world (Allahbadia, 2016).

ASSISTED REPRODUCTION TECHNIQUES

Oocytes obtained from assisted reproduction techniques and sperm from the patient's partner are fertilized using the IVF or ICSI (Intracytoplasmic Sperm Injection) method (Yılmaz & Kerimoğlu, 2014).

Oocyte Collection

For oocyte collection, information about the age of the patient, body mass index, response to previous ovarian stimulation, and hormone values are required. Oocyte collection starts with the IVF cycle lasting 4-6 weeks. During the cycle, the patient may be exposed to hormone therapy for mature oocyte production for months. In order to follow oocyte development, measurement of daily estradiol levels and vaginal ultrasonography are performed. HCG (Human Choronic Gonodotropin) is administered when at least two molecules reach 18 mm in diameter, and oocytes that develop after 36 hours are collected transvaginally (Özsait & Bulgurcuoğlu, 2009; Ross, *et al.*, 2014).

The obtained follicle fluid is examined under the microscope in the laboratory and appropriate oocytes are separated and transferred to the culture medium. The collected oocytes are incubated in incubators providing 37°C heat and appropriate carbon dioxide medium until fertilization is performed. Unused oocytes are frozen and stored (Barbey, 2017).

IVF

In classical IVF method, obtained oocytes are washed in culture medium and cleaned from erythrocytes and insemination is performed by adding sperm to this culture medium. After insemination, the culture petri dish is incubated for 3-12 hours at 37°C in a suitable carbon dioxide medium. At the end of the period, the oocytes are taken from the culture medium, subjected to the washing process, and the cleaned oocyte is taken to the new culture medium and the fertilization is controlled (Özsait & Bulgurcuoğlu, 2009).

ICSI

ICSI is a technique of providing fertilization by injecting a single sperm into an oocyte's cytoplasm. It was first applied in 1992. This method provides a good chance of success in patients with indications such as severe male infertility, advanced maternal age, poor quality and number of oocytes, and repeated failed IVF applications (Yılmaz &Kerimoğlu, 2014).

To be able to apply the method, the maturity and quality of the oocytes need to be assessed. After mature and quality oocytes are selected, morphology and movement of the sperm are selected and damage is made to the sperm tail. The purpose of this process is to prevent sperm movement within the oocyte. The damaged sperm in the tail is injected into the oocyte (Özsait & Bulgurcuoğlu, 2009). The development of ICSI-treated oocytes is monitored at 37°C in the presence of appropriate carbon dioxide (Gook, *et al.*, 2016).

Embryo Development in Laboratory

The development and quality of embryos obtained by assisted reproductive techniques are related to the genetic structure of the embryo, culture conditions, external factors exposed during IVF / ICSI procedures, and the induction tools used (Pabuççu & Pabuççu, 2017).

The fertilization control of oocytes is done at 16^{th}-18^{th} hours after insemination. The development of the embryos in the incubator is monitored daily and cell numbers and structural characteristics are determined. After insemination, the embryo reaches two cell stages earliest 20-27 hours, four cell stage 45-48 hours later. The embryo reaches 7-8 cells on the 3^{rd} day and after this period, the embryo can be transferred directly, followed up in culture until the blastocyst stage and then transferred, or the quality embryo cryopreservation after transfer can be performed (Özsait & Bulgurcuoğlu, 2009).

Embryo Transfer

Frozen embryos are thawed 24 hours before transfer and transferred at 2-5^{th} days. During this process, the embryos with the highest quality are slowly and properly left to the uterus cavity (Karanisoğlu & Yazıcı, 2009).

Over the past 30 years, better quality culture media have been developed for embryos. Thus, the embryo can be followed up in the laboratory environment until the blastocyst stage. Implantation rates of embryos left in the uterus during the blastocyst stage are high (Yılmaz & Kerimoğlu, 2014).

Studies have shown that the success rates of pregnancies obtained from fresh embryo transfer and frozen embryo transfer are similar and have increased the popularity of the cryopreservation process (Argyle *et al.*, 2016).

CRYOPRESERVATION

Cryopreservation is the technique of protecting cells and tissues for long periods at temperatures below zero. In this method, by using special chemicals called cryoprotectants (Cryoprotective additives-CPA), the cells are cooled at a specific rate without losing their viability and frozen in liquid nitrogen (Rienzi *et al.*, 2017). This substance is intended to remove freezing damage to cells by preventing the ice formation within the cell (Argyle *et al.*, 2016). The shelf-life of frozen embryos can be extended to 10-15 years. However, according to the legal regulations of the countries, this process may change. At the end of this process, the unused embryos are destroyed with the written consent of the spouses (Küçük, 2012).

Historical Development of Cryopreservation

The first pregnancy of frozen oocytes was obtained by slow freezing method at the end of the 1980s. However, no progress was made in cryopreservation during those years due to low fertility and low pregnancy rates. One of the reasons for this was that oocytes were highly sensitive to intracellular ice formation during cryopreservation (Rienzi *et al.*, 2017). Subsequent studies have shown that oocytes can preserve morphology and chromosomal integrity after cryopreservation. The new method, called vitrification, caused less damage to the internal structure during cryopreservation and consequently the pregnancy success rates were increased (Pabuççu & Pabuççu, 2017). However, the hardening of the zona pellucida layer of oocytes frozen by this method made it difficult sperm to fertilize oocyte. This is solved by the development of the ICSI technique (Cutting *et al.*, 2009). Since 2000s, frozen eggs have been allowed in the UK. Studies show that vitrification and fresh frozen oocytes have similar fertilization and pregnancy success rates. Today, oocyte cryopreservation has begun to be implemented in worldwide IVF clinics (Argyle *et al.*, 2016).

Cryopreservation Techniques

Today, oocyte cryopreservation is performed with two techniques. The first of these is controlled slow freezing method which was frequently applied in the past. The second technique is the vitrification method which is preferred today. This is an ultra-fast process of freezing eggs (Brison *et al.*, 2012; Konc *et al.*, 2014).

Slow Freezing Method

In this technique, the heat is slowly reduced by using low density CPA. The oocytes are first cooled to -5, -7℃, then cooled to reach -30 to -65℃ as to be 0.3-0.5℃ per minute and then stored in liquid nitrogen. The success of the slow freezing technique has been shown in many studies. However, slow freezing method has weaker results than fresh human oocyte method (Argyle *et al.*, 2016).

Vitrification Method

This method requires the use of CPA at a higher concentration. In the method, the risk of icing and crystallization in the nucleus is low as a result of the freezing process. An ultra-fast freezing process is required before immersion of the liquid nitrogen (Küçük, 2012; Gook, *et al.*, 2016). Although the vitrification method is a new technique, it is stated that the development of frozen embryos, survival rates and pregnancy rates are high in this method (Cutting *et al.*, 2009; Konc *et al.*, 2014). Using this method, the first live birth occurred in 1999. It is reported that the success of fresh

human oocyte method with vitrification method is similar (Brison *et al*., 2012).

Compared to slow freezing and vitrification methods, vitrification method has been reported to have more survival, fertilization and high pregnancy rates (Cutting *et al.,* 2009; Rienzi *et al.,* 2017). When oocyte vitrification and spontaneous pregnancy outcomes are compared, it is reported that there is no difference between birth weight and congenital anomaly (Yılmaz & Kerimoğlu, 2014).

Conditions in which Cryopreservation Method is Applied

Cryopreservation method can be applied in various conditions. These;

1. Freezing the remaining embryos with good quality after embryo transfer (Özsait & Bulgurcuoğlu, 2009)

2. Freezing embryos in cases where embryo transfer can not be done for any reason (development of ovarian hyperstimulation syndrome, inadequate development of endometrium, presence of endometrial polyps etc.) (Pabuççu & Pabuççu, 2017).

3. Freezing oocytes from patients who will receive chemotherapy / radiotherapy due to cancer treatment (Ross *et al.,* 2014).

4. Womens' request to freeze their oocytes for social reasons (career, economic or psychological etc.) (Martinelli, 2015).

Preservation of Fertility in Cancer Patients

Cancer-related treatments for women in reproductive age include removal of reproductive organs, radiation therapy and the use of cytotoxic agents. These practices adversely affect fertililty by causing damage to follicular reserves of the patients (Noyes *et al.,* 2011; Argyle *et al*., 2016). Despite the cancer-related diseases increase with the age, many young women are diagnosed with cancer each year. The demand for the protection of fertility is also increasing in these patients. With the increase in surival rates from cancer, new technologies for the protection of fertility have started to come to the agenda (Noyes *et al.,* 2011; Argyle *et al.,* 2016).

The development of the oocyte vitrification method has been a hope for cancer patients (Rienzi & Ubaldi, 2015). Ovarian cell banking, offered as an alternative to oocyte cryopreservation, is a tissue banking that does not require postponement of cancer treatment. In oophorectomy patients, ovarian cells are collected daily by the surgical method independently of the menstrual cycle (Ross, *et al.*, 2014; Waldby, 2015). Although successful pregnancy is possible with ovarian tissue cryopreservation, fewer births have been reported (Küçük, 2012).

International guidelines recommend health care providers to provide fertility counseling including information on the treatment of the disease and the risk of infertility that can be caused by this treatment (Lambertini, 2016), protection of fertility, its follow-up and structuring fertility (Cutting *et al.*, 2009; Rienzi & Ubaldi 2015).

Social Oocyte Cryopreservation

Today, the age of being a mother in all countries is delayed for various reasons. With advancing age, the number and quality of oocytes decrease and the fertility rates of women decrease. This method, which increases the chances of women getting pregnancy with their young eggs in the future, brings ethical debates with it (Martinelli, 2015).

Ethical and Social Aspects of Social Oocyte Cryopreservation

Social oocyte freezing is defined as a revolution in the reproductive autonomy of

women. Autologous oocyte cryopreservation allows women to freeze their own eggs and use them later. Autologous oocyte cryopreservation is seen as an option for individuals refusing embryo freezing for ethical/moral reasons and fitting in legal regulations against oocyte donation (Baldwin *et al.*, 2014).

In the past years, cryopreservation of the embryo was recommended for the protection of fertility in cancer patients. However, the embryos formed with sperm from the male partner caused various ethical and legal problems. For example, the facts that the embryos of couples who left during cancer diagnosis and treatment become ownerless and the failure of women to have children after cancer treatment except from their ex-husband have made the strategies of protecting reproduction useless. Due to the fact that the genetic material in oocyte cryopreservation belongs to an individual, the right of ownership is certain. Because of these advantages, oocyte cryopreservation is recommended as a method by which women can provide reproductive autonomy (Rienzi & Ubaldi 2015).

Developments in the preservation of the social oocyte cryopreservation are viewed as an opportunity by some companies and the postponement of the pregnancy of their employees is encouraged. This situation brings ethical arguments together. This policy can hamper the work arrangements for reconciliation between motherhood and career and women may feel pressure on them to postpone gestation (Martinelli, 2015).

Medical Aspect of Social Oocyte Cryporeservation

While the risk of congenital anomalies and fetal loss is reduced in older pregnancies by social egg freezing, high pregnancy rates and maternal ownership of the baby increase genetically (Martinelli, 2015). Freezing embryos that are not used during infertility treatment prevent multiple pregnancies and ovarian stimulation for pregnancy. In addition, many frozen embryos increase the chances of pregnancy (Rienzi &Ubaldi, 2015).

Oocyte cryopreservation has several disadvantages associated with ovarian stimulation and the oocyte retrieval process. These include the need for multiple cycles to collect a sufficient number of oocytes, the risk of developing ovarian hyperstimulation, and invasive procedures that the patient will be exposed to during collection (Petropanagos *et al.,* 2015). In addition, there are risks of preeclampsia, hypertension and gestational diabetes, premature birth, low birth weight infant in elder patients who want to conceive with frozen oocytes. In addition, infants born after IVF treatment have a risk of cancer, congenital anomaly and cardiac anomaly (Küçük, 2012).

CONCLUSION

Oocyte and embryo cryopreservation is currently used for the preservation of fertility in cancer patients, postponement of pregnancy due to social reasons, and preservation of oocytes and embryos during infertility treatment. This method allows women to have their own baby in the coming years. However, as with all assisted reproductive techniques, there are no research results that include long follow-up of the method. In particular, there are also ethical concerns and debates about social oocyte cryopreservation.

REFERENCES

Argyle, C.E., Harper, J.C., Davies, M.C. (2016). Oocyte cryopreservation: where are we now? Human Reproduction Update 22(4):440-449.

Allahbadia, G.N. (2016). Social Egg Freezing: Developing Countries Are Not Exempt. The Journal of Obstetrics and Gynecology of India 66(4):213–217.

Baldwin, K., Culley, L., Hudson, N., Mitchel, H. (2014). Reproductive technology and the life course: Current debates and research in social egg freezing. Human Fertility 17(3):170–179.

Barbey, C. (2017). Evidence of Biased Advertising in the Case of Social Egg Freezing. The New Bioethics 23(3):195- 209.

Brison, D., Cutting, R., Clarke, H., Wood, M. (2012). Oocyte And Embryo Cryopreservation. Human Fertility 15(2):69–74.

Cutting, R., Barlow,S., Anderson, R. (2009). Human oocyte cryopreservation: Evidence for practice. Human Fertility 12(3):125–136.

Gook, D. A., Choo, B., Bourne, H., Lewis, K., Edgar., D.H. (2016). Closed vitrification of human oocytes and blastocysts: outcomes from a series of clinical cases. J Assist Reprod Genet. 33:1247–1252.

Konc, J., Kanyo, K., Kriston, R., Somoskoi, B., Cseh, C. (2014). Cryopreservation of Embryos and Oocytes in Human Assisted Reproduction. BioMed Research International 1-9. Article ID 307268.

Karanisoğlu, H. And Yazıcı, S. (2009). Yardımcı üreme teknikleri ve hemşirelik yaklaşımı. İçinde: N. Kızılkaya Beji (ed.), İnfertilite Hemşireliği. (69-88ss.). Acar Basım, İstanbul.

Küçük, M. (2012). Fertility preservation for women with malignant diseases:ethical aspects and risks. Gynecological Endocrinology 28(12):937–940.

Lambertini, M., Mastro, L.D., Pescio, M.C., Andersen, C.Y., Azim, H.A. et al. (2016). Cancer and fertility preservation: international recommendations froman expert meeting. BMC Medicine 14(1):1-16.

Martinelli, L., Busata, L., Galvagni, L., Piciocchi, C. (2015). Social egg freezing: a reproductive chance or smokeand mirrors? Croat Med J 56:387-91.

Noyes, N., Knopman, J.M., Melzer, K., Fino, M.E., Friedman, B., et al. (2011). Oocyte cryopreservation as a fertility preservation measure for cancer patients. Reproductive BioMedicine Online 23:323-333.

Özsait B. And Bulgurcuoğlu, S. (2009). Hemşirelere yönelik embriyoloji. İçinde: N. Kızılkaya Beji (ed.), İnfertilite Hemşireliği. (115-128ss.). Acar Basım, İstanbul.

Pabuçcu, E.G. & Pabuçcu, R. (2017). Taze embriyo transferi mi yoksa dondurulmuş embriyo transferi mi tercih edilmelidir? TJRMS 1(1):54-8.

Petropanagos, A., Cattapan, A., Baylis, F., Leader, A. (2015). Social egg freezing: risk, benefits and other considerations. CMAJ 187(9):666-669.

Rienzi, L., Ubaldi, F.M. (2015). Oocyte versus embryo cryopreservation for fertility preservation in cancer patients: guaranteeing a women's autonomy. J Assist Reprod Genet 32:1195–1196.

Rienzi, L., Gracia, C., Maggiulli, R., LaBarbera, A.R., Kaser, D.J. et al. (2017). Oocyte, embryo and blastocyst cryopreservation in ART: systematic review and meta-analysis comparing slow-freezing versus vitrification to produce evidence for the development of global guidance. Human Reproduction Update 23(22):139-155.

Ross, L., Chung, K., Macdonald, H. (2014). Fertility Preservation in the Female Cancer Patient. Journal of Surgical Oncology 110:907–911.

Waldby, C. (2015). 'Banking time': egg freezing and the negotiation of future fertility.

Culture, Health & Sexuality 17(4):470-482.
Yılmaz, S.A., Kerimoğlu, Ö.S. (2014). Yardımcı Üreme Teknikleri Gebeliklerinde Perinatal Sonuçlar. Arşiv Kaynak Tarama Dergisi 23(4):575-587.

Chapter 75

Vaginal Birth after Caesarean Section: An Evidence-Based Approach

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INTRODUCTION

Labor is the termination of the pregnancy with the fetus, which has the ability to live outside the uterus, abdominally or vaginally. Abdominal delivery is called caesarean section and giving birth vaginally is called vaginal birth (Cetin, 2012; Taskin, 2016). Caesarean section is an abdominal delivery that should be applied if vaginal birth is not recommended, normal maternal birth is not possible to be completed safely and the risk of extreme maternal or fetal morbidity following birth is a concern (Bal *et al.*, 2013).

The caesarean section is one of the most common surgeries in the world and is increasingly being performed in countries with a particularly high and middle income. The World Health Organization (WHO) stated that the rate of caesarean section was 15%, while caesarean section rates increased as the income level of the countries increased (caesarean section rates in regional order: USA (38%), Europe (25%), Western Pacific (25%), Eastern Mediterranean (22%), Northeast Asia (10%) and African regions (4%) (WHOa, 2015). According to Turkey Demographic and Health Survey (TDHS) data, caesarean section rate is 48%. Today, one in every two pregnant women has a caesarean section in Turkey (HUIPS, 2014).

Caesarean section is needed in cases where mother or fetus may be at risk of life (prolonged labor, fetal distress or abnormal fetal presentation etc.) (WHOb, 2015). The American College of Obstetricians and Gynecologists (ACOG) states that caesarean section indications are multiple pregnancies, contraindications to labor (cervical dilatation failure, etc.), fetal conditions (umbilical cord compression, fetal heart rate abnormalities, etc.), placental problems, macrosomic baby, breech presentation, maternal infection (HIV, Herpes etc.) and maternal medical conditions (diabetes, hypertension etc.) (ACOG, 2015). A systematic review of 33 million (31 countries) caesarean section by Betran et al. (2014) indicated that the caesarean indications according to the Robson classification (caesarean after caesarean section) have the highest number of indications. It is seen that caesarean section rate in caesarean section indications is in the first place in the literature (Yilmaz *et al*., 2009; Tekirdag & Cebeci, 2010; Caglayan *et al.*, 2010; Mutlu *et al*., 2013; Aksoy *et al.*, 2014; Yapca *et al*., 2015).

The debate over the reduction of caesarean section rates has gained momentum in recent years. The first step to reduce the rate of caesarean section is to keep away from the thought of "once a caesarean, always a caesarean." It is stated that vaginal birth after

caesarean section is a successful and a safe method when conditions are appropriate. Today, especially in the United States (USA), many babies come to world with vaginal birth after caesarean section (VBAC). The increase in the rate of VBACs has a great influence on the reduction of caesarean rates (Akcay *et al*., 2001; Konakci & Kilic, 2002; Gozukara & Eroglu, 2011; Rosenstein *et al*., 2013; Yapca *et al.,* 2015). In studies conducted, the success rate of VBAC ranges from 50% to 86% (Macones *et al*., 2005; Landon *et al*., 2006; Posner *et al*., 2013; Raja *et al*., 2013; Siddiqui, 2013; Abdelazim *et al*., 2014; Smriti *et al*., 2014; Tessmer-Tuck *et al*., 2014; Kabore *et al.,* 2015; Senturk *et al*., 2015; He *et al.*, 2016; Wu *et al*., 2016). This study was conducted to increase the sensitivity of the subject by drawing attention to vaginal birth after caesarean section in the light of the current literature.

INDICATIONS OF VAGINAL BIRTH AFTER CAESAREAN SECTION

Good identification of cases where VBAC is indicated increases the success of the application. The literature focuses on the provision of maternal, infant, and institutional criteria that recommend testing of VBAC and increase the chances of success (Gardner *et al*., 2014; Committee on Practice Bulletins-Obstetrics, 2017). In the implementation of VBAC, both the fetal-maternal and the birth place should meet certain requirements of the health care facility. These are,

- Presence of previous lower segment transverse caesarean section (Hospital records and surgical note, not extending out of incision line),
- Having no previous caesarean section indication at this birth,
- Fetal head presentation,
- No pelvic incompatibility,
- No history of uterine rupture in anamnesis of the pregnant,
- Vaginal birth expectation of the pregnant woman,
- Not having medical or obstetric complications that can prevent vaginal birth,
- Availibility of the blood supply, operative facilities and anesthesia within the institution for emergency situations,
- Understanding and accepting the risks by pregnant women (Posner *et al*., 2013; Gardner *et al*., 2014; Committee on Practice Bulletins-Obstetrics, 2017).

SITUATIONS CONTRAINDICATED IN VAGINAL BIRTH AFTER CAESAREAN SECTION

Knowing well how the application is contraindicated before beginning the VBAC trial will prevent maternal-fetal mortality and morbidity. In the literature, there are cases where VBAC is contraindicated which do not suggest testing of VBAC. These cases are,

- Having more than one caesarean history in the anamnesis,
- Previous fundal or lower segment vertical incision or T-shaped prolonged incision presence,
- Having hysterotomy history or presence of myomectomy in the uterine cavity,
- Uterine rupture history in anamnesis,
- Not knowing the past caesarean section incision type,
- The first surgeon's recommendation to avoid vaginal birth,

- Abnormal presentations such as forehead, rectus and transverse presentations,
- Placenta previa,
- Narrow or inadequate pelvis,
- Repetition of previous caesarean section indication,
- The presence of conditions requiring immediate obstetric or medical necessity for delivery,
- Failure to find appropriate blood for the pregnant or patient's rejection of the blood transfusion,
- Being the delivery room remote from the operation room and not able to perform emergency caesarean section,
- Pregnant woman's rejection of vaginal birth (Posner *et al*., 2013; Committee on Practice Bulletins-Obstetrics, 2017).

COMPLICATIONS OF VAGINAL BIRTH AFTER CAESAREAN SECTION

VBAC has a risk of uterine rupture, hysterectomy, blood transfusion, neonatal hypoxic-ischemic encephalopathy and death (Landon *et al*., 2004; Bal, 2017). In cases with VBAC, the incidence of complications was reported as 27.1% for maternal and 7.1% for fetal complications (Senturk *et al*., 2015).

One complication of VBAC is uterine rupture. Uterine rupture is a full-thickness rupture of myometrium, sometimes accompanied by the fetal departure from here. This requires urgent caesarean section (Posner *et al*., 2013). The use of epidural analgesia increases the risk of pregnancy with over a 40-week gestational week and uterine rupture of the macrosomic fetus (Barger *et al*., 2011; Studsgaard *et al*., 2013). The risk of uterine rupture in women with vaginal birth before the caesarean section decreases the VBAC trial (Landon, 2010; Barger *et al*., 2011; Studsgaard *et al*., 2013), while the risk of uterine rupture in women with more than one caesarean increases (Landon *et al*., 2006). The incidence of uterine rupture in cases with VBAC ranges from 0.2% to 0.9% (Landon *et al*., 2004; Durnwald & Mercer, 2004; Macones *et al*., 2005; Smriti *et al*., 2014; Kabore *et al*., 2015; Senturk *et al*., 2015; Wu *et al*., 2016). The incidence for other maternal complications in VBAC is 0.2% for hysterectomy (Landon *et al*., 2004), between 0.7% and 13% for transfusion (Landon *et al*., 2004; Macones *et al*., 2005; Senturk et al., 2015), 9.4% for postpartum hemorrhage (Wu *et al*., 2016) and 0.02% for maternal mortality (Landon *et al*., 2004; Wu *et al.*, 2016). The neonatal morbidity rate is 5% (Smriti *et al*., 2014), the incidence of neonatal asphyxia is 1.3% (Wu *et al.*, 2016) and the mortality rate is 0.08% (Landon *et al*., 2004; Wu *et al.*, 2016).

CRITERIA OF VAGINAL BIRTH AFTER CAESAREAN SECTION

Maternal age, body mass index (BMI), gestational week, birth interval, vaginal birth history, vaginal birth history after caesarean section, cervical dilatation and effacement, number of caesarean births and previous caesarean technique, induction of labor, race/ethnic group, fetal weight and fetal head level have been found to affect the success of VBAC (Landon *et al*., 2004; Srinivas *et al*., 2007; Bujold & Gauthier, 2010; Eden *et al*., 2010; Tahseen & Griffiths, 2010; Birara & Gebrehiwot, 2013; Metz *et al.*, 2013; Raja *et al*., 2013; Siddiqui, 2013; Studsgaard *et al*., 2013; Abdelazim *et al*., 2014;

Smriti *et al*., 2014; Tessmer-Tuck *et al*., 2014; Cheng *et al*., 2015; Lappen *et al.*, 2015; Senturk *et al*., 2015; Edmonds *et al*., 2016; He *et al*., 2016).

Increasing maternal age causes a decrease in the success of VBAC. In a study, the success rate of VBAC was 91.5% in patients under 30 years old and who had a vaginal birth before the caesarean section, whereas the success rate was 65.1% in patients over 35 years old (Bujold *et al*., 2004). In the studies conducted, the success rate of VBAC was found higher in the patients who were under 30 years old (Srinivas *et al*., 2007; Raja *et al*., 2013; Tessmer-Tuck *et al*., 2014). Repetitive caesarean rate is increasing in patients who are 35 years old and over (Studsgaard *et al*., 2013).

The success rate of VBAC decreases with increasing body mass index (BMI). Studies on this subject show that pregnant women with BMI less than 30 kg/m2 have a higher success rate of VBAC (Landon *et al*., 2004; Studsgaard *et al*., 2013; Tessmer-Tuck *et al*., 2014). Gestational week is another factor that affects the success of VBAC. The success of VBAC increases in pregnant women with 38-40 gestational week when compared to 41-42 (Smith *et al*., 2005; Siddiqui, 2013, Abdelazim *et al*., 2014; He *et al.*, 2016).

The low birth interval in pregnant women tested with VBAC decreases the success of VBAC by increasing the risk of uterine rupture (Huang *et al.*, 2002; Stamilio *et al*., 2007; Bujold & Gauthier, 2010). In the study conducted by Huang et al. (2002), the success rate of VBAC was 79.0% in pregnant women with a birth interval less than 19 months, while the success rate of VBAC in pregnant women with a birth interval more than 19 months was 85.5%. In a study conducted by Bujold and Gauthier (2010), the relationship between the birth interval and uterine rupture was examined in pregnant women with VBAC. In pregnant women who had VBAC, the rupture rate in the group with birth interval of 24 months and more (74.8%) was 1.3%, the rupture rate in the group with birth interval of 18-23 months (14.5%) was 1.9% and the rupture rate in the group with birth interval of 18 months and less (10.6%) was 4.8%.

Another factor affecting the success of VBAC is to have vaginal birth. The success of VBAC is lower in pregnant women who have no vaginal birth history (Eden *et al*., 2010; Studsgaard *et al*., 2013). It has been reported that with every successful VBAC, the success rate of VBAC increases in the following trials (Birara & Gebrehiwot, 2013; Tessmer-Tuck *et al*., 2014). In the study of Tessmer-Tuck et al. (2014), 42.7% of the pregnant women who have VBAC in their current birth tried VBAC before. Cervical dilatation and effacement are another criterion affecting birth success in pregnant women accepted for VBAC. In the studies conducted, the cervical dilatation of <4 cm in cases accepted for VBAC decreases the success of VBAC (Siddiqui, 2013; Abdelazim *et al.*, 2014).

There is no definite opinion on the success of VBAC in the number of caesarean births. According to the studies, the success rate of VBAC increases and the rate of complication decreases only after one caesarean section (Landon *et al*., 2004; Macones *et al.*, 2005). It has been reported that there is a relation between uterine incision and uterine rupture as a caesarean technique and this case affects the success of VBAC. The incidence of incisional-type uterine rupture has been reported to be 0.7% for the lower transverse incision, 2% for the lower vertical incision, and 0.5% for the unknown incision type (Landon *et al.*, 2004).

Labor induction is one of the criteria that affects the success of VBAC. Labor induction increases uterine rupture and decreases the success of VBAC (Landon *et al*., 2004; Eden *et al.*, 2010; Barger *et al.*, 2011; Lappen *et al.*, 2015). Another criterion that affects the success of VBAC is ethnic group/race. Studies have shown that success of VBAC is high among white race and Asian/Pacific Islander women, and low among Spanish and African-American women (Eden *et al.*, 2010; Tessmer-Tuck *et al.*, 2014; Cheng *et al*., 2015; Edmonds *et al.*, 2016).

The fetal criteria that affect the success of VBAC are fetal weight and fetal head level. In cases where the fetal weight is > 4 kg, the success of VBAC falls (Eden *et al.*, 2010; Studsgaard *et al.*, 2013; Abdelazim *et al.*, 2014; He *et al*., 2016). There are opinions that the fetal head level affects the success of VBAC. It has been reported in some studies that the success rate of VBAC decreases when the fetal head level is ≥-2 (Siddiqui, 2013; Abdelazim *et al.*, 2014).

VAGINAL BIRTH MANAGEMENT AND CARE AFTER CAESAREAN SECTION

Testing and successful completion of VBAC depends on the well recognition of the indications, complications and contraindications, and the well-managed care. Ensuring that the health institution provides the necessary conditions for emergencies, ensuring active involvement of the mother to the process by discussing the risks and benefits of this situation with the mother and ensuring effective communication of the health personnel with the team consciousness following the birth are factors enable the successful management of VBAC (Posner *et al.*, 2013; Committee on Practice Bulletins-Obstetrics, 2017; Bal, 2017). For the positive completion of VBAC, care management is given in the table below (Posner *et al*., 2013; RCOG, 2015),

Criteria	Management
Start of labor	*Ideally, labor should start by itself.
Situations where the mother should immediately refer to the hospital	*If she feels that the birth has begun, *If the membranes rupture, *If she has vaginal bleeding.
Monitoring and care in the labor	*Individual supportive care is given, *Maternal and fetal status is evaluated, *Vascular access is established, *The blood is crossed and prepared for use, *Continuous electronic fetal monitoring is performed throughout the labor, *Uterine contractions are often evaluated via electronic system or abdomen, *Maternal vital findings are checked every 15 minutes, *The patient should never be left unattended, *The physician must be on the same floor with the pregnant woman during the whole process of labor, *Cervical opening should be assessed regularly (at least every 4 hours),

	*The progress of labor should be normal.
Induction/ Augmentation of labor	*Induction / augmentation of labor is not strictly contraindicated in VBAC. However, the risk of uterine rupture increases when compared to spontaneous VBAC, *If there is indications for labor induction, mechanical methods using amniotomy and foley catheter should be preferred, *The use of oxytocin to stimulate birth should not be contraindicated, but should be used with caution in selected cases. There is insufficient evidence for the safety of prostaglandins for the vaginal delivery trial, *In women having caesarean section before, the use of misoprostol for cervical ripening is contraindicated. All of the prostaglandin agents are associated with an increased risk of uterine rupture.
Epidural analgesia	* Epidural analgesia is not strictly contraindicated in VBAC. However, the professional should be careful in terms of signs and symptoms of uterine rupture.
Intervention during labor	*Birth can be accomplished as spontaneous, forceps below or vacuum. Tough vaginal interventions are contraindicated.
Failure of vaginal birth and decision of caesarean section	*Vaginal birth test continues until the vaginal birth or caesarean section is done, *Main indications of giving up on vaginal birth and preferring caesarean section are stop of progress, atypical or abnormal heart rate pattern, uterine separation or uterine rupture risk.
Postnatal care	*Postpartum uterine cavity control should only be performed in the presence of signs and symptoms suggestive of uterine rupture.

RESPONSIBILITIES OF MIDWIVES/NURSES IN VAGINAL BIRTH AFTER CAESAREAN SECTION

Providing appropriate prenatal care for maternal and fetal factors affecting the success of VBAC is among the primary responsibilities of the midwives / nurses. The quality of maternal obstetric history is a preliminary qualification for the VBAC trial. The follow-ups beginning from the earliest pre-conceptual period in pregnant women having caesarean section before are the basis of the midwifery / nursing services. With proper nutrition programs, the BMI of the pregnant women should be monitored closely. As having vaginal birth before increases the success of VBAC, pregnant women with VBAC should be followed with priority in prenatal services. If pregnant women having caesarean section with a cervical dilatation, effacemet, -2 fetal head level, estimated fetal weight of $\leq$3.5 kg and lower transverse uterine incision are admitted to the delivery room, the midwives / nurses should encourage pregnant women about VBAC if the establishment is appropriate (such as the presence of the team and

the operating room in emergency caesarean cases) (Ertem & Kocer, 2008; Gozukara & Eroglu, 2011). The midwives / nurses are the most important healthcare professionals responsible for monitoring and care in the postpartum period (Posner *et al*., 2013; Bal, 2017).

CONCLUSIONS

VBAC is very important in reducing caesarean rates. The reliability of appropriately managed VBAC is supported by studies. Maternal-fetal mortality and morbidity risks reduce in pregnant women that meet the criteria of the institution in which the birth will take place.

REFERENCES

Abdelazim I.A., Elbiaa A.A.M., Al-Kadi M., TYehia A.H., Sami Nusair B.M. and Ebu Faza M. (2014). Maternal and Obstetrical Factors Associated With a Successful Trial of Vaginal Birth After Cesarean Section. J Turk Ger Gynecol Assoc 15, 245-249.

Akcay T., Gol K., Sahin I. and Simsek M. (2001). Vaginal Birth After Cesarean's Reliability. Turkey Clinical J Gynecol Obst 11(4), 224-7.

Aksoy H., Ozyurt S., Aksoy U., Acmaz G., Karadag I.O. and Babayigit M.A. (2014). Overview Cesarean Section Birth in Turkey in Line With the Cesarean Rate and Indication Distributions in our Hospital. Medical Journal of Kocaeli 3, 1-7.

Bal D.M., Yilmaz D.S. and Beji K.N. (2013). Women's Preferences for Cesarean Birth. Florence Nightingale Nur. Journal 21(2), 139-146.

Bal M.D. (2017). Initiatives Towards Labor. In: M.D. Bal, S. Dereli Yılmaz (Ed.), Comprehensive Birth for Midwives, Akademisyen Bookstore, Ankara, p. 277-308.

Barger M.K., Weiss J., Nannini A., Werler M., Heeren T. and Stubblefield P G. (2011). Risk Factors for Uterine Rupture Among Women Who Attempt a Vaginal Birth After a Previous Cesarean: A Case-Control Study. J Reprod Med 56(7-8), 313-20.

Betran A.P., Vindevoghel N., Souza J.P., Gulmezoglu A.M. and Torloni M.R. (2014). A Systematic Review of the Robson Classification for Caesarean Section: What Works, Doesn't Work and How to Improve It. PLoS ONE 9(6), e97769.

Birara M. and Gebrehiwot Y. (2013). Factors Associated with Success of Vaginal Birth After One Caesarean Section (VBAC) at Three Teaching Hospitals in Addis Ababa, Ethiopia: A Case Control Study. BMC Pregnancy and Childbirth 13(1), 31-36.

Bujold E. and Gauthier R.J. (2010). Risk of Uterine Rupture Associated With an Interdelivery Interval Between 18 and 24 Months. Obstetrics & Gynecology 115(5), 1003-1006.

Bujold E., Hammoud A.O., Hendler I., Berman S., Blackwell S.C., Duperron L. and Gauthier R.J. (2004). Trial of Labor in Patients With Aprevious Cesarean Section: Does Maternal Age İnfluence the Outcome?. Am J Obstet Gynecol 190, 1113-1118.

Caglayan K.E., Kara M. and Gurel C.Y. (2010). Three-year Caesarean Ratio and Indications in our Clinic. Journal of Experimental and Clinical Medicine 27, 50-53.

Cetin A. (2012). Cetin Gynecology and Obstetrics Manual, I. Edition, Sertan Publishing, Bursa, ISBN: 9786056194313

Cheng E.R., Declercq E.R., Belanoff C., Iverson R.E. and McCloskey L. (2015). Racial and Ethnic Differences in the Likelihood of Vaginal Birth After Cesarean Delivery. Birth 42(3), 249-253.

Committee on Practice Bulletins-Obstetrics. (2017). Practice Bulletin No. 184: Vaginal Birth After Cesarean Delivery. Obstet Gynecol 130(5), e217-e233.

Durnwald C. and Mercer B. (2004). Vaginal Birth After Cesarean Delivery: Predicting Success, Risks of Failure. J Matern Fetal Neonatal Med 15, 388-393.

Eden K.B., McDonagh M., Denman M.A., Marshall N., Emeis C., Fu R., Janik R., Walker M. and Guise J.M. (2010). New Insights on Vaginal Birth After Cesarean: Can It Be Predicted?. Obstet Gynecol 116(4), 967-981.

Edmonds J.K., Hawkins S.S. and Cohen B.B. (2016). Variation in Vaginal Birth After Cesarean by Maternal Race and Detailed Ethnicity. Matern Child Health J 20(6), 1114-1123.

Ertem G. and Kocer A. (2008). Vaginal Birth After Cesarean Section. Dirim - Medical Newspaper 82, 1-5.

Gardner K., Henry A., Thou S., Davis G. and Miller T. (2014). Improving VBAC Rates: The Combined İmpact of Two Management Strategies. Aust N Z J Obstet Gynaecol Aug 54(4), 327-332.

Gozukara F. and Eroglu K. (2011). A Way to Prevent Cesarean Birth Increase: Nursing Roles and Vaginal Birth After Cesarean Section Instead of "Once a Caesarean Always Caesarian" Approach. Hacettepe University Faculty of Health Sciences Nursing Journal 18(2), 89-100.

Hacettepe University Institute of Population Studies. (2014). 2013 Turkey Demographic and Health Survey, Hacettepe University Institute of Population Studies, T. C. Ministry of Development and TUBITAK, Ankara, ISBN: 978-975-491-390-3

He L., Chen M., He G.L. and Liu X.X. (2016). Clinical Study on Vaginal Birth After Cesarean. Zhonghua Fu Chan Ke Za Zhi 51(8), 586-591.

Huang W.H., Nakashima D.K., Rumney P.J., Keegan K.A. and Chan K. (2002). Interdelivery Interval and the Success of Vaginal Birth After Cesarean Delivery. Obstet Gynecol 99(1), 41-44.

Kabore C., Chaillet N., Kouanda S., Bujold E., Traore M. and Dumont A. (2015). Maternal and Perinatal Outcomes Associated with a Trial of Labour After Previous Caesarean Section in Sub-Saharan Countries. BJOG 123(3), 2147-2155.

Konakci K.S. and Kilic B. (2002). Increasing Births With Caesarean Section. PMEJ 11(8), 286-288.

Landon M.B. (2010). Predicting Uterine Rupture in Women Undergoing Trial of Labor After Prior Cesarean Delivery. Seminars in Perinatology 34(4), 267-271.

Landon M.B., Hauth J.C., Leveno K.J., Spong C.Y., Leindecker S., Varner M.W., Moawad A.H., et al., (2004). Maternal and Perinatal Outcomes Associated With a Trial of Labor After Prior Cesarean Delivery. N Engl J Med 351, 2581-2589.

Landon M.B., Spong C.Y., Thom E., Hauth J.C., Bloom S.L., Varner M.W., Moawad A.H., et al., (2006). Risk of Uterine Rupture With a Trial of Labor in Women With Multiple and Single Prior Cesarean Delivery. Obstet Gynecol 108(1), 12-20.

Lappen J.R., Hackney D.N. and Bailit J.L. (2015). Outcomes of Term Induction in Trial of Labor After Cesarean Delivery: Analysis of a Modern Obstetric Cohort. Obstet Gynecol 126(1), 115-123.

Macones G.A., Peipert J., Nelson D.B., Odibo A., Stevens E.J., Stamilio D.M., Pare E., et al. (2005). Maternal Complications With Vaginal Birth After Cesarean Delivery: A Multicenter Study. Am J Obstet Gynecol 193, 1656-1662.

Metz T.D., Stoddard G.J., Henry E., Jackson M., Holmgren C. and Esplin S. (2013). How do Good Candidates for Trial of Labor After Cesarean (TOLAC) Who Undergo Elective Repeat Cesarean Differ from Those Who Choose TOLAC?. Am J Obstet Gynecol 208(6), 458.e1-6.

Mutlu I., Mutlu M.F., Demir A., Efeturk T. and Kiseli M. (2013). Cesarean Section Rates of our Clinic Between 2009-2012: Is Increase in Cesarean Rates Unavoidable?. Gazi Medical Journal 24, 40-43.

Posner D.G., Dy J., Black Y.A. and Jones D.G. (2013). Oxorn-Foote Human Labor & Birth, 6th Edition, McGraw-Hill Education, China.

Raja J.F., Bangash K.T. and Mahmud G. (2013). VBAC Scoring: Successful Vaginal Delivery in Previous One Caesarean Section in Induced Labour. J Pak Med Assoc 63(9), 1147-1151.

Rosenstein G.M., Kuppermann M., Gregorich E.S., Cottrell K.E., Caughey B.A. and Cheng W.Y. (2013). Association Between Vaginal Birth After Cesarean Delivery and Primary Cesarean Delivery Rates. Obstet Gynecol 122(5), 1010-1017.

Royal College of Obstetricians and Gynaecologists (RCOG). (2015). Birth After Previous Caesarean Birth. Green-top Guideline No. 45.

Senturk M.B., Cakmak Y., Atac H. and Budak M.S. (2015). Factors Associated With Successful Vaginal Birth After Cesarean Section and Outcomes in Rural Area of Anatolia. Int J Womens Health 7, 693-697.

Siddiqui S.A. (2013). Obstetric Factors for Unsuccessful Trial of Labor in Second-Order Birth Following Previous Cesarean. Ann Saudi Med 33(4), 356-362.

Smith G.C., White I.R., Pell J.P. and Dobbie R. (2005). Predicting Cesarean Section and Uterine Rupture Among Women Attempting Vaginal Birth After Prior Cesarean Section. PLoS Med 2(9), 872-878.

Smriti G., Shanti J., Raka G. and Anjali G. (2014). An Observational Study of Various Predictors of Success of Vaginal Delivery Following a Previous Cesarean Section. The Journal of Obstetrics and Gynecology of India 64(4), 260–264.

Srinivas K.S., Stamilio M.D., Sammel D.M., Stevens J.E., Peipert F.J., Odibo O.A. and Macones A.G. (2007). Vaginal Birth After Caesarean Delivery:Does Maternal Age Affect Safety and Success?. Paediatric and Perinatal Epidemiology 21(2), 114-120.

Stamilio D.M., DeFranco E., Paré E., Odibo A.O., Peipert J.F., Allsworth J.E., Stevens E. and Macones G.A. (2007). Short Interpregnancy Interval: Risk of Uterine Rupture and Complications of Vaginal Birth After Cesarean Delivery. Obstet Gynecol 110(5), 1075-1082.

Studsgaard A., Skorstengaard M., Glavind J., Hvidman L. and Uldbjerg N. (2013). Trial of Labor Compared to Repeat Cesarean Section in Women With No Other Risk Factors than a Prior Cesarean Delivery. Acta Obstet Gynecol Scand 92(11), 1256-1263.

Tahseen S. and Griffiths M. (2010). Vaginal Birth After Two Caesarean Sections (VBAC-2)- a Systematic Review With Meta-Analysis of Success Rate and Adverse Outcomes of VBAC-2 Versus VBAC-1 and Repeat (Third) Caesarean Sections. BJOG 117(1), 5-19.

Taskin L. (2016). Birth and Women's Health Nursing, Expanded 13th Edition, Academician Medicine Bookstore, Ankara.

Tekirdag A.I. and Cebeci R. (2010). Cesarean Rates in Education Hospital. Gynecology Obstetric Pediatrics Journal 2(1), 21-26.

Tessmer-Tuck J.A., El-Nashar S.A., Racek A.R., Lohse C.M., Famuyide A.O. and Wick M.J. (2014). Predicting Vaginal Birth After Cesarean Section: A Cohort Study. Gynecol Obstet Invest 77, 121-126.

The American College of Obstetricians and Gynecologists (ACOG). (2015). Cesarean Birth (C-Section), http://www.acog.org/Patients/FAQs/Cesarean-Birth-C-Section (Accessed: 3 May.2018).

World Health Organization (WHOa). (2015). WHO Statement on Caesarean Section Rates, http://apps.who.int/iris/bitstream/10665/161442/1/WHO_RHR_15.02_eng.pdf?ua=1) (Accessed: 12 June.2018).

World Health Organization (WHOb). (2015). Caesarean Sections Should Only Be Performed When Medically Necessary, http://www.who.int/mediacentre/news/releases/2015/caesarean-sections/en/ (Accessed: 25 May 2018).

Wu S.W., Lu Y.Z., Wang S.S., Dong X.J., Fang J.H., He D. and Zhang W.Y. (2016). Maternal and Obstetrical Factors Associated With a Successful Trial of Vaginal Birth After Cesarean Section. Zhonghua Fu Chan Ke Za Zhi 51(8), 576-580.

Yapca O.E., Karaca I. and Catma T. (2015). How Can We Reduce the Increasing Primary Cesarean Rates? Evaluation of Our 3-Year Data of Cesarean Sections**.** Istanbul Kanuni Sultan Suleyman Medical Journal 7(3), 97-102.

Yilmaz M., Isaoglu U. and Kadanali S. (2009). The Analysis of Patients With Cesarean Between 2002-2007 in our Clinic. Marmara Medical Journal 22(2), 104-110.

Physical Therapy and Rehabilitation

Chapter 76

Evidence-Based Protective Exercises Approaches to Prevent Osteoporosis

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INTRODUCTION

Osteoporosis (OP) is an osteometabolic disorder developed because of increased fracture risk, effected bone quality/strength, decreased bone mass and destruction of bone tissue micro structure (Moreria et al., 2014). Peak bone mass insufficiency in osteoporosis physiopathology occurs due to the changes in organic matrix of bone because of accelerated bone metabolism and failure of anabolism (4-6 months) to compensate catabolism (2 weeks) (Ünal 2014; Ataman & Yalçın, 2012). Despite osteoporosis incidence increases gradually, its prevalence in Turkey has been reported as 24.8%. Every 3 women in the world are diagnosed with osteoporosis (Abay et al., 2015).

Protection from osteoporosis starts before birth and lasts lifelong. Bone mineral density (BMD) develops during childhood and adolescence, increases in the middle of 20s and increases until it reaches a peak in some body parts and subsequently a balance is reached between bone anabolism and bone catabolism. Age-based bone loss starts at the 4^{th} and 5^{th} decades of life and lasts until the 8^{th} and 9^{th} decades in both sexes (Eryavuz, 1999).

The situations leading to risk factors for both genders are shown in Table 1 (Josse & Canada, 2002; Compston et al., 2017).

Table 1. Risk factors for osteoporosis

Major risk factors	Minor risk factors
• To be at the age of 65 and above • Vertebral compression fracture • Fragile fracture above 40 years of age • Familial osteoporotic fracture history (Evidence level 1a) • Systemic glucocorticoid use for longer than 3 months • Malabsorption syndrome • Primer hyperparathyroidism • Falling episode or fractures (Evidence level 1a)	• Rheumatoid arthritis • Clinic hyperthyroidism history • Use of chronic anticonvulsion • Low calcium intake • Cigarette smoking • Excessive alcohol consumption • Excessive coffee consumption • Low body weight (Wing level 1a) (≤19 kg/m2) • More than 10% loss of body weight • Chronic heparin treatment

• Osteopenia determined by X-ray • Hypogonadism • Early menopause (younger than 45 years old)	

PRIMER PROTECTION

It encompasses taking the required measurements to reach the peak bone mass until the 20s starting from infancy (Eryavuz, 1999).

Exercise increases BMD, bone mass and strength and improves mechanical properties of bone. Cumulative evidences show that exercise stimulates osteogenic differentiation of bone marrow mesenchymal cells with mechanical overload and plays an important role in the activation of osteocytes and osteoblasts. New strategic designs are necessary to completely understand the interaction between the exercise-induced mechanical overload, biochemical signals and hormones and their roles in bone metabolism and OP prevention and treatment (Yuan Y et al., 2016).

Recent studies show that exercises imposing overload on bones increase bone mineral density during early puberty and pre-menstruation period. In the systematic analysis of 26 studies, when exercises containing jumping activities (plyometric exercises) are performed during childhood and adolescent period, they increase bone mineral density and content in 24 conducted studies (Eliakim & Beyth, 2003, Gómez-Bruton et al., 2017). OP-preventive strategies: balanced nutrition containing vitamin and mineral support, adequate calcium intake for growth and mineralization and participation in 10-45-minute regular exercises 3-5 times a week improving flexibility and coordination; and activities must be diversified, mild-heavy activities must be recommended for middle age and older age groups and they must contain mechanical patterns stimulating bone growth throughout skeleton (Cech, 2012). However, it has been reported that excessive physical activity could lead to "athletic amenorrhea" in the female reproductive system (Eliakim & Beyth, 2003; Munns et al., 2006) (Table 2, Table 3).

Table 2. Required intake of calcium in children

Recommended amounts for healthy children	
Age	Adequate calcium intake (mg/day)
0-6 months	210 mg
6-12 month	270 mg
1-3 years old	500 mg
4-8 years old	800 mg
9-18 years old	1300 mg

Table 3. Required intake of Vitamin D in children

In Vitamin D deficiency	
1 month<	1000 IU/day
1-12 months	3000 IU/day
12 months>	5000 day

SECONDARY PROTECTION

Bone loss prevention or peak bone mass protection is the main purpose (Eryavuz, 1999). In a study conducted on OP-prevention, BMD after a 12-month physical activity in women with postmenopausal osteopenia was evaluated and 1% increase in femoral neck, 1.3% increase in total hip and 1% BMD increase in lumbar was seen (Slawta&Ross, 2004). 11 randomized controlled studies and a total of 1061 women in postmenopausal period were studied. It was shown that different physical activities combined with exercise increased the mineral densities of lumbar spinal column, femoral neck, total hip and total body bone. Whereas combined exercise practices increased femoral neck bone mineral density generally in women under the age of 60, they were more effective on lumbar spinal column in women above 60 years old (Zhao et al., 2017).

There are scarce evidence-based approaches showing that the nutritional factors including the level of calcium, protein, vitamin, lycopene, Vitamin C, and collagen and olive oil are affective on increasing BMD. There are evidence-based studies conducted about OP-prevention during childhood and adolescent but, there are not adequate evidences showing that physical activity prevents OP during postmenopausal period. The reasons for this are low participation in exercise training studies, hormonal level changes, calcium deficiency, and skeletal system inadequacy for adaptation to mechanical stress of exercise (Herrero & Pico, 2016).

It has been reported that spinal orthesis can be used in spinal fracture prevention for back extensor strengthening and prevention of repetitive flexion movements. It must be kept in mind that flexibility exercises improving flexibility and flexor-directed exercises could increase fracture risk by generating breakout force (Sinaki, 2012). It has been determined that aerobic exercises are safe in postmenopausal women with osteoporosis and that submaximal aerobic exercises performed with weights improve bone synthesis and balance (Roghani et al., 2013; Saxena & Sen, 2013). It was seen that physiotherapist-guided group exercises alleviated pain and improved bone mineral density (BMD) and life quality (Angın& Erden, 2009; Ünal, 2014).

PREVENTION OF FALLS

Strengthening and balance exercises aim both to decrease the number of falls and falling rate in society. Home modifications made by occupational therapists to prevent falls, intake of multivitamins containing Vitamin D, and wearing shoes preventing falls outdoors may prevent falls. There are many practices aiming to decrease the falls and number of falls. There are high level evidences for practices aiming to decrease falls and the number of falls in elderly and to decrease hospitalization periods (Karlsson et al., 2013).

Weak-strong correlation was found between body muscle composition and balance and functional performance for prevention of falls in elderly in 582 articles. Clinical plates and core stability exercises were found as useable exercises. However, quality studies are needed to generate evidence-based studies (Granacher et al., 2013). It was determined that progressive resistant exercises and proprioception exercises for quadriceps muscle increase fall risk and improve static and dynamic balance and increase motor response rate (Teixeira et al., 2010).

In a study conducted to evaluate the long-term effects of exercise on critical health

parameters starting from early menopausal period in women for a 16-year period (equal Ca and Vitamin D intake in 2 groups), fewer fractures were seen in the group receiving a program that contained exercises 2 days a week (jumping, isometric, isotonic exercises) including supervised and home exercises (Kemmler et al., 2016).

Evidence-based measurements:

a. Increasing calcium intake (evidence level 1a), ranging between 700-1200 ml daily
b. Measuring bone mineral density before 50 years of age
c. More attention must be paid in case of neck shortening of 4 cm and more, long term glucocorticoid use and T-score ≤ -2.5.
d. Vitamin D intake
e. Regular exercises imposing overload on bone (Compston et al., 2017).
f. Prevention of new fractures
g. Weight loss
h. Muscle strengthening exercises
i. Quitting cigarette smoking
j. Avoiding excessive alcohol consumption (Antonino et al., 2017).
k. Regular sleep (it has been shown that optimum nearly 8-hour of sleep, short or long sleep can increase osteoporosis risk) (Wang et al., 2018).

Osteoporosis is a preventable disorder and it can be treated. However, it is difficult to diagnose in the early stage since it progresses quietly until fractures develop. The most useful exercises for bones are the ones performed with weights against gravity, for example, walking, jogging, stair climbing, tennis and dance. Biking and swimming are the examples of exercises performed without weights. However, despite biking and swimming are exercises with high cardiovascular benefits, they are not the best exercise methods for bone development. Strength and balance exercises aid to prevent falls that could cause fractures. Any man and woman above the age of 50 in postmenopausal period must be evaluated for osteoporosis risk (Brunilda et al., 2017; Cosman et al., 2014; Beck et al., 2017).

REFERENCES

Abay H, Kaplan S, Pınar G, Akalın A. (2015). Çağın pandemisi: Osteoporoz ve güncel yaklaşımlar Yıldırım Beyazıt Üniversitesi Hemşirelik e-dergisi, 2(2).

Angin E, Erden Z. (2009). The effect of group exercise on postmenopausal osteoporosis and osteopenia. Acta orthopaedica et traumatologica turcica, 43(4), 343-50.

Antonino Catalano,Gabriella Martino, Nunziata Morabito, Claudia ScarcellaAgostino Gaudio, Giorgio Basile,Antonino Lasco. (2017). Pain in Osteoporosis: From Pathophysiology to Therapeutic Approach. Drugs Aging, 34, 755–765.

Ataman, Ş., Yalçın, P. (2012). *Romatoloji*, Özyurt Matbaacılık, Ankara.

Beck BR, Daly RM, Singh MA, Taaffe DR. (2017). Exercise and Sports Science Australia (ESSA) position statement on exercise prescription for the prevention and management of osteoporosis. J Sci Med Sport, 438–445.

Brunilda Subashi, Dr Saad Butt. Fatjona Kamberi, Glodiana Sinanaj, Yilka Bilushi. (2017). Physical activity recommended for osteoporosis prevention. Durreesamin Journal, 3(3), 1-9.

Cech D. (2012). Prevention of osteoporosis: From infancy through older adulthood. Hong Kong Physiotherapy Journal, 30, 6-12.

Compston J, Cooper A, Cooper C, Gittoes N, Gregson C, Harvey N, Hope S, Kanis JA, McCloskey EV, Poole KES, Reid DM, Selby P, Thompson F, Thurston A, Vine N; National Osteoporosis Guideline Group (NOGG). et al. (2017) UK clinical guideline for the prevention and treatment of osteoporosis. Arch Osteoporos,.12(1), 1-24.

Cosman F, de Beur SJ, LeBoff MS, Lewiecki EM, Tanner B, Randall S, Lindsay R. (2014). Clinician's Guide to Prevention and Treatment of Osteoporosis. Osteoporos Int., 25, 2359–2381.

Eliakim A, Beyth Y. (2003). J Pediatr Adolesc Gynecol., 16(4), 201-6.

Eryavuz M. (1999). Osteoporozdan Korunma ve Rehabilitasyon. *Osteoporoz Sempozyumu*, 101–107.

Gómez-Bruton A, Matute-Llorente Á, González-Agüero A, Casajús JA, Vicente-Rodríguez G (2017). Plyometric exercise and bone health in children and adolescents: a systematic review. World J Pediatr., 13(2), 112-121.

Granacher U, Gollhofer A, Hortobágyi T, Kressig RW, Muehlbauer T. (2013). The importance of trunk muscle strength for balance, functional performance, and fall prevention in seniors: a systematic review. Sports Med., 43(7), 627-41.

Herrero S, Pico S. (2016). Can a healthy life prevent us from post-menopausal osteoporosis? Myths and truths. PharmaNutrition 4, 45–53.

Moreira LDF, Oliveira MLD, Lirani-Galvão AP, Marin-Mio RV, Santos RNd, Lazaretti-Castro M. (2014) Physical exercise and osteoporosis: effects of different types of exercises on bone and physical function of postmenopausal women. Arquivos Brasileiros de Endocrinologia & Metabologia. 58(5), 514-22.

Josse R, Canada SACotOSo. (2002). Clinical practice guidelines for the diagnosis and management of osteoporosis in Canada. CMAJ, 167(10), S1-S34.

Karlsson MK, Magnusson H, von Schewelov T, Rosengren BE. (2013). Prevention of falls in the elderly--a review. Osteoporos Int., 24(3), 747-62.

Kemmler W, von Stengel S, Kohl M. (2016). Exercise frequency and bone mineral density development in exercising postmenopausal osteopenic women. Is there a critical dose of exercise for affecting bone? Results of the Erlangen Fitness and Osteoporosis Prevention Study. Bone., 1-6.

Munns C, Zacharin MR, Rodda CP, Batch JA, Morley R, Cranswick NE, Craig ME, Cutfield WS, Hofman PL, Taylor BJ, Grover SR, Pasco JA, Burgner D, Cowell CT; Paediatric Endocrine Group; Paediatric Bone Australasia. (2006) Prevention and treatment of infant and childhood vitamin D deficiency in Australia and New Zealand: a consensus statement. Med J Aust. 4;185(5):268-72.

Roghani T, Torkaman G, Movasseghe S, Hedayati M, Goosheh B, Bayat N. (2013). Effects of short-term aerobic exercise with and without external loading on bone metabolism and balance in postmenopausal women with osteoporosis. Rheumatology international, 33(2), 291-8.

Saxena A, Sen S. (2013). Effects of Aerobic Exercises and Progressive Resisted Exercises on Bone Density Measurement and Quality of Life in Patients with Osteoporosis. International Scientific Journal of Sport Sciences, 2(1and2), 1-7.

Sinaki M. (2012). Exercise for patients with osteoporosis: management of vertebral compression fractures and trunk strengthening for fall prevention. PM&R., 4(11), 882-8.

Slawta JN, Ross N. (2004). Exercise for Osteoporosis Prevention. ACSM s Health & Fitness Journal, 8(6), 12-19.

Teixeira L, Silva K, Imoto A, Teixeira T, Kayo A, Montenegro-Rodrigues R, Peccin MS,

Trevisani VF. (2010). Progressive load training for the quadriceps muscle associated with proprioception exercises for the prevention of falls in postmenopausal women with osteoporosis: a randomized controlled trial. Osteoporosis international, 21(4), 589-96.
Ünal E. (2014). Romatizmal Hastalıklarda Biyopsikososyal Model: Bilişsel Egzersiz Terapi Yaklaşımı (BETY) Ankara, Pelikan Yayıncılık.
Wang D, Ruan W, Peng Y, Li W. (2018). Sleep duration and the risk of osteoporosis among middle aged and elderly adults: a dose-response meta-analysis. Osteoporos Int., 1-7.
Yuan Y, Chen X, Zhang L, Wu J, Guo J, Zou D. (2016). Prog Biophys Mol Biol., 122(2), 122-130.
Zhao R, Zhang M, Zhang Q. (2017). The Effectiveness of Combined Exercise Interventions for Preventing Postmenopausal Bone Loss: A Systematic Review and Meta-analysis. J Orthop Sports Phys Ther., 47(4), 241-251.

Chapter 77

Sleep Disturbances and Pain in Individuals with Cerebral Palsy

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SLEEP AND PAIN IN CEREBRAL PALSY

Cerebral Palsy (CP) is the name of a group of permanent but not progressive disorder that causes the restriction in activities and deterioration in the development of posture and movement due to the damages in fetal brain that has not completed its development (immature) or in infant brain. Although the main component of CP is motor function disorder, the accompaniment of several problems such as sensory disorders, speech and language disturbances, aural, visual and behavioral learning problems, epilepsy and sleep disturbances are frequent. In addition, the incidence of physiological problems such as gastro-esophageal reflux in CP is very high. Problems such as epilepsy, visual disturbances, respiratory problems, drooling and uncoordinated swallowing can be classified as the other problems related to CP from musculoskeletal and physiological problems. On the other hand, pain and sleep disturbances are among important factors that ruin the quality of life of the children with CP.

Pain and sleep disturbances are among the problems that interact each other and affect the development during childhood period. If a child having CP cannot sleep well, he experiences the pain more severely. Also the sleep of the child having pain is affected directly. When referring to pain problems for a child with CP, it is inevitable to think that sleep problems will accompany this situation. When referred to a child with CP, it is inevitable to think that sleep problems will accompany pain problems. Sleep problems in children with CP are four times more common than in children with normal development. On the other hand, 3 out of every 4 children with CP are known to have pain problems. Hammingsson et al. (2008) revealed that children with CP or children having eating disturbances constitute the high risk group in term of sleep problems. Pain is one of the most important problems that lead sleep disturbances in children with CP and with physical development disorder (Stores, 2000, Wright et al., 2006). In related studies, the relationship between pain and sleep disturbance is shown at a high level and both are accepted as the problems that ruins the quality of life of the individuals with CP. It is also indicated in the literature that research is needed in this regard. The investigation of the causes of these problems and the development of evaluation methods and interventional approaches is one of the essential issues needed.

SLEEP AND DEVELOPMENT IN CHILDREN

Sleep is the most basic physiological need for brain and body development. Sleep is one of the most important factors affecting child development between 0-3 years of age and it is accepted that uninterrupted and quality night's sleep is as important as

nutrition for children's healthy development. Children aged 0-3 years spend 50% of their days sleeping. In particular, to be able to sleep continuously at night provides important advantages for children both mental and physical development. Sleep is accepted as the essential of the development in terms of maturing behaviors, memory and social skills of children. Sleep is regarded as the basis for the development in terms of the maturity of children's behavior, memory and social skills. If the child is deprived of sleep, the child's development, learning potential and physical health can be in danger. In addition, sleep disturbances seen in early childhood are associated with problems such as behavioral disturbances and depression in the upcoming period of life. It is indicated that sleep disturbances between 6 – 12 months are associated with the behavior problems between 3 – 4 ages (Lam et al., 2003) and sleep disturbances at the age of 8 is the precursor of the depression at the age of 10 (Barclay & Gregory, 2013).

Three basic needs of children must be met in order to ensure a healthy development. These are; love and protective support given by the caregiver, meeting the need of nutrition, adequate sleep. The first two items are issues that are also supported by health policies and particularly need family support. Sleep is another issue that needs to be investigated and discussed in terms of its effects and consequences in every developmental period of childhood. We can examine sleep in 5 groups according to periodical development and needs.

1. **New-born (0-3 months):** A new-born sleeps approximately 10 – 18 hours (h) a day. Sleep is provided by a physical instinct in this period. A new-born is mostly at REM (rapid eye movement) phase of the sleep. REM is accepted as an important phase for brain development.
2. **Infants (4-11 months):** Infants' sleep is more regular in this period. They sleep approximately 9 – 12 h at night and 2-hour-sleep can be adequate during the day. In this period, they are beginning to develop social skills; the brain is alerted to social situations.
3. **Toddlers (1-2 years):** They sleep 1 hour during the day and a sleep of 11- 14 h is adequate a day. In this period, toddlers begin to accelerate the independence in motor, cognitive and social skills. Since they are engaged with the situations that affect their behavioral skills in this process, they are in an uneasy mood, they whine at bedtime and they can refuse sleeping. It is important to maintain a regular sleep routine to keep the process as stressless as possible and to calm the activity in the brain.
4. **Pre-schoolers (3-5 years):** They sleep for 11 – 13 h a day and they do not need sleep during day after 5 years old. This age range is a period in which children develop their imagination. Imaginary creatures and nightmares dreamt in this period both ruins their sleep and affect their psychology in a negative way. Anxiety, frequent deterioration of sleep and not being able to fall asleep again problems again cause debilitating effects on the immune system. The quiet, peaceful, stress-free sleeping environments are important for the continuity of the sleeping pattern of children.
5. **School children (6-13 years):** Schoolchildren need 9 – 11 hours' sleep per day. TV, internet and media tools are among the factors that deteriorate the sleep pattern of children. According to the studies, children watching TV before sleeping have difficulty in falling sleep.

Sleep and Brain Development

The first year of life is the period in which both human brain and sleep

development have an important change. The relationship between the two is vital. Sleep control and sleep cycle is regulated by central nervous system (CNS). Sleep is important in neural development and adaptation to initial experiential responses.

Circadian timing system: It is a basic system that controls leep-wake cycle. This system in the suprachiasmatic nucleus of the anterior hypothalamus (SCN) shows rhythms and oscillations for nearly 24 hours. The neurogenesis of SCN was detected at the earliest 18 weeks of conceptual age. The maturation of the SCN has been shown to continue throughout the first year of life.

Effect on neuroplasticity: Another important process involved in brain maturation is brain plasticity. It is a genetically determined ability to alter the structure of the baby's brain and function as a response to environmental stimuli. Studies have shown that young animals have a loss in brain plasticity when they are deprived of REM- and non-REM (NREM) sleep. This loss is characterized by smaller brain tissue, decreased learning and long-term negative behavioral effects.

Endogenous stimulation: It is another important component of early neurosensory development. Such stimulation seems to be necessary for axon growth and targeting, which is not related to the environmental conditions of the child, coming from neurons in the neurosensory system. These discharges create various connections between sensory organs and basic brain structures. Healthy development depends on endogenous stimulation. Endogenous stimulation occurs only during REM sleep. It is suggested that the intervention in REM sleep in animal models causes the abnormal development of these systems and structures. For instance, REM sleep deprivation leads to less development of the central visual system because it prevents the connection between the retinal ganglion cells and the lateral geniculate nucleus.

The relation of sleep to cognitive performance and memory is shown in children and adults. The role of the specific elements of sleep in strengthening memory and maintaining cognitive function is revealed in studies.

The effects of sleep in infancy include the maturity of central nervous system (CNS), general functioning and the future cognitive, psychomotor and temperament developments. It is revealed in neurodevelopmental tests that inadequate sleep in the first 3 years of life (short sleep time) is related to the hyperactivity/impulsivity and low cognitive performance at the age of 6. It is stated that this is related to the short sleep time at the age of 2,5 mostly. It is shown that this situation does not change even if sleep time increases between the ages of 3,5 and 6 after sleep deprivation in the first 3 years. This also suggests the long-term consequences of inadequate sleep in the first three years of life. In addition, studies have shown that sleeping time is stable from 2.5 to 6 years of age. It is shown that the 1-hour decrease in sleep every night in early childhood may be related to the cognitive performance of the child at school.

Most studies linking sleep and development have been performed in animals, adults, or older children. While it is shown that sleep deprivation affects cognitive functions in adults, studies in children are related to sleep measurements, sleep patterns and hyperactivity, attention span shortening, and cognitive and behavioral states. However, studies investigating sleep deprivation at different grades in children were usually performed overnight and the results showed inconsistent results.

Dahl states that toddlers and elementary school children have disturbance, decrease in the tolerance of disappointment and shortening in the attention span

depending on inadequate sleep. In addition, many authors indicate that there is a potential connection between inadequate sleep and attention-deficit hyperactivity disorder (ADHD) (Dahl, 1997).

Sleep deprivation affects the immune system and health directly. Every time we sleep, our body is charged and our immune system gets stronger. When we do not get the right amount of sleep, our immune systems become weaker. Children's immune systems are at greater risk because they are constantly fighting new bacteria. It is important to observe whether children who get sick often get enough sleep.

SLEEP AND DEVELOPMENT IN CEREBRAL PALSY

While sleeping problems are important for all children's development, more attention should be paid to children with physical development problems. Problems such as cramps, respiratory distress, pain, incontinence, difficulties in moving in the bed, orthoses use at night and epilepsy are frequently encountered in these children in relation to their diagnosis. Studies related to cerebral palsy (CP), spina bifida (SB) and muscular dystrophy (MD), which cause physical disability, and sleep are insufficient. In a study comparing children with physical disabilities between the ages of 1 to 16 years and healthy children in terms of sleep disorders, it was shown that sleep disturbance is 57% in physically disabled children and 14% in healthy children (Wright et al., 2006). Compared to the sleep disorders of the average 8 year old children with CP and healthy children, 23% and 5% was found respectively (Newman et al., 2006). When the medical conditions that disturb the sleep are examined, it is shown that it is mostly due to recurrent ear infections, (87%), constipation (53%), allergies / eczemas (45%) and other types of infection (45%) (Smith et al, 1998).

Quine and Brylewski & Wiggs showed the relationship between sleep problems and epilepsy (Quine, 1991; Brylewski & Wiggs, 1998). It was stated that children having sleep disturbances are more prone to epilepsy. Children with CP with sleep disturbance were found to be more prone to epilepsy than those without sleep disturbances (Poindexter &Bihm, 1994). It was also emphasized that this was not related to sleep pattern. It was revealed that sleep problems in CP were not related to short sleep time.

The treatment of CP, which is accompanied by many problems, nowadays involves a multidisciplinary approach. These approaches include physical and occupational therapy, night and day orthoses use, standing frames, botulinum toxin type A (BTX-A) treatment, surgical approaches and approaches to prevent secondary problems. Especially orthoses are used to prevent the development of secondary deformities. Particularly orthoses that support the lower extremity or are used to prevent deformities are widely used. Night orthoses during sleep are used to prevent contractures and deformity development relative to the body part that has been affected or wanted to affect (ankle-foot orthoses, knee-ankle-foot orthoses). These orthoses used during sleep are usually uncomfortable and unpopular for children and their parents. In a study investigating the effect of night and day orthoses on sleep, it is shown that there is no difference between sleep disturbances of children who use orthoses and those who do not use them (Mol et al., 2012). In another study conducted on this matter, it was shown that the invisible reason of that the use of night orthoses did not cause sleep problems in the child was taking off orthoses when the child felt uncomfortable

(Newman et al., 2006). On the other hand, Mol et al. (2012) found that children who use daytime orthosis had more difficulty to start and maintain sleeping than those who use nighttime orthoses (Mol et al., 2012).

It is seen that about 50% of children with CP and having visual impairment have sleep disturbances. It has been shown that children have difficulty in starting and maintaining sleep due to cortical visual impairment (CVI) and blindness (Stores & Ramchandani, 1999). Newman explains that this situation develops as a result of that sleep-related hormones such as melatonin and adenosine are affected by abnormal light perception (Newman et al., 2006).

It is stated that the difficulty in starting and maintaining sleep is directly proportional to the severity of the CP and that seizures may predispose sleeping problems. At the same time, anti-epileptic medications cause children to be drowsy and sleepy during the day (Kotagal et al., 1994; Newman et al., 2006).

THE EVALUATION OF SLEEP

Questionnaires are used to determine and identify sleep problems. The most commonly used ones of these are Sleep Disturbance Scale (Bruni et al., 1996), Children's Sleep Habits Questionnaire (Owens et al., 2000), Epworth Sleepiness Scale (John, 1990), Composite Sleep Disturbance Index and BEARS questionnaire (Appleton, et al., 2013; Jan et al., 2008). If the sleep problem is identified, the next stage is to investigate the child's sleep pattern, sleep duration, sleep/wake schedule and environmental factors. In addition, the room's light and temperature, voices in the environment and bed characteristics should be evaluated as the environmental factors affecting sleep.

Most of the sleep problems in childhood are temporary and are particular to the developmental nature of the child. However, some internal and external risk factors play an important role to occur this problem. The difficult characteristic features of the child, his chronic disease and maternal depression and chronic sleep disturbances are among these factors. Inadequate sleep or drowsiness in children can cause adverse outcomes in many functional areas including mood, behavioral characteristics, school performance and health problems.

In their studies examining the relationship between musculoskeletal system and changes seen in sleep pattern in CP, Lelis et al. revealed the relationship between motor function level, postural limitation, grade of spasticity, and accompanied physical and muscle problems and sleep disturbance (Lelis et al., 2016). Especially in spastic quadriplegia and dystonic dyskinetic CP in which total body involvement, it is shown that they are under higher risk of experiencing difficulties in initiating and maintaining sleep.

Sleep in CP is examined by categorizing in 7 areas (Galland et al., 2012).

1. Breathing difficulties that may be due to various reasons: Upper airway obstruction, pulmonary aspiration and gastroesophageal reflux have contributed to sleep-related breathing disorders in children with CP.
2. Movement disorders: Muscle spasms, difficulties in changing position
3. Sleep-wake Cycles: Problems in initiating and maintaining sleep can occur in individuals having optical damages.
4. Epilepsy: It usually occurs when children are sleeping and waking up or are

being awakened from sleep

5. Deterioration in sleep pattern: Deterioration in REM, abnormal body movements during sleep

6. Physiological factors: They are seen in the 50% of the children with CP. These include irritability, negative behaviors, having anxiety, bad mood, extreme activity and weak attention span.

7. Pain and Discomfort: Acute and chronic pain, orthopedic and postural instrument use and gastro-esophageal reflux affect sleep and the state of feeling comfortable.

When the approaches and results of the proposed for sleep problems in CP are examined, there is not enough study and evidence in the literature. The effects of the following approaches on the factors that affects sleep disturbance are being discussed and there is not sufficient evidence on their efficiency.

1. There is not sufficient evidence showing that sleep quality, sleep duration or breathing problems can be decreased by providing postural arrangement in bed.

2. Adenotonsillectomy for obstructive sleep apnea.

3. Massage: it is said to be effective on children's eating and sleep/wake duration.

4. Medication for baclofen and tonus: It is thought that a more comfortable sleep can be achieved by reducing hypertony and spasticity.

5. Melatonin: In an observative study, it is stated that there have been important improvements in the perceptions of parents about their children's sleep and sleep latency. It is revealed that confusing results have been recorded in children's total sleep duration and in the number of waking during night.

6. Cranial osteopathy (gentle hand manipulation onto the skull) and/or acupuncture: Either study have revealed a reliable improvement in children's total sleep duration, time of falling asleep or following these interventions, in the general health and the state of well-being of children with CP.

THE RELATIONSHIP BETWEEN SLEEP DISTURBANCES AND PAIN

In a study conducted on 153 children with CP between the ages of 8 - 18 and their parents, it has been revealed that 65% of children have moderate pain problems (Ramstad et al., 2011). In this study, it was found that the pain level showing the perceived effect of pain during sleep was higher in parents' evaluations than the one in the children evaluation reports (Dutt et al. (2015) investigated 82 reviews and found that 3 out of every 4 children with CP have pain problem (Dutt et al., 2015). Novak et al. (2012) emphasizes the relationship between chronic pain, sleep and behavioral problems, and they state that it warrants urgent attention. At the same time, it is revealed that the sleep quality of the person giving care to the child ruins related to the child's sleep disturbance and it causes the depression of the caregiver (Novak et al., 2012).

In another study conducted on children with CP, children were examined under three different groups as follows: 1) children having no pain, 2) children whose pain had been treated, 3) children whose pain had not been intervened (Breau & Camfield, 2011). The findings of the study revealed that children having pain usually experienced more sleep problems, had higher night waking frequencies, parasomnia, sleep-disordered breathing and shorter sleep durations. In addition, it has been revealed that

pain is related to the self-care skills and sleep of the children with CP (Engel et al., 2005). It has been shown that chronic sleep disturbance at the same time is related to the underlying problems arising from cerebral palsy (such as muscle spasm, or contractures) and treatment regimens (such as analgesics and antiepileptic sleep-disrupting medication).

Studies on pain and sleep problems have shown that inadequate sleep causes pain sensitivity and an increase in dysregulation of the hypothalamic pituitary adrenal axis (HTP).

PAIN IN INDIVIDUALS WITH CEREBRAL PALSY

Pain is a common problem among children with neurodevelopmental and neuromuscular problems. It is defined as a secondary disorder affecting the quality of life, the level of participation and body structure and functions of individuals with CP. It is known that pain affects the ability of the child's mobility, the level of the activity, the participation in life and the sleep condition in the negative direction in addition to the existing problems of CP. In the literature, it is shown that main reasons of the pain related to CP are musculoskeletal pain (such as hip dislocation and scoliosis), neuromuscular pain (such as muscle spasm) and gastrointestinal pain (such as gastro-esophageal reflux and constipation). At the same time, the effects of dental problems (such as abscesses), ophthalmologic problems (such as corneal abrasions), and urologic problems (such as bladder spasm) are less commonly mentioned.

It is stated that there is a relation between GMFCS of the children with CP and their pain levels. Penner found that children's pain levels increase as their GMFCS levels increase (Penner, 2013). Muscle shortening, increased tendon stretch (tension) and increased tonus spastic tetraplegia are the problems that are seen in children with CP commonly and cause pain. Also, it is reported that the most severe pain is seen in children with tetraplegic CP.

Pain is defined as chronic (ongoing) pain if the healing lasts longer than the normal course of 3 months. Chronic pain has an important and negative effect on the individual's lifestyle, self-care, productivity and activities. It is known that children with CP with chronic pain are less likely to participate in activities during the day, avoid activities that can lead to pain, and have lower quality of life when compared to those without pain. The individual reduces his participation in social activities when he constantly feels pain and moves away from social life by avoiding asking for the help he needs because he constantly needs help. For this reason, chronic pain is indicated as one of the most important problems affecting participation in life.

It is necessary to examine the pain and its effects in a developmental process in order to understand how it affects the life of an individual with CP.

Pain in Infancy:

According to the latest researches on pain, it is thought that brain has a memory related to pain and this memory continues pain against the stimuli creating disturbance without depending on the level of the stimuli. Children with CP in neonatal intensive care unit are exposed to many painful stimuli in the cycle of neural pain that has not yet completed development. The exposure of the newly developed peripheral and central nervous system of the newborn baby to repetitive painful stimuli during plasticity has negative effects on the baby's future pain response.

Exposure to painful stimuli has 2 harmful effects on the baby. First; painful procedures performed without analgesia cause unnecessary pain and stress on the baby. Second; the early exposure of newborns to painful procedures may cause its sensitivity to pain to develop and this sensitivity to continue at the later stages of life. During the neurodevelopmental processes, the structure and function of the nervous system of particularly premature infants who are often exposed to painful procedures during the early stages of life gets changed. This affects consecutive pain responses during childhood and contributes to the development of chronic pain.

Pain during School Period

Children with chronic pain during the schooling period were found to have frequent absenteeism when compared to healthy age groups (Carlsson et al., 1996; Dunn-Geier et al., 1986; Lovell et al., 1990). It is seen that reasons such as chronic pain, sleep disturbances in children, negatively affecting family relations caused by pain and treatment, decreased attention in lessons, increased sensitivity and depression negatively affect the participation of the children in the school (Chan et al., 2005), (Logan et al., 2009).

Pain in Adulthood

It has been reported that the pain seen in adult individuals with CP is more associated with fatigue and balance and walking deterioration. Children become more prone to pain during adulthood due to damages that occurred in joints and back but not chronically defined and untreated.

Turk et al reported that the incidence of chronic pain is 18% below 30 years of age, but increases to 40% by the age of 60. This was found to be valid in both genders (Turk et al., 1997).

Joint contractures, one of the most common musculoskeletal problems, are among the primary factors for pain during this period. According to Turk et al., 75% of the adult females have contractures and these are seen mostly in foot, neck and hip. In another study, it is revealed that 80% of the adults with CP have contracture problems (Andersson& Mattsson, 2001). For this reason, stretching exercises are particularly important for the ability of individuals with CP to provide independent ambulation (GMFCS I-III).

Chronic pain is a more common problem in children with higher CP severity (GMFCS IV-V). On the other hand, children providing independent mobilization (GMFCS I-III) reveal that pain is a common problem affecting their quality of life by saying that they are experiencing constant pain problems during their daily life activities.

In CP, acute pain can occur due to the reasons such as gastro-esophageal reflux, and operational pain due to the reasons of therapy, surgery and botulinum injections. Chronic pain usually arises from the operated part, muscle spasms, deformation, dislocation in the joint, inflamentation and problems in the hip. Chronic pain is a more common complaint among adults with CP. Adults with CP complain of back pain firstly and pain in the weight-bearing joints secondly. Neck pain, shoulder pain and headache are the pain types that are seen especially in individuals with dyskinetic CP. People with diplegic CP have the highest rate of foot pain. Individuals with tetraplegic CP have pain in their knees at most.

Pain originating from hip dislocation is one of the most common conditions in

adults with CP. Spasticity and degenerative changes occurring in the joint seen in CP may cause pain. Boldingh et al. showed the relationship between pain and femoral head deformity and femoral migration in individuals with severe CP (Boldingh et al., 2005). A strong relationship was found between pain and the abnormal formation between femur head and acetabulum. Because of increased asymmetry and osteoarthritis, the severity of pain also increases. In addition, it is seen that surgical interventions for decreasing the pain due to the abnormal formation of femur head and pelvis are not always efficient.

Adults with CP report that their independence in daily activities is restricted and their social integration and participation in work and sports activities decreases with the increase in fatigue due to pain. It is seen that individuals with CP who have chronic pain have to change their life styles for some reasons such as pain, fatigue or function disturbance before the age of 40. They have to make modifications in their life styles with the situations such as starting to use wheel chair or ancillary instruments and to decrease the time they work. These mandatory modifications made in the way of life have a negative impact on the person's level of functioning, quality of life, daily life and work life by leading to a psychological stress. At the same time, constantly experienced pain disrupts sleep patterns, reduces appetite, creates a general fatigue, reduces libido, increases nervousness and anxiety. As a result all of these, individuals go into a cycle that leads to unhappiness and hopelessness as a result of problems such as withdrawal from social life and activities, the loss of self-respect, depression, fulfillment of roles, difficulties in maintaining relationships and feeling emotional stress. It is important to remove the pain factor to be able to prevent the formation of this vicious circle.

EVALUATION OF THE PAIN

In order to understand pain, it is necessary to use scales that can evaluate pain from different perspectives.

For this purpose, self-report, physiological pain, behavioral pain and distress are evaluated.

Self Report Measures: They are the evaluations of the location, intensity, duration and characteristic of the pain, active reactions, conditions increasing pain and pain conditions related to the disability situation. Numerous scales are used for this purpose. While some investigate this condition by oral expressions, others examine it using face expressions or drawings.

Behavioral Measures: They are scales evaluating behaviors commonly in evaluating pain. In the evaluation of pain for behaviors, children's facial expressions, vocalizations, movements, tone changes, sleep, eating, general state changes and atypical pain behaviors observed in neurologically damaged children are examined. Pediatric Pain Profile (PPP), Non-communicating Children’s Pain Checklist and Individualized Numerical Rating Scale (INRS) are the scales developed recently and answered by consulting the person who gives care to the child.

Physiological Measures: Heart rate, vagal tone, blood pressure, oxygen saturation, palmar sweating and neuroendocrine response are the physiological measures used in evaluation of pain.

INTERVENTION METHODS FOR PAIN

Pain in children is controlled better by determining and identifying the reasons that

cause pain in the early stage. The best start in controlling pain is to question the pain by the child himself and by his family, and to detect it correctly. Pain is a problem that the child with CP experiences during his life and that accompanies his life. For this reason, the child can accept any pain he feels as a normal and familiar situation. To detect the presence of the pain of the child and to reveal its reasons, it is necessary to discuss and analyze it. In this way, a prediction about the circumstances and time that the pain can occur can be made, and the pain can be controlled better by taking local anesthetics and analgesics at the right time.

When the intervention methods in the literature used to stop the chronic pain in individuals with CP are examined, it is seen that not adequate evidence and solutions are revealed for chronic pain as it is for sleep problems. Although intervention methods have a multi-directional approach to pain, it is revealed that psychological aspect (such as counselling, biofeedback and relaxation training), rehabilitative aspect (such as orthoses, exercise and positioning) and the use of physical agents (such as TENS, hot application and massage) fail to decrease the effects of chronic pains. It is established that whirlpool, ultrasound and TENS provide a little decrease in pain, and ibuprofen, massage, hot application, chiropractic care, whirlpool, diazepam and aquatic therapy provide only a short-term relief in pain.

In studies on the interventions for stopping pain in adults with CP, medication supports are seen as the solutions having the highest level of evidence. Engel et al. (2002) evaluated the chronic pain of 64 adults with CP. More than 50% of the participants were using non-steroid anti-inflammatory drugs and one third of them anti-spasticity or narcotic analgesic drugs. However, the study reports that all of these drugs achieve limited success. On the other hand, it is reported that health approaches (counselling, biofeedback, relaxation training, cognitive therapy) and exercises for improving health are used much lesser, but the individuals using these methods are more content than those using medication.

Exercise is referred as one of the most effective interventions to relieve pain and improve health conditions. Activity, stretching, massage, medication use and mild weather decreases pain. It is known that fatigue, stress, depression, cold or extreme forcing increases pain and resting decreases it. An important point to be paid attention is that resting and inactivation is not the same thing. The pain occurring after an activity decreases by resting, but inactivity or immobilization causes pain and disturbance to increase. Regular swimming, aquatic activities and positioning are known to be efficient methods to cope with pain. It is revealed that the social participation and health conditions of the physically handicapped individuals who have high level of physical activity are better than those whose physical activity level is low. A significant interaction is seen between pain and ambulation level. It is known that ambulatory adults suffer from pain more than non-ambulatory ones.

In a study in which the individuals at the level of GMFCS IV-V were included in a swimming program twice a week for 8 weeks regularly, there was a significant level of decrease in the pains of the individuals. It is thought that this situation is ensured by the effect of swimming on pain and by changing position of the individuals who have to sit on a wheel chair without changing position for 14-16 h a day. In addition, exercise is recommended for individuals with CP and with other disabilities due to the effects of combatting obesity, improving strength and cardiovascular convenience and preventing

secondary problems.

There are difficulties in the community to ensure the individuals with CP and with physical disabilities to participate in exercise programs. Fitness centers for disabled individuals are not accessible.

Individuals having severe disturbances need help and an attendant during transportation and exercise. This is an important barrier for adults who do not use a car and do not have a family member who can take them to the exercise facility. Membership in fitness center, transportation and personal assistance costs are other obstacles. All adults with CP are not interested in exercise when personal preferences are taken into consideration. Despite these difficulties, studies show that exercise is an effective method of managing pain.

In another study, Miller et al. investigated the effects of physiotherapists' behavior on stress coping levels of children with CP participating in a rehabilitation program (Miller et al., 1997). They have examined stretching practice in the physiotherapy session. They have found that the communication and non-procedural speaking of the physiotherapist is positively related to the child's coping skills. Criticism and assurance have shown to be related to stress being increased.

It should be remembered that psychological factors also play an important role in chronic pain. In studies, cognitive behavior therapies for this purpose is shown to be at great importance for both children and adults with CP. Cognitive behavioral methods encourage the development and implementation of coping skills. There is strong evidence that the use of these interventions is effective in the treatment of operative pain such as chronic headache, abdominal pain and injection. One of the methods used to relieve pain is to direct the child's attention to another direction. The other method is that the previously created negative memory can be changed. This is another cognitive behavioral strategy that should be considered especially for young children. While remembering an event, children can interpret it by remembering with negative thoughts. However, the child’s suffering by remembering it and/or remembering it negatively after a negative event that he experienced is a changeable situation with the guidance of an adult. Basically, the child's memory of the painful event is "reshaped" by the adult.

Researches show that sleep disturbances and pain are problems that accompany the lives of individuals with cerebral palsy and negatively affect their lives. At the same time, they are also risk factors for other disorders that may develop. Both require attention from health professionals, the families of the individuals with CP, and the individuals themselves. It is important for health professionals to be able to address this issue and develop highly evidential researches for the development of assessment and intervention methods.

REFERENCES

Albright, A.L. (1995). Spastic cerebral palsy. Approaches to drug treatment. *Practical Therapeutics* 4:(1), 17–27.

Anand, K.J.S. & Scalzo, F.M. (2000). Can adverse neonatal experiences alter brain development and subsequent behavior? Biol. Neonate 77:(2), 69-82.

Anand, K.J.S. (2001). The International Evidenced-Based Group for Neonatal Pain. Consensus statement for the prevention and management of pain in the newborn. Arch. Pediatr. Adolesc. Med 155: (2), 173-180.

Andersson, C. & Mattsson, E. (2001). Adults with cerebral palsy: a survey describing problems, needs, and resources with special emphasis on locomotion. *Dev Med Child Neurol* 43: 76–82.

Barclay, N. L. & Gregory, A. M. (2013). Quantitative genetic research on sleep: A review of normal sleep, sleep disturbances and associated emotional, behavioural, and health related difficulties. Sleep Medicine Reviews 17: 29–40.

Barkovich AJ, Kjos BO, Jackson DE, Norman D. Normal matura-11. tion of the neonatal and infant brain: MR imaging at 1.5T. Radiology 1988;166:173-80.

Baxter, P. Comorbidities of cerebral palsy need more emphasis—Especially pain. Dev. Med. Child Neurol. 2013, 55, 396–396.

Boldingh EJ, Jacobs-van der Bruggen MA, Bos CFA, Lankhorst GJ, Bouter LM. Determinants of hip pain in adult patients with severe cerebral palsy. *J Pediatr Orthop* 2005;14: 120–125.

Boothby, J.L.; Thorn, B.E.; Stroud, M.W.; Jensen, M.P. (1999). Coping with pain. In: Gatchel, R.J.; Turk, D.C. (Ed). Psychosocial factors in pain, Chapter 21, p. 343-359, New York: Guilford Press.

Bouza, H. (2009). The impact of pain in the immature brain. Journal of Maternal Fetal Neonatal Medicine 22:(9), 722-732.

Breau, L.M. & Camfield, C.S. (2011). Pain disrupts sleep in children and youth with intellectual and developmental disabilities. Res. Dev. Disabil 32:(6), 2829–2840.

Bruni, O.; Ottaviano, S.; Guidetti, V.; Romoli, M.; Innocenzi, M.; Cortesi, F.; et al. (1996). The Sleep Disturbance Scale for Children (SDSC) Construction and validation of an instrument to evaluate sleep disturbances in childhood and adolescence. Journal of Sleep Research 5: (4), 251–261.

Carskadon, M.A. & Dement, W.C. (2006). Normal human sleep: an overview. In Kryger, M.H.; Roth, T.; Dement, W.C. (Eds.). Principles and practice of sleep medicine, 4th ed. Chapter 2:p.13-23, Philadelphia: WB Saunders.

Castle, K.; Imms, C.; Howie, L. (2007). Being in pain: a phenomenological study of young people with cerebral palsy. Dev Med Child Neurol 49:(6), 445–9.

Chambers, H.G. (2002). Advances in cerebral palsy. Current Opinion in Orthopaedics 13:(6), 424–431.

Cooperman, D.R.; Bartucci, E.; Dietrick, E.; Millar, E.A. (1987). Hip dislocation in spastic cerebral palsy: long-term consequences. *J Pediatr Orthop* 7:(3),268–276.

Craig, K.D. (1994). Emotional aspects of pain. In: Wall, P.D. & Melzack, R. (Eds). *Textbook of Pain.* 3rd Edt. p: 261–274, Edinburgh: Churchill Livingston.

Dahl, R.E. (1996). The impact of inadequate sleep on childrens daytime cognitive function. Semin Pediatr Neurol 3:(1), 44-50.

Desloovere, K.; Molenaers, G.; Decat, J.; Pauwels, P.; Vancampenhout, A.; Ortibus, E.; et al. (2007). Motor function following multilevel botulinum toxin type A treatment in children with cerebral palsy. Journal of Developmental Medicine and Child Neurology 49:(1), 56–61.

Dickinson, H.O.; Parkinson, K.N.; Ravens-Sieberer U; Schirripa, G.; Thyen, U.; Arnaud, C.; et al. (2007). Self-reported quality of life of 8–12- year-old children with cerebral palsy: a cross-sectional European study. The Lancet 369: (9580), 2171–2178.

Dutt, R.; Roduta-Roberts M.; Brown, C.A. (2015). Sleep and Children with Cerebral Palsy: A Review of Current Evidence and Environmental Non-Pharmacological Interventions. Children 2:(1), 78-88.

Engel, J.M.; Jensen, M.P.; Schwartz, L. (2004). Outcome of biofeedback-assisted relaxation

for pain in adults with cerebral palsy: preliminary findings. Appl Psychophysiol Biofeedback 29: (2), 135–140.
Engel, J.M.; Kartin, D.; Jensen, M.P. (2002). Pain treatment in persons with cerebral palsy: frequency and helpfulness. Am J Phys Med Rehabil 81:(4), 281–286.
Engel, J.M.; Petrina, T.J.; Dudgeon, B.J.; McKearnan, K.A. (2005). Cerebral palsy and chronic pain – a descriptive study of children and adolescents. Phys Occup Ther Pediatr 25:(4), 73–84.
Engel, J.M.; Petrina, T.J.; Dudgeon, B.J.; McKearnan, K.A. (2006). Cerebral palsy and chronic pain: A descriptive study of children and adolescents. Phys. Occup. Ther. Pediatr 25: (4),73–84.
Engel, J.M.; Schwartz, L.; Jensen, M.P.; Johnson, D.R. (2000). Pain in cerebral palsy: the relation of coping strategies to adjustment. Pain. 88: (3),225–230.
Fauconnier, J.; Dickinson, H.O.; Beckung, E.; Marcelli, M.; McManus, V.; Michelsen, S.I.; et al. (2009). Participation in life situations of 8–12 year old children with cerebral palsy: cross sectional European study. BMJ 338: b1458.
Fitzgerald, M. (2005). The development of nociceptive circuits. Nature Reviews Neuroscience 6: 507–620.
Galland, B.C.; Elder, D.E.; Taylor, B.J. (2012). Interventions with a sleep outcome for children with cerebral palsy or a post-traumatic brain injury: a systematic review. Sleep Med Rev 16: (6), 561-573.
Goodin, B.R.; Smith, M.T.; Quinn, N.B.; King, C.D.; McGuire, H. (2012). Poor sleep quality and exaggerated salivary cortisol reactivity to the cold pressor task predict greater acute pain severity in a non-clinical sample. Biol. Psychol 91: (1), 36–41.
Grunau, R.V.; Holsti, L.; Peters, J.W. (2006). Long-term consequences of pain in human neonates. Seminars in Fetal and Neonatal Medicine 11:(4), 268-275.
Hill, C.M.; Parker, R.C.; Allen, P.; Paul, A.; Padoa, K.A. (2009). Sleep quality and respiratory function in children with severe cerebral palsy using night-time postural equipment: A pilot study. Acta Paediatrica 98: (11), 1809–1814.
Houlihan, C.M.; O'Donnell, M.; Conaway, M.; Stevenson, R.D. (2004). Bodily pain and health-related quality of life in children with cerebral palsy. Dev Med Child Neurol 46:(5), 305–310.
Imms, C.; Reilly, S.; Carlin, J.; et al. (2008). Diversity of participation in children with cerebral palsy. Developmental medicine and child neurology 50:(5), 363-369.
Jahnsen, R.; Villien, L.; Aamodt, G.; Stanghelle, J.K.; Holm, I. (2004). Musculoskeletal Pain In Adults With Cerebral Palsy Compared With The General Population. J Rehabil Med 36: 78–84
Jayanath, S.; Ong, L.C.; Marret, M.J.; Fauzi, A.A. (2016). Parent-reported pain in non-verbal children and adolescents with cerebral palsy. Dev Med Child Neurol 58:(4),395-401.
Johns, M.W. (1991). A new method for measuring daytime sleepiness: the Epworth Sleepiness Scale. Sleep 14: (6),540–545.
Kotagal, S.; Gibbons, V.P.; Stith, J.A. (1994). Sleep abnormalities in patients with severe cerebral palsy. Journal of Developmental Medicine and Child Neurology, 36, 204–211.
Lam, P.; Hiscock, H.; Wake, M. (2003). Outcomes of infant sleep problems: a lon gitudinal study of sleep, behavior and maternal well-being. Pediatrics 111: (3), 203-207.
LeBourgeois, M.K. (2003). Validation of the Children's Sleep-Wake Scale (Ph.D.) United States -- Mississippi: The University of Southern Mississippi.
Lelis, A.L.P.A.; Cardoso, M.V.L.M.; Hall W. A. (2016). Sleep disorders in children with

cerebral palsy: An integrative review. Sleep Medicine Reviews 30: 63-71.
Merskey, H. & Bogduk, N. (1994). Classification of Chronic Pain: Descriptions of Chronic Pain Syndromes and Definitions of Pain Terms. 2nd edn. Seattle: IASP Press.
Miller, A.C.; Johann-Murphy, M.; Pit-ten Cate I.M. (1997). Pain, Anxiety, and cooperativeness in children with cerebral palsy after rhizotomy: changes throughout rehabilitation. J Pediatr Psychol 22:(5), 689–705.
Miller, A.C.; Johann-Murphy, M.; Zhelezniak, V. (2001). Impact of the therapist child dyad on children's pain and coping during medical procedures. Dev Med Child Neurol 43: (2), 118 –123.
Mitchell, A. & Boss, B.J. (2002). Adverse effects of pain on the nervous systems of newborns and young children: A review of the literature. The Journal of Neuroscience Nursing 34(5): 228-236.
Mol, E.M.; Monbaliu, E.; Ven, M.; Vergote, M.; Prinzie, P. (2012). The Use of Night Orthoses in Cerebral Palsy Treatment: Sleep Disturbance in Children and Parental Burden Or Not? Research in Developmental Disabilities 33:(2), 341-349.
Murphy, K.P.; Molnar, G.E.; Lankasky, K. (1995). Medical and functional status of adults with cerebral palsy. Dev Med Child Neurol 37: (12),1075–1084.
Newman, C.J.; O'Regan, M.; Hensey, O. (2006). Sleep disorders in children with cerebral palsy. Dev. Med. Child Neurol. 48:(7), 564–568.
Noonan, K.J.; Jones, J.; Pierson, J.; Honcamp, N.; Leverson, G. (2004). Hip function in adults with severe cerebral palsy. J Bone Joint Surg Am 86(7):2607–2613.
Novak, I.; Hines, M.; Goldsmith, S.; et al. (2012). Clinical prognostic messages from a systematic review on cerebral palsy. Pediatrics 130: (5), 1285–1312.
O'Hara, P. (1996). Pain Management for Health Professionals. London:Chapman & Hall.
Opheim, A.; Jahnsen, R.; Olsson, E.; Stanghelle, J.K. (2009). Walking function, pain, and fatigue in adults with cerebral palsy: a 7-year follow-up study. Dev Med Child Neurol 51:(5), 381–388.
Owens, J.A.; Spirito, A.; McGuinn, M. (2000). The Children's Sleep Habits Questionnaire (CSHQ): psychometric properties of a survey instrument for school-aged children. Sleep 23(8):1043–1051.
Parkinson, K.N.; Gibson, L.; Dickinson, H.O.; Colver, A.F. (2010). Pain in children with cerebral palsy: a cross-sectional multicentre European study. Acta Paediatr 99: (3), 446-451.
Penner, M.; Xie W.Y.; Binepal, N.; Switzer, L.; Fehlings, D. (2013). Characteristics of pain in children and youth with cerebral palsy. Pediatrics 132: (2),407-413.
Pruitt, D.W. & Tsai, T. (2009). Common medical comorbidities associated with cerebral palsy. Phys. Med. Rehabil. Clin. N. Am. 20: (3), 453–467.
Quine, L. (2001). Sleep problems in primary school children: comparison between mainstream and special school children. Child: Care, Health and Development 27:(3), 201–221.
Ramstad, K.; Jahnsen, R.; Skjeldal, O.; Diseth, T.H. (2011).Characteristics of recurrent musculoskeletal pain in children with cerebral palsy aged 8 to 18 years. Dev. Med. Child Neurol. 53: (11), 1013–1018.
Roberts, K. & Lawton, D. (2001) Acknowledging the extra care parents give their disabled children. Child: Care, Health and Development, 27:(4), 307–319.
Rosenbaum, P.; Paneth, N.; Leviton, A.; Goldstein, M.; Bax, M. (2007). A report: The definition and classification of cerebral palsy. Journal of Developmental Medicine and Child Neurology 49:(109), 8–14.
Sheldon, S.H. (1996). Development of CNS function. In: Evaluating sleep in infants and

children. 71-95, Philadelphia: Lippincott-Raven.
Shonkoff, J.P. & Phillips, D. (Eds.). (2000). National Research Council Committee on Integrating the Science of Early Childhood Development. From neurons to neighborhoods: the science of early childhood development. Washington DC: National Academies Press.
Smedje H. (2000). Nighttime sleep and daytime behaviour in children: Studies based on parents' perceptions of five to eight year old children. Thesis. ISBN 91-554-4801-1 Uppsala: : Acta Universitatis Upsaliensis, Sweden.
Stores, G. & Ramchandani, P. (1999). Sleep disorders in visually impaired children. Journal of Developmental Medicine and Child Neurology, 41: (5), 348–352.
Strong, J. (1987) Chronic pain management: the occupational therapist's role. Brit J Occup Ther 50:(8), 262–263.
Tervo, R.C.; Symons, R.; Stout J.; Novacheck,T. (2006). Parental report of pain and associated limitations in ambulatory children with cerebral palsy. Archives of physical medicine and rehabilitation 87:(7), 928-934.
Thoman, E.B. (1990). Sleeping and waking states in infants: a functional perspective. Neurosci Biobehav Rev 14: (1),93-107.
Thunström, M. (1999). Severe sleep problems among infants in a normal population in Sweden. Prevalence, severity and correlates. Acta Paediatricia (Oslo, Norway) 88: (12), 1356-1363.
Thunström, M. (2002) Severe sleep problems among infants. Doctoral dissertation. Uppsala University, Uppsala, Sweden.
Touchette, E.; Petit, D.; Segui, J.R.; Boivin, M.; Tremblay, R.E.; Montplaisir, J.Y. (2007). Associations between sleep duration patterns and behavioral/cognitive functioning at school entry. Sleep 30: (9), 1213-1219.
Turk, M.A.; Geremski, C.A.; Rosenbaum, P.F.; Weber, R.J. (1997). The health status of women with cerebral palsy. Arch Phys Med Rehabil 78: (12),10–17.
Valrie, C.R.; Bromberg, M.H.; Palermo, T.; Schanberg, L.E. (2013). A systematic review of sleep in pediatric pain populations. J. Dev. Behav. Pediatr. 34:(2), 120–128.
Vogtle, L.K. (2009). Pain in adults with cerebral palsy: impact and solutions. Developmental Medicine & Child Neurology 51: (4), 113-121.
Von Baeyer C.L.; Marche, T.A.; Rocha, E.M.; Salmon, K. (2004). Children's memory for pain: Overview and implications for practice. The Journal of Pain 5(5): 241-249.
Walco, G.A. (2008). Needle pain in children: contextual factors. Pediatrics 122:(3),125-129.
Wayte, S.; McCaughey, E.; Holley, S.; Annaz, D.; Hill, C.M. (2012). Sleep problems in children with cerebral palsy and their relationship with maternal sleep and depression. Acta Paediatr 101: (6), 618–623.
Wirell, E.; Blackman, M.; Barlow, K.; Mah, J.; Hamiwka, L. (2005). Sleep disturbances in children with epilepsy compared with their nearest-aged sibling. Developmental Medicine and Child Neurology, 47: (11), 754–759.
Wright, M.; Tancredi, A.; Yundt, B.; Larin, H. (2006). Sleep issues in children with physical disabilities and their families. Physical and Occupational Therapy in Pediatrics, 26: (3), 55–72.

Health Management

Chapter 78

Health and Status of Health

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INTRODUCTION

The definition of health is still a debated issue. While some individuals take the slightest discomfort as an illness and consult a physician, some others do not consider themselves to be ill even though they suffer from a serious disease. There is a wide range of studies and research on the issues of health, illness, well-being, maintaining one's health and improving the status of one's health. In our time and day, health is a concept that is handled in a multi-faceted manner. Therefore, information on health, illness, well-being, maintaining and improving one's health, the status of health and its determinants, indicators and variables and their impact on the status of health and Romer and Lerer's models on this subject is provided in this study. While countries establish their health policies, they take health related health status criteria as a basis. Thus, the status of health gains further importance and priority as a concept utilized in defining and demonstrating the condition or level of health of a patient or individual. In order both to determine health needs and to measure the level of health of a country or a region, appropriate health indicators need to be utilized. The level of health and health needs of an individual or the society can be determined by measuring the status of health on the basis of health indicators. All necessary data collected during the measurement of the status of health point to the importance of the decision maker on the whole healthcare system. When faced with inadequate and incomplete data, hardships arise with relation to taking decisions on the allocation of resources. Studies on the status of health and its indicators provide substantial contributions to the work of healthcare managers with relation to the identification of health needs, the measurement of a country or region's level of health, the improvement of health and the planning, organization, execution and supervision of healthcare services and decisions related thereto.

THE CONCEPT OF HEALTH

The common purpose of all activities is fighting to survive. The secondary purpose of societies who survive is maintaining a healthy life. Health is the crux of everyday life. Being healthy is a fundamental need; and without it, other goods and services are of no meaning and use. Therefore, the significance of the concept of health is undebatable. That is because health is an irreplaceable fortune.

Health is generally defined as a non-existence of disorder. While physicians accept the simplest grievance or abnormal condition as a disorder, individuals do not deem ailments that do not discomfort them much as a disorder. (Öztek, Z.2001-294).

According to the definition made by the World Health Organization (WHO) in 1948, health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (Akın, 2007-17; Ak, 2016-4).

Health is discussed under its three facets: physical, mental and social health. Physical health refers to an individual's capability of carrying out respiratory, alimentary, urinary and motor functions etc. in full while mental health means the individual being aligned both with himself/herself and his/her environment; and social health is the individual feeling loved, having a sense of belonging and being able to form social relations and so on. In terms of biological sciences, health is a state wherein each cell in the body function at the highest level and a harmony between such cells exist. According to behavioral sciences, health is the individual being aligned with the environment and demonstrating a potential of defending himself/herself against unexpected conditions (Ak, 2018, 1-7).

Health is not being ill. While an individual may feel healthy when s/he does not feel pain, upon medical examination the physician can determine that the same individual is in fact ill. Apart from physical ailments such as diseases and disabilities, health also necessitates that mental and social ailments do not exist. Within this framework, it can be clearly seen that health cannot be taken solely as an individual problem, but the society's perception and the interactions stemming from within the society must also be taken into consideration in this regard. Ensuring and maintaining the health of individuals is a social goal for all countries of the world. Having healthy citizens is deemed an essential element of social peace and economic development. That is because unhealthy citizens give way to negative impacts on the economy since they hinder income growth due to the loss of labor and increase social spendings. The social costs arising out of health related issues are quite high (Dağlı, 2006, 12, 13).

Health is a concept that is difficult to understand and define. It can be defined as negative health and positive health. According to the medical and negative approach, health is a scientifically defined state of non-existence of disorders. More often than not, medicine confines health to this definition and deems the healthy individual as one who has no disorders whatsoever that can be identified in the medical sense.

Negative health is the status of health that requires treatment and rehabilitation; and non-existence of disorders is defined as the absence of pathologic abnormalities. Negative health-related behaviors encompass existing or potential harmful acts such as smoking, drug/alcohol use and malnutrition (Ak, 2016-4; Çelik,Yusuf, 2013-25,26).

Positive health is defined as being happy and able to sustain one's life through sturdy social support, or as the skill of coping with stress (Ak, 2016-4).

Positive health involves more than just the absence of disorders. WHO's definition of health can be given as an example for a positive definition of health (Ak, 2016-4). In order to understand the state of well-being, the concept of health can be studied under two aspects as "subjective" and "objective". Subjective health is the individual's perception of himself/herself in terms of his/her physical, social and mental state. Objective health is, on the other hand, the non-existence of disorders as per diagnostic tests and physician examinations. In order to call a person healthy under these circumstances, this person needs to both feel subjectively healthy and actually be objectively healthy. Within this context, one should also refer to the concepts of neutral and holistic health. Neutral health expresses a stable status of health where no disease or

disability exists. Neutral health status is sustained through efforts aimed at maintaining health and preventing disorders. Holistic health, on the other hand, argues that individuals need to be approached as a whole with their social, mental and physical aspects and states that the individual should be evaluated together with areas with which s/he interacts. (40-3,4)

While defining health, some criteria are mentioned such as life expectancy at birth, need for medical care and capability of fulfilling personal and social tasks (Ak, 2016-6).

MAIN OBJECTIVE AND SOME DETERMINANTS OF HEALTH AND PRIMARY FACTORS THAT AFFECT HEALTH

The main objective of health is eliminating or preventing the emergence of biological, environmental, social, familial and personal factors that hamper the development of human potential (Ak, 2016-3). There are some determinants of health such as sufficient and balanced nutrition, environmental safety, air pollution and economic power (Ak, 2016-2,3,5).

There are many factors that affect health. These factors can be listed with percentages as social conditions (10%), medical conditions (8%), climactic conditions (7%), hereditary conditions (15%), life style (60%) and modern pollution. Other factors are the place where an individual lives, genetics, the individual's attitudes/way of living, weight, environment, income (money), culture, social relations, familial relations, being able to benefit from healthcare services, age, sex, profession, faith and education. Such factors are dubbed the determinants of health.

There are also numerous cultural factors that affect health and illness. Such factors are economic condition, family structure, gender roles, marriage patterns, sexual behavior, preventive patterns, population policy, pregnancy and birth practices, changes in body image, nutrition, apparel, personal hygiene, housing regulations, general health regulations, professions, religion, habits, cultural stress, immigrant status, substance abuse, leisure activities, pets, self-treatment strategies and therapies (Ak, 1989). Health-related behavior is also affected by biological, psychological and social factors.

The family also has tasks and functions related to health. These are the basic tasks of a family regardless of the type of the family and can be listed as biological, economic, protective and educational tasks. Such functions of the family are providing sufficient nutrition, shelter, dressing, creating an appropriate and sanitary physical and psychosocial home environment, providing resources for personal hygiene, improving health, decision-making in health and illness, calling for healthcare services, determining the treatment and care services in illness, supervising drug use, ensuring rehabilitation, caring for public health and conveying health-related cultural traits to future generations.

Fundamental factors that impact health are biological, personal/familial conditions and life style, social environment, physical environment, public services and public policy. Biologically influent factors are genetics, sex and age. For personal/familial conditions and life style, family structure, education, profession, unemployment, income, level of risk perception, nutrition, alcohol and tobacco use, physical exercise, self-realization and transport have an impact on health. Factors which have an influence on health in terms of the social environment are culture, discrimination (social exclusion), social support networks and participation in society/culture. Factors of

physical environment are air, water and dwelling conditions, working conditions, noise, smoke, public security, civil design, shopping locations (layout/ratio/quality), communication and transportation, space utilization, solid wastes and features of local environment. For public services, access to healthcare services and the quality of healthcare services, child care, social services, housing support/leisure/ employment/ social security services, public transport services, other health-related services and non-governmental bodies and services can be listed. Within the scope of public policy are developments in economic/social/environmental health, local and national priorities, policies, programs and projects.

MODELS AND THEORIES RELATED TO HEALTH

Various models and theories exist in the field of health. Principal health models are the medical model, the holistic model, the wellness model and the environmental model. The medical model refers to health as the non-existence of disorders and health is evident in the absence of pathologic findings or abnormalities in any part of the human body. The holistic model purports a positive definition of health by including its physical, social and mental aspects instead of approaching the issue in a negative manner as the absence of disorders. The definition made by the World Health Organization becomes evident in this model. The main characteristic of the definition of health as asserted by the wellness model is that it displays a subjective perspective and focuses on how the individual feels. Within this framework, health is the individual's physical well-being, energy and ability to perform his/her daily activities, depending upon the individual's perception. Taken from the definition made in the environmental model, health is a continuous adaptation that a living being demonstrates in order to be attuned to its environment.

There are also several theories that define health in a positive manner. The most important of these theories are the ones developed by Talcott Parsons and La Londe. (Aggleton, 1990; (Seedhouse, 1986). Talcott Parsons' theory defines health as the individual's ability to perform daily activities of socializing. According to Parsons, there are various social roles ascribed to each individual by the society. If the individual is able to perform such roles of socializing, then s/he is healthy, and vice versa.

There are other theories developed with relation to health which define health as a commodity or personal power and skills. According to the theory which defines health as a commodity, health can be lost as any other possession, and be regained through correct diagnosis and treatment methods. Other theories which define health as personal power and skills approach health as a life style and the skill of accepting and withstanding the challenges faced. The fact that a wide range of factors affecting health exists is a widely accepted phenomenon in the literature. In explaining such factors, it can be said that there are two basic approaches as the social and medical approach. According to the social approach, the social class, profession, life style and level of education of a person significantly influences the diseases which such person will experience throughout his/her life and the severity thereof. This approach transforms health from an exclusively medical field to a political field. According to the medical approach, on the other hand, health manifests in the absence of disorder and can be measured as per norms developed within the framework of scientific knowledge. Discussions on the relationship between health and healthcare services have given way

to the development of various approaches with relation to factors influencing health. Some of these approaches revealed that the relationship between the development of healthcare services and medical sciences and the development of the status of health of societies may not be as strong as thought and that some medical developments may even be to the detriment of human health (Illich, 1975; McKeown, 1988), Conversely, in La Londe's approach, it is purported that healthcare services are only one of the factors that influence health such as genetics, environment and life style (La Londe, 1974). A growing number of studies on environment, life style and genetics have been performed in this regard in the recent years and programs prepared to this end have become significant elements of national health policies. The significant differences in health indicators of groups of a lower and higher socio-economic status in developed societies with a relatively better general status of health and such differences becoming more apparent with each passing day has flared up the discussions on the social determinants of health.

CONCEPTS OF WELL-BEING AND DISORDER

Well-being is a person's state of not being physically ill or disabled. With relation to well-being, concepts related to daily decision making such as self-responsibility, forward-looking goals, a dynamic process of growth, nutrition, stress management, physical fitness, preventive healthcare and emotional health and the wholeness of a person are mentioned. Well-being has physical, social, emotional/psychological, intellectual/professional and spiritual aspects (Ak, 2018-19).

Disorder is a specific abnormal state that occurs in the body or mind and leads to discomfort, illness or dysfunction. It is a state of not feeling oneself good. Disorder refers to organs and systems becoming incapacitated due to physiological changes brought about by various factors. In some cases, the term "disorder" is utilized in a broad fashion to refer to an abnormal structuring and function such as injury, disability, syndrome or symptom.

According to the medical model, disorder is a pathologic setting that manifests with symptoms. According to the sociological model, a disorder stems from the cultural and social structure. This model argues that in order to improve health, one needs to focus on economic and educational life standards.

Disorder is a concept that needs to be defined in perfect fashion. There are many terms in English for the same concept but with different meanings such as "sickness", "illness", "disease", "morbidity", "medical condition" and "disorder". Therefore, in order to have a full grasp of the causes, types and outcomes of a disorder, one needs to first make a good definition of such terms.

Disorder refers to an abnormality or irregularity of a function of an organism. Disorders are generally grouped under five main categories as mental, physical, genetic, emotional and behavioral and functional disorders.

Disease refers to a "state of discomfort" in the broadest sense. In short, it can be regarded as any situation that disrupts the normal functioning of an organism. More often than not, the term "disease" is associated with infectious diseases. Such kind of diseases are caused by microbial factors.

Illness and **Sickness** is generally used interchangeably and synonymously with "disease", and in the medical sense it refers to an individual personally experiencing a disease. Therefore, according to this definition an individual can be "ill" or "sick" even when not stricken with a disease, and vice versa. That is to say that an individual can feel himself/herself ill when in fact s/he does not have a disease, and vice versa. Typical symptoms faced in illness are fatigue, depression, a constant desire to sleep, extreme frailty, sensitivity to pain and lack of concentration.

Medical Condition is a general definition that implicates all disorders and diseases. It is also frequently preferred in the literature since it is a rather neutral wording and not of a disturbing nature. However, many public agencies use the term "medical condition" to refer to all disorders except for psychiatric disorders.

Morbidity is interpreted as a "state of sickness", "inadequacy" or "low health".

Some factors which had been regarded as an "illness" for a long time such as pain, fever, coughing, sneezing, vomiting, anxiety etc. were in time understood to be unrelated to illness, and have in fact evolved as a defense mechanism. Before evolutionary biology, such factors were regarded as "illnesses". Moreover, people who displayed such symptoms were deemed to be "possessed" or "cursed" and were burned, hanged, quartered and killed as per some faiths. It was revealed that such factors regarded as illnesses did not come from the skies or occurred by themselves, or were caused by supernatural and non-scientific sources such as "magic", "curse, "voodoo" and the like; but were ordinary and natural phenomena that can be explained solely on the basis of organisms.

A great deal of disorders arise out of our bodies being invaded by external organisms. Persons fall ill due to foreign chemicals released as a result of such invasion. Some other times, what makes us ill is not foreign chemicals but the exploitation of our bodily resources. During a state of illness, reactions such as pain, high fever, coughing, sneezing etc. are warning signs regarding the homeostasis of a living being and contain serious benefits. Cooperation between sectors such as local administrations, education, business, recreation, accommodation, transportation, environment, agriculture etc. is important in preventing diseases.

Illness and disease have some specific features. Features of illness are a degradation in personal status and physical, intellectual, social, developmental and spiritual functions, which may not be synonymous to or related with illness and the person may only state that s/he feels ill. Features of disease are changes in bodily functions, decrease in capacity or normal length of life and an etiologic explaining of the cause of disease.

THE PROTECTION OF HEALTH

The protection of health amounts to the whole of services provided in order to prevent individuals from becoming ill. This concept involves three steps as primary, secondary and tertiary prevention.

Primary prevention is oriented towards the individual and the environment. In essence, services oriented towards the individual involves basic health services such as

immunization, family planning, health education, chemoprophylaxis, nutrition and providing clean water. Preventive services oriented towards the environment involves making the environmental adjustments and interventions. For instance, it may involve conducting regular sampling and assessment procedures in order to make sure that the water is clean.

Secondary prevention comprises the services of early diagnosis and treatment. Within this scope, it is of paramount importance that individuals go through medical tests (check-up) regularly. For instance, doing regular mammography screenings in order to detect breast cancer at its early stages or cervical screening tests (smear tests) for the early diagnosis of cervical cancer.

Tertiary prevention services comprise rehabilitation services. In this way, progression of the diseases diagnosed or in treatment can be inhibited. Thus, the negative effects of disabilities and permanent disorders are minimized. For instance, providing prosthesis amenities to an individual whose leg is amputated.

For the Protection of Health, disabilities and limitations need to be eliminated through early diagnosis, treatment and rehabilitation services. Disease prevention services not only involve precautions regarding preventing the incidence of disease altogether, but also those that are oriented towards inhibiting its progression and reducing its effects once it manifests itself (Anonymous 1984). For the elimination of diseases, it is necessary to eliminate the risk factors and effectuate the factors necessary to stay healthy.

HEALTHCARE SERVICES

Healthcare services ensure the health and longevity as well as the efficient working of the individual and the society. This is the purpose why healthcare services are operated. Healthcare services have certain characteristics, which are listed as follows: the demand is inelastic (high prices do not lower the demand); it has a societal character; the demand is incidental; the physician determines the demand of the person; the patient does not have the ability to assess the quality and character of the healthcare services provided; substituting the service on demand is not possible (the patient has to receive the healthcare service suggested by the physician); and it is nonprofit in most cases (Ak, 2018-28). Healthcare services are listed as: preventive, curative and rehabilitative. First aid also ranks among preventive health services. First aid is a temporary medical practice applied in institutions where primary health services are given and it continues all throughout the patient's transfer to the hospital, in the emergency room or in the respective clinic as emergency treatment. First aid is a life-saving service wherever it is provided.

It plays an important role in health services, protection from diseases and the treatment of unprevented diseases. For the last two centuries, the effect of healthcare services in improving health has substantially increased. The immunity developed against poliomyelitis in the 1950s has rendered this disorder ineffective as a debilitating one for many countries. As of late, a decrease in mortality rate has been observed in certain types of cancer such as neck cancer, Hodkgin's disease, leukemia etc. thanks to healthcare services. In many industrialized countries, the death rates in relation to cardiovascular and blood disorders have significantly dropped. Full utilization of healthcare services is also effective in improving life quality, which is rarely reflected

on actual death rates. Modern medical care services enable patients with chronic disorders such as heart disorder, diabetes, paralysis, hearing and vision impairment, arthritis and amputation to lead a happier and more effective life in the society, although their disorders cannot be completely eliminated.

Within the scope of social and environmental determinants of health and disorder, the effect of recent developments and technological innovations on curative and preventive health services for the health improvement of the population should not be neglected. Before 1940, when effective medications to be used against microbes have not yet been developed and immunity was only possible for a few diseases in the wealthiest countries, the effect of healthcare services was quite low compared to today. (Ak, Bilal, 2016-61-63) In a central position within the healthcare system, hospitals provide a variety of health services to the society and assume significant duties in building a healthy society. These organizations comprise an important part of national economy as a major service industry (Azzem, 2003-114). Hospitals are defined as social and societal units: where persons who wish to have their health status checked suspecting injury or disease are medically examined as outpatients or inpatients; where patients are kept under observation; where their disorders are diagnosed; where curative or rehabilitative services are provided; that are a medical organization, an economic enterprise, a institutional research unit providing training to doctors and other health personnel; and an organization where people from many different occupational groups work (Ak, 1990-68,69; Dalbay and Biçer, 2002-12).

The most fundamental function and reason for existence of hospitals is to carry out treatment services. In pursuance of their reason for existence, hospitals carry out functions such as providing preventive and rehabilitative health services, training employees and service receivers, engaging in research and development activities and implementing all of these services with an active management mechanism (Küçükilhan and Lamba, 2007-117). Acknowledged as institutions where public service provision is at the forefront and where profit motive is not or which regard public interest more highly than individual or private interest, hospitals are required to have an exceptional organizational structure and an effective administration in order to be able to provide their services more effectively and efficiently. In this sense, hospitals ensure efficient collaboration, efficient division of labour and a perfectly functioning workflow between their service units and if these are valued adequately, it is possible to talk about an active management (Karakılçık, 1997-43). Hospitals have substantial differences in comparison to other types of administrations and these differences can be listed as follows: The demand for hospital services, urgency/immediacy and irrefusability. The tolerance is very low for the people who are responsible for running the service to exhibit indecision and make mistakes. Services in the hospital are being carried out by people who are devoted to their jobs rather than the institution itself. It is difficult to fully define or measure the services provided. In terms of the service being carried out, the organizational supervision mechanism is either non-existent or very weak in effect. Jobs being performed in a hospital show characteristics of being very volatile, complicated, over-specialized, mutually dependent and of requiring an advanced level of coordination. Hospitals are organically structured organizations. The presence of bilateral authority channels cause role ambiguity, role conflict, coordination issues and overlap in spheres of responsibility. It is highly likely that conflict and opposition occur

between departments since many employees from different fields of occupation provide service in hospitals. When the mutual dependency between services is taken into account, a conflict of such a nature causes the quality to decrease and unnecessary delays. Since the fundamental aim is to protect and improve human health, principles of rational management may often be relinquished when a conflict occurs. The relationship of the hospital with the political, legal and financial institutions which make up the external environment of the hospital is very complex (Ak, 2018-22-27).

When it comes to healthcare services, the main issue is primary healthcare. Primary healthcare involves those services which are predicated on universally tenable, practical and scientifically valid methods and technology which should be acquired and used at affordable costs and which should enable the development of the country at each of its stages within the scope of its own self-reliance and insight into decision-making through the full participation of individuals and families in the society. These services are compulsory ones, rendered accessible with scientifically valid and socially acceptable methods at a cost a country or society can afford (Aksakoğlu 2002-91-100). In the Declaration of Alma-Ata, it is emphasized that everyone needs to have primary healthcare and everyone should be involved in it. Key components of the primary healthcare approach are indicated as: fairness; societal participation/involvement; being cross-sectoral; suitability of the technology; and affordable costs (UNICEF/DSÖ, 1978).

The main purposes of healthcare services are verbalized as: enhancing societal health status and striving to maintain the state of well-being; protection of individuals from diseases; treating patients with suitable methods and ensuring that they are able to lead their lives without being dependent on anyone; preventing or eliminating biological, environmental, social, familial and personal factors which may hinder the development of human potential (Ak, 2016-2).

The goals of healthcare services are listed as: educating the public in order to solve health problems and keep them under control; facilitating the suitable nutrition conditions; providing sufficient and clean drinking water; developing services oriented towards maternal health and family planning; ameliorating pediatric health services; immunization against infectious diseases; ameliorating environmental conditions; procurement of medications needed; improving health management; developing treatments for frequently encountered diseases and injuries (Bulakbaşı, 2015-1).

Healthcare services are listed as: preventive health services; curative health services; rehabilitative health services; health improvement servises (Anonymous 2: 3, 4)

The structure composed of all the institutions and organizations that produce goods and services with the aim of achieving and protecting health (which is the greatest treasure of people) is generally called the health sector. All the activities carried out by the health sector with a specific focus on health are called healthcare services.

The purpose of all the services provided is to prevent illnesses negatively affecting the society from occurring and achieve a healthier and more productive society (Akın, 2007-6). Healthcare services are defined by the World Health Organization (WHO) as a permanent system organized nationwide in order to actualize the purposes varying according to the society's needs and demands utilizing different types of health

personnel in different health organizations and thus provide healthcare for the society through all kinds of preventive and curative activities (Kavuncubaşı, 2000-34).

THE IMPROVEMENT OF HEALTH

The promotion and improvement of health is the process through which people are enabled to raise their levels of control over determinants such as biological, social, economic, environmental and lifestyle-related factors and thus be able to enhance their own health on their own. Not only does it adopt activities oriented towards enhancing individuals' skill and capacity but it also embodies activities oriented towards changing the social, environmental and economic conditions, thereby alleviating the effects of these on the individual and societal health as well. The fundamental policy in the improvement of health is the determining of the mission and vision as well as the institutional aims and objectives of the organization providing healthcare service (Anonymous, 2018).

In the Ottawa Charter for Health Promotion, certain prerequisites are emphasized in terms of improving health, including: comfort; sufficient economic resources; food and shelter; a stable ecosystem; and use of sustainable resources (Ak, 2015).

The improvement of health is the process of increasing individuals' control over health-threatening factors, ensuring the increase of their own control on their own health status and ensuring that they are able to improve their own health status. This has been adopted as the main strategy in the control of health problems for the past quarter century (Anonymous, 1986-1).

In order to improve health, strategies such as establishing cross-sectoral collaboration in order to strengthen the health system and build healthy social policies in terms of health literacy and health behaviour.

The protection and improvement of health is the process of enabling people to raise their control on the determinants of health and thereby improve their own health condition. Participation is of pivotal importance in order for this process to be sustainable. As stipulated in the Ottawa Charter for Health Promotion, the promotion and improvement of health is supported by five action areas of top priority, and these are indicated as: establishing healthy public policies; creating environments that are supportive of health; strengthening the social movement for health; developing personal skills; and redirecting healthcare services.

In the Jakarta Declaration, five priorities are specified such as: promoting social responsbility; increasing investments on health improvement; extending of partnerships for the promotion and improvement of health; enhancing the capacity of the public and granting authorization to individuals; and guaranteeing the infrastructure for the promotion and improvement of health (Anonymous, 1997-17).

Health policies are developed for everyone so as to enable them to reach a level of health which will allow them to lead an efficient life, both socially and economically (Anonymous, 1984). The combination of individual and social actions designed in order to gain political commitment, political support, social acceptance and system support is purported as supporting health (Anonymous, 1995). The support for health improvement can be given in many ways including the utilization of mass communication and multi-media tools, engaging in direct political lobbying and setting the society in motion by virtue of aggregating interests around the issues determined.

Healthcare professionals are responsible for providing support at all levels of society. Through health support and constructive activities: age-specific mortality rate can be reduced 13%; average life expectancy can be increased up to 1.5 years; 18% of all types of cancer and 80% of lung cancers can be prevented by reducing cigarette smoking in the society; and more than half of deaths caused by health-related reasons such as cardiac diseases, chronic bronchitis, emphysema, kidney diseases and highway accidents can be eliminated (Armntrong, 1989).

In order to be a healthy individual, there needs to be a successful harmony between her/his biological and psychological factors, namely that between their internal system and the social, economic and cultural factors, i.e., the external system (Ak, 2018-,9). Within the scope of health protection, protective activities oriented towards delivering people from biological, physical, chemical and environmental factors which negatively affect human health are carried out. Protective activities oriented towards the environment involve: elimination of the effects of dangerous waste and residue; controlling the vectors; provision of clean water; prevention of air pollution; noise control; inspection of buildings and food in terms of health. Within the scope of personal protection, on the other hand, there are: health education; immunization; personal hygiene; protection with medication and serum; family planning; early diagnosis; and nutrition.

THE SOCIAL DETERMINANTS OF HEALTH

The significant differences in health indicators of groups of a lower and higher socio-economic status in developed societies with a relatively better general health status and such differences becoming more apparent with each passing day has flared up the discussions on the social determinants of health.

According to WHO, there is evidence that policies and actions concerning the social determinants of health improves accessibility to health and health services. In the 2004 World Health Assembly, the "Commission on Social Determinants of Health" has been established and this commission was assigned the duty of making suggestions regarding social policies in order to improve health and reduce inequalities (Anonymous, 2005). The aspiration of health for individuals and the society necessitates the consideration of all factors that determine health.

HEALTH STATUS AND MEASURING HEALTH STATUS

Health status is a concept which is used to define or illustrate the individual's or patient's health status or level. According to the formulation developed by Bergner, health status involves the genetic, physiological, anatomical, biochemical, functional (physical, psychological and social) and potential dimensions of health. In this model, factors affecting health status such as social, individual, socio-economic (income, shelter etc.), environmental (clean water supply, sanitation etc.) and systems oriented towards healthcare services are viewed as processes affecting the results of health or health status rather than dimensions of health status (Ak, 2016-8).

In measuring the health status of the population, two properties need to be taken into account which might contribute a statistically significant interpretation to the measuring of any aspect of a multi-faceted health status with adequate and conclusive data. The validity and reliability of the death rate data needs to be verified and defects in the entries made need to be kept down at the minimum level. Death rates, on the

other hand, may not be adequate for measuring health status (such as distress and suffering and other declines in the improvements in health quality). The health needs should be determined and suitable health indicators should be used in order to measure the health level of a region or country. Health level and health needs can be determined by measuring the health status of the individual or the society by virtue of health indicators. In the measuring of health status, conventional health indicators are used such as mortality, morbidity and life expectancy at birth. In addition to conventional measurements such as these, modern measurements such as profiles and disease-specific scales (Ak, 2016-9). The measuring of health status is shown in Figure 1.

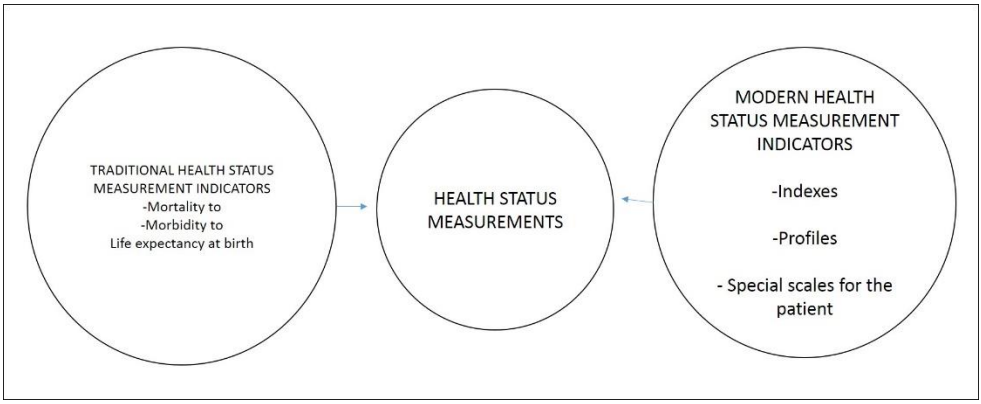

Figure 1. The Measuring of Health Status (Ak, 2016-10).

While available methods provide information on health status and health indicators, they require adequate and reliable data. All necessary data collected during the measurement of the status of health point to the importance of the decision maker on the whole healthcare system. Even in industrialized countries, epidemiological methods require improvement in the face of the disorder-health distribution and the changing of determinants. In developed countries, the measuring of health level on the basis of adequate data only inches forward because of the "data gap" caused by resource insufficiency and system inadequacy. In many countries of Sub-Saharan Africa, the reliable estimation of injury and health status cannot be accomplished. When faced with inadequate and incomplete data, hardships arise with relation to taking decisions on the allocation of resources. It is not simple and easy to determine priorities in health.

HEALTH STATUS INDICATORS

Mortality and morbidity rates are used as health status indicators. Crude death rates, baby death rates and life expectancy at birth are indicators within the scope of mortality rates (Ak, 2016-12).

Mortality Rates: Mortality rates are generally used as health indicators. Because, these rates provide objective, comparable and available information. Two types of information are needed, those on mortality (death) and morbidity (disease), when defining health-related events in a country or region. Death rates provide more detailed information in comparison to disease rates. Because death is a one-off act. Death-related information can be obtained more easily and it can also provide information about diseases. In case that death records are kept cautiously and fully, an interpretation

can be reached about the health status of a region or a country. According to 2015 data, the number of deaths in Turkey amounts to 405.218 people, 54,8% of which are male and 45,2% of which are female. The highest death rate has been observed on people at the ages of 75 or higher. The death rate in this age group has increased to 49,5% in 2015 (Anonymous, 2015).

Deaths are assessed quantitatively and qualitatively. By using death-related statistics, existing issues and priorities are striven to be identified. Thereby, the healthcare service and other types of service are put into planning and implementation, taking the necessary precautions. In this sense, death rates are very valuable data used in the planning of healthcare services.

On the other hand, they can be used in order to make international and interregional comparisons. In order to make a correct evaluation about deaths and suitable service planning, death rates in the region should be known fully and correctly as well as the information regarding the deceased such as their age, sex, occupation, educational attainment, cause of death and marital status. As an indicator of the health status, the simplest one among the health outputs is the measurement of crude death rates and standard death rates according to age. This measurement will also show primary causes of death. A further variation of this is the number of life years lost because of premature death. The recalculation of life expectancy not taking into account deaths caused by a specific reason can be given as an example of this (Ak, 2016-40; (Çelik 2013-26-28; Ak, 2017-32; Beaglehole, 1997). Mortality/death rate is used to achieve the purposes of: comparative assessment of public health and measurement of health status; determining of priorities for action with regard to assessing people's health needs and reducing death risks; reconfiguration and reinforcement of healthcare services; assessment of healthcare programmes; measurement of the relative (proportional) significance of special diseases/cases as causes of death; estimation of the average length of lifespan that the person at a certain age might reach; and evaluating the effectiveness of a medication or procedure in an experiment involving a clinical treatment against a disease/case that has a high risk of resulting in death.

Crude Mortality Rate: Crude mortality rate relates to the number of deaths per capita. Crude mortality rate in Turkey is 0,52%. (39-2015) Death rate according to age= deaths at age X / population at the age of X * 1000 When deaths are examined according to age group, the highest death rate has been observed in the year 2015 with 49,5% and above 75 years of age. While death rates are used in the measurement of health, the simplest measurement of mortality is crude mortality rate. That is to say, it is the rate of the number of deaths per 1000 people. However, crude mortality rate is radically affected by the age structure. If the necessary information is available for calculating age-specific or sex-specific deaths, the calculation of age-specific and sex-specific mortality rates is preferred to crude mortality rates. According to 2015 data, 54,8% of people who died in Turkey were male, while 45,2% of them were female. In order to make comparisons between populations of varying age and sex distribution in a region or society epidemiologically concerning deaths, both direct and indirect standardization are used. The measurement of the health status in a society is necessary for making comparative assessment of public health and being able to make comparisons between countries and regions. However, only having the knowledge of

death rates is not sufficient for important decisions. In which society and at which rate these deaths occur also need to be known (Çelik, 2013-29; Ak, 2016-21-23).

Crude mortality rate can be a beneficial measurement of health for short-term population projections and estimating demand for funeral services. However, if the aim is to make long-term population projection or predict education demand, age-specific death rates become important. Useful information can be obtained about the health of the population by looking at causes of death. For instance, a finding which shows that most of the deaths are caused by infectious diseases by the calculation of age-specific death rates in a society might show that deaths caused by cardiac diseases and cancer need to be prioritized over others. The chief point for the researcher is drawing conclusions on the basis of measurements and having a specific idea about the actions.

The easiest and clearest measurement in the assessment of health status is the measurement of death rates and its relation with disease rates on an extensive area. It measures the average danger of death oriented towards the general public. It is easy to calculate. The level of it not only reflects the dangers related to death but also the age and sex distribution of the society. Therefore, it can only be used to compare relative mortality rate if both of these populations have a similar age/sex distribution. It is mostly used to compare relative mortality in a specific region, between two time frames that are not too far apart from each other (Ak, 19-23; Çelik, 29,30).

Infant mortality rate: As a main indicator in measuring national health status, mortality rates for infants and children under the age of five are used. It is one of the most frequently used mortality indicators in the inter-country comparison of health status. Healthcare services provide a general idea about maternal and infant health. It is measured by the ratio of infant mortality before the age of one to healthy infants in a region and/or country in a single year. Interpretively, it shows how many infants lost their lives for all 1000 babies alive. In recent years, however, there has been a consensus on that infant mortality rate is not enough on its own and the mortality rate for children under the age of five needs to be assessed also. Mortality rate of infants under the age of one is a generally accepted measurement for assessing the health status of a society. This is because countries have started to put more emphasis on mother and child care and there have been declines in infant mortality. In developing countries, on the other hand, mortality rates of children under the age of five are still high. This is why there is a strong consensus on the necessity of measuring the mortality rate for children under the age of five as well as the infant mortality rate in measuring a society's health status.

Infant mortality rates are a significant indicator of a society's public health. A high rate provides a preliminary idea about inadequate levels of healthcare service provision as in preventive health services and having unfavorable socio-economic indicators in terms of education, economic conditions such as income distribution, nutrition and shelter conditions, environmental pollution, noise, sanitation etc.

In order to obtain more comprehensive information on the causes of infant deaths, a distinction can be made between infant death rates within 0-28 days (neonatal) and 29-365 days (postneonatal). Neonatal infant mortality rate is calculated by dividing the number of liveborn infant deaths when they are 0-28 days old to the number of liveborn infant deaths in that year. Most of the deaths in the neonatal period are caused by congenital anomalies, birth traumas, Rh factor incompatibilities such as erythroblastosis

fetalis and premature births. That is to say, causes of neonatal infant deaths are antenatal factors. It is very difficult and in some cases impossible to prevent deaths caused by these reasons. Postneonatal infant death rate, on the other hand, is calculated by dividing the number of infant deaths when between 29-365 days old to the total number of liveborns in that year. Postneonatal infant deaths are those types of death that can be prevented by immunization, nutrition, infant care, maternal education and mother-infant care services. Postneonatal infant death rates can be calculated by subtracting neonatal death rates from infant death rates.

Postneonatal mortality is a significant indicator of mother-child health services. Both of the rates have declined in Turkey in the last 50 years. When the causes of this decline are examined especially for postneonatal infant deaths, it was seen that they stemmed from vaccination programmes, the ministry of health placing emphasis on this issue and developing projects, public health education, control of infectious diseases and good nutrition. In neonatal deaths, on the other hand, the causes stem from the ensuring of technological and professional adequacy in premature medical care services and the decrease in critical problems relating to birth such as congenital anomalies.

Infant mortality and deaths in children under the age of 5 are indicators sensitive to social welfare. These are key indicators which are to be examined in the determining of health needs. In our day and time, countries place more emphasis on where they fall into in terms of infant death rates than their rank in the gross national product ranking of the world countries. Very few countries have a measurement system that can show the level of infancy and childhood death rates and is in continuous operation. In most of the countries, reliable and sufficient data resources on this issue either non-existent or very limited. Health policy makers and health professionals first determine objectives in reducing infant-child mortality and later strive to measure improvement (Ak, 2016-24-36; Çelik, 2013-30-32).

Life expectancy at birth: Life expectancy at birth is a measure that shows how many years a person who was born in a specific year is expected to live. Values belonging to this measure are calculated by the "life table method" based on the registers of people. Life expectancy at birth is one of the most important among the criteria indicating health status.

Infant deaths have a major effect on life expectancy at birth. In developed countries, life expectancy at birth is longer compared to developing or undeveloped countries. This indicator is an important health status indicator which outlines rather significantly the measurement of death occurrences compared between international and intertemporal dimensions. In developed countries such as Holland, Canada, the USA and in developing countries such as India, when the changes in the rates of life expectancy at birth according to gender within similar periods between the years of 1960 and 1973 are examined, it is seen that life expectancy for women varies between 35 and 75 years according to the development level of the countries. In demographically advanced countries, life expectancy at birth for women is noticeably higher than that for men. In contrast, the picture is much different for India. That is, life expectancy for men is higher than that for women. This is explained by dangers faced in pregnancy and inadequacy in the provision of healthcare services for women in the country (Ak, 2016; 37-40).

MORBIDITY MEASUREMENTS

Morbidity rate or morbidity speed is the ratio, of the number of people suffering diseases in a certain period of time and in a certain population, to the healthy population. It is expressed in percentages or promilles. The literal meaning of the word '**morbidity**' denotes a sickness or having a sickness. Disease measurements and alternative indicators such as bodily health are more suited to analyze the changes within a country. It is the most methodologically problematic one between all the possible health status indicators. It is affected by many economic and normative (having the strength and value of a rule) factors. The high morbidity rates recorded for women might be a reflection of gender norms determining economic roles rather than an actual difference between the physical risks of diseases. In recent times, bodily health has arisen as a possible objective measure of health status. Researchers concede that it is closely concerned with longevity and that it works as a measure of life, not death. There is a wide consensus on that if the diseases are measured objectively, through such reliable and comprehensive measurements, information can be obtained on all the dimensions of unhealthiness. Therefore, without using death rates, the unhealthiness level of the society can be measured using disease rates. However, most of the data is not easy to obtain and access. Consultation and treatment rates, research and inquiry into the inpatients, records of activity analysis, information on the extent of diseases and national disease research comprise some of the data. On the other hand, since not all the patients are admitted to the hospital, rates cannot be exactly measured for many diseases. Even so, there is data such as hospital admittance rates showing rates of unhealthiness in different geographical regions.

Different disease groups cannot be compared with disease information. For instance, as two different disease groups, it is not possible to compare findings for a patient who has influenza and a patient who has suffered a heart attack.

The diagnosis of diseases changes from person to person. While some people pull through a certain illness with relative ease, others may do so in severe suffering and bedbound. Diseases also relate to the income status of people. Employees who are not in any security system keep working even when they are ill so as not to face salary deduction and they are unwilling to benefit from a health organization. Conversely, an employee with insurance can report ill in the most minor health problem, not go to work and apply to receive healthcare service from any health organization.

While different types of morbidity measurements can provide information about the health status of the population and the efficiency of different programmes with regard especially to health improvement, if the person who applied to the hospital exhibits behaviour oriented towards fulfilling her/his need for healthcare and is interested in medical services, this data can be much more telling. In that case, morbidity will be a beneficial health criterion. Because, even if the diseases are not life-threatening, healthcare service programmes will have been used which require lesser amounts of resource instead of severe and fatal diseases which require the allocation of much more resources and chronic findings. On the other hand, works oriented towards providing more medical care service will be concentrated on for chronic findings amounting to severe diseases which require extensive amounts of resource transfer (Ak, 2016-41-43).

HEALTH STATUS INDICATORS

There are two main approaches that research into the fundamental determinants of health and their relative significance: historical approach and comparative approach. Historical approach searches for the answer of how significant improvements in death rates occur and how change occurs in societies where these improvements have specific reasons.

There are disputes on whether the rapid declines in death rates since the 1850s and the factors affected them stem from medical advancements or improvements in other factors such as personal hygiene, nutrition, lifestyle, clean water supply and sanitation, agriculture and technology. Are the declines in death rates due to personal hygiene? For example, until the beginning of the 19th century, soap had been classified as luxury goods and taxed at high rates. McKeown explains half of the declines in death rates with improvements in nutrition and lifestyle and concludes that clean water supply and sanitation is a more important factor than the others. Increase in the availability and affordability of food due to agricultural improvements and declines in the sizes of families have also contributed to this change.

Death rates caused by typhoid type infectious disease has been reduced before chloramphenicol began to be used in the 1950s. Medical research conducted and public health measurements on the basis of the effect of chlorination through filtering of the water and the effect of water supply facilities being configured have aided in understanding the cause of infection in infectious diseases.

Beginning from the second half of the 19th century, there has been a continuous decline in deaths caused by diseases transmitted by water and food. It is beyond the shadow of a doubt that these declines are caused by improvements in health hygiene and it is striking that the declines coincided with advancements in wastewater disposal and water treatment.

Roemer's model of health status determinants: Roemer is an important researcher who initiated the first studies in health systems and who also put forth a model on health status. As is known, factors affecting health and disease are both manifold and very complicated. Creating a model in such an area is also difficult. As is seen in Figure 2, features defining physical and social environment in Roemer's model varies from country to country. The effect of physical and social factors in the environment not only affects health, but also varies substantially between countries. In lesser developed countries, physical environment and disease are much more effective on death. In more developed countries, physical environment is brought under control or eliminated as a pathogen power, but the social environment became much more important.

Work and living conditions affect health (Figure 3). Work and living conditions might be stressful and lead to psychosomatic strain in the individual. These may lead to excessive smoking and alcohol abuse, poor nutrition habits, drug use, insufficient sleep and other types of behaviour that affect diseases. In some individuals, external pressures and psychoneurosis may directly lead to disorders such as hypertension and ulcers. The difficult preventive method is to create stress-free work and living conditions. Even if this is not possible, education and healthcare services can aid susceptible people to deal with stress more actively.

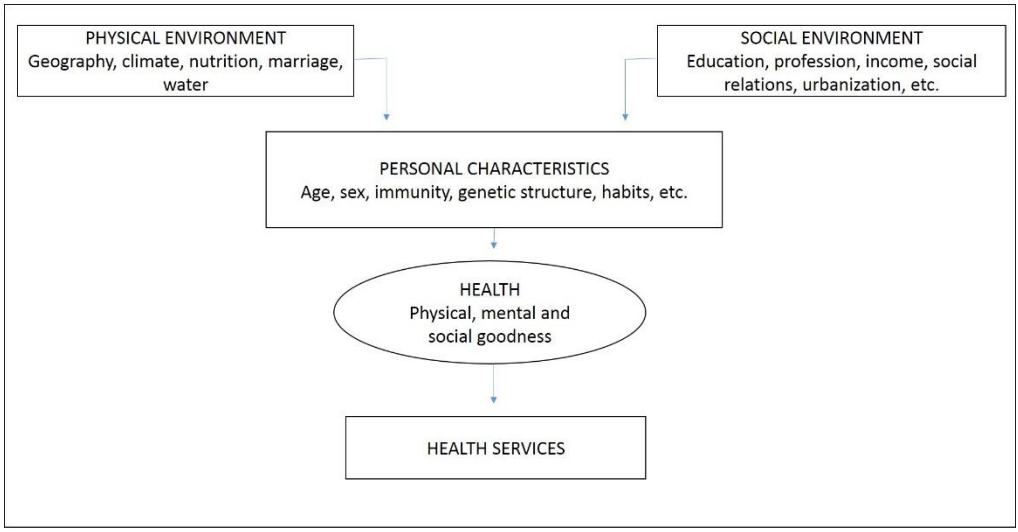

Figure 2. Roemer's health status determinants model (Roemer, 1991-11-20; Ak, 2016-48)

Many social and environmental factors that lead to disease or injury do not affect every person in the same way. For instance, while the saliva spread by the coughing of a tuberculosis patient may lead to tuberculosis in one person, it may not cause the disease in another person. While a long-lasting stressful situation may lead one person to smoking, it may not affect another person. That is to say, diseases or injuries are caused by certain preliminary external factors. However, it is also related to the person having certain characteristics. These may be caused by genetic factors to a certain extent. Children are more susceptible to certain diseases and some diseases may affect men more than women. A stressful environment similar to this may cause hypertension in a person, alcoholism and liver cirrhosis in another one and severe depression in the third, while it may not have any effect on the forurth.

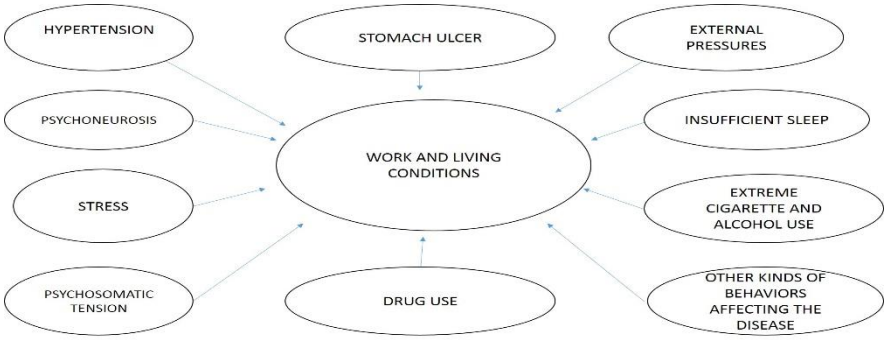

Figure 3. The effect of work and living conditions on health (Ak, 2016-50).

In the research that was conducted by Durkheim in the late 19th century, marriage has been seen to have a protective effect. That married people live longer is partly due to the factor Durkheim specifies as "marriage preference". In addition to it being a matter of preference, some groups which do not have marriage-related, physical and mental advantages can never surpass the "obstacle of being healthy". According to Durkheim, the protective effect of marriage causes normative adjustment. Marriage disciplines excessive egotism and causes individuals to lead their lives according to the requirements of values, expectations, emotions, a spouse and family. In other words, marriage entails a more social and group-centered lifestyle. More collaboration involves attending to people and benefiting from mutual support.

Although Durkheim focuses on the "social control" aspect of marriage, socio-medical research conducted in recent times places emphasis on the mutuality of matrimonial cohabitation as the fundamental resource of health share. Marriage primarily functions as the closest and most intensive social support network. Especially with regard to men, marital status and health are interrelated, nonetheless, differences apply for each gender.

When cause-specific death rates are examined, it is observed that they have a relation with socio-economic factors. For instance, the mortality of ischemic heart disease in England is higher in people who are manual labour workers than those who are not. Wilkins et al. have calculated in 1986 special death rates for various disease groups adjusted according to age for different Canadian groups known for their relative wealth in New York. By comparing the relative proportion of wealthy people to people from poor areas, they have found that the mortality rate of poor people is 1.5 times higher for infectious diseases, lung cancer, bowel cancer, and alcoholism for men, severe respiratory tract diseases, cirrhosis, perinatal mortality, traffic accidents, suicides and other accident types.

Lifestyle is the combination of specific habits reflecting life examples and environmental conditions. These involve the interactions between behaviors, environment, culture and socio-economic statuses. It is seen that each of these factors which constitutes and affects lifestyle also affects health, sickness, injuries and deaths. The most important variable that directly affects these relations is education.

Environmental conditions are also an important determinant of health status and these conditions affect and are affected by behaviour and lifestyle.

Lerer et al.'s model of proximal and distal determinants of health: In Lerer et al.'s (1998) model, macro-economic factors, demography, nutrition, environment, alcohol and tobacco consumption etc. comprise the main design. (Figure-4) Health determinants can be either proximal or distal. It is possible to give the clearest example for this with tobacco consumption. While the economic, social and demographic factors which lead to tobacco consumption are "distal" determinants, smoking itself is a "proximal" determinant. The relation of proximal and distal determinants with health status have been examined in terms of causality and the reciprocal relation between health status and its determinants have been shown straightforwardly by Lerer et al. in a different model. Compelling attention as the dynamic power of health status, macro-economic, economic, environmental, demographic, nutrition-related along with alcohol and tobacco consumption-related factors are distal determinants.

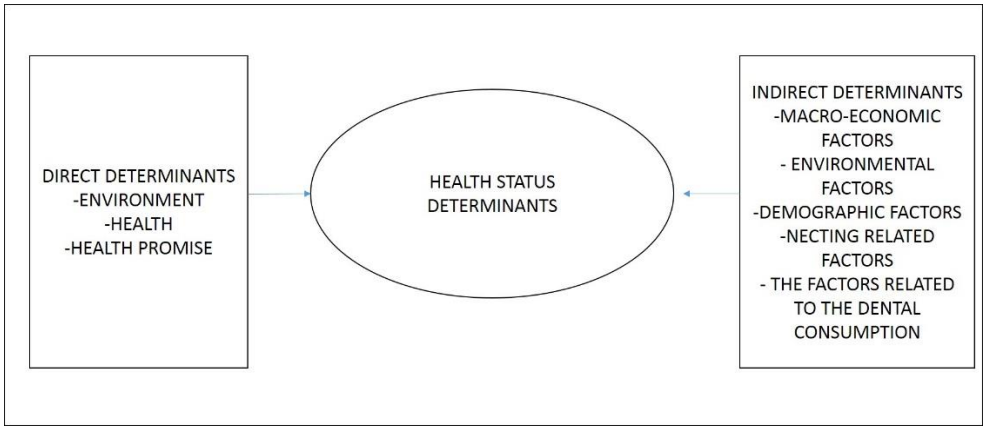

Figure 4. Lerer et al.'s model of "proximal and distal determinants of health status" (Lerer, 1998-7-20; Ak, 2016-55)

Distal and proximal determinants of health status along with health status indicators in terms of macro-economic, environmental, socio-demographic and education factors are shown on Table-1.

Table 1. Distal and proximal determinants of health status in relation to factors

Factors	Distal Determinants	Proximal Determinants	Health Status Indicators
Macro-economy	GDP, income inequality, trade and professional life, liberalization	Nutrition, "Social Capital"	Vital statistics, disease burden, health system data, "Social Capital"
Environment	Climate change, infrastructure, pollution	Recurring infections, disease vector, water supply, sanitation, housing	Vital statistics, disease burden, and other data
Socio-demographic structure	Social class and social stratum	Violence (coercion, oppression), housing and shelter, access to healthcare services	Vital statistics, disease burden, "Social Capital",
Education	Resource allocation	Women's educational status	Vital statistics, fertility, child mortality

Most of the distal determinants: ecompass the areas of macro-economy, education, environment, demography and health; are less suitable to interventions in the health sector; and their effects and results are mostly reconciled changing into proximal determinants. Proximal determinants encompass the intervention areas of the health sector such as environment, health and health promotion; and they generally prove compatible with direct interventions in the health sector such as the protection and improvement of health (Ak, 2016-57; Ak, 2017- 32).

EFFECTS OF THE VARIABLES ON HEALTH STATUS

After addressing the determinants of health in the general framework, it is necessary to explain the minor yet significant effects of these variables on health status. As is seen in Figure 5, these effects are addressed in terms of healthcare services, socio-economic factors, determinants regarding economic factors, education, socio-demographic, behavioural and cultural factors.

Healthcare services factor: Generally, it can be said that healthcare services provided render people's lives healthier and/or save their lives. Accordingly, it has been seen that there is a beneficial effect of expenditures made by the public and private sectors on healthcare entries as well as preventive and curative healthcare services on people's health status. A positive correlation has been found between health and public medical care. In studies they have conducted in 1978, Archie Cochrane et al. have arrived at findings suggesting that "factors relating to healthcare services are insignificant compared to other factors in explaining differences between death rates." While the minor yet significant effect of medical care services on health status is quite low in industrialized countries, this effect is rather profound for developing countries. For a developing country, on the other hand, it is observed to be the best investment for positive improvements relating to education, industrial investments and healthcare services along with having a positive effect on health.

Healthcare services of countries play an important role in the prevention of diseases and the treatment of unprevented diseases. For the last two centuries, the effect of healthcare services in improving health has substantially increased. The immunity developed against poliomyelitis in the 1950s has rendered this disorder ineffective as a debilitating one for many countries. Antibiotics have enabled doctors and other health professionals to cure their patients of once fatal or paralyzing infectious diseases. In recent years, declines have been observed in the death rates for certain kinds of cancer such as Hodgkin disease and leukemia, owing to healthcare services.

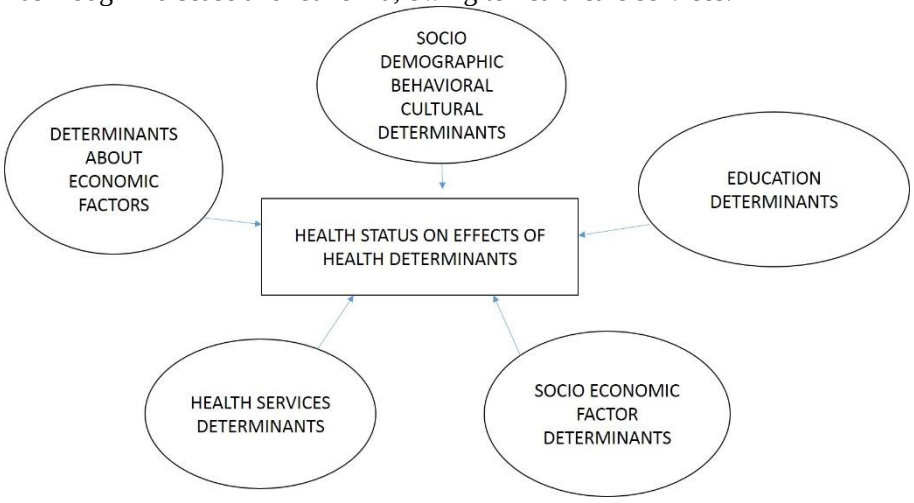

Figure 5. Effects of the determinants on health status

In many industrialized countries, the death rates in relation to cardiovascular and blood disorders have significantly dropped. While age-specific death rate was 0,308% in the 1950s, it has declined to 0,210% in the 1970s. It is beyond the shadow of a doubt that this decline of 32% is a result of many factors such as decrease in smoking, better diet (less animal fat), more exercise, antihypertensive medications and treatment of cardiac diseases. However, all of these factors stem to a great extent from healthcare services, therapy and preventive medicine.

Full utilization of healthcare services is also effective in improving life quality, which is rarely reflected on actual death rates. Modern medical care services enable patients with chronic ailments such as heart, diabetes, paralysis, hearing and vision disorders, arthritis and amputation to lead happier and more effective lives although their diseases cannot be cured. Within the scope of social and environmental determinants of health and disorder, the effect of recent developments and technological innovations on curative and preventive health services for the health improvement of the population should not be neglected. Before 1940, when effective medications to be used against microbes have not yet been developed and immunity was only possible for a few diseases in the wealthiest countries, the effect of healthcare services was quite low compared to today.

Socio-economic factors: Social, environmental and economic factors are effective on health as one of the variables affecting health status and their relative effects have been a matter of debate for a long time. For instance, research done by Thomas McKeown in 1976 into deaths by tuberculosis and child deaths have shown that they have started to decline at late nineteenth century and early twentieth century, much before the discovery of relevant conducive microorganisms and the development of public health and medical strategies designed to combat them. This decline has occurred mostly due to improvements in work and living conditions, housing, nutrition, education and health rather than medical efforts. In research conducted by Auster et al., statistical inferences also show that more than 50% of the differences in death rates between countries are caused by socio-economic and personal factors rather than medical care services.

Regarding the possible mechanisms that can explain the coherent relations between health indicators and socio-economic indicators such as death and disease rates, the argument propounding that the parts of socio-economic status are in interaction with lifestyle characteristics which significantly affect health is laid store by. These characteristics are behaviour related to physical, social and cultural environment, improvement and socialization processes, and health. Researches conducted in many countries have consistently yielded results exhibiting the connections between socio-economic status and health behaviour. The poorer and more uneducated the individual, the more her/his likelihood to exhibit behaviour that does not aid health. As environmental factors: increase in death rates by air currents as a result of climate changes; diseases transmitted by water, vectors and food; and cancer cases as a result of radiation from ultraviolet rays negatively affect health status. While climate change will lead to disease and injury by affecting agricultural production and food safety, it will do so by air currents and floods at its extreme (Ak, 2008 –CNNTÜRK; Ak, 2008-Habertürk; Ak, 2008-Milli Gazete; Çelik, 2013-40; Ak, 2016-64,65).

Economic factors: Imbalances between countries, regions and societies provide the strongest evidence for explaining the differentiation of disease-health rates. Income is the most important indicator both at the macro level as for the regional and national levels, and at the micro level in individual life as for the household level, when the mutual relationship between these and health results are examined. It is seen that less exercise and stressful environment correlates more with high-paying jobs. The estimated effect of income on health status varies according to income level. When the income level is low, increase in income will positively affect health status and lead to better healthcare services, better housing conditions and changes in dietary habits. In their studies, Gertler and Van Der Gaag have found that due to a 10% increase in income, 8.3% decrease in the death rate of children under the age of five, 14.2% in the death rate of children, 1.5% in crude mortality rate and a year's increase in the life expectancy at birth.

The higher the average per capita income of countries, the longer and healthier the lives of the people from that society. Life expectancy at birth in developed countries depends more upon the equality in income distribution rather than per capita income and health status increases in countries where there is equal income distribution. Preston contends that increase in life expectancy at birth is more a product of improvements in economic and social indicators than that of improvements in medical care services. In comparisons between countries, it has been seen that countries where more inequality is in effect for income distribution have higher infant death rates (Çelik, 2013-40,41).

Education factor: In all phases of life as well as in professional life, education is the most essential and important quality. There is a close correlation between longevity and education. Education is the fundamental determinant of economic welfare since it facilitates securing a salary and getting good jobs. Well educated people access more new information more quickly and can perhaps view the benefits of curative medicine with more reservation. Education seems to be an indicator that is the most coherent with health-related behaviour and is quite important. Education might affect changes in health-related behaviour and social support processes that have direct effect on health. At the same time, it can increase self-confidence, competence and reasoning, and whether there is behavioural change caused by any of these or not, it can have an independent effect on health. For improvements observed in health and effective use of other benefits and services, education is seen to be considerably important. In our day and time, due to the necessity of specialization in education, health education has gained importance as a distinct discipline (Ak, 1990). If studies in the literature on health production function, it can be seen that people with higher levels of education generally have the inclination towards being healthy (Çelik, 2013-42,43; Ak, 2016-66,67).

Socio-demographic, behavioural and cultural factors: Economic indicators on their own have little to no effect on health status indicators. Exposure to pollution, excessive use of alcohol and tobacco, unsafe sex, the possibility of motor vehicle accidents, unhealthy diet, not being uncomfortable with excess weight, irregular and imbalanced food consumption and the like have a potentially negative effect on health status. In many parts of the world, immigration has a significant impact on population distribution. In Turkey, for instance, there are four million Syrian external immigrants

and these immigrants comprise 5% of the population of 80 million, having negative effects on the country's demographic, behavioural, cultural and health status.

In lesser developed and newly industrialized countries, rural depopulation in general causes the emergence of cities that face extraordinarily major problems which do not have the infrastructure to meet the basic needs of the increased population such as health and energy. Urban population can access healthcare services at very low costs and they generally benefit more from healthcare service provision and other public service amenities. However, it is imperative that the negative effects of over-crowded urban population be overcome. On the other hand, the increase in the environment of stress and tuberculosis heightens the likelihood of contracting infectious diseases and cardiovascular system disorders and there is difficulty in dealing with these types of problems that have negative effects on health. Through demographic factors, there is a transition from considerably high child population rate to middle-aged and elderly population. The decline in birth rates is a positive aspect in demographic transition phase. In many developed countries, birth rates are on the decline in the historical process.

The political structure and ideology of a country is also effective on the implementation of the healthcare system and health organizations. Until social and political policies improve the social and political principles of equality, the distribution of services and resources that affect health saliently affects the population's welfare and improvements in the health status.

Behavioural determinants are also the affecting factors of health status. When the behavioural risk factors expected for the disease are examined, it can be clearly seen that a very small number of behaviour categories has a relation with deaths at high rates. In the USA, out of the main behavioural risk factors, smoking, diet and alcohol consumption comprise one tenths of the main causes of death. Active cigarette smoking is a risk factor for coronary heart disease and pathological cases such as low-weight birth, premature rupture of membranes and untimely separation of the placenta affect pregnancy results negatively. Passive smoking as being exposed to environment with cigarette smoke is related to lung cancer and other respiratory disorders. In addition, there is evidence on environmental cigarette smoke proving an independent risk factor for coronary heart disease.

As causes of death, all behaviour related to disease and happiness has various effects. For instance, physical inactivity is an important health behaviour. It is not only a risk factor for coronary heart disease but is also related to hypertension, osteoporosis and mental health. In developed countries, all of these diseases are quite common health problems. Beliefs on the importance of physical inactivity, physical activity, attitudes towards motivation and self-discipline, starting an exercise routine, abilities on preventing relapse and creating the intended environment, the discomfort or the unsuitability of the exercise and family support are various effects related to physical activities.

Culture plays an independent role on health status. It is held that a large part of culture and social practices are closely related to disease. A society's culture, general customs related to health, beliefs, social exercises and practices need to be taken into account by health administrators (Ak, 1999). Epidemiological evidence on the effect of culture on health originates from ecological studies related to diet and chronic heart

diseases as well as studies on cardiovascular diseases. Ecological studies show that cultural differences have important effects on diet-related practices along with the results of cardiovascular diseases. For instance in Turkey, in the Tuz village of Gülşehir district in the province of Nevşehir, villagers have been exposed to various lung and cancer diseases due to the soil structure made up of various minerals. The state has taken a decision on relocating the Tuz village and transferring it to a risk-free area but the villagers refused to move to the new location saying that they could not desert their village because it was the hearth and home of their ancestors that their cemeteries and memories were there. Settling for becoming ill, contracting cancer and dying, the villagers still live in that village.

Nutrition is seen as the most important determinant of diseases that are the most important in terms of public health in the whole world. Because of this, in lesser developed countries and especially in rural areas, there are many diseases caused by nutritional deficiency. However, these typically fall into the category of increasing adult chronic diseases related to developing countries. Changes in health are generally contingent upon environmental changes involving changes in social and economic conditions, implementation of immunization programmes, advancements in women's social and educational status within the society and changes in access to food (Ak, 2016-68-71; Çelik, 2013-44-46)

CONCLUSION

The changing and improving significance and dimensions of health show us that problems cannot be solved solely on the basis of healthcare service provision, but that the scope has wider dimensions to it. Namely, health is too serious a matter to leave into the hands of physicians' opinions only and it is a teamwork progressing on the basis of group efforts. As is seen in our study, the scope of health has widened substantially; it is revealed that phenomena considered as disease before are not considered as such today. It has been understood that there is a wide range of factors affecting health beyond the curative health services provided in primary health services, hospitals and homes and that health policies; that plans and programmes should be carried out taking these factors into account and applications have begun to be performed accordingly. Health authorities of countries have started to place emphasis on improving health status and its criterion along with health protection and improvement. This is why Directorate General for Health Improvement has been established in the central organization of the Ministry of Health in Turkey and courses on health improvement and health policies have started to be given in universities. By extension, it is believed that this study will pay dividends in this area.

REFERENCES

Aggleton, P. (1990) Defining Health, Routledge, London

Ak, B. (1989). Sağlık İdarecileri için Tıbbi Antropoloji, Bilge Yayınevi, Ankara

Ak, B. (1990). Hastane Yöneticiliği, Özkan Matbası, Ankara

Ak, B. (2008).İklim Değişikliği,"Dünya ısındıkça kanser de yaygınlaşacak", https://www.cnnturk.com/2008/bilim.teknoloji/kuresel.isinma/04/09/dunya.isindikca.kanser.de.yayginlasacak/446575.0/index.html

Ak, B. (2008).İklim Değişikliği, Herkes kör ve kanser olacak, https://www.haberturk.com/saglik/haber/66444-herkes-kor-ve-kanser-olacak,
Ak, B. (2008). İklim Değişikliği, Hastalıklar Artacak, https://www.milligazete.com.tr/haber/794731/hastaliklar-artacak
Ak, B. (2018).Sağlık ve Hastalık Kavramları, Sağlığın Yükseltilmesi ve Sağlık Politikaları Ders Sunusu, Toros Üniversitesi, Sağlık Bilimler Yüksekokulu Hemşirelik ve Sağlık Hizmetleri Bölümü, Mersin
Ak, B. (2015). Sağlık İçin Sosyal Bilimler, Toros Üniversitesi, Sağlık Bilimleri Yüksekokulu, Sağlık Yönetimi Bölümü, Mersin
Ak, B. (2016). Sağlık ve Sağlık Statüsü, Sağlık Ekonomisi Ders Sunusu, s.64,65, Toros Üniversitesi, Sağlık Bilimler Yüksekokulu Sağlık Yönetimi Bölümü, Mersin
Ak, B. (2017).Sağlık ve Hastalığın Ölçülmesi, s.32, Epidemiyoloji, Toros Üniversitesi, Sağlık Bilimleri Yüksekokulu, Hemşirelik ve Sağlık Hizmetleri Bölümü, Mersin
Akın, C.S. (2007). Sağlık ve Sağlık Harcamalarının Ekonomik Büyüme Üzerine Etkisi: Türkiye'de Sağlık Sektörü Harcamaları, s.17,Yüksek Lisans Tezi, Çukurova Üniversitesi Sosyal Bilimler Enstitüsü İktisat Anabilimdalı, Adana
Aksakoğlu, G. "Herkes İçin Sağlık'tan Hedef 21'e: Dünya Sağlık Örgütü değişiyor" Toplum ve Hekim, 2002; 17:2:91-100.
Anonymous 1. http://www.tuik.gov.tr/PreHaberBultenleri.do?id=21522). Erişim 05.08.2018
Anonymous 2. https://www.facebook.com/pitstopistanbul/photos/a.469450276401968.114316.273253252688339/547288875284774/?type=1&theater. Erişim 05.08.2018
Anonymous (1986). Sağlığın Teşviki ve Geliştirilmesine Yönelik Ottawa Sözleşmesi 17-21 Kasım 1986, Sağlığın Teşviki ve Geliştirilmesine Yönelik Dönüm Noktaları Global Konferanslardan Bildiriler,s.1, T.C. Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü, https://sbu.saglik.gov.tr/Ekutuphane/kitaplar/sa%C4%9Fl%C4%B1g%C4%B1n%20te%C5%9Fviki.pdf. Erişim 05.08.2018
Anonymous (1995). Sağlık ve Gelişim İçin destek Stratejileri hakkında Kurumlar Arası Toplantı Raporu: Eylemde İletişimin Geliştirilmesi. DSÖ, Cenevre
Anonymous (1997). Jakarta Konferansı, Dördüncü Uluslararası Sağlığı Geliştirme Konferansı: Yeni Dönem için Yeni Oyuncular – Sağlığın Teşviki ve Geliştirilmenin 21. Yüzyıla Getirilmesi, (1997). Jakarta, Endonezya, 21-25 Temmuz 1997,s.17, Sağlığın Teşviki ve Geliştirilmesine Yönelik Dönüm Noktaları Global Konferanslardan Bildiriler,s.17, T.C. Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü, https://sbu.saglik.gov.tr/Ekutuphane/kitaplar/sa%C4%9Fl%C4%B1g%C4%B1n%20te%C5%9Fviki.pdf
Anonymous (2015). Ölüm İstatistikleri, http://www.tuik.gov.tr/PreHaber Bultenleri.do?id=21522. Erişim 05.08.2018
Anonymous 1984. Sağlığın Teşviki ve Geliştirilmesi Sözlüğü, (1984). World Health Organization 1998, Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü, Anıl Matbaacılık Özveren Sokak 13/ A Kızılay / ANKARA
Armntrong, D. (1989). Communication and Medical Practice: Social Relations in the Clinic, https://onlinelibrary.wiley.com/doi/abs/10.1111/1467-9566.ep10844154

Azzem, Ö. (2003). ‘‘Hastane İşletmelerinde Maliyetleme Yaklaşımları, Uludağ Üniversitesi, İİBF Dergisi, 22(2). S.114
Beaglehole, R., Bonita, R., Kejellström, Ç. Nazan Bilgel, (1997). Temel Epidemiyoloji, DSÖ, Yayını Nobel-Güneş Tıp Kitapevi, İstanbul
Bulakbaşı, Müge, Sağlık Tanımı Sağlık Hizmetleri Türk Sağlık Sistemi, https://neu.edu.tr/wp-content/uploads/2015/11/Sa%C4%9Fl%C4%B1k-Tan%C4%B1m%C4%B1-Sa%C4%9Fl%C4%B1k-Hizmetleri-T%C3%BCrk-Sa%C4%9Fl%C4%B1k-Sistemi2.pdf
Comisión sobre Determinantes Sociales de la Salud, (2005), http://www.who.int/social_ determinants/strategy/QandAs/en/index.html. Erişim 05.08.2018
Çelik, Y. (2013). Sağlık Ekonomisi, Siyasel Yayınları, Ankara,s.25, 26
Dağlı, G. H. (2006), Türkiye’de Sağlık Sektörünün Yapısı, T.C. Ankara Üniversitesi Sosyal Bilimler Enstitüsü Kamu Ekonomisi (Maliye) Anabilim Dalı, Yayınlanmamış Yüksek Lisans Tezi, Ankara
Dalbay, Ö. ve Biçer, İ.H. (2002). “Bir Kamu Hastanesinde ISO-9002: 1994 Kalite Güvence Yönetimi Uygulamasının Hasta Memnuniyeti ve Bazı Performans Göstergelerine Etkisi”. İTÜ, Sosyal Bilimler Dergisi, 1(1). ,s.12
Halk Sağlığı ile ilgili Temel Kavramlar, http://docs.neu.edu.tr/staff/emine.onkun/20.%20HALK%20SA%C4%9ELI%C4%9EI%20KAVRAMLAR_9.pdf,p-3,4. Erişim 05.08.2018
Herkes İçin Sağlık, http://dosyamerkez.saglik.gov.tr/Eklenti/13892,2018sagliktak vimipdf.pdf? Erişim 05.08.2018
https://neu.edu.tr/wp-content/uploads/2015/11/Sa%C4%9Fl%C4%B1k-Tan%C4%B1m%C4%B1-Sa%C4%9Fl%C4%B1k-Hizmetleri-T%C3%BCrk-Sa%C4%9Fl%C4%B1k-Sistemi2.pdf. Erişim 05.08.2018
http://www.acikders.org.tr/pluginfile.php/4153/mod_resource/content/1/TUBA9.pdf). Erişim 05.08.2018
https://www.facebook.com/pitstopistanbul/photos/a.469450276401968.114316.273253252688339/547288875284774/?type=1&theater. Erişim 05.08.2018
Illich, I. (1975) Medical Nemesis: The Expropriation of Health, Calder and Boyars, London.
Karakılçık, Y. (1997). Üniversite Araştırma Hastanelerinin Yönetimi. Yüksek Lisans Tezi, Malatya Üniversitesi, Sosyal Bilimler Enstitüsü, Kamu Yönetimi Anabilim Dalı s.43
Küçükilhan, M. ve Lamba, M. (2007). Üniversite Hastanelerinde Örgütsel Yapıdan Kaynaklanan Sorunlar (Hasta Hakları Örnek Olayı). Afyon Kocatepe İ.İ.B.F. Dergisi, 9(11): s.117
Kavuncubaşı, Ş. (2000). Hastane ve Sağlık Kurumları Yönetimi, Siyasal Kitapevi. S.34, Ankara,
La Londe, M. (1974), A New Perspective on the Health of Canadians. A Working Document, Health and Welfare, Canada.
Lerer, L.B., Lopez, A.D., Kjellstrom T., Yach, D. (1998),”Health for All: Analyzing health status and determinants”, Worl Healt Statistic Quarterly, 1998, Vol:51, No:1. pp.7-20
Mc Keown, T. (1988), "The Medical Contribution", içinde Black, N. ve diğerleri, Health and Disease. A Reader, Open University Pres, Milton Keynes.

Öztek, Z. (2001). “Türkiye’de Sağlık Hizmetleri”. Yeni Türkiye Dergisi, 7(39). Paşa, S.F. (2000). s.294
Roemer, M.L. (1991). é global Health and its determinants”, National Health Systems of World Volume:1, Chapter 2, New York, Oxford University Press, pp:11-20
Seedhouse, D. (1986). Health. The Foundations for Achievement, John Wiley and Sons, Chichester.
Tatar, M. (2012), Sağlık Nedir? (2012)
UNICEF/DSÖ Temel Sağlık Hizmetleri Uluslararanı Konferansı, (1978). https://dosyaism.saglik.gov.tr/Eklenti/27594,almaatabildirisi1978pdf.pdf?0&_tag1=FC3E7AC48F1716DEA440C85126AE87D30F858130. Erişim 05.08.2018
Wilkinson, R.; Marmot, M. (2003), Social Determinants of Health. The Solid Facts, Scond Edition, Worlld Health Organization, 33-Copenhagen.

Chapter 79

The Impact of Social Responsibility Projects on Health Care Services: Example of Hemodialysis Treatment

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INTRODUCTION

Chronic illnesses all over the world are a major problem area that brings additional burdens to the patient, the family, and the society. Complex treatment processes in chronic diseases severely limit the activities of patients and lead to loss of independence, financial stress, role change, deterioration in family life, change in self-image, and self-esteem. As a result, this group of patients may have psychological problems such as anxiety, depression, social isolation, loneliness, helplessness and hopelessness (Brunner, 2010; Perlman and Peplau, 1984; Tsay and Healstead, 2002; Weilitz and Sciver, 1996). In chronic illness, patients have to deal with social and psychological problems that have turned into a spiral (Alnazly, 2016). These problems can lead to severe depressions (Levenson and Glocheski, 1991) and depression can lead to death by weakening the ability to cope with life (Kimmel, 2001). The prevalence of Major Depressive Episode in dialysis patients is greater than in the general population (Craven, Rodin, Johnson, and Kennedy, 1987; Santos et al., 2017). Barret et al. (1990) found that somatic symptoms such as uremia, irritability, loss of appetite, insomnia, fatigue and concentration decrease in dialysis patients are strongly related to depression (Barrett, Vavasour, Major, and Parfrey, 1990). In addition, these patients may also have other conditions that affect their mood, including anemia, electrolyte imbalance, and underlying diseases. Disease severity or duration of dialysis may affect the mental state (Tsay and Healstead, 2002).

McSweeney et al. (1982) found that 42% of patients with emotional and social impairment were depressed when they were working with 203 patients with COPD (McSweeny, Grant, Heaton, Adams, and Timms, 1982). Untas et al. (2010) found that 32332 dialysis patients in 12 countries have health problems, they affect social activities; isolates the patient from the outside world and is felt as a burden (Untas et al., 2010).

Another condition that triggers depression in dialysis patients is lack of social support (Patel, Peterson, and Kimmel, 2005). The researches conducted are in the relation between loneliness, depression and social support in patients receiving dialysis treatment (Asti, Kara, Ipek, and Erci, 2006), that behavioral, psychological, and social factors (van der Borg, Schipper, and Abma, 2016) affect perceived fatigue in dialysis patients. As a result, lack of perceived social support was associated with depressive symptoms (Gençöz and Astan, 2006).

Social support is a consistent indicator of survival, as evidenced by empirical

studies in patients with cancer or cardiovascular disease. There are studies showing that social support is associated with healing and better survival in many chronic diseases, including cancer and end-stage renal failure. However, in the field of kidney disease, this issue has not yet been extensively studied (McKercher et al., 2013; Thong, Kaptein, Krediet, Boeschoten, and Dekker, 2006). The mechanism by which social support is beneficial to health is not known, but practical help may play an important role in ensuring harmony, better access to health care, improved psychosocial and nutritional status, and improving immune function and stress levels (Elal and Krespi, 1999; Patel et al., 2005). There are very few data on social support in patients with chronic renal insufficiency. However, there is a link between social support and depressive mood and quality of life (Patel et al., 2005). Social support for dialysis patients is also important for greater satisfaction and quality of life and less hospitalization (Plantinga et al., 2010). For this reason, perceived social support may make it easier to cope with the disease (Asti et al., 2006).

In addition, the inadequacy of family support and various psycho-social measures reduce adherence to the length of the hemodialysis session and negatively affect the patient in terms of weight control and fluid restriction (Jiang et al., 2015; Kara, Caglar, and Kilic, 2007; Untas et al., 2010). However, for the success of the treatment process, healthcare professionals have to cope with these problems. Therefore, approaches are needed to cope with these problems, which occur with secondary effects of the disease. Often, efforts to address these secondary problems are not addressed, as the primary goal of health care is to get rid of the disease. However, if these patients are better supported and treated, these negative psychosocial consequences can be prevented or minimized (Asti et al., 2006; Subramanian et al., 2017). The individual, the institution, and the society may have a common endeavor to solve social sensitivity and problems in chronic diseases. This support, which is needed for the healthy continuity of the treatment process for both the patient and the healthcare worker, can be handled with social sensitivity and transformed into social projects.

The concept of social responsibility, which is referred to as modern philanthropy, means that all components of the underlying society produce solutions for individual, society and environmental problems by showing social sensitivity. Patients and their relatives suffering from chronic diseases can also be considered as disadvantaged segments for social responsibility projects and the projects can be designed to solve these problems. Interventions that increase social support in chronic kidney disease should be assessed (Patel et al., 2005; Plantinga et al., 2010). Social support can be obtained from family members, friends, colleagues, spiritual advisers, health workers, or community members (Jiang et al., 2015; Patel et al., 2005; Santos et al., 2017). However, there are no cases of dialysis patients except for a few attempts at these factors (van der Borg et al., 2016).

In this context, it is aimed to make the dialysis treatment process smoother and to alleviate the illness burden of the patients with the voluntary support project for hemodialysis patients for Dialysis Diseases, which is designed as a sensitivity and solution way. The research assesses whether such projects are beneficial in reducing disease burden in chronic diseases, in view of dialysis patients and healthcare workers.

The voluntary support project for hemodialysis patients

The concept of social responsibility, which corresponds to philanthropy with

traditional expression in the modern world, is a subject that shows the sensitivity of institutions as much as individuals. Especially the social responsibility projects for the disadvantaged sections of the society, as well as the beneficiaries of these projects and the institutions that realize the project, have positive results. The voluntary support project for hemodialysis patients was designed as a social responsibility project. The project was realized in collaboration with Ankara University, Vocational School of Health, Medical Documentation and Secretarial Program (AU VSH MDS-P), Ankara Numune Hospital (ANH) and Çankaya Municipality Public Education Center Directorate. The target population of this project is patients who receive dialysis service at ANH Dialysis Unit. As a result of the chronic renal failure, dialysis patients are treated by staying in dialysis units for three days in a week and for an average of four hours in each session. The project aims to remove patients from the difficulties of the treatment process or from material and moral difficulties caused by a chronic illness for a period of time and to make the treatment period more bearable. The project was planned for 36 patients treated at the ANH dialysis unit. The project started in October 2016 and completed in May 2017. During this period, 40 students studying in AU VSH MDS program worked as volunteers.

A project team was formed in May 2016 before the project started. Then project activities were planned and service-learning and informing meetings were organized for volunteer students who wanted to take part in the project and voluntary application and selection were realized. Before the start of the project, an education in which volunteers were informed by the physician and nurse in charge of dialysis about the hemodialysis procedure applied to chronic kidney diseases, the effects on hemodialysis patients, general characteristics of patients, dialysis unit working conditions, risk factors faced by patients and employees, it is given. At the same time, the patients were informed about the project and their approvals were taken both in written form and verbally. The project passed the activity on September 2016. The volunteer students in the project helped the patients during the coloring of the wooden objects and they read them books. They chatted with them and played games like chess. Following the passage of the project, patients and students were introduced and activities were carried out during the dialysis service. The project was monitored with the participation of all stakeholders every 4 weeks and the solutions were developed to the next problems.

Two organizations were organized, the products produced in the project were exhibited and offered for sale. This organization is the organ donation week; the other was realized within the scope of world kidney day and announced through national and local media. The first year of the project was completed in May 2017.

METHOD

The purpose of this study is to evaluate the realization of the target in such a social responsibility project with the opinions of the patients. The purpose of this study is to evaluate the realization of the target in such a social responsibility project with the opinions of the patients. The study was planned as a qualitative study in the light of the evaluations of the results of the prognosis of the patients who participated in the activities and the health professionals in charge of dialysis within the scope of the voluntary support project for hemodialysis patients. For this reason, research is a descriptive study of the situation and it is designed based on qualitative research

techniques.

Socio-demographic data of patients in the study were obtained from patient files. Descriptive data on the age, gender, educational status, occupation, marital status, illness and treatment duration of the patients were collected with the 7 questions in the form prepared in this context. In-depth interviews were conducted using a semi-structured interview form with two active participants in the project and the responsible nurses of the dialysis who agreed with the purpose to demonstrate the realization of the patient-related goals of the project. Interviews during the dialysis session lasted approximately 25-30 minutes. During the interview, voice and video recordings were taken with the permission of the patients. During the interview with the dialysis nurse, only the voice recorder was used, with the permission of the nurse. The data obtained in the interview were analyzed by content analysis for the effects of the progeny on the patient and the dialysis treatment process. Findings from interviews were discussed in the light of literature.

FINDINGS

Descriptive Findings

Although the target population of the project was all of the patients treated in the unit (n = 36), only 31 of these patients experienced at least one activity in the project. However, only 10 patients participated actively and regularly in the project activities. The average age of the patients is 46 (n: 31) years, with the youngest being 18 and the oldest being 75 years old. Socio-demographic data of the patients are shown in Table 1 and Figure 1. All of the patients have education at primary level (see Table 1). Patient's illness and dialysis treatment duration is 4 years on average.

Table 1. Socio-demographic characteristics of the patients participating in project activities

	Patients who attend the events at least once		**Patients who are actively involved in the activities**	
	Number	**%**	**Number**	**%**
Gender				
Male	*13*	*42*	*3*	*30*
Female	*18*	*58*	*7*	*70*
Vocation				
Self-employment	*18*	*58*	*3*	*30*
Housewife	*11*	*36*	*7*	*70*
Retired	*2*	*6*	-	-
Education				
Primary school	*26*	*84*	*8*	*80*
Secondary school	*5*	*16*	*2*	*20*
Marital status				
Married	*7*	*23*	*2*	*20*
Single	*24*	*77*	*8*	*80*
Total	**31**	**100**	**10**	**100**

Table 1 shows the socio-demographic characteristics of the patients participating in the project activities. Three of the patients who participated actively in the project males, 7

females; 3 of them are self-employed, all of them have education at the primary education level and only 2 are married.

Findings Related to Patient Opinions

Patients heard the project from the responsible physician and nurse during hemodialysis treatments. When they first heard the project, the patients wondered what the project was like, and the idea excited them. Patients have stated that they are adopting the project more at later stages of the project. They have indicated that they are now more willing to treat hemodialysis that they do not want to come before, they do not understand how time passes while painting during treatment and continue to paint until the end of treatment.

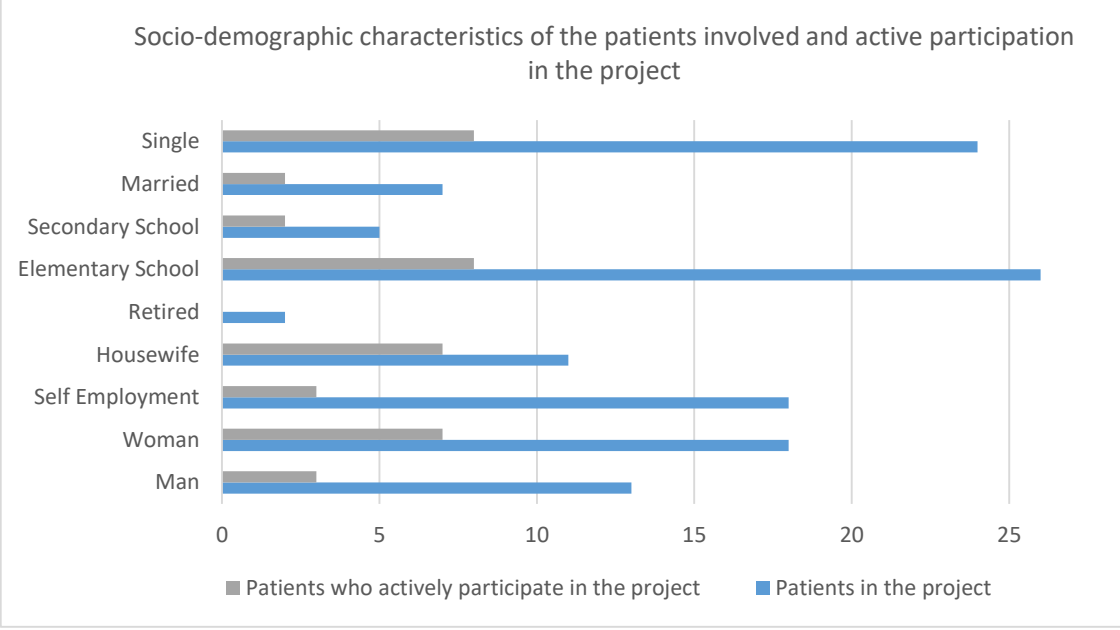

Figure 1. Socio-demographic characteristics of active participants in the project

During the interview, the patients expressed the things that affected them the most in the project. According to the answers given by the patients, the painting activity was found to be more attractive than the other activities in the project. The patients expressed that they were very influenced by the warm and sincere approach to the students on the project. They were pleased that their students paid attention to them. Another reason for the satisfaction of the patients is the organization during the project. The first of these events took place on the kidney day and the second was on the organ donation week. National and local media have been invited to the organizations and thanks to these activities, public attention has been drawn to organ donation. The patients were proud of their work exhibited and sold in these organizations. With the revenue from the sale, new painting objects were taken on the project. The patients were proud of their work exhibited and sold in these organizations. With the revenue from the sale, new painting objects were taken on the project. Moreover, they have had

the opportunity to talk about dialysis patients, their lives, and their illnesses.

All of the patients participating in the project are thinking that the project allows them to see themselves as a useful individual. For example, Patient "A":

> "In a moment when our hope is consumed, this project has made us believe in ourselves. Even my parents thought that my illness made me useless. I was divorced and trying to keep alive with my two children. Before the project, I did not want to do anything. But now when I see that there is something I can do it, my faith in myself grows."

Opinions of patients about the project

We looked closer at the project to see if the project goals were realized. In this section, the opinions of two patients and the dialysis nurse who were interviewed in depth were discussed. Patient "A" is 33 years old, the female has chronic kidney disease for 4 years, is taking dialysis treatment and is not working. She divorced after she got sick and lives with two daughters. The patient expresses the following troubles that they live in the dialysis treatment process before the project.

> "Before the project, I was worried about how I would spend time on dialysis. Because there is nothing I can do other than watching television during dialysis, and I was lying still here for about four hours. I was constantly checking the clock. But time did not pass. Sometimes I could not stand until the end of the treatment. I wanted frequent treatment sessions to be terminated early. I was trying to withstand the nurses' insistence, but it was very difficult for me."

Patient "A" expressed in the following sentences what she feels when she first heard the project idea.

"I was very glad that I heard the project and I thought it was a good reason to come here other than treatment."

When asked what kind of change in her life after the project started, she expressed his views as follows.

"This disease and dialysis treatment process are very distressing and stressful situation. So painting in this project has made my stress less. Although I was sick, seeing what I was doing made me happy. I feel better now. Painting is like therapy. Earlier, a thousand kinds of bad thoughts went around in my head. I do not feel any more of them when I paint. I choose especially difficult and detailed jobs in painting and it makes me comfortable to be busy with them. I do not check the time anymore. I do not realize the session is over. The nurse warns. Sometimes I get angry just to get through it quickly. Dialysis sessions are now full. After the project, I started painting even at home. The work we do does not require talent and everyone can do it. I developed here by experimenting at home. I even started to sell the objects I painted and make a little money."

Patient "A" expresses the opinions of young volunteers about the contribution to the project as follows.

> "We do the painting activities in the project together with the young volunteers. Being with young people in this process is very good for them and for us. It's nice to have a chat while painting. They have beautiful energies. They are very cheerful and encouraging. Being with them is good for us too. Sometimes, even though we treat them badly with the stress of

cure, they are understanding and patient with us. I am sure they have positive contributions to this project. They witness that we live here and observe the disease, the difficulties we experience more closely. They will be both an individual and a health worker. Hence, with patients like us, they will make it easier for them to empathize. At the same time, these students are increasing awareness of organ donation. It may be a benefit of such voluntary activities in communities like ours. Organ donation awareness. The prospect of organ donation in Turkey is not understood. So it will be more effective for them to experience it. "

Patient "A" believes that this project should be continued and that other patients will benefit from similar projects.

Patient "B" is 46 years old, male, chronic kidney and dialysis patient for 1 year. The patient, who worked as a furniture painter before illness, left the work after the illness, divorced, currently unable to work and living alone. Patient "B" tells us what he lived before the project, how he met the project, and how his life changed with his participation in the project.

"The disease was diagnosed about fifteen days before the start of the project, and dialysis treatment was started. However, I have not yet accepted this situation. My wife left me in this process. I started living alone. I refused dialysis treatment. I did not want to come to the hospital for treatment. I even tried to commit suicide. The doctor told me that the situation is very serious and the importance of regularly coming to the treatment. I used antidepressant drugs in that process. Then I met this project. I was a furniture worker, but I learned the subtleties of painting in this way through the project. I now have more desire for dialogue and it became more bearable for me when I spent here. In this process, communication with other patients increased and I could see that I was not the only person living with this disease. I love life now and I am more hopeful than I am. I also am painting at home. I have painted my TV unit, armchair, and stalls with the methods I have learned here. I spend 4 days a week at the hospital and this work keeps me busy at home and on dialysis sessions because I can not work."

Patient "B" expressed his satisfaction with the volunteer students and his thoughts on the maintenance of the project, like Patient "A".

"It's great to be with volunteer students. I believe that they are happy to help us. I would like to see such projects become more widespread."

Opinions about the Contribution of the Project to the Dialysis Care Process

The responsible nurse was interviewed to learn the contribution of the project to the dialysis care process. When asked about the activities involved in the project to the dialysis nurse and the effects of these activities on patient behavior and treatment:

“Before the project started, I thought that it would be just a little fun for the patients and that they would have a good time during the treatment. But I saw that it was more than I thought. Some of our patients have begun to participate in dialysis treatment more willingly after these activities. We want the project to continue. Because we have seen a decrease in some of the negativities that we experienced during the treatment period. We observed that some patients did not experience many conditions

during the session due to these events. For example, after the second hour of the session, patients complained of psychosomatic pain. However, there was a noticeable decrease in the complaints of the patients who stained. There was also an increase in session loyalty. The earlier, the patients were having difficulty completing the sessions, and it was very difficult for us to convince them. However, when the same patients participate in these events, their perceptions are changing and they can not even realize that the session is over. Hence, the efficiency of the dialysis session has increased. In this sense, health workers do not have to make an effort to continue the session. This situation also increased the quality of the health worker-patient relationship."

Nurses were asked what measures they were taking to ensure that they were not adversely affected by the events on the project. The nurses answer this question as follows:

"We took the necessary precautions to keep the patients from experiencing the problems arising from these activities during the treatment process. For example, activities were conducted with a limited number of volunteers. Information on the treatment process and the medical, psychological and socio-cultural status of the dialysis patients were given to the volunteers. And we designed a separate room for sanding, polishing or drying the objects in order to protect the patients from the damage of the painting activity. Apart from this, no matter how much the patients were willing to participate in these events, we ended the event according to their vital signs."

The responsible nurse expressed the contribution of the project to the provision of health care services as follows.

> "The project has made a significant contribution, in particular, to the problem of not continuing to the session due to the treatment process and the efforts to reduce patient complaints. Now a nurse does not have to convince the patient to treat. Or we do not have to deal with the patient's complaints. This result facilitated our communication with our patients and their families and affects service quality positively."

The responsible nurse stated that the interests of the patients to participate in the project were different but still the results were meaningful for them.

> "When the project started, all our patients tried to participate in the activities. Some of them later refused to participate. However, 10 patients participated in the paintings activities without interruption. But even this number was very important to us. "

Responsible nurse, when asked what aspects of the project should be developed:

> "In male patients, participation in the project was less. The reasons for this can be researched and solutions for male patients can be presented. Male participants are demanding different activities such as rosary construction, games such as chess, sports conversations. These issues can be considered in new projects." she answered.

DISCUSSION

As a result of the research, it is seen that the patient-centered support project, which is designed as a social responsibility project according to patient and nurse opinions, is generally adopted by the patients and has the expected positive results. Patients who actively participated in the project expressed that the project facilitated

their compliance with the hemodialysis process. Patients have indicated that they are now more willing to treat, that they do not understand how it is getting through during the treatment process, and continue to paint until the end of treatment.

Dialysis treatment requires significant changes in patients' lifestyle (diet, sleep, fluid restriction, etc.) (Mollaoglu, 2006). It is not easy for the individual to adapt to this change. There are studies showing that social support positively affects dialysis patients to behave in accordance with their diets (DiMatteo, 2004; Khalilian, 2013). Researches show that social support facilitates individual adjustment to chronic illness (Cohen, 1988). Health care workers should be sensitive to the loneliness and lack of social support of the patients (Asti et al., 2006).

Patients participating in the project think that the project allows to see themselves as a useful individual. These findings reveal that the project has supportive effects in terms of dialysis patients, coping with psychological and social problems. In Turkey, especially in studies investigating the perceived social support from family on pregnant women, the social support was found to be effective on problem solving skills (Arıkan and Kahriman, 2002; Okanli, Tortumluoglu, and Kirpinar, 2003).

The project is designed to provide university students with social support for dialysis patients. During the interview, the patients counted the warm and sincere attitudes of the students involved in the project and the painting activities as the most influential factors in the project. Sattoe et al. (2013) studies have shown that peer support in dialysis patients is influential in increasing self-confidence, feeling more knowledge about diseases, taking more responsibility, feeling open to others, and having the courage to stand up (Sattoe, Jedeloo, and van Staa, 2013). According to the literature, both in the pediatric nephrology and adult patients, peer support is the facilitating factor for disease and treatment compliance (Gillespie et al., 2017; Sattoe et al., 2013). Another factor that delights patients is the meetings held within the scope of the project. In these organizations, finding opportunities to express themselves and their illness made them happy.

Among the factors affecting the hemodialysis treatment process, ineffective communication between health service providers and patients is emerging. For this reason, more effective communication for treatment success is important (Anderson, Cunningham, Devitt, Preece, and Cass, 2012). According to the findings from the interviews, the project positively contributed to this process and positively influenced the health worker-patient communication. In addition, dialysis patients have little opportunity to interact with each other (Tannor, Archer, Kapembwa, Van Schalkwyk, and Davids, 2017). In this context, the project has created a better environment for patients to communicate with each other.

According to the information given by the patients and the responsible nurse, there was a problem with the dialysis session loyalty before the project. Inadequate hemodialysis treatments are a serious problem, leading to increased morbidity and mortality in the end-stage renal disease population. Lack of motivation is among the top reasons for the difficulty in participating in planned dialysis treatments (Chenitz, Fernando, and Shea, 2014). Therefore, it can be said that the project is a remedy for this motivation problem when the views of active participants in the project are taken into consideration.

Dialysis should aim not only to prolong life but also to increase the quality of life

(Tannor et al., 2017). Of course, there is a need for extensive researches to evaluate the interventions to improve social support and other psychosocial factors to prolong survival and improve quality of life (Untas et al., 2010). Psychosocial risk factors for mortality are important in dialysis patients and further efforts are needed to develop this disease support (Thong et al., 2006). The social support provided by the project has positively affected the hemodialysis treatment process. Patients' complaints in the sessions diminished and session commitment increased. This result supports similar research findings (Mollaoglu, 2006). Psychological care of patients in the hemodialysis unit is becoming an increasingly important aspect of the overall treatment of patients with end-stage renal failure. In this case, it is vital that nurses working in the hemodialysis unit offer quality psychological care to their patients (Bath, Tonks, and Edwards, 2003). Because, it is hoped that the cost of care and hospitalization will be reduced by supporting the patient during treatment and increasing compliance with treatment (Golestaneh, 2018).

CONCLUSION

As a result, revised health care provision to optimize the care of chronic kidney patients is recommended (McKercher et al., 2013). Voluntary support project for hemodialysis patients has been developed with this point of view and has produced promising results. Similarly, various projects can be developed by considering the socio-demographic characteristics of patient groups. As a matter of fact, alternative therapies such as religious activities (Santos et al., 2017), psychotherapy, counseling, social support, and music therapy can be utilized in the treatment of depression in chronic kidney patients (Duarte, Miyazaki, Blay, and Sesso, 2009; Hedayati, Yalamanchili, and Finkelstein, 2012; Levendoğlu et al., 2004; Maratos, Gold, Wang, and Crawford, 2008; Ouzouni, Kouidi, Sioulis, Grekas, and Deligiannis, 2009).

Of course, this study's results, due to be held in only one hospital and in Turkey, cannot be generalized. However, the study provides strong evidence and lessons that such projects can be regarded as supportive practices in health care services. By utilizing these findings, similar projects can be carried out for different disease groups, different countries, and cultures. The researches that evaluate the results of such projects will contribute to the field to obtain new evidence in this direction.

REFERENCES

Alnazly, Eman Khamis .2016. “Burden and coping strategies among Jordanian caregivers of patients undergoing hemodialysis”. *Hemodialysis International, 20*(1), 84-93.

Anderson, Kate, Joan Cunningham, Jeannie Devitt, Cilla Preece and Alan Cass. 2012. “Looking back to my family: Indigenous Australian patients’ experience of hemodialysis”. *BMC Nephrology,* 13(1), 114.

Arıkan, Duygu, İlknur Kahriman. 2002. “Yenidoğan bebeği olan primipar annelerin ailelerinden algiladiklari sosyal desteğin sorun çözme becerilerine etkisi”. Journal of Anatolia Nursing and Health Sciences, 5(1).

Asti, Turkinaz, Magfiret Kara, Gulay Ipek, Behice Erci. 2006. “The experiences of loneliness, depression, and social support of Turkish patients with continuous ambulatory peritoneal dialysis and their caregivers”. *Journal of clinical nursing,*

15(4), 490-497.
Barrett, B., Vavasour, H., Major, A., and Parfrey, P. 1990. Clinical and psychological correlates of somatic symptoms in patients on dialysis. *Nephron, 55*(1), 10-15.
Bath, J., Tonks, S., and Edwards, P. 2003. Psychological care of the haemodialysis patient. *Journal of Renal Care, 29*(2), 85-88.
Brunner, Lillian Sholtis. 2010. *Brunner and Suddarth's textbook of medical-surgical nursing* (Vol. 1): Lippincott Williams and Wilkins.
Chenitz, Kara B., Michael Fernando, Judy A Shea. 2014. "In-center hemodialysis attendance: Patient perceptions of risks, barriers, and recommendations". *Hemodialysis International, 18*(2), 364-373.
Cohen, Sheldon. 1988. "Psychosocial models of the role of social support in the etiology of physical disease". *Health psychology, 7*(3), 269.
Craven, John L, Gary M Rodin, Liane Johnson, Sidney H Kennedy. 1987. "The diagnosis of major depression in renal dialysis patients". *Psychosomatic Medicine, 49*(5), 482-492.
DiMatteo, M Robin. 2004. "Social support and patient adherence to medical treatment: a meta-analysis". *Health psychology, 23*(2), 207.
Duarte, Priscila Silveira, Maria Cristina Miyazaki, Sergio Luís Blay, Ricardo Sesso. 2009. "Cognitive–behavioral group therapy is an effective treatment for major depression in hemodialysis patients". *Kidney international, 76*(4), 414-421.
Elal, Guliz, Margorit Krespi. 1999. "Life events, social support and depression in haemodialysis patients". *Journal of Community and Applied Social Psychology, 9*(1), 23-33.
Gençöz, Tülin, Gülendam Astan. 2006. Social support, locus of control, and depressive symptoms in hemodialysis patients. *Scandinavian Journal of Psychology, 47*(3), 203-208.
Gillespie, A., Fink, E., Traino, H., Uversky, A., Bass, S., Greener, J., . . . Reese, P. 2017. "Hemodialysis Clinic Social Networks, Sex Differences, and Renal Transplantation". *American Journal of Transplantation, 17*(9), 2400-2409.
Golestaneh, Ladan. 2018. *Decreasing hospitalizations in patients on hemodialysis: Time for a paradigm shift.* Paper presented at the Seminars in dialysis.
Hedayati, S Susan, venkata Yalamanchili, Fredric O Finkelstein. 2012. "A practical approach to the treatment of depression in patients with chronic kidney disease and end-stage renal disease". *Kidney international, 81*(3), 247-255.
Jiang, Hong, Li Wang, Qian Zhang, De-xiang Liu, Juan Ding, Zhen Lei, Qian Lu, Fang Pan. 2015. "Family functioning, marital satisfaction and social support in hemodialysis patients and their spouses". *Stress and Health, 31*(2), 166-174.
Kara, Belguzar, Kayser Caglar, Selim Kilic. 2007. "Nonadherence with diet and fluid restrictions and perceived social support in patients receiving hemodialysis". *Journal of Nursing Scholarship, 39*(3), 243-248.
Khalilian, Alireza. 2013. "The relationship between perceived social support and self-efficacy with diet adherence among hemodialysis patient". *Scientific Journal of Hamadan Nursing and Midwifery Faculty, 21*(3), 59-67.
Kimmel, Paul L. 2001. Psychosocial factors in dialysis patients. *Kidney international, 59*(4), 1599-1613.
Levendoğlu, Funda, Lütfullah Altintepe, Nilsen Okudan, Hatice Uğurlu, Hakki Gökbel,

Zeki Tonbul, Güney İbrahim, Süleyman Türk. 2004. “A twelve week exercise program improves the psychological status, quality of life and work capacity in hemodialysis patients”. *Journal of nephrology, 17*(6), 826-832.

Levenson, James L, Susan Glocheski. 1991. Psychological factors affecting end-stage renal disease: A review. *Psychosomatics, 32*(4), 382-389.

Maratos, Anna, Christian Gold, Xu Wang, Mike Crawford. 2008. “Music therapy for depression”. *The Cochrane Library*.

McKercher, Charlotte M, Alison J Venn, Leigh Blizzard, Mark R Nelson, Andrew J Palmer, Michael A Ashby, Jennifer L Scott, Matthew D Jose. 2013. “Psychosocial factors in adults with chronic kidney disease: characteristics of pilot participants in the Tasmanian Chronic Kidney Disease study”. *BMC Nephrology, 14*(1), 83.

McSweeny, John A, Igor Grant, Robert K Heaton, Kenneth M Adams, Richard M Timms. 1982. “Life quality of patients with chronic obstructive pulmonary disease”. *Archives of internal medicine, 142*(3), 473-478.

Mollaoglu, Mukadder. 2006. “Perceived social support, anxiety, and self-care among patients receiving hemodialysis”. *Dialysis and transplantation, 35*(3), 144-155.

Okanli, Ayşe, Gülbu Tortumluoglu, İsmet Kirpinar. 2003. “Gebe kadinlarin ailelerinden algiladiklari sosyal destek ile problem çözme becerileri arasindaki iliski/The relationship between pregnant women perceived social support from family and problem solving skill”. *Anadolu Psikiyatri Dergisi, 4*(2), 98.

Ouzouni, Stavroula, Evangelia Kouidi, Athanasios Sioulis, Dimitrios Grekas, Asterios Deligiannis. 2009. “Effects of intradialytic exercise training on health-related quality of life indices in haemodialysis patients”. *Clinical rehabilitation, 23*(1), 53-63.

Patel, Samir S, Rolf Peterson, Paul L Kimmel. 2005. *Psychosocial factors in patients with chronic kidney disease: The impact of social support on end-stage renal disease.* Paper presented at the Seminars in dialysis.

Perlman, Daniel, Letitia Anne Peplau. 1984. Loneliness research: A survey of empirical findings. *Preventing the harmful consequences of severe and persistent loneliness, 13*, 46.

Plantinga, Laura C, Nancy E Fink, Rachel Harrington-Levey, Frederic O Finkelstein, Nasser Hebah, Neil R Powe, Bernard G Jaar. 2010. Association of social support with outcomes in incident dialysis patients. *Clinical Journal of the American Society of Nephrology, 5*(8), 1480-1488.

Santos, Paulo Roberto, José Roberto Frota Gomes Capote Júnior, José Renan Miranda Cavalcante Filho, Ticianne Pinto Ferreira, José Nilson Gadelha dos Santos Filho, Stênio da Silva Oliveira. 2017. “Religious coping methods predict depression and quality of life among end-stage renal disease patients undergoing hemodialysis: a cross-sectional study”. *BMC Nephrology*, 18(1), 197.

Sattoe, Jane NT, Susan Jedeloo, AnneLoes van Staa. 2013. “Effective peer-to-peer support for young people with end-stage renal disease: a mixed methods evaluation of Camp COOL”. *BMC Nephrology, 14*(1), 279.

Subramanian, Lalita, Martha Quinn, Junhui Zhao, Laurie Lachance, Jarcy Zee, Francesca Tentori. 2017. “Coping with kidney disease–qualitative findings from the Empowering Patients on Choices for Renal Replacement Therapy (EPOCH-RRT) study”. *BMC Nephrology, 18*(1), 119.

Tannor, Elliot K, Elize Archer, Kenneth Kapembwa, Susan C Van Schalkwyk, Razeen

M Davids. 2017. “Quality of life in patients on chronic dialysis in South Africa: a comparative mixed methods study”. *BMC Nephrology, 18*(1), 4.

Thong, Melissa SY, Adrian A Kaptein, Raymond T Krediet, Elisabeth W Boeschoten, Friedo W Dekker. 2006. “Social support predicts survival in dialysis patients”. *Nephrology Dialysis Transplantation, 22*(3), 845-850.

Tsay, Shiow-Luan, Marilyn Healstead. 2002. “Self-care self-efficacy, depression, and quality of life among patients receiving hemodialysis in Taiwan”. *International journal of nursing studies, 39*(3), 245-251.

Untas, Aurélie, Jyothi Thumma, Nicole Rascle, Hugh Rayner, Donna Mapes, Antonio A Lopes, Shunichi Fukuhara, Tadao Akizawa, Hal Morgenstern, Bruce M Robinson. 2010. “The associations of social support and other psychosocial factors with mortality and quality of life in the dialysis outcomes and practice patterns study”. *Clinical Journal of the American Society of Nephrology, CJN*. 02340310.

Van Der Borg, Wieke E, Karen Schipper, Tineke A Abma. 2016. “Protocol of a mixed method, randomized controlled study to assess the efficacy of a psychosocial intervention to reduce fatigue in patients with End-Stage Renal Disease (ESRD)”. *BMC Nephrology,* 17(1), 73.

Weilitz, P., Sciver, T. 1996. “Nursing role in management obstructive pulmonary disease”. *Medical surgical nursing*, 701-730.

Chapter 80

The Concept of Management and the Management of Healthcare Services

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INTRODUCTION

Management is a concept that emerges with the coexistence of people and is of great importance in the realization of organizational goals. Management is generally defined as the process of achieving objectives through employees. It is observed that the importance of healthcare services and management has been increasing day by day due to the recent developments in health and the reforms. The healthcare sector's unique characteristics such as the development of technology in the healthcare sector, having a matrix organization structure, increasing the expectations of the society and employees, working with different expertise levels in service provision, creating demand for supply, increasing health expenditures and increasing cost of health investments are among the main reasons of that healthcare management has gained importance. However, nowadays, it is seen that some changes such as the increase of the elderly population and the coming to the agenda of different health needs due to the prolongation of the life span, becoming widespread of chronic diseases, the increase of accidents and the necessity of meeting different needs are accelerated the development of the healthcare administration as a separate field of specialization.

In this chapter, the definition and process of management concept will be emphasized, the characteristics of health services will be explained and the development, necessity and importance of management in health services will be emphasized.

The concept of management and its processes

Management is qualified as a multidimensional concept (Atilla 2016; Gökçe and Şahin 2010), and it is seen that different point of views of different disciplines aimed at defining it come into prominence (Gökçe and Şahin 2010). As a result, it is difficult to present a common accepted definition of management. While management is taken as land, capital and workforce according to economists, it is explained as a system of prestige according to sociologists; and management scientists define management as a system of authority (Gökçe, Şahin 2004).

The contemporary changes (Gökçe and Şahin 2004) and increasing complexity depending on the growth and improvement of societies cause management to gain more importance (Çimen 2010). The fact that people start living together is one of the important reasons that brings the need for management to the agenda (Karagöz 2006), since management requires that labor force work together in order to achieve the

organization's determined goals effectively and is defined as directing employee's efforts to a common purpose and supervising them (Çimen 2010).

Management is expressed as a series of hierarchical activities and behaviors completing each other, continuing and requiring collaboration, reconciliation and division of labor (Karagöz 2006). According to another point of view, management is a process of using the limited sources in an effective and productive way to achieve the determined goals (Şahin 2010). The planning and implementation of the works to be accomplished in order to achieve the specified goals is another definition of management (Eren 2000).

To be able to talk about the management concept and managerial practices as seen from the definitions, there must be human power, must be acted in cooperation and regulations should be made in order to adopt a common purpose and to direct human power to this aim (Gökçe, Şahin 2004). Besides, it is stated that the following principles have gained importance: *purposefulness* since every managerial activity has a purpose, inclusion due to the integrative point of view, *complexity* because of the variety of the aims and problems encountered, *productivity* for the purpose of using limited sources best, and *being planned* to achieve success (Eren 2000).

Management is a necessary and valid process having vital importance for the organizations in terms of achieving their goals effectively and productively, and including efforts such as planning, organizing, directing, coordination and control (Atilla 2016). Fayol defines management as planning, organizing, directing, coordinating and controlling on the basis of management processes. However, when looking at the literature, it is seen that the widely used classification of management processes is in the form of decision making, planning, organizing, directing, coordinating, controlling and communicating (Ağdelen and Ağdelen, 2017).

Decision making; it is accepted as one of the important and essential characteristics of management processes (Sözen and Özdevecioğlu 2002; Tozlu 2016). In the process of actualizing managerial actions, it is necessary to make a logical decision first, and then practice it. Achieving organizational success depends on the accuracy level of the decision. To achieve the organizational goals, reaching adequate information, developing appropriate alternatives within the frame of scientific principles, selecting the most appropriate alternative and carrying it into effect underlies the process of decision making. From this point of view, the process of decision making adopts the principle of effectiveness and productivity, needs a strong information flow, predicts about future, takes a specific period of time, creates needs for planned actions, and is accepted as a problem solving approach (Tozlu 2016).

Planning; it functions as a bridge between the current situation and the point to be reached, and is defined as a process determined what will be done where, by whom, how and when (Ağdelen and Ağdelen 2017; Göksu 2017; Kavuncubaşı 2000; Sözen and Özdevecioğlu 2002). Works and actions to be done are thought in the stage of planning, the future is predicted, the priorities are appointed, and by this means, sources are used effectively and productively, and continuity in the activities is provided (Göksu 2017). In this sense, planning is a process carried out deliberatively (Kavuncubaşı 2000). Saving time for employers, decreasing the risk of forgetting and preventing unnecessary activities are stated among the other benefits of planning (Eren 2000).

Organizing; it is defined as gathering the production factors together and determining the duties, authorities and responsibilities of employers in the process of actualizing the specified goals of an organization. In the organizing stage, the limits of duties, authorities and responsibilities are determined, the risk of chaos is removed, a good communication is provided between employers, and an effective and productive working environment is created (Göksu 2017). Organizing process is also defined as a technical process in which the structure of the organization is determined to achieve the specified goals (Kavuncubaşı 2000).

Directing; it is defined as the force and effort to direct the organization to the specified goals within the frame of the productivity principle by using the existing sources rationally and effectively. It is also stated as the authority or the power to be able to make employees work. In this process, managers should provide order and coordination, instill the employees with the spirit of entrepreneurship, and make everyone in the works of their abilities (Göksu 2017). Directing process is also defined as a process that managers provoke and prompt the sources in accordance with the goals (Atilla 2016). Directing includes all the activities related to the human factor such as motivation, leadership, managing conflicts and changing behaviors (Kavuncubaşı 2000). In directing, it is targeted that employees are made to work in the highest capacity and willingness (Sözen and Özdevecioğlu 2002).

Coordinating; it is defined as that all units and employees in the organization acting accordantly and collaborating in the process of achieving organizational goals. In coordinating, a compatible work environment should be created, and the management should adopt some encouraging approaches for employees (Göksu 2017). The key feature of coordinating is to prevent unnecessary use of sources by the duties fulfilled appropriately and on time by employees, and increase the cost/benefit rate of the activities (Eren 2000). Coordinating is an important process providing managerial activities to be actualized concordant with each other (Kavuncubaşı 2000).

Controlling; it is a process in which the level of realization of the activities planned in line with the objectives is evaluated, whether the activities are carried out effectively and efficiently, and if they are not actualized, its reasons are investigated (Göksu 2017). Controlling enables employees to improve themselves and correct their mistakes (Göksu 2017) and provides the failing activities to be arranged appropriately (Eren 2000). Only by this way, corrective precautions can be taken and suggestions concerning the solutions of the problems can be possible (Atilla 2016). Therefore the standards of success are specified and the obtained results are compared with these standards (Kavuncubaşı 2000).

Communication; it is one of the most important processes needed for management to be successful, to manage the organization well, employees' well-understanding of the goals of the organization, and during the process of both written and oral messages to be transmitted in a desired way. Practices such as face to face communication, meetings related to the management, corresponding, reports and publishing's are among the most preferred tools in communication. To be able to talk about an efficient communication, it must be bidirectional as both from top to bottom and from bottom to top (Eren 2000). Mainly three types of communication as being vertical, lateral and mixed are stated (Sözen and Özdevecioğlu 2002).

The concept of health care services

The definition and classification of health care services

According to the traditional approach, health meant being without illness (Akdur 2005; Erdem 2007), and this situation caused the concept of illness came into prominence (Erdem 2007). However, the variety of the definition of illness in different countries caused the variety of definition of health. The definition of health that is accepted by many countries today has been from the World Health Organization (WHO). WHO does not define health as being without illness or disability, but as a whole well-being physically, socially and mentally (Akdur 2005).

The concept of healthcare services, which aims at increasing the health levels of the societies and maintaining the state of being healthy (Gümüş et al., 2014), is defined as the protection of health, treatment and rehabilitation of diseases (Akdur 2005; Bilgili, Ecevit 2008; Erdem 2007; Gümüş et al., 2014) and the whole services given to improve health (Erdem 2007). This definition has been determinative in classification of healthcare services (Erdem 2017), and accordingly, healthcare services has been classified as preventive healthcare services, therapeutic healthcare services, rehabilitation services (Akdur 2005; Atilla 2016; Erdem 2007; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011) and health improving services (Atilla 2016; Erdem 2007; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011).

Preventive healthcare services

It includes the services given in order to provide individuals with prevention of diseases, traumatization, becoming disabled and premature death (Atilla 2016), and is called as public health or basic health services (Sözen and Özdevecioğlu 2002). Preventive healthcare services are divided into two as the preventive healthcare services for individuals and environment (Atilla 2016; Erdem 2007). The main goal of the preventive healthcare services for individuals is to make arrangements to prevent individuals being ill and to present proper healthcare services by healthcare staff and healthcare organizations. The preventive healthcare services for environment are the services given in order to provide a healthier environment to live for individuals and to improve environmental conditions (Sözen and Özdevecioğlu 2002). Therefore, it is aimed to remove any kind of biological, physical, chemical and social factors around the individuals affecting their health in a negative way (Kavuncubaşı and Yıldırım 2010). In this process, specially educated professionals such as engineers, chemists, technicians and vets are assigned actively (Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011), and the health sector functions in the training, counselling and controlling stages (Tengilimoğlu et al., 2011).

The preventive healthcare services include the early diagnosis and treatment of the diseases, immunization, prenatal care services, personal hygiene and care, protection by medication and efficient and balanced nutrition (Atilla 2016). The services such as preventing air pollution, control of wastes, housing health, providing adequate and clean water, food inspection and safety (Atilla 2016; Erdem 2007), pest control and radiological hazard control are studied under the title of preventing healthcare services for environment (Erdem 2007).

In terms of the introduction of healthcare services, preventive healthcare services are always cheaper and more efficient than the therapeutic health services.

Arrangements aimed at extending the preventive healthcare services will enable the scarce sources to be employed better, thus it will prevent the waste of sources, decrease the patient population in hospitals, and enable an easier access to healthcare services (Atilla 2016).

Therapeutic healthcare services

They are services given on the purpose of the individuals having poor health to regain their previous state of healthiness under the responsibilities of physicians, and other health staff also takes place of in the process (Erdem 2007; Tengilimoğlu et al., 2011). Therapeutic healthcare services include the services for individuals in the event of emerging diseases and disabilities (Tengilimoğlu et al., 2011). They are more expensive than the preventive healthcare services, and they are given as ambulatory treatments, impatient treatments and home care services including all kinds of medical examination, diagnosis and treatment services (Atilla 2016).

Therapeutic healthcare services are classified as primary, second-line and tertiary healthcare services (Tengilimoğlu et al., 2011).

Primary healthcare services are accepted as an essential part of the healthcare systems of the countries (Atilla 2016), and explained as the services given for the diagnosis and treatments of the patients as ambulatory or at home (Atilla 2016; Erdem 2007; Tengilimoğlu et al., 2011). Community health centers, dispensaries, private polyclinics and practices (Tengilimoğlu et al., 2011) and centers of maternal and infant health are among the foundations giving primary healthcare services (Erdem 2007).

Second-line healthcare services are the services which diagnose and treatment are performed by hospitalizing patients (Atilla 2016; Sözen and Özdevecioğlu 2002), and all kinds of medical tools and implications are used (Sözen and Özdevecioğlu 2002). Public hospitals, private hospitals (Erdem 2007; Sözen and Özdevecioğlu 2002) and in-patient centers are the foundations that are responsible for giving second-line healthcare services (Erdem 2007).

Tertiary healthcare services are the foundations that patients who need improved medical technology and special care (Sözen and Özdevecioğlu 2002), cannot be diagnosed in second-line healthcare foundations (Atilla 2016; Sözen and Özdevecioğlu 2002) or need a complex treatment process are given one-day or as inpatient (Tengilimoğlu et al., 2011). University hospitals, oncology hospitals, mental hospitals (Erdem 2007; Sözen, Özdevecioğlu 2002), transplant and ambustion centers and cardiothoracic hospitals are among the foundations giving tertiary healthcare services (Erdem 2007).

Rehabilitation services

Rehabilitation is the services given to individuals who have been injured and lost their ability to work (Sözen and Özdevecioğlu 2002) or cannot maintain their daily lives because of a number of disabilities after diseases (Tengilimoğlu et al., 2011) in order to regain their physical and mental abilities (Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011). The only thing in question in rehabilitation services is not the treatment of the subsequent diseases, but it is aimed at that the patients become beneficial for themselves, their families and society without being dependent on the others by removing the negative effects of some congenital diseases (Atilla 2016).

Rehabilitation services are classified into two as medical rehabilitation and social rehabilitation (Atilla 2016; Kavuncubaşı and Yıldırım 2010; Sözen and Özdevecioğlu 2002; Tengilimoğlu et al., 2011). In ***medical rehabilitation,*** it is aimed to treat some physical disabilities (Atilla 2016; Erdem 2007; Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011) and permanent disorders and improve the patients' qualities of lives (Erdem 2007). Services given to rehabilitate postural disorders (Erdem 2007; Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011) and minimize audial and visual disorders are examples for rehabilitation services (Erdem 2007; Kavuncubaşı and Yıldırım 2010). ***Social rehabilitation services*** are the services given to the individuals having some physical disabilities and some handicaps (Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011) or having lost their abilities to work (Sözen, Özdevecioğlu 2002) to live without being dependent on others, to find a new job, to learn the job and to adapt it (Atilla 2016; Erdem 2007; Kavuncubaşı and Yıldırım 2010; Tengilimoğlu et al., 2011), and aimed at the individuals to regain their previous productivity, make their daily lives easier and fit into society (Sözen and Özdevecioğlu 2002). Rehabilitation services are given by inpatient rehabilitation centers, nursing care centers and home care centers (Kavuncubaşı and Yıldırım 2010).

Health improvement services

Improving health is one of the main aims of health systems (Donev et al., 2013). Health improvement services are the services given to improve the general health level of the society (Atilla 2016), increase individuals' quality of lives and lifetimes (Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011) and maximize the health states of healthy individuals (Tengilimoğlu et al., 2011). The concept of health improvement was first used by the famous historian Henry E. Sigerist (Tengilimoğlu et al., 2011). The opinion of that today many diseases emerge depending on the life styles and habits of individuals has increased the importance of the healthcare improvement services (Erdem 2007; Tengilimoğlu et al., 2011). It is stated that it is possible for individuals to be healthier by doing sports, preferring healthier food and decreasing smoking and taking alcohol (Tengilimoğlu et al., 2011).

Health improvement aims to change both the environment and political and social structure nationally and internationally in the process of increasing the health state of individuals and societies. This is not the responsibility of only healthcare institutions, but the joint effort of all public and private institutions in both national and international level is needed (Kavuncubaşı, Yıldırım 2010).

The characteristics of healthcare services

There are some special characteristics of healthcare services given within the frame of main objectives (Atilla 2016; Kavuncubaşı 2000; Tengilimoğlu et al., 2011) such as increasing the health level of the society, preventing individuals to become sick, providing patients to regain their health, and providing the post-treatment adjustment period for patients or the injured (Sözen, Özdevecioğlu 2002). Accordingly;

- Healthcare services are intangible and invisible like an output since they are stated by actions, performances and efforts (Atilla 2016; Erdem 2007).
- Trial and error method is not possible to be used since the mistakes and delays in healthcare services affect human life directly (Atilla 2016; Erdem 2007; Tengilimoğlu et al., 2011), and the activities must be done "accurately at first time"

(Atilla 2016; Erdem 2007). Besides, it mustn't be ignored that there is no guarantee in giving healthcare services and even a simple injection practice can risk the patient's life (Tengilimoğlu et al., 2011). Therefore the service needs to be given perfectly (Sözen, Özdevecioğlu 2002).

- A 24-hour service is provided in healthcare institutions and most of the activities have the feature of emergency and cannot be delayed (Atilla 2016; Erdem 2004). Especially acute diseases, the diseases causing intensive pain or threatening the life of the patient are not possible to delay. Moreover, when the importance of early diagnosis in the process of diagnosis and treatment of some diseases is considered, it must be remembered that delays can cause permanent diseases and disabilities in individuals, and accordingly the cost of the treatment increases (Tengilimoğlu et al., 2011).
- It is uncertain when, where and how the demand for healthcare services arises and how much they cost (Atilla 2016). This situation causes healthcare services have a random characteristic, and makes difficult definite estimates and economic feasibility studies related to where, when and how much healthcare services are needed to be done (Tengilimoğlu et al., 2011).
- There is asymmetry of information in healthcare services, and the one receiving the service does not have the chance to evaluate the quality of the service technically (Atilla 2016). Inadequate knowledge of healthcare services removes the possibility for individuals receiving the service to make decisions about which physician or institution they should consult and what should be done for their treatments (Tengilimoğlu et al., 2011). In addition, the fact that the physician does not adequately explain the patient's illness causes the information asymmetry to emerge (Bilgili, Ecevit 2008).
- Depending on the nature of supply creating demand in health care, it is not possible for emergency patients, patients who are not in a mental balance and for children to make a decision about receiving healthcare services (Atilla 2016). This situation removes the possibilities for healthcare service receivers to act rationally and determine the best choice for themselves (Erdem 2007; Tengilimoğlu et al., 2011).
- It is difficult to evaluate and define the results in healthcare services, and also there is no opportunity to carry out an evaluation related to preventive and therapeutical services in a short time (Atilla 2016).
- The demand must be satisfied at the moment it emerges, so it is impossible to stock healthcare services in order to give them another time (Atilla 2016; Bilgili, Ecevit 2008; Erdem 2007; Sözen, Özdevecioğlu 2002), and to substitute the demanded service with another service (Atilla 2016; Bilgili, Ecevit 2008). In other sectors, increasing in the price of the products cause consumers to look for another alternative and there is a possibility of substitution. However, in healthcare sector, it is impossible to substitute healthcare service with another service (Tengilimoğlu et al., 2011).
- The character of healthcare services being both labor-intensive and technology-intensive unlike other services causes increase in the cost of the service (Atilla 2016; Erdem 2007; Tengilimoğlu et al., 2011).
- In the production of healthcare services, occupational groups having different levels of specialization work together (Atilla 2016; Erdem 2007). This situation increases the need of coordination between the activities of different occupational groups (Erdem 2007). Moreover, the number of healthcare institutions and healthcare

staff having different specialization levels does not increase as balanced with the population increase, and it needs a long time to train labor (Bilgili, Ecevit 2008).

- It is not possible to determine the satisfaction of the patients and the quality of service in advance (Atilla 2016; Erdem 2007). The service receivers cannot give up purchasing the service they are not content with and decide to get another service as they do in other sectors. They are in the position of relying on the knowledge of those giving healthcare service and using that knowledge. Otherwise, nonrecoverable mistakes can arise (Tengilimoğlu et al., 2011).

In addition to these explanations, characteristics such as availability, quality, continuity and productivity should be taken into consideration to provide the desired improvements in healthcare sector and to produce an efficient healthcare service (Kavuncubaşı 2000).

The development and importance of management in healthcare services

Some characteristics healthcare services have by nature, human life's being essential and the need for an efficient healthcare service to increase the quality of life have accelerate the process of the development of the management of healthcare services (Atilla 2016). The direct effect of the healthcare services on human life, gradually increasing care expenses and the expectations such as the desire to adapt the technological improvements to the healthcare system and increasing the service quality have caused the healthcare management to be accepted as a specific field and to gain importance (Çimen 2010). In addition, factors such as the importance of planning human resources in the production of healthcare services, the high level of specialization, functional dependence between different occupational groups, the complexity of the diagnosis and treatment activities, the characteristics of emergency and not being able to be delayed, the need for financial management on the regulations related to care expenses (Çimen 2010) and the dynamic and complex structure of the healthcare sector have affected the healthcare services to become a separate discipline (Thompson et al., 2017).

In the management of preventive healthcare services and the primary healthcare services, community oriented services are accepted, and managerial regulations bringing the intersectoral collaborations into prominence are made. In the second-line and tertiary healthcare institutions, the managerial regulations related to ambulatory, roentgen, laboratory and operating room services, and also to the introduction of the accommodation services are needed to be made. This variety in healthcare sector has caused the management of healthcare sector to gain a difficult and complex characteristic and the process related to the management has become more important (Atilla 2016; Çimen 2010; Hayran 2007). Another issue that should not be forgotten is that the importance of health care management has a great impact on the success of the national health care system (Çimen 2010).

It is stated that healthcare services have a vital importance and responsibility in terms of providing the society have a healthy life and making the state health sustainable (Donev et al., 2013). It is pointed out that the management of healthcare services is essential in order to carry out the processes of planning, organizing, directing, coordinating and control that are necessary to provide individuals and societies to have better life conditions, to improve human health, to use the sources of

healthcare efficiently and productively and to meet the expectations of the society (Ceylan 2011). Another point that should be kept in mind is the necessity of the managers with knowledge, skills and experience who have received special training in the field in achieving success in the management of health services, and it is seen that in its statements WHO especially draws attention to this issue (WHO 2007).

Conclusions

Management is crucial in terms of ensuring that organizations reach their pre-determined goals effectively and efficiently. Efforts such as decision-making, planning, organizing, directing, coordinating, supervising and communicating are among the management processes. Management is an indispensable function at the point of planning preventive and curative services, providing rehabilitation services and conducting health promotion activities in order to raise the health levels of communities and for the maintenance of health status.

Reasons such as the special characteristics of healthcare services, the importance and indispensability of human life, the direct effect of healthcare services on human health, the need for an efficient healthcare service to improve the quality of life and health status of the community and harmonization of the healthcare system with the technological improvements have caused the healthcare management to become a separate discipline. The increasing pressure for healthcare services to be accessible, available and sustainable, to meet the expectations of the society and to increase the efficiency has caused healthcare management to gain more importance.

REFERENCES

Ağdelen, B., Ağdelen, Z. (2017). İlköğretim Okullarında Yönetim Süreçlerinin İşleyişine İlişkin Olarak Öğretmen Algılarının Analizi. http://talimterbiye.mebnet.net/Dergi/2.pdf

Akdur, R. (2005). Türkiye'de Sağlık Hizmetleri ve Avrupa Topluluğu Ülkeleri İle Kıyaslanması. http://www.recepakdur.com/upload/ab_turkiye_kiyaslamasi.pdf

Atilla, E.A. (2016). Sağlık Hizmetleri Yönetimi, In: A. Ataklı, A.Kaplan (ed.), Tıbbi Dokümantasyon ve Sekreterlik, Güneş Tıp Kitabevleri Ltd Şti., Ayrıntı Basım Yayın ve Matbaacılık Hiz. San. Tic. Ltd. Şti., Ankara: 207-232.

Bilgili, E., Ecevit, E. (2008). Sağlık Hizmetleri Piyasasında Asimetrik Bilgiye Bağlı Problemler ve Çözüm Önerileri. Hacettepe Sağlık İdaresi Dergisi, 11(**2**), 201-228.

Ceylan, A. (2011). Sağlık Yönetimi. http://www.dicle.edu.tr/Contents/88edde95-a480-42a3-a14b-10c5fc58d0fb.pdf

Çimen, M. (2010). Sağlık Yönetimi ve Sağlık Yönetimi Eğitimi. Acıbadem Üniversitesi Sağlık Bilimleri Dergisi, 1(**3**), 136-139.

Donev, D., Kovacic, L., Laaser, U. (2013). The Role and Organization of Health Systems, In: G. Burazeri, L.J. Kragelj, K. Petrela (ed), Health: Stytems – Lifestyle – Policies, Jacobs Publishing Company, Germany: 4-14.

Erdem, Ş. (2007). Sağlık Hizmetleri Pazarlaması: Hastaların Sunulan Hizmetlerin Kalitesini Algılamaları Üzerine Bir Uygulama. Trakya Üniversitesi Sosyal Bilimler Enstitüsü İşletme Anabilim Dalı Yayımlanmamış Yüksek Lisans Tezi, Edirne.

Eren, N. (2000). Sağlık Yönetimine Giriş, SOMGÜR Eğitim Hizmetleri Yayıncılık Ticaret Limited Şirketi, Ankara.
Gökçe, O., Şahin, A. (2004). Yönetimde Rol Kavramı ve Yönetsel Roller. Selçuk Üniversitesi İktisadi ve İdari Bilimler Fakültesi Sosyal ve Ekonomik Araştırmalar Dergisi, 6, 133-156.
Göksu, T. (2017). Yönetimin Fonksiyonları. http://www.turgutgoksu.com/FileUpload/ks7441/File/yonetiminfonksiyonlari12.pdf
Gümüş, S., Korkmaz, M., Kılıç, B., Yücel, A.S., Aytaç, A., Toker, F. (2014). Sağlık Pazarlaması ve Uygulamaları. 8. Sağlık ve Hastane İdaresi Kongresi Lefke Avrupa Üniversitesi Sağlık Bilimleri Fakültesi, 10-12 Eylül 2014, ss.774-786, Kıbrıs.
Hayran, O. (2017). Sağlık Hizmetleri Yönetimi Ders Notları. http://www.merih.net/m1/wosmhay15.htm
Karagöz, B.K. (2006). Okul Yöneticilerinin Yönetim Süreçleri Açısından Karşılaştıkları Problemler. Trakya Üniversitesi Sosyal Bilimler Enstitüsü Eğitim Bilimleri Anabilim Dalı Eğitim Yönetimi, Teftişi, Planlaması ve Ekonomisi Bilim Dalı Yayımlanmamış Yüksek Lisans Tezi, Edirne.
Kavuncubaşı, Ş. (2000). Hastane ve Sağlık Kurumları Yönetimi, Siyasal Kitabevi, Ankara.
Kavuncubaşı, Ş. ve Yıldırım, S. (2010). Hastane ve Sağlık Kurumları Yönetimi, Siyasal Kitabevi, Ankara.
Sözen, C., Özdevecioğlu, M. (2002). Sağlık Hizmetlerinde ve İşletmelerinde Yönetim, Nobel Yayın Dağıtım, Ltd.Şti. Ankara.
Şahin, A. (2010). Örgüt Kültürü-Yönetim İlişkisi ve Yönetsel Etkinlik. Maliye Dergisi 159 Temmuz Aralık, 21-35.
Tengilimoğlu, D., Işık, O., Akbolat, A. (2011). Sağlık İşletmeleri Yönetimi, Nobel Yayın Dağıtım Tic. Ltd. Şti., Ankara.
Thompson, J.M., Buchbinder, S.B., Shanks, N.H. (2017). An Overview of Health Care Management, Johns and Bartlett Learning, LLC. http://onlineislemler.ydy.duzce.edu.tr/Files/healthcare%20management/90868_CH01.pdf
Tozlu, A. (2016). Karar Verme Yaklaşımları Üzerinde Herbert Simon Hegemonyası. Sayıştay Dergisi 102 Temmuz-Eylül, 27-45.
Managing the Health Millennium Development Goals – The Challenge of Management Strengthening: Lessons from Three Countries. (2007). World Health Organization, Geneva.

Chapter 81

Economic Evaluation Methods in Health Sector

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1. INTRODUCTION

Certain data and systematic studies on health expenses have started after 1960 in the modern period (Erixon and van der Marel, 2011). It is calculated in research conducted under Medical Care Costs Committee in the USA in 1933 that the share of health expenditures in 1929 in the USA was 3.5% in GDP. According to the data obtained, health expenditures constitute stable but a small part (1-4%) of all the market activities until 1950 (Getzen, 2014). However, there has been a significant and steady increase since the 1960s (Erixon & van der Marel, 2011). While the share reserved for health was 3.9% OECD-wide (Oxley & Macfarlan, 1995), this share increased to 8% in 2000, then again increased to 8.8% in 2008. Finally, it reached 9.6% in 2009 (Hurst, 2000). At the present time, more than 10% of the world economy has been reserved for the health sector. The increment in incomes of people and countries that is the source of the health expenditures has not reached a level that can meet these health costs within all the time when the records have been kept (Erixon & van der Marel, 2011). For instance, while rational national income was doubling in OECD countries between 1960 and 1997 years, the increase in health expenditures realized almost six times more (Hurst, 2000).

It is possible to mention following reasons for the increment in health expenses; increasing the social income and expectancies from the health services, population aging, change in the rendering of the service. It is true to say that change in the rendering of the service is the biggest reason among these factors. The health care services that could be rendered via personal implementations of doctors and small capitals in the 1960s are now rendered via devices with advanced technology and specialized personnel in big hospitals nowadays. Even this change has progressed to a point that can provide service to be rendered via remote monitoring without having to face doctor with the patient. This change in the rendering of the service is the result of the advanced technology. The health sector is one of the sectors where the technology develops rapidly.

The thing that is aimed via using more capital and technology in notably the industry sector is to reduce the unit costs by both decreasing the costlier labor force and shortening the production time. However, this strategy is not valid for all the sectors. As is revealed in ‘Baumol’s cost disease’ theory of economist William Baumol, new technology use does not reduce the unit costs in sectors where the craft production dominates. On the contrary, it is not enough that being followed the general incline

GDP growth by incomes in the sectors where the features of 'Baumol's cost disease' are observed. The sources reserved need to increase above the general GDP incline to bear the increasing cost of the diseases; health sector is one of these sectors (Erixon & van der Marel, 2011).

As the result of the cost and production structure of the health sector, countries and repayment institutions face serious problems in health expenses financing. It needs to seek solutions for the more efficient use of sources reserved for health instead of buying each of technologies advanced. The surveys have been started to analyze whether these sources reserved for health are used effectively. It is also researched that whether the amount spent could bring health achievements at a higher level. Economic evaluation methods answer these questions. Some of the countries lay economic evaluation down as a condition or get these data as the reference for medicine or applications that are taken into the scope of repayment (Kobelt, 2002).

Economic evaluation is an analysis process where the costs and outputs of alternative initiatives are evaluated together (Drummond et al. 2005). In other words, economic evaluation is a tool towards evaluating gains stemming from different using of scarce resources and the costs required to reach these gains (Kobelt, 2002). Economic evaluation is based on accepting that information relating to the efficiency of initiatives/technology is required but not enough for making decisions (Gray et al. 2012); this evaluation aims productivity or obtaining maximum benefit from a specific resource (Eddemaa & Coast 2008). Every economic evaluation needs to have at least two alternative initiatives or programs to be evaluated relating to a decision; costs and health output of these alternatives are evaluated together (Gray et al. 2012). The methods that can provide these two fundamental assumptions (including alternative and evaluating the costs and alternatives together) are called as full economic evaluation methods. Methods that can provide only one of the assumptions are called as semi-economic evaluation methods (Drummond et al. 2005).

Entire economic evaluation methods used in the health sector;

- ✓ Cost minimization
- ✓ Cost-utility analysis
- ✓ Cost-benefit analysis
- ✓ Cost-effectiveness analysis (Drummond et al. 2005).

Independently of the sort, implementation purpose of all the economic evaluation methods to the health sectors is to provide information about alternatives that will be repaid or bought for the whole society or specific patient groups. At the same time, these analyses bring data for decisions on quotation, access and 'content'. In other words, independently of the sort of health system that is evaluated in or the different perspectives relating to the use of these health systems in health decisions, providing information for the decisions is the chief goal of all the economic evaluation methods. All the economic evaluation methods need to consider four main subjects to support the decisions;

- ✓ Determining the available alternatives,
- ✓ Measurement methods of health outputs,

- ✓ Specifying the costs of each of the alternative and health achievements,
- ✓ Determining the gain in return for the extra cost born.

There are two other important issues required for fulfilling these functions besides four main subjects. These two issues are the future health benefits, evaluating costs (discount) and the method of uncertainties (sensitivity analysis) (Drummond et al. 2015). Information on the common factors considered general characteristics of the methods, discount and sensitivity analysis will be expressed in following chapters.

Determining the available alternatives: As is mentioned above, economic evaluation methods need to evaluate at least two methods. Much as two alternative evaluation provides the fundamental assumption, there is need to evaluate all the realistic alternatives relating to the subject discussed. However, it is not possible to evaluate all the alternatives because of the resource constraints. Moreover, the application (status quo) that is valid with the most realistic application should absolutely be implicated in the analysis. The initiatives evaluated have not to be the active initiatives always. Even bringing 'do nothing' alternative to the initiatives compared is generally beneficial. 'Do nothing' ensures a reference point for analyses users. People continue to get examined, stay in the hospital if the designated initiative is not implemented, namely, they will cost again. However, the initiatives will not bring cost by itself. This is because the absence of initiative will be cheaper and less effective in comparison with other alternatives evaluated. Moreover, the new initiatives evaluated are more efficient and costlier than the standard application (status quo) (Drummond et al. 2005; Muenning, 2002).

Determining the measurement methods of health outputs: Costs are expressed as monetary units in all the methods and also determined by the similar ways. The key fact that reveals the difference between them is the evaluation and expression ways of health outputs. Health outputs are measured by natural units in cost-effectiveness analysis (CEA); these same outputs are measured by a unit means the life quality change in the cost-utility analysis (CUA). Cost-benefit analysis (CBA) measures the health outputs via monetary units (Eddemaa and Coast, 2008; Drummond et al. 2005). Since the results are found by other studies in cost minimization, there is not a fixed criterion. In short, each of the entire economic evaluation methods evaluates a health initiative from different aspects.

Determining costs of each of the alternative and health acquisitions: The first stage of specifying the cost and health outputs in economic evaluation is to determine the perspective used in the analysis. It is possible to define the perspective of analysis as the side that is affected by the initiative reviewed in the analysis. All the stakeholders that are affected by the initiative are the candidates for creating a perspective. However, the perspectives frequently used in economic analyses are; social, public health, service provider, payment institution (insurance) and patient perspectives. The perspective of the research varies by the result desired as well as determines the costs and outputs taken into the analysis. In other saying, parties to the initiative can have interest in different cost and health outputs (Tai et al., 2016). For example, while the patient share is a cost title in terms of the patient perspective in an analysis that evaluates two drugs

used in the treatment of a disease, this patient share is not a cost title in terms of the repayment institution. Again, while a difference that may occur in terms of times pass during people back to work is a significant health output for patients in a medical treatment; this difference does not concern the repayment institution. However, all the costs and health outputs are counted in the analysis that is the broadest one (analysis with social perspective) of all the possible perspectives. Therefore, payments that belong to the health system, hospital, payer institutions and individuals and also the health outputs are considered in this perspective (Kobelt 2002; Muenning, 2002; Drummond et al. 2005). This is because analysis results may vary perspective to perspective (Tai et al., 2016).

Costs and health outputs need to be measured after being determined the perspective of the analysis. The extra cost born in return for the evaluation and measurement of the health outputs, determining the gain is proper to be expressed in the features of the analysis.

2. COSTS IN ECONOMIC EVALUATION METHODS

The cost of an initiative is the sources that are used to realize the initiative (Muenning 2002). Costs may be divided into financial and economic costs. Financial costs are the real monetary value of the sources required for a program or an initiative. The economic cost of an initiative is the opportunity cost of the sources used to apply that initiative. Economic costs also include the value of sources that can be used without money such as time spent by volunteers and donated books besides the monetary value of the sources. Therefore, economic costs are more inclusive in comparison with the financial costs (Haddix et al. 2003; Drummond et al. 2005). The costs should be accepted as local and expressed by the money of the country that is the subject of the analysis when the data relating to the health outputs can be obtained from the international resources in economic evaluation methods (Drummond et al. 2005). It ought to be remembered that the costs may also vary within the country; the time needs to be mentioned when the data is collected (Muenning, 2002). The data should be made free from the inflation if the analysis covers different years (Drummond et al. 2005).
Three successive stages are followed in being costed the sources used; determining relevant cost titles (sort of source used), measuring the cost titles and expressing the monetary resources by a monetary unit (Drummond et al. 2005; Muenning 2002; Brouwer et al. 2001; Gold et al. 1996).

It is possible to accept the determining of relevant cost titles as a production function study of the initiative analyzed. Firstly, all the resources from within the health sector and outside the sector are specified to realize an initiative. It needs to have knowledge about epidemiology and duration of the disease to manage this stage well. Answer of the patient to the initiative, possible complications and sources required for treatment of the adverse effects should be determined besides the cost of the initiative (Muenning, 2002).

Measuring the resource amount is the evaluation process that founds the amount of resource that is used for the initiative. The amount is determined in accordance with the

natural size of the cost factor at this stage. It is measured by the material units such as workforce hours, amount of bottles of the drug, number of sickbeds, number of stages of treatment (Muenning, 2002). It is possible to use two different approaches at this point. Firstly, marginal costing method can be used starting from the change in resource amount used in alternatives of the initiative in analyses. This method precludes the factors that are commonly utilized. As an alternative, change in resource use can be computed by subtracting the cost of initiative evaluated from the cost of the initiative compared after the collecting resources used for each of the scenarios. The thing that is considered in both situations is the incremental cost of the initiative, not the total cost (Gold et al. 1996).

The stage where the resources are expressed by the monetary units can be defined as multiplying the sources and two previous stages with the unit's costs. The biggest problem in expressing the resources by the monetary units is that a considerable part of these goods cannot be gone up in price by the free market. Prices in the health sector do not reflect the real value of the goods or services; even there are no prices about some of the services. Therefore, there is need for a detailed cost analysis to find the social opportunity cost in the analysis (Gold et al. 1996). Another significant issue that needs to be considered in quoting the resources is the value-added taxes that are hidden into the price. If these taxes can be taken back or reflected another payer in the perspective of the analysis, the taxes are deducted from the price. On the contrary, if the perspective issue of the analysis is the payer of the tax, value-added tax constitutes a component of the good.

2.1. Types of Costs Used in Economic Analyses

Types of costs that are used in economic analyses can be collected under 5 groups: medical costs, non-medical costs, intangible costs, productivity losses and other sector costs.

Direct Medical Costs: All the resources that are used to treat the possible adverse effects based on the initiative constitute the direct medical costs (Drummond et al. 2005). This is the cost group that interests all the perspectives and also the cost group that is the easiest to associate with the initiative. For example, property subjects to depletion like medical equipment and drugs, labor, building and equipment, capital, electricity and water costs (Tan-Torres Edejer et al. 2003).

Non-medical Costs: These are the costs that are directly associated with initiative and health outputs. These costs are not a component of the real initiative. Much as they are not the fundamental elements of the initiative, they are essentials to complete the initiative. It is difficult to group them such as the medical costs. Following examples can be given for such costs; transportation expenses to reach the health care centers, special foods for diet, non-medical equipment about the initiative or the health output (e.g air purifier of patients with asthma) (Haddix et al. 2003). Almost all these costs belong to the patient. Accordingly, while these costs are frequently seen in analyses with patient and social perspective, repayment institution and service provider do not consider.

Intangible Costs: These are the costs arising from pain, emotional distress occur

based on a disease or an initiative. Being damaged the prestige in society is another reason for such costs. This is a sort of cost that is quite difficult to measure directly (Haddix et al. 2003). This is a cost group that is generally excluded from the calculation because of the measurement difficulty and disinterestedness of repayment institutions and service providers.

Productivity Losses: Time is a significant input in the production of healthcare services. Treatment process, recovery period after disease or operation creates serious losses in labor or free time of people besides the time that is spent by service providers. With reference to circumstance above, productivity losses are defined as the resources that are lost because of receiving a treatment, seeking for service to reach a health status, caring for a relative, disability, disease or premature death. Productivity losses typically mean the losses in time for the reason of honorary affairs such as housework and free time besides the decrement in revenue or salary (Garber & Phelps, 1997). These are called as indirect costs in literature. Since these costs change the productivity of labor or free time and refer to a different type of cost differs from other indirect costs, it is suggested in some of the references to particularly use 'productivity losses' expression (Haddix et al. 2003).

Other Sector Costs: Healthcare services and programs can change the resource use of other sectors because of their high externalities. This article means additional resource use arising from being affected other sectors from decisions that are made to promote the health. For example, the journey times extend because of the speed limits that minimize death and physical injuries. Ticket prices increase at the end of this extension. Many of the analyses that make the comparison of health care services in practice preclude these costs (Haddix et al. 2003).

3. ECONOMIC EVALUATION METHODS

3.1. Cost-Minimization Analysis

Cost-minimization analysis is based on comparing two or more initiatives that give equal results after analyzing (Homik & Suarez-Almazor, 2004). The proof relating to equal outputs can be observed from clinical experiments or secondary data such as meta-analysis (Goodacre & McCabe, 2002). Since it is accepted that the initiatives evaluated give equal results, just the costs are compared. The purpose is to minimize the cost (Homik &Suarez-Almazor, 2004). In the light of these assumptions, the budget-friendly initiative will prioritize and selected as worth to be applied. The method achieves saving from time and labor due to the ease of application in cases of the assumptions are compared (Muenning, 2002).

Both the costs and conclusions of the initiative are considered in this analysis (Gray et al., 2012). However, in some of the authors accept this technique as 'semi-economic evaluation method' by the reason of coming to the initiative result from another study (Drummond et al. 2005). This analysis is only used in situations where the health output is definite. It is not possible to use this technique for future evaluations because of the absence of the data. Furthermore, some of the authorities argue that the use of this method is not suitable because of uncertainty even if the data is available

(Briggs & O'Brien, 2001).

3.2. Cost-Effectiveness Analysis

Cost-effectiveness analysis (CEA); This is a type of analysis that is originated from different disciplines such as activity surveys, decision analyses, different disciplines of economics (Haddix et al. 2003). It is used in situations that required making a choice between alternatives in a definite area within a certain budget. The questions that research more effective situations for a budget that cannot meet whole of the needs are ideal to apply CEA. In addition to this, finding the more successful treatment method per unit paid is another question

Effectiveness can be defined as the level of initiative or test to detect the time or severity of a disease (Muenning, 2002). An initiative is evaluated as effective if it promotes the health status. Effectiveness needs to have differed from two closely related concepts; efficacy and appropriateness. Efficacy means the level of initiative to reach the goal in ideal conditions (laboratory/experiment). Appropriateness means making a decision about whether an initiative will be applied after an evaluation that includes negative effects of the result of an initiative in health more than the positive effects of it (Aday et al. 2004).

While the costs are expressed by monetary units in CEA just the same way as in all other economic analysis methods, the outputs are expressed by natural units (Drummond & Nixon 2006; Drummond et al. 2005; Robinson, 1993a). The unit in which the output will be expressed varies by the domain. In addition to this, the effectiveness criterion specified need to be in conformity with the initiative; there ideally should be a single criterion (Robinson, 1993a). Effectiveness standards used in CEA are; generality, the most direct effect observed at the end of the initiative, decrease in the problem, the disappearance of the problem. For instance, a decrease in blood pressure (mmHg), number of immunized people in alternatives of the vaccination campaign, number of pregnancies prevented by the birth control methods, number of true diagnoses, etc.

Interim and result outputs can be used as effectiveness standards in CEA. Result outputs are the number of events prevented, the number of deaths prevented and the years gained for life. Result outputs can be the direct criterion of an initiative as well as they may be derived from the interim outputs. Interim outputs are the only output that can be measured within the hour worked. For instance; the number of incidences determined, the number of incidences treated, etc (Haddix et al. 2003). The interim output needs to represent a value by itself, be meaningful to be used in CEA. The relationship between interim and last outputs is not always clear. That's why several surveys published made analysis by using interim outputs (Drummond et al. 2005). The life years gained or QALY (Quality-Adjusted Life Year) should be taken as the result output in initiatives affect the time of life. However, it is proper to use cost-utility analysis whose fundamental assumptions are much more fit to the criterion is the result output measures different dimensions like life quality and lifetime.

Even though the economic analysis has been used for a long time, the commonly used technique is CEA. Tai et al. conducted a systematic analysis research. 21 (70%) of

30 economic evaluation surveys were CEA. Increase in evidence-based medical implementations provided proper and beneficial effectiveness standards and cause analysis has become prominent (McGuire, 2001). Moreover, getting many of the effectiveness criteria from the research results without having to convert provided great convenience. Another advantage of without having to convert is the absence of error probability in assumptions and methods required for converting.

Results in cost-effectiveness analysis are expressed by cost-effectiveness ratio (CER). Cost-effectiveness is a measurement means the source amount that is used per unit effectiveness in CEA. This standard enables us to decide whether the source is worth to spend on a unit output. This ratio submits sources saved and health achievement as a single criterion by applying the initiative (Muenning, 2002).

Cost-effectiveness ratio can be computed as average and marginal. As is seen in equation 1, Average Cost-Effectiveness Ratio (ACER) is computed by dividing the net cost of an initiative to the net effectiveness (Drummond et al. 2005). The result of the equation is the cost of obtaining a unit of effectiveness. The lowest-cost one per unit effectiveness will be prioritized and accepted as productive in comparing the initiatives. However, all the initiatives may be denied if none of them is in payment interval of the decision maker. For instance, let's the repayment institution accepts to pay $80 for each of the persons immunized against poliomyelitis. If the costs of three vaccines evaluated are found as $90, $100 and $110, none of the vaccines can be paid by the institution.

$$ACER = \frac{Net\ cost\ of\ the\ initiative}{Net\ effectiveness\ of\ the\ initiative} = \frac{C}{E} \qquad \textit{Equation 1}$$

Computing incremental cost-effectiveness ratio (ICER) varies by being initiative mutually exclusive or independent. Being independent of initiatives is defined as not be affected by cost and results of an initiative from other cost and results of the initiative. In this circumstance, getting more than one of the initiatives do not change the result. Cost and results of an initiative are affected by the cost and results of another initiative in case of being initiatives mutually exclusive. In mutually exclusive initiative, the person who gets just one of the initiatives does not get another initiative (Çalışkan 2009; Drummond et al. 2005). It is expected in real life that treatments (taking two debrisoquine together) that are applied to a health problem affect each other. Therefore, the calculation for only the mutually exclusive initiatives will be explained.

$$\text{İ}MEO = \frac{C_A - C_B}{E_A - E_B} = \frac{\Delta C}{\Delta E} \qquad \textit{Equation 2}$$

C_A = Cost of the initiative A

C_B = Cost of the initiative B

E_A = Effectiveness of initiative B

E_B = Effectiveness of initiative B

ΔC= Incremental cost

ΔE= Incremental effectiveness

Initiatives (including do nothing or status quo) are put in order for the lowest cost or effectiveness in ICER calculation. Incremental cost (ΔC) and incremental effectiveness (ΔE) of cost and effectiveness of initiatives ordered are computed by subtracting them from cost and effectiveness of the alternative. Incremental cost-effectiveness ratio (ICER) is computed by dividing incremental costs to incremental effectiveness. This ratio means the payment amount required for a unit of incremental effectiveness. The decision about whether this amount is worth to pay will be made by the policymakers or principles determined before (Drummond et al. 2005).

The status of cost and effectiveness of the alternatives by each other realizes in four different manners. Let's accept that there are two initiatives as the status quo and the new one;

I. The new initiative is cheaper and less effective in comparison with the status quo,
II. The new initiative is costlier and less effective in comparison with the status quo,
III. The new initiative is costlier and more effective in comparison with the status quo,
IV. The new initiative is both costlier and more effective in comparison with the status quo.

To make a decision is easy if ICER value is II and III. While the new initiative is denied in the 2nd case, it will be accepted in the 3rd case at the same time. However, it is difficult to see such situations in real life. Status quo initiative is cheaper and less effective (I). After all, the new initiative is both costlier and effective (case IV). Resources of the country, the matter of priority and payment thresholds are the reference points of 1st and 4th cases (Drummond and Nixon 2006; Drummond et al. 2005).

3.3. Cost-Utility Analysis

Cost-utility analysis (CUA) is a method that was developed to remove the disadvantage of CEA (Scaletti, 2014). This analysis is a type of CEA. The key difference between them is the expressing manners of the outputs. While CEA uses natural units to measure, CUA is expressed by a general utility-based criterion. This characteristics of CUA enables to compare different initiatives and treatment programs in health care services. Opportunity cost (effect for the budget) of comparing cardiovascular diseases and cancer and also applying them can be evaluated via this analysis (Drummond et al. 2015).

CUA is used in fields in which both qualitative (utility evaluation) and quantitative functions of the initiative need to be actualized. For example, decrement in life quality can be evaluated as well as the lime can be extended in intensive care o cancer treatments. Moreover, it is preferred in situations in which the positive effects of the treatment are seen after a long time and the treatment includes distress a certain extent (e.g. the life quality of cancer patients decreases in a short period of their life but they

get better in the long run) (Scaletti, 2014).

MFA; It can be seen that two analyses do not separate from each other because of the similarities between CUA and CEA. The necessities about evaluating and entitling of these two analyses are summarized below;

- ✓ It enables to compare different health initiatives due to giving a general result,
- ✓ It measures the change in life quality with the change in lifetime,
- ✓ It does not only consider the clinical data but also the preferences of the person gets the services (Drummond et al. 2005).

Utility that is the main criterion of CUA is a concept that is used by different disciplines in different meanings. In the widest sense, it is the preference (Drummond et al. 2005). 'Utility' concept is used as individuals' or society's preferences for specific health outputs (Durummond et al. 2015). According to Robinson (1993c), the utility is a concept means subjective well-being that people experience in different health situations. The more preferred one is associated with more utility (Drummond et al. 2005). The preferences of people about health outputs can be measured by rating scale, standard gamble and time trade-off methods (Scaletti, 2014).

CUA health output is generally measured in Disability-Adjusted Life-Years (DALY). Both two standards can evaluate life quality or lifetime together. Time in terms of years and health status that is valid during that time period is multiplied to calculate QALY for a certain time (Drummond et al. 2005). There is need for a quality weighting that shows health-based life quality to measure QALY (Gold et al. 1996). The most frequently used measurement method for weighting preferences relating to the health status is the Health-Related Quality of Life. More preferred health status is expressed by a bigger weight and prioritized in the analysis (Drummond et al. 2005).

Perfect health and death points need to be found and weighted in QALY weighting scale. Since the death and perfect health are the easiest points to understand, representing both two ends of the scale provides convenience. This is because the most frequently used scale is (0-1) interval so as to zero means death and 1 means the perfect health. If there is a status that is evaluated as worse than death in this scale, the values smaller than zero can be added. Otherwise, the values more than one can be added if there is a status that is better than the perfect health. In addition to this, there are practical reasons being accepted the interval as (0-1) in QALY weight scale. Since the death is a steady state, the value of the death will continue forever if the death is expressed by a number different from zero. The numerical value of the analysis continues forever; this is not a situation desired. It can be seen when this reason is considered that the best fit value for the death is zero. Computing the perfect health by 1 eases the measurement of QALY. Namely, a year equals to perfect health 1 QALY; 0,5 years equal to 0,5 QALY (Drummond et al. 2005).

DALY that is the other standard that is used in MUA was developed to use in disease and disability burden by the World Health Organization. It is conceptually parallel with QALY as well as there are significant differences at the same time. The most important similarity between two standards is evaluating life quality and lifetime

together. The remarkable difference is being measured the disease instead of the health (Drummond et al. 2005). In DALY calculation, ideal health is the absence of the disease, namely the absence of disability or disease is zero; death is one. Then, the average time of the health status is multiplied by the severity of the health status. The longest life expectancy (Japan) has been used as the base to measure the life lost. The life years that are lost because of the premature death are the function of the difference between death-rate, average lifetime and the age when the person dies (Drummond et al. 2005; Tan-Torres Edejer et al. 2003).

There are health acquisitions that are obtained via an initiative in the denominator of CUA. However, DALY that is used for disease burden is a negative concept means the life years lost. DALY needs to be turned into a positive concept. This transformation is provided by expressing the denominator is DALY. Because the calculation (1 - decrease in health) of CUA is the subsidiary of the weight used in disease burden (Tan-Torres Edejer et al. 2003).

CUA results are computed by cost-utility ratio. The net cost of the initiative is dividend; the health acquisition is the denominator of this ratio. The result found is the cost per QALY gained or per DALY prevented. The initiative, treatment or health program with the lowest cost per unit is accepted as more effective. Applying the initiative is based on the payment thresholds and ability to pay.

3.4. Cost-Benefit Analysis

CBA is the most far-reaching one of economic evaluation methods. It has been used to provide data for decision makers in social policy for many years. The thing that makes this analysis different is expressing inputs (costs) and results (benefits) via the same units, viz, the monetary units. Being measured all kinds of gains by money enables to compare the monetary return on investments in health fields with the investments in other fields of the economy (Drummond et al. 2005; Robinson 1993b).

CBA compares the future incremental benefit of a health program with the discounted value of the incremental cost of the same program. In short, the goal of this analysis is to find whether the benefit that is obtained from the program exceeds the resource. The difference between is the ‘net social benefit’. Positive different confirms that the program is worth to be applied. Frequently used result standards in the analysis are the net present value and the benefit-cost ratio (Drummond et al. 2005).

CEA and CUA remain limited by comparing programs on health because of producing similar result units such as QALY. These two analyses answer the questions on production efficiency due to giving results relating to the benefit obtained from the health. CBA enables intersectoral comparison and answers the questions about allocative efficiency (Drummond et al. 2005). CBA can be used in a situation in which the welfare change and economic productivity that can be occurred because of the program are considered. CBA can also be used in the situation when a program produces different outputs is asked to be evaluated. Moreover, while CEA and CUA evaluate the effect of the program in terms of the people benefited, externalities are also considered in CBA (Drummond et al. 2005).

The most effortful stage in CBA is the process that expressing health outputs via

monetary units. Besides the theoretical difficulty of this stage, many of the people, even economists accept attributing a monetary value to human life as unethical. There are three approaches to determine the monetary value of the health outputs. These are human capital, observed preferences and willingness to pay (Robinson 1993b, Drummond et al. 2005).

4. DISCOUNT IN ECONOMIC EVALUATION

In economic analysis all the possible costs and health outputs need to be expressed via the present values. Thus, cost and health outputs of initiatives evaluated can be adapted to time; this adaptation enables to make a healthier comparison (Gold et al. 1996). Discount is not only about the inflation. Because individuals are in the tendency to postpone the costs by moving benefit to an early time even in case of the inflation is zero. This tendency is the positive time preference (Drummond et al. 2005).

There are specific reasons for having time preferences. Firstly, individuals have short run life perspective; they prefer to live today instead of looking ahead. The second reason is that the future is uncertain. Thirdly, people expect to be richer due to the positive economic growth that has continued since the Second World War. Consequently, $1 that he will have within the current economic situation is more valuable than $1 that he will earn in the future. Lastly, since the people have a positive time preference, they obtain positive return even if invest without risk (Drummond et al. 2005). On the other hand, there is the opportunity cost of postponing the revenue to the future.

Much as the necessity of discount is accepted in initiatives such as public health applications extended over time, the discount rate that will be used is unclear. There are different approaches to the discount rate. General incline uses 3%-5% discount ratios annually (Drummond et al. 2005). Much as using 3%-5% discount is a habit worldwide, this application may not be proper for all the time. With reference to this mentality, using different discount ratios offer comparison opportunity in terms of showing that society values different programs. For instance, if there is a belief that long-termed preventive initiatives are different from the treater initiatives, it will be proper to apply different ratios for these initiatives. Accordingly, the programs can be directly compared. Another factor that requires being used different discount ratios is the welfare and social values of the society. Willingness to postpone the consumptions is the ratio that is determined by the society for a unit of future value toward the marginal social value of units consumed today. Therefore, the social discount rate of societies whose welfare level is low and needs are not met is higher than developed societies (Krahn & Gafni, 1993).

Much as the discount is required for evaluating the future results of the initiatives, the discount ratio used can change the research results. Using high discount ratios may cause to be exceeded the thresholds determined. Moreover, while the low discount ratio makes preventive initiatives attractive in comparing preventive initiatives with treater initiatives, treater initiatives as accepted as more profitable in case of using high discount rate. While the discount rate that is used in rehabilitative initiatives does not

affect the profit much, this same rate is so sensitive to preventive treatments because of occurring health outputs immediate (Keeler & Cretın, 1983)

Some of the economists are uncomfortable with discounting the health output on account of the fact that the life of future generations is accepted as less valuable. On the contrary, Weinstein and Stason (1976) explained a reason that necessitates discount in outputs. If 1 QALY will be provided after 50 years by the monetary value of today, the initiatives will be postponed as far as possible. Keeler and Cretin (1983) argued the discount necessity on an equal basis with the costs.

Uncertainty and Sensitivity Analysis in Economic Evaluation

The last stage of economic evaluation methods is the sensitivity analysis. Sensitivity analysis is to test the effect of variables such as probability assumptions, values assigned and structural assumptions to the decisiveness of the result (Sox et al. 1988). In economic analyses, there occur uncertainties in some situations like existing procedural differences between the analyses, data required for the study, deduction from the data, reaching to last output via interim outputs (Drummond et al. 2005)

Sensitivity analysis is applied by recounting the results by putting new variables instead of the variables (probabilities and result value) in the analysis. There are two points to take into consideration when sensitivity analysis is performed; the type of variables that are used in sensitivity analysis and the new variables that are used instead of old ones. Indeed, each of the variables is a candidate to be the subject of the analysis because of the uncertainty. The most frequently used variables in sensitivity analysis is the discount ratios and the different values of the health output in case of obtaining from the literature. Lower and upper limits with most frequently used ones need to be determined by the values used as the variable (Sox et al. 1988).

5. CONSLUSION

Economic evaluation methods are the systematic studies provide support for decisions to be made. Much as each of the methods are applied for different situations and evaluated by the different standards, the chief goal of use is to provide productivity in resource utilization. The health sector is one of the areas where these methods are intensively used. Even Health Technology Assessment surveys whose basis is provided by economic evaluation methods are the separate disciplines.

There are specific reasons for the health sector to enter in economic evaluation. Firstly, a good part of domestic incomes of developed countries, notably the USA is spent for the health sector. Furthermore, the increment continues. It is not possible to say that health status of people increases at the same time as well as the countries that spend more on health are not more healthy. On the other hand, cutting back from the expenses is difficult because of the dispensability of health care services. At this point, the formula that is developed to control the health expenses is to analyze whether getting in return for money spent. Only the economic evaluation methods can answer this question.

Secondly, the health sector is an area that necessitates serious investments. This labor-intensive sector used in large quantities of investment. The sector intensively

benefits from the technological advancements; revolutions have been observed in the rendering of the service. The newest monitoring methods provide early diagnosis of diseases notably cancer. The operations that necessitated long-term hospitalization before can be performed for one day. Many of the diseases can be treated without having to stay in the hospital. The contributions of these technological advancements are incontrovertible. However, in opposition to other several sectors, the technological advancements in health sector do not minimize the unit costs. Thus, the costs of new technologies cause prices of services to increase. As a matter of general economic principles, accessing to high priced health care services may cause other expenses (food, education, etc.) to decrease. On the purpose of removing this dilemma, public and private repayment institutions make buying and repayment decisions based on economic evaluation methods.

Even though the economic evaluation methods aim to effectively use the scarce resources, these methods are not commonly used in developing countries whose resources are proportionately less. A limited number of studies' shortcomings in terms of methodology and data quality show the size of the problem. Establishing public institutions such as National Institute for Health and Clinical Excellence (NICE) in the United Kingdom and IQWiG Institute for Quality and Efficiency in Health Care (IQWiG) in Germany can contribute effectiveness of health sector and the success of the academic studies.

REFERENCES

Aday, L.A.; Begley, C.; Lairson, D.; Slater, C. (2004). Evaluating the Health Care System: Effectiveness, Efficiency and Equity. Trird Edition. Ann Arbor, MI: Health Administration Press: Chicago.

Briggs, A.H. ve O'Brien B.J. (2001) The Death of Cost-Minimization Analysis? Health Economics 10 (2), 179–184.

Çalışkan, Z. (2009) Sağlık Hizmetlerinde Önceliklerin Belirlenmesinde Ekonomik Değerlendirme Yöntemi Olarak Maliyet-Etkililik Analizi. Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 14 (2), 311-32.

Drummond, M.F.; Sculpher, M. J.; Claxton, K.; Stoddart, G.L.; W. Torrance, G.W. (2015) Methods for The Economic Evaluation of Health Care Programmes. Fourth Edition. Oxford University Press. Oxford- United Kingdom.

Drummond, M.F.; Sculpher, M. J.; Torrance, G.W.; O'Brien, B.J.; Stoddart, G.L. (2005) Methods for The Economic Evaluation of Health Care Programmes. Third Edition. Oxford University Press: Oxford.

Drummond, M. F., Aguiar-Ibáñez, R.; Nixon, J. (2006) Economic Evaluation. Singapore Med. Journal 47 (6), 456-61.

Eddamaa, O.; Coast, A.J. (2008) Systematic Review of the Use of Economic Evaluation in Local Decision-Making. Health Policy 86 (2), 129–141.

Erixon, F.; van der Marel, E. (2011). What is driving the Rise in Health Care Expenditures? An Inquiry into the Nature and Causes of the Cost Disease. Ecıpe Workıng Paper 05/2011.

Garber, A.M.; Phelps, C.E. (1997) Economic Foundations of Cost-Effectiveness Analysis.

Journal Of Health Economics 16 (1), 1-31.
Gray, A. M.; Clarke, P.M.; Wolstenholme, J.L.; Wordsworth, S. (2012) Applied Methods of Cost-effectiveness Analysis in Health Care. Oxford University Press: Oxford.
Getzen, T.E. (2014) Measuring and forecasting global health expenditures. Chapter for global health economics and public policy. Available at:file:///C:/Users/hpuser/Downloads/SSRN-id2542826.pdf (accessed: 30 March 2017).
Gold, M.R.; Siegel, J.A.; Russell, L.B.; Weinstein, M.C. (1996) Cost-Effectiveness in Health and Medicine. Oxford University Press: New York.
Goodacre, S.; McCabe, C. (2002) An Introduction to Economic Evaluation, Emerg Med J 19 (3), 198–201.
Haddix, A.; Teutsch, S.M.; Conso, P.S. (2003) Prevention Effectiveness-A Guide to Decision Analisis and Economic Evaluation. Second Edition. Oxford University Press: Oxford.
Homik, J. E.; Suarez-Almazor, M. (2004). An Economic Approach to Health Care. Best Practice & Research Clinical Rheumatology 18 (2), 203-18
Hurst, J. (2000) Challenges for Health Systems in Member Countries of the Organisation for Economic Co-operation and Development. Bulletin of the World Health Organization 78: 751-760.
Keeler E. B.; Cretın S. (1983) Discounting of Life-Saving and Other Nonmonetary Effects. Management Science 29 (3), 300-06.
Kobelt, G. (2002) Health Economics: An Introduction to Economic Evaluation. Second Edition. Office Of Health Economics. Londra.
Krahn M.; Gafni A. (1993) Discounting in the Economic Evaluation of Health Care Interventions. Medıcal Care 31 (5), 403-18.
McGuire, A. (2001) Theorical Concept in The Economic Evaluation of Health Care. In: Drummond M.F. ve McGuire A. (2001) Economic Evaluation in Health Care Margin Theory with Practice, 1-21. Oxford Press.
Muennig, P.; Khan, K. (2002). Designing and Conducting Cost-Effectiveness Analyses in Medicine and Health Care, First Edition. Jossey-Bass. San Fransisco.
Oxley, H.; Macfarlan, M. (1995) Health Care Reform: Controlling Spending and Increasing efficiency. OECD Economic Studies No. 24, I995/1.
Robinson, R. (1993a). Economic Evaluation and Health Care: Cost-Effectiveness Analysis; BMJ, 307:670-3.
Robinson, R. (1993b). Economic Evaluation and Health Care: Cost-Benefit Analysis; BMJ, 307 (6909), 924-26.
Robinson, R. (1993c). Economic Evaluation and Health Care: Cost-Utility Analysis; BMJ 307 (6908), 859-62.
Scaletti, A. (2014) Evaluating Investments in Health Care Systems-Health Technology Assessment. First Edition. Springer- New York Dordrecht-London.
Sox, H. C.; Higginsi M.C.; Owens, D.K. (1988). Medical Decision making. Boston: Butterworth Publishers. Stonehan.
Tai, B.B.; Bae, Y.H.;, Le, Q.A. (2016) A Systematic Review of Health Economic Evaluation Studies Using the Patient's Perspective. Value Health 19 (6), 903-908.
Tan-Torres Edejer, T.; Baltussen, R.; Adam, T.; Hutubessy, R.; Acharya, A.; Evans, D.B.; Murray, C.J.L. (2003) Making Chouse in Health: WHO Guide To Cost-Effectiveness

Analysis; World Health Organization; Geneva.
Weinstein, M.C.; Manning, W.G. (1997) Theoretical Issues in Cost-Effectiveness Analysis. Journal of Health Economics 16 (1), 121-28.

Chapter 82

Ethics in Health Services

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INTRODUCTION

Ethical issues in every sector especially in health, media, politics, business administration, environment, law, education have begun to come up more day by day. *Ethics concept in health services*, which consists principles such as beneficialness, autonomy, patient's privacy, do no harm and has *human factor* in especially its input and output, it is important to be usable and involving ethical principles in health system.

In the light of the fact that healthy living is one of the basic human rights, states in each country are obliged to regulate the provision of health care for their citizens. They sometimes do this with establishing, financing and managing organizations that will offer health services; and sometimes do this by regulating the market which created for this purpose. Health services, need to be well organized and well managed in order to reach its goal and offer well, whether they are offered by organizations which are established by the state or offered by private individuals and organizations in accordance with the free market understanding (Hayran, 2012).

However today, because of the commercializing health services and profit motive to be at the forefront, problems such as work's complexity and work load pressure, financial problems gradually show tendency. This situation causes more focus on ethics, in the health system where the margin of error expected to be zero, and causes facing with the medical or ethical problems by workers or health care managers and increase in the desire of pacification of these problems. In recent years, it is seen that studies related to find a solution for ethical management and ethical problems both in public administration and in medical sector which is an important component of public administration. Unethical behaviors draws more attention because the activities of the services sector institutions especially health institutions take place in public.

In this study, alongside the ethical concepts, it will be dwelled on, for every profession employee, working in health organizations in order to provide good, accurate and high quality health care services, to know fundamental ethical concepts and principles, even if they are not experts on this areas, every health manager to form ethical behaviors in relations with stakeholders when performing managerial duties.

1. ETHICAL CONCEPTS AND THEORIES

1.1. Ethics and Related Concepts

Ethics, which considered as axiology, is a field of science that solves problems related to values in life, guides decisions and actions, directs behaviors to truth and

goodness, and investigates and interprets them in the frame of moral rules. Ethics is about the behaviors that people make in social scale and which have consequences that affect other people, and the thinking processes that shape them. Ethics, as a field of philosophy, deals with what is good in terms of behavior; aims to formulate the ideal behavior of a person (Yıldırım & Kadıoğlu, 2007). Ethics is a principle, value and standard system which explains and defines how will individuals behave right while it is considered as moral standards and rules that an individual should follow (Köprü, 2007).

Ethics can be expressed as all of the moral principles which are fundamental to one's behavior. In other words, ethics is advisor values, principles and standards which help people in determining "how works must be done". Ethics is a philosophical process, at the same time. This process requires that one must be stick to the certain principles and standards while making and implementing decisions (Şen, 2012). Ethics is an alliance of values which suggests people what to do or not to do. These values can be examined in four groups as duty, virtue, principle and society's benefit. *Duty* is the behavior which is expected of the role of the person takes. *Virtue* is all of the characteristics that defines a good person. *Principle* is the basic truths that shape behaviors. And *society's benefit* is every kind of action which is favor of society in general (Svara, 2007). Ethics is a concept that makes reference to rules of conduct; and ethical values are system of rules of conduct and generally are system of rules which belongs to a philosophical trend or a religion, an occupational group or a culture (Barkow, 2000).

Ethical value-ethical principle: In a general sense, value can be defined as "a person, object, place, situation, process, concept which is attributed to mostly positive qualities sometimes negative qualities by an individual, family, group, society, certain crew like humanity in a thematic frame like politics, economy, aesthetics, law, religion, history, health". In this diversity, the determinant feature of "ethical value" is the nature of a suggestion or direction that directs and justifies behavior. With a different interpretation, ethical values form criteria for thinking processes which determines behavior in mind and form source for rules which regulates behaviors in social scale. Because of there is a meaning crossing specific to ethics, it seems more appropriate saying ethical principal instead of ethical value. *Ethical rule - ethical code:* Ethical rules, are the regulations which are derived from ethical principles, which are directive and create scale for behaviors like ethical principles and are more special and concrete compared to ethical principles. And ethical code expresses the ethical rules combination on certain subject. *Ethical problem - ethical dilemma - ethical violation:* Ethical problems are the conditions that hesitations or objections arise regarding good behavior. They can be a matter in social environment, which behavior is exhibited, and in mental process which determines behavior. There is two main categories in the frame of ethic related problematic cases such as "dilemma" and "violation". It is possible to define dilemma as, choosing problem which is experienced by decision-maker in situations that have not rule; and violation as, breaking the standard rules that regulates professional action (Kadıoğlu, 2007).

Ethics-morals: Morals include unwritten standards related to how to behave. Depending on the changes in time and conditions, previously banned behaviors can be behaviors which are supported and even encouraged over time. Actions, which are the

same fundamentally, can be interpreted differently by the different moral understandings. Morals, related to ideals, tries to explain rights and wrongs about cultural values and based on this how to act in social manner. Ethical and especially medical ethics' principles are universal, they do not differ. Ethics discusses all problems related to morals in a way that is general, principal therefore abstract. For this reason, ethics does not determine which concrete aims each are good, which are worth to reach for all individuals, it is more determines the criteria and shows which aim is considered to be a good can be binding according to this criteria. Ethics tells how we can say something is good does not tell what is good (Kılavuz, 2002).

There can be talked about ethical principals not moral; moral behavior not ethical. So ethics is the values that an individual wants to express in certain situation; and morals is the way to put this in real life. Ethics, first of all, is the exploration and understanding of a life to be desired. Ethics examines individual meaning of life, function of morals in society, relation of individual and society, norms and values of social life and states abstract and ideal opinions on these subjects. And morals are ethics' combination of rules which are reflecting to daily life. Morals studies behaviors moral structure; and ethics is interested in behaviors causes. Ethics is more special and philosophical compared to morals. The the common ground of both of these concepts is, they are rules of conduct which are regulating the relations between individuals (Karaköse & Özkanan, 2010). Ethics searches what is good and right concepts and states not the good one, how to reach the opinion of something is good, in short, in ethics there is the scientific explanation of moral behaviors. And morals is performing individual and concrete inquiries, and defined as set of rules that ethics' reflection on life practice.

1.2. Ethical Theories

For better understanding of ethics, it is beneficial to examine developed theories. What is right and what is wrong can be changed according to the reference morals approach Despite there are different theories in which ethical behavior definitions are done with different point of views by important philosophers; in here the most general classification will be examined under two titles as teleological and deontological.

1.2. 1. Teleology

Utilitarianism is an ethical theory which is proposed by John Stuart Mill and Jeremy Bentham in 19th century. Mill and Bentham's approach is named as classical utilitarianism. In utilitarian ethics theory's foundation there is "Principle of Utility" as Mill says. Mill expresses this principle as "actions are right in accordance with the happiness they can produce, and wrong in accordance with the unhappiness they can produce". The principle of utility is named as "greatest happiness principle" by Bentham and Mill. The definition under this name is this; "the actions which produce more happiness for more people are the right action in ethical approach" (Munson, 2012). Teleological approach suggests that a behavior's morality, whether its right or wrong should be evaluated by its result. If the outcome of the performed behavior, there is no need to look at the intentions behind it and if it is beneficial to most people more benefit, it is moral and it is preferrable. In short, ethical values of actions are determined with the results they lead.

1.2.2. Deontology

The value of the action is depends on goodwill rather than the outcome. They are the duties and obligations that make them individuals to do so. According to deontologists, every individual has obligations and these must be performed without thinking consequences. Immanuel Kant is the founder of this theory. According to him, the rightness or wrongness of the action depends on moral importance of the source of action. If the action is performed with goodwill, it is believed that it is moral. Ethical action involves that task is done, the implementation of the task is right and not doing it is wrong (Margaret & Alvita, 2013). Deontologyis also called **duty based ethics**. It is an ethical approach whether the intentions behind the some actions are right or wrong rather than focusing on the outcomes of the actions right or wrong. It adopts always behaving well and the golden rule of "treat people how you wanted to be treated". Deontological ethics is based on equitable principle and focuses on all decisions to be consistent, impartial and right.

2. ETHICAL AREAS

In the scope of ethical areas, in this section occupational ethics, organizational ethics and administrative ethics will be examined.

2.1. Concept of Profession and Professional Ethics

Profession is generally defined as a type of service, based its applications on knowledge, research and experiment, which is duties authorities and responsibilities are determined by laws, formed its ethical/moral rules and serves for certain payment while serving a certain need of the society (Velioğlu & Babadağ, 1992). When referring to professional ethics, it is meant that in a certain profession (especially in the ones that directly related to humans) behavior rules that must be followed and it is expected that the all people who have the same profession is generally defined as a type of service obey these rules. A few examples from the definitions that have been made about the subject is given below.

Professional ethics is principles and rules based on beliefs about what is right, wrong, fair, unfair related to occupational behavior. Professional ethics are influenced by the ethics of the person, the business/institution and the society. Society, clients, competitors, state are factors that influence the occupational ethics (İşgüden & Çabuk, 2006). In another definition, professional ethics is the composition of professional principles that a certain professional group's created and protected related to the profession; shows the principles must be followed to members of the profession, and forces them to behave in certain way; restricts personal tendencies; exclude the ineligible and unprincipled members out the profession; regulates intra-professional competition and aims that maintaining service ideals (Başpınar & Çakıroğlu, 2012).

Professional ethics are related to work ethics and working ethics and overlap to some extent. However, in order to a job to be considered as an occupation; it is necessary to have an activity process which includes an academical training time, training on specializing, member are participated, an professional organization which is audited and has standards and primary aim should be services features (Kadir, 2014). Work ethic is expressed as total of ethical standards and principles which directs behaviors in world of work and guides them. Work ethic and community ethics are intertwined now and it is almost impossible to differ from one another. In this respect, it

is impossible to talk about a social ethics understanding which does not include work ethic (Özkalp & Kırel, 2011). And working ethics expresses values and attitudes towards work and working in a society. Since the working ethics is a process that is influenced by the culture and values of the society, the attitude towards work in a society may differ from another society, and there may be different approaches among different layers of the same society. Because having working ethics is as much as a personality trait as it is at the same time s cultural phenomenon and can be transferred through the process of interaction and education as every cultural phenomenon (Arslan & Berkman, 2009).

The rules established for the protection of the rights of persons who receive and provide services during the practice of an occupation and thus serve more effectively are called ethical principles of that occupation. Having these principles, determining principles based on these and that is being sanctioned is an important condition for the occupation is become a professional one (Kınay, 2006). In historical process, the production of every kind of goods or services needed by human beings has resulted in the formation of various occupational groups. These professional groups have been organized over time and set a number of principles. The separation of professions according to their functions and their organization within themselves has caused the subject of ethics to vary. For this reason, we can say that the more professions are, there are more ethics there.

2.2. The Concept of Organization and Organizational Ethics

We can define the organization as "a social unit formed by merging knowledge and abilities with gathering other individuals for achieving certain aims". In organizations, which established with the aim of being beneficial to society, there is need for certain regulations so that individuals with different beliefs and expectations can work together to achieve a common aim. In this context, organizational ethics is the written and non-written principles, values and norms that define the system of general values that the institution possesses, and how communication between the members of the organization and organizational functioning will be. Businesses have responsibilities towards people and institutions (employees, stakeholders, customers, suppliers, etc.) where they are in a business relationship, as well as towards society and the natural environment. We can count principles such as to be respectful to consumer rights, to be honest and clear with stakeholders, do not discriminate during recruitment, not to harm environment when producing as examples of organizational ethics.

Organizational ethics is a practice discipline and art of ethical principles for examining and solving complex moral dilemmas in work environment (Weiss, 1998). Ethical principals of an organization are accepted and current perceptions and understandings which are reflected to its decisions and practices. Organizational ethics emerge through the creation of an environment in which all employees can actively participate in the formation of values and put these values into practice (Ray, 2006). For this reason, organizations with ethical standards have vital importance in terms of establishing organizational culture.

Institutionalization of ethical principles in organizations can be in different ways. It is the main purpose of the development of ethical principles to carry out the same type of behaviors of members from different cultures on a legal frame. Even for putting in place the purpose of social responsibility of the organizations, only related to this

subject, boards and commissions are established within the organization (Northcraft & Neale, 1990). Establishment of institutional culture in ethical behavior in organizations depends primarily on the values that general politics and management in that institution give to ethical standards.

2.3. The Concept of Administration and Administrative Ethics

Administration, which is characterized as operate through others; we can define it as organization's financial and humane resources' planned, organized, commanded, coordinated and controlled effectively and efficiently for achieving common aim.

Administrative Ethics is a form of morality, which is a subset of professional ethics, and which is emerged in a certain organization nourished by its determined rules. Administrative Ethics expresses the necessary principles and standards in order to reach right behaviors in certain organization. On the one hand deals with the eliminating the administrators' in immoral behavior, while on the other hand deals with the creation of principles and standards that can help them in the solution of conflicts and dilemmas that administrators face (Köprü, 2007; Kınay, 2006).

Administrative ethical principles are encouraging, safe and decision-making aids in the development of high standards of behavior. These prevent conflicts of interest and provide neutrality. While using the powers of the managers and employees, it is expected that their institutions will observe their aims and the benefit of the society, acting in accordance with ethical principles. The must be followed administrative ethical principles are; Justice, equality, honesty and truth, impartiality, responsibility, human rights, humanism, commitment, superiority of law, love, tolerance, secularism, respect, frugality, democracy, positive human relations, openness, rights and freedoms, as resistance to the illegal orders (Köprü, 2007). In administrative ethics, it is aimed to create an organizational environment that will exist in businesses and prevent non-ethical behavior that can exist.

3. ETHICS IN HEALTH SERVICES

Health services are total of activities related to prevention of diseases, improving the level of health of individual and society alongside the diagnosis, treatment and rehabilitation of diseases (Kavuncubaşı, 2000). Health services are classified as preventive health services, treatment services, rehabilitation services and health promotion services.

Like other organizations in the service sector, because of the organizations', which offer health services, all activities are taking place in public, it is vital that these organizations see and take precautions against possible problems for both the groups that they serve and workmen (Gül, 2006). The increased technological and pharmacological developments in health services, increased interaction between health professionals and each other, increased unethical behaviors during service presentation, and increased numbers of written or visual media reports regarding ethical behavior (Hart, 2005) cause ethical understanding and ethical behaviors have gradually increasing importance -in terms of health care providers and receivers-.

3.1. Health Ethics and Related Concepts

It can be said that health ethics is related to the "system of values" that emerges within the frame of the presentation of health services. In the approach of value

problems in presentation of health services, “good” and “bad” will be determine in accordance with which value scale and whether there is “social” and “universal” values in health services’ presentation are the fundamental discussions of health ethics. Health ethics are trying to determine the approaches aimed at value problems in health services’ presentation and trying to form a “system of values” related to health services’ presentation, with based on these discussions (Arda, 2004). Health ethics, which is in the group of occupational ethics, is about health care providers’ what to do and what not to do in order to behave virtuous.

Health ethics, which means grounding of moral behaviors in health services’ presentation in terms of philosophy, is based on value understanding in services’ presentation and aware of the human health’s value which is entrusted to health professionals (Yüksel, 2012). Besides health ethics concept, “deontology” is one of the most used concepts with “medical ethics”. Deontology concept in health services often used instead of ethics concept, and in health services’ presentation deontology is knowledge of rules which are determined by society for the answers of the questions “what to do” or “what not to do”, and provided with sanctions (Sayım, 2011; Aydın, 2010). In here, it will be useful to explain the concepts related to health ethics. Kadıoğlu (2007) defined these concepts as follows (Kadıoğlu, 2007):

Codes of the medical ethics: They are rules systems that prepared by national or international scale official or unofficial authorities for guiding medical action. The main reason that an ethical codes are valid is their adaption by the crews they guide to because of the supply that they needed. Republic of Turkey Ministry of Health’s legislations on drug research and patient rights are examples of national and official medical ethics code.

Clinical ethics - research ethics: Clinical ethics is focused on patient-physician relation and preventive medicine practices and research ethics is focused on the works towards increasing medical knowledge which is conducted in clinic, laboratory and field. In first one it is possible to say principles and dilemmas are on front and in second one rules and rule violations are on front.

Ethical evaluation - ethical decision making: Ethical evaluation expresses that embracing the processes, events-situations which are happening or happened with a analyzing approach focused on ethical aspect; and determining which ethical principles and rules and which happened or potential ethical problems are on the agenda in those concrete situations. And ethical decision-making is of the opinion that whether prospective evaluation determines what is the most appropriate action and performs it or retrospectively evaluates it and whether the action taken in the concrete case is appropriate.

Ethical committee: They are the formations that have heterogenous member profile which evaluate situations, processes, events related to ethics with a broad perspective. There are two types, one of which is undertook consultancy and other auditing as the main function.

Medical Deontology: It expresses the rules that determine the duties of health professionals. Some of these rules are official and some of them are unofficial; some of the unofficial ones have been put into writing in the form of civil medical ethics code and some of them are living in oral tradition.

Medical deontology or just deontology is used as the exact meaning of medical

ethics until recently in Turkey. And nowadays, the tendency to accept it as the name of medical ethics' subset of rules is outweighed.

Health legislation: It is the entire set of formal rules in the form of constitutional law, law, international treaties, guidelines, regulations and lower-level administrative provisions and case law decisions which are included in by law, code, national legislation, and regulate medical settings and relationships, which determine the actions to be taken and avoided by healthcare professionals in this context.

The texts and provisions of health legislation, which determines professionals' actions, can be considered as a subset of medical deontology.

Patient rights: The **right to health**, one of the major derivatives of the **right to life**, one of the fundamental human rights, foresees the regulation of the development, protection and repair of health. Patient rights, a derivative of the right to health, are regulated in a narrower frame, such as the situation of receiving medical care, and in more detail. They connect medical relation to a rule with an approach that focuses patient's needs and expectations. They are sort of an alternative a subsidiary of medical ethics which makes connecting to the rule with an approach that focuses on physician to be good.

Medical malpractice: It expresses that medical action is not carried out in accordance with accepted standards; in short faulty medical practice. In general, error is in practice's medical and technical aspects however it may occur in legal, ethical and economical aspects. It is called **responsibility** that the health professional must give the account for the mistake he/she made. There four mechanisms for determining the responsibility and if necessary enforcing sanctions such as punishment and compensation proceedings, administrative investigation, evaluation in the occupational organization disciplinary committee.

3.2. Principles of Health Ethics

Hippocrates, who is accepted as the symbol of medical profession and lives in Ancient Greek in 460-370 BC, included certain principles and profession rules in his practices and works and the mentioned ethical codes have been used for centuries. The expressions in Hippocratic Oath are turning points for medical ethics as well as medical applications. The concepts in today's health ethics firstly stated in here (Aydın, 2006).

It is generally accepted that extending the principle concept which is widely used in health ethics in recent years and its elements' sources to Hippocrates, however, health ethics' principals are firstly written by Thomas Percival in the year 1803. After that in 1847, mostly based on Percival's ethical principals, American Medical Association have prepared ethical principles (Çobanoğlu, 2009). And in Turkey first regulations, with the aim of providing supervision of occupational ethical principles, are with the law in the year 1928 numbered 1219 "The Mode of Execution of Medicine and Medical Sciences".

It is possible to list the principles of health ethics revised in 2001 by the American Medical Association as follows (Pervical, 1803).

- The physician should be dedicated to providing adequate medical care for human dignity and rights through compassion and respect.

- The physician should maintain professional standards, be honest in his professional relations, fight with the unethical behaviors of health institutions and with the lack of competence and unethical behavior of physicians.

- The physician should be respectful to the law and at the same time accept the responsibility for the benefit of the patient.

- The physician should respect the rights of patients, colleagues and other health professionals, and protect the secrets and confidentiality of the patient in the frame of legal restrictions.

- The physician should continue to work to maintain medical education, develop practical and scientific knowledge capacity; if necessary, use the skills to be helpful to the patient, colleagues and society, and should be mentor.

- The physician should be free to choose appropriate treatment and services in order to provide appropriate patient care, except in emergencies.

- The physician should accept the responsibility to participate in activities that will contribute to the improvement and development of the community and public health.

- The physician should accept the responsibility of extraordinary circumstances that may arise in the treatment of the patient.

- The physician should support the access of all people to health care.

Health ethics principles have been systemized in different forms in literature as well as there are principles which are considered as universal.

We can summarize important ethical principles which are universally accepted as follows (Hayran, 2012):

- The principle of respect for autonomy: According to this principle, every human, as a free and independent human, has the competence and perfection for thinking, making decisions about himself/herself and acting appropriately in this decision.

- The principle of beneficiary when offering health services the primary principle should be “do no harm” and then “be beneficial”. This principle is traditionally at the start of fundamental principles of the medical profession.

- The principle of justice: According to this principle, when offering health service, fairness, equality and rightness must be looked out in the use of resources, facilities and in determining priorities.

- The principle of informed consent: In accordance with this principle, the patient should to be informed about medical treatment and interventions and the patient’s approval must be taken. Namely, the patient should be informed about what procedures will be done on him/her and his/her consent should be taken on the procedure which will be done.

It is now a necessity for every profession employee, working in health organizations in order to provide good, accurate and high quality health care services, to know fundamental ethical concepts and principles, even if they are not experts on this areas, every health manager to act appropriate to ethical principles alongside the legal regulations when performing managerial duties.

3.3. Areas of Health Ethics

During the discussion of ethical issues in medicine and health issues, three main concepts are encountered (Bankowski, 1989; Kadıoğlu, 2007):

1. Medical Ethics
2. Bioethics
3. Health Policies Ethics

Medical ethics focuses on the moral principles of professional practice in medicine field. It focuses on the problems which occur during the relations between

physician-patient, physician-colleague and physician-other health personnel. Medicine is a different scientific field from other disciplines of science because it is closely related to human life and quality of life. During medical practices, a series of moral principles are required such as, respect for autonomy, keeping secrets, tell the truth, do no harm.

Bioethics focuses on the rapid developments in biology and medicine in recent years and the moral problems of these developments' effect on human health. For example, the subjects such as the implementability of developments on genetic technology on humans, artificial insemination (IVF, sperm bank, surrogate mother), trialability of newly developed drugs and technologies on humans need a new professional morals understanding. ***Biomedical ethics*** can be considered as a step when passing bioethics from medical ethics. In addition to the medical actions carried out on humans, the inclusion of the researches which are carried out on animals as its field of interest means that it shifted from human-centered to living-centered in some level.

Health Policies Ethics focuses on the possible ethical problems during the organization, financing and offering of health services. For example subjects such as how to use information and sources related to health without conflicting with human values, how to organize the health service offered according to what purposes and priorities, and and how much religious and cultural characteristics of people should be taken into consideration during the presentation of services require some ethical debates and principles.

In order to find solutions to ethical problems in the field of health, health related occupational organizations have their own occupational moral principles known as "ethical codes". These are general principles and in some cases they cannot answer the special circumstances. In special circumstances, in order to make evaluation and find solution, in every health institution, which cares ethical values and works well, there should be "ethical committees". The establishment way of these committees and functioning style of these is defined legally in some countries and regulated with legislations.

4. CONCLUSIONS AND RECOMMENDATIONS

In health institutions, employees and patients are in constant interaction, and for providing patient satisfaction, quality of service offered with ethical behavior are important criteria. Organizational ethics can exist as long as all employees take an active role in the formation of ethical values and can put these values into practice with interiorising. Without a doubt, the most important task in establishing an ethical organizational culture and ethical environment, taking precautions against unethical behaviors and correcting unethical behaviors must be done by organizations' managements.

The fact that medicine is now serving an intense technological environment shapes hospitals within. And the health personnel who are serving in hospital are becoming an heterogenous group. Patients have to face with complex medical relations environment with come out of the transparency of traditional physician-patient relation. In this environment the protection of patient rights is the primary responsibility of the hospital. In the same way, it is inevitable to establish and operate hospital ethics committees in order to many meaningful events in the hospital can be analyzed and enlightened (Aydın, 1999).

In conclusion, for the institutionalization of ethics in health institutions (Öztürk, 2010);

Top management must

- believe the necessity of ethics
- show leadership
- make preparation work (for example, screening and evaluation of the may be related implementation samples)
- pursue a long term perspective
-adopt a comprehensive approach (including all activities and individuals)

Ethical Code Preparation

- Determination of hospital values/priorities
- Evaluation of related codes
- Development of the most suitable (in terms of sector, activities, culture, stakeholders and environment) codes' outlines for hospital
- In these processes, if necessary, employing experts from outside
- In these processes, in a suitable stage, getting attribution and opinion with appropriate methods from various departments in institution
- Detailed instructions for those who are in sensitive problems or positions in terms of hospital as well as general principles in code
- Identification of the one's who are responsible for code's execution
- Clarification of sanctions and processes in violation of code principles and rules of conduct

Implementation of Ethical Code

- Communication of the code's whole text to all employees with the examples of its importance, necessity and benefit
- Providing the names and contact information of ethics attendants for information and question related to code and its implementation

Ethics Committee and Attendants

- Establishment of ethical committee for the roof of ethical settlement (In committee there can be members outside the hospital)
- Identification of ethics attendants in departments (The can be naming of ombudsman or ethical consultant)
- Diversification and keeping open of problem reporting channels

Ethical Education

- Informing about the importance, necessity and benefit of ethics
- Starting from the upper levels and the covers the whole staff
- Implementing of different programs (in terms of content, method, instructor) for employees in different levels and positions

Human Resources Implementations

- Becoming prevalent that the implementations on rewarding ethical behavior and punishing unethical behavior
- Including ethical behavior in performance evaluation elements
- Making annual ethical evaluation

Hospital's Decisions and Implementations

- Ethics' gain situatedness in all decisions and implementations
- Establishing health relations with stakeholders and society

- Contribution to social quality of life with civil society initiatives

Ethical Control and Evaluation

- Control and evaluation of all ethical-related processes, if possible, via external agencies and publication of results

-Determination of performance in the dimensions of "ethical management" and "ethical administration" and, if necessary, revision of operations, tools and processes (Arslan & Berkman, 2009).

REFERENCES

Arda, B. (2004). Etiğe Kavramsal Giriş ve Temel Yaklaşımlar, Arda, B., E. Kâhya ve T. G. Başağaç, (Ed.), Bilim Etiği ve Bilim Tarihi, Ankara, Ankara Üniversitesi Yayınları, 26.

Arslan, M.; Berkman, Ü. (2009). Dünyada ve Türkiye'de İş Etiği ve Etik Yönetimi, Haziran 2009, TÜSİAD/T-2009-06-492, s.36-113.

Aydın, E. (1999). Etik Yönünden Hastane Hizmetleri, Türkiye Klinikleri Tıp Etiği, 7, s.92.

Aydın, E. (2006). Tıp Etiği, Ankara, Güneş Tıp Kitabevi, s.13

Aydın, İ. (2010). Yönetsel, Mesleki ve Örgütsel Etik, 4. Baskı, Ankara, Pegem Akademi Yayınevi, s.108.

Bankowski, Z. (1989). Ethics and Health. World Health, April, p.2-7

Barkow, J. H. (2000). Davranış Kuralları ve Evrimin Davranışı, Changeux, J. P. (Ed.), Etiğin Doğal Kökenleri, Çev. Nermin Acar, İstanbul, Mavi Ada Yayınevi, s.95

Başpınar, N. Ö.; Çakıroğlu, D. (2012). Meslek Etiği, Nobel Akademik Yayıncılık Eğitim Danışmanlık Ltd. Şti., 2. Basım, İstanbul, s.63.

Çobanoğlu, N. (2009). Kurumsal ve Uygulamalı Tıp Etiği, Ankara, Eflatun Yayınevi, s.15.

Gül, H. (2006). Etik Dışı Davranışlar ve Ussallaştırılması: Devlet Hastanelerinde Bir Uygulama, Selçuk Üniversitesi Karaman İİBF Dergisi, 10(9): 65-79.

Hart, S.E. (2005). Hospital Ethical Climates and Registered Nurses' Turnover Intentions, Journal of Nursing Scholarship, 37(2): 173-177.

Hayran, O. (2012). Sağlık Yönetimi Yazıları, 2.Baskı, SAGE Yayıncılık, Ankara, s.51-194.

İşgüden, B.; Çabuk, A. (2006). Meslek Etiği ve Meslek Etiğinin Meslek Yaşamı Üzerindeki Etkileri, Balıkesir Üniversitesi Sosyal Bilimler Enstitüsü, Cilt:9, Sayı:16, s.63.

Kadıoğlu S. (2007). Etik Etik Dedikleri, III. Koloproktoloji- Stomaterapi Sempozyum Özet Kitabı, 12–14 Nisan. Adana. Adana Ostomi Derneği, Türk Tabipler Birliği, Çukurova Üniversitesi, Cleveland Clinic katkılı yayın. s. 86–88

Kadir, A. (2014). Etik-Ahlâk İlişkisi ve Etiğin Gelişim Süreci, Journal of International Management and Social Researches, Volume, 1(2). p .26

Karaköse, A.; Özkanan A. (2010). Etik Uygulamaların Çalışan Motivasyonu Üzerine Etkileri: Türk Patent Enstitüsü Örneği, 9. Uluslar arası Katılımlı Büro Yönetimi ve Sekreterlik Kongresi, Erzurum, s.302-303

Kavuncubaşı, S. (2000). Hastane ve Sağlık Kurumları Yönetimi, Ankara, Siyasal Kitapevi, p.34

Kılavuz, R. (2002). Yönetsel Etik Ve Halkın Yönetsel Etik Oluşumuna Etkileri, C.Ü. Sosyal Bilimler Dergisi, 26/2, s.257.

Kınay, S. (2006). İlköğretim Okulu Yöneticilerinin Yönetsel Etik İlkelere Bağlılık Düzeylerinin Öğretmen Görüşlerine Göre Değerlendirilmesi, Yüksek Lisans Tezi, Ankara, Gazi Üniversitesi Eğitim Bilimleri Enstitüsü, s.21-25

Köprü, B. (2007). Türk Kamu Yönetiminde Etik Değerlerden Sapma ve Yönetsel Yozlaşma, Yüksek Lisans Tezi, Ankara, Gazi Üniversitesi Sosyal Bilimler Enstitüsü Kamu Yönetimi Anabilim, s.5-29.

Margaret, AB.; Alvita KN. (2013). Çağdaş Hemşirelikte Etik (Alpar Ş.E.; Bahçeçik N.; Karaback Ü. Çeviri Editörü). İstanbul: Tıp Kitabevi.

Munson, R. (2012). Intervention and Reflection Basic Issues in Bioethics. 9. Boston: Cengage Learning; p. 863–875.

Northcraft, G. B. ; Neale, M. (1990). Organisational Behaviour: A Management Challengh, The Dryden Press, Florida, p.205-207.

Özkalp, E.; Kırel, Ç. (2011). Örgütsel Davranış, Anadolu Üniversitesi Yayınları, Eskişehir, s.236.

Öztürk, H. (2010). Yönetici Hemşirelerin Etik Davranışları ve Bir Araştırma. İstanbul Üniversitesi Sosyal Bilimler Enstitüsü Hastane ve Sağlık Kuruluşlarında Yönetim Bilim Dalı Yüksek Lisans Tezi, İstanbul, s.104-106

Pervical, T. (1803). Medical Ethics: Or, a Code of Institutes and Precepts, Adapted to the Professional Conduct of Physicians and Surgeons, Manchester, S. Russell Printed.; American Medical Association (2013). "Principles of Medical Ethics", http://www.ama-assn.org/ama/pub/physician-resources/medical-ethics/code-medical ethics/principlesmedical-ethics.page

Ray, S. L. (2006). Whistleblowing and Organizational Ethics, Nursing Ethics, Vol:13, No: 4, p.442.

Sayım, F. (2011). Sağlık Piyasası ve Etik: Sağlık Hizmetlerinde ve Sağlık Piyasasının Yapısında Etik, Bursa, MKM Yayınları, s.51.

Svara, J. H. (2007). The Ethics Primer for Public Administrators in Government and Nonprofit Organization, Arizona, Jones and Bartlett Publishers. p.10.

Şen, M. L. (2012). Kamu Görevlileri Etik Rehberi (6. basım). Ankara: T.C. Başbakanlık Kamu Görevlileri Etik Kurulu. http://www.etik.gov.tr/basbakanlikkitap.pdf. p.10

Velioğlu, P.; Babadağ, K. (1992) Hemşirelik Tarihi ve Deontolojisi, Eskişehir, ETAM A.Ş s.13.

Weiss, J. W. (1998). Business Ethics, A Stakeholder and Issues Management Approach, 2.Ed. The Dryden Press, p.7.

Yıldırım, G.; Kadıoğlu, S. (2007). Etik ve Tıp Etiği Temel Kavramları. Cumhuriyet Üniversitesi Tıp Fakültesi Dergisi; 29:12–7.

Yüksel, C. (2012). Etik ve Felsefi Açıdan Hasta-Hekim İlişkisi, Zengin, N. (Ed.), Sağlık Çalışanı-Hasta İlişkisinde Güncel Konular, Konya, Kardelen Yayınları, s.9.

Chapter 83

Change Management in Health Institutions

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INTRODUCTION

Today's organizations are often faced with changes as general reasons of new developments. In the days when we are experiencing a rapid change in every field, health institutions are faced with a vague, complex and rapid process of change in the face of intense global competition.

Organizations and managers who can adapt to this change on time and place can have the chance to survive, while those who can not provide are lost in this cycle of change.

The natural, economic, socio-cultural and legal environment factors in which health institutions operate are constantly changing. Especially these changes and developments, which we have experienced more intensely in recent years, mostly affect these establishments.

Along with change, in today's fast-paced competition, today's organizations will be able to survive only if they adapt to their changing environment. This adaptation effort appears to be one of the most important problems faced by health institutions.

Change management, which can provide organizations with a strategic advantage in today's competition process, is an inevitable process that health institutions and managers must be underscore it. The ability to change is the greatest competitive advantage for the future organizations.

1. CHANGE AND CHANGE MANAGEMENT

1.1. The Concept

Change refers to bringing something from one level to another. Change is a learning process that necessitates changes in culture, principle and values of organization. Changes in organization mean to come to a different situation from the current situation, whether planned or unplanned, in relation to organizational activities. It requires to press mutual mind into service, inter-organizational agreement and communion (Hill & Collins, 2000; Beeson & Davis, 2002).

Change management is old as a managerial concept. However, today’s change environment brings a different importance and content to change management. Change was necessitated to making an effort in and equal and regular environment until 1980. Factors that accelerated and complicated in 1990’s was brought a strategic aspect to change management (Alpelbaum et al., 1998).

With the rapid changes in markets, customer preferences and technology, many organizations have come to the point of decline. Organizations that could not keep pace

with change and could not internalize it faded away and the rest of organizations made effort to find the answers of the questions such as what change is, why, when and how to do it and who will apply and when it will happen to sustain their existence. As a result of these efforts, a new approach called "change management" has emerged (Tevruz; 1996, Aktan, 1998; Eroğlu, 1998).

From this approach, it is possible to define the organizational change management, including the human factor, as follows: It is the whole process of utilizing at every level of person's ability, knowledge and personal characteristics during the efforts to develop all managerial and organizational attitudes that play an important role in enabling a flexibility that in an organization integrated with its surroundings can quickly adapt to the changes in its surrounding (Çalışkan, 2007).

1.2. The Importance of Change

Today's rapid change environment makes continuous approaches and efforts related to change and change management. The main point of change is that it perceived of the importance of necessity of change.

In the other word, whatever its kind, the adoption and success of change will be proportionate to the power of the intellectual revolution that will begin in the brains. The approach which will meet the increasing change need of the day is continuing and whole-spread change efforts.

Renewing is inevitable to ensure continuity. Whereas, continuity has a value in business life, change is directed to innovation is necessary (Gibson, 1997).

A constant existence of reflex of change becomes a basic approach for health institutions establishments. Effective change means multifaceted development (Moran & Brigtman, 2000; Hazır, 2003). Organizations have to catch the necessity of change for beyond being powerful even survive. The only possible way to be successful in the rapid change process is seeing the necessity and the reason of change.

1.3. The Scope of Change

The subjects that fall under the scope of application of the change process in health institutions are as follows (Kritner and Kinicki, 1995):

a. The establishment,
b. Purposes of the establishment,
c. Leaders/managers in the establishment,
d. Employees in the establishment,
e. Social factors,
f. Work methods.

1.4. The Purposes Of Change Management

Change management directs to organizations at strategic level to following purposes Aktan, 1999; Düren, 2000):

a. Paying attention to stakeholders and predicting possible changes in their expectations.
b. Knowing and following conditions of competition
c. Being on the alert about technology and turning knowledge into action
d. Increase of smartness with developing participative management and flexibility abilities.
e. Developing the rewarding which customized or oriented to groups in the

performance assessment.

f. Developing by identifying creative potential in human resource.

g. Investing in intellectual assets that create synergy and innovation such as patent, right of usage, brand values.

h. Developing innovation and creation in organizations and constituting dynamic, flexible and nimble organization structure.

1.5. Varieties of Change

There is classification of change from different point of view. These are the main ones (Koçel, 2010):

1.5.1. Planned Change - Unplanned Change

Organizational change efforts can be considered planned and unplanned (Kılınç, 2001).

Planned change is a reaction created by the ones in the organizations in performance. They are pre-determined and applied change efforts initiated by change leaders. Most of the change works are within the scope of planned change.

Unplanned change refers that the purpose direct and stages in the process of change was not thought in beforehand and it comes to above of the organization so there is no other solution except adaption. This kind of changes can not be manage, they happen spontaneously (Allen, 2001).

1.5.2. Macro Change - Micro Change

Macro and micro change activities are related to count of issues that subject to change in organization. Macro change refers that organizations in the aggregate is subject to change. This change, known as organization development refers that many strategies and techniques are used to improve the performance of the organization as a whole.

Micro change refers to making change related to any subject at top or low level in organization.

1.5.3. Extended Over Time Change - Sudden Change

Realization of changes in some organizations is extending over time and trying to reach the purpose stepwise (Dauphinais & Means, 2002). On the contrary, sometimes, the regulations envisaged by sudden change are completed in a short period of time and change is tried to be realized (Ateş, 2005).

1.5.4. Proactive (Predictive) Change - Reactive Change

The fact that a change is proactive according to predicted environmental conditions refers that the organization's work, activities and procedures are changed, so that the organization is ready when predicted conditions are met. Proactive change is the conscious change efforts to improve the functioning of organizations and adaptation to the competitive environment.

In spite of that, the reactive change is not making change in the organization according to predicted conditions, but making change to accommodate the actual conditions.

1.5.5. Far-Reaching Change - Narrow-Scoped Change

The point of emphasized in far-reaching change- narrow-scoped change is that the

count and the extent of the changes required in the organization is broad or narrow.

1.5.6. Active Change - Passive Change

Passive change is the organization makes changes in its own environment in order to adapt to the developing conditions of the outside environment. In spite of that, active change the organization is influencing and changing its external environment with making innovation.

1.5.7. Stepwise Change In The Way That Improvement - Radical Change

Step-by-step change as improvement does not reflect acutely and contains the situations that managers faced throughout their business life.

Methods of doing business; includes factory layout plan, changing the way the new product is releasing on the market, and other situations in which people see it as the continuation of the past.

Radical change, as is evident from it's name, includes change efforts to change the current situation completely and radically.

2. ORGANIZATIONAL CHANGE MANAGEMENT MODELS

Change can be considered as a natural process in evolutionary, as well as it may includes revolutionary fundamental innovations and approaches (Budak, 1998).

The concept of evolution is defined as a process that is self-changing and self-transcending, linear in time, and thus can not turn back, creating innovation, diversity, more complex organizing, and increasing conscious mental activity. Revolution means sudden and radical change.

Change management models take the following models according to evolutionist, revolutionist features, change management and participation feature:

2.1. Evolutionist and Autocratic Model

If the various types of change are thought to be on a line, there is an evolutionist and autocratic model on the far end of the line (Mellina, 2003).

In this organizational change management model, it is defended that change is gradual and moderate. However, here, an autocratic leader and / or an autocratic senior board takes and applies decisions about change.

In here, the reforms to be carried out in the organization are made up of orders from top, and the employees in organization are only responsible for implementing it.

2.2. Evolutionist and Participative Model

In this change management model, it is envisaged that the change is made as gradual which means as stepwise, slowly and consistently and employees in organizations participate the change management works (Lawler, 2003).

This approach features the ability of learning and adaption of people in the organization. People agreed and participate to this kind of change and they make effort. This approach understands the real meaning of organization with creating a corporate culture and values in harmony with a past vision (Gull, 1997).

This model is centerless; it performs a wide and lasting springing over time with more superior-subordinate (Meyerson, 2003).

2.3. Revolutionist and Autocratic Model

Leaders of organizations think that they have no time to allow to occurring of

evolution to spontaneously or evolution can mislead the organizational change (Hanna, 1998). In these times, change is quickly accomplished under the leadership of an autocratic leader and a group that obeys the leader. In this model, it is the subject that making changes as rapidly, without losing time and large scale (Lawler, 2003).

In this approach, there is change effort that a region's will is on the other and observed mechanical forces. The revolutionary approach includes self-limiting features as well as it is fast. It can cause lack of trust and motivation between employees due to it does not support creativity and participation (Gull, 1997).

Members of the organization do not have the right to appeal the reforms. In this conditions change can be sudden and often quite painful. Military coups are examples of such a change management model.

2.4. Revolutionist and Participative Model

The change model is at the other end of the line. In this model, change management studies are carried out with the leadership of senior management and with the participation of all the employees of organization (Herman, 2004). The adopted change in here is radical change, not the gradual change.

This is the most healthy change management model for organizational change. Employees should reach the success with directing change within the process (Daft, 2003). An organization heads towards to a new area with leaving the area where they are active, mergers, etc. can be given as revolutionist change examples (Hussey, 1997).

3. REASONS OF CHANGE IN HEALTH INSTITUTIONS

Health systems are in a rapid process of change in all developing or developed countries. The reasons for the change are as follows (Lee & Alexander, 1999; Bazzoli et al. 2004; Fleuren et al 2004; Lemieux-Charles & McGuire, 2006):

a. Enlargement of the sector and Increase of Competition
b. New medical and communication technologies
c. Changing expectations of society and patients
d. Aging population,
e. Multiple diseases,
f. Changes in national health strategies and policies,
g. New payment systems, which are developed due to limited resources,
h. Quality and safety.

Developments that occurred in all these factors obliged for health institutions to adapt to change, to internalize change.

4. ROAD MAP FOR CHANGE FOR HEALTH INSTITUTIONS

The key of the manage of change is forming a process that the change is accepted, explained, followed. In this chapter a course of action is offered to health institutions for successful implementation of change management (Çalışkan, 2007):

- **Step One: Determine the necessity of change**
  - Detecting the need for change
  - Acquisition of change decision
  - Creating a top level intellectual exchange on change
- **Step Two: Preparing Organizations for Change**
  - Announcement of change decision to all business units

- Preparing people for change
- Preparation of structure and resources to change

❖ **Step Three: Planning of Change**

- Determination of responsibilities
- Defining vision and mission
- Identification of objectives and determination of objectives
- Existing situation
- Development of alternative solutions
- Choice between alternatives to strategy and tactics to be used
- Determination of the workforce and other resources required for the realization of the plan

❖ **Step Four: Realization of Action Plan**

- Pilot implementation
- Determining positive and negative directions
- Strengthening the modification and rebalance change model required
- Drawing the new model schematic
- Spreading model to all parts of the organization
- Transition to practice

❖ **Step Five: Evaluation and Institutionalization of Change**

- Measurement and evaluation of change results
- Institutionalization of change

5. CONCLUSION

Today's manners of rule make irreplaceable of change for survive and exist in future in more intensifying and globalizing competition environment each passing day. It is getting more difficult that organizations that can not understand the importance of change protect and sustain their existence in the current competitive environment.

The necessity of change is very important for all organizations in a competitive environment. It is a fact that they have a great difficulty in change and managing change regardless of the size, developmental stages and locations of organizations. Leaders have to understand not only when the change comes but also know how they will manage it. Furthermore, the necessity of managing the change will continue even after the desired situation was reached.

Another very important issue about change is when and how organizations should change. Every organization is very different from each other, so the way that will follow in respect of change will be different.

As organizations grow, their organizational and managerial needs also increase. The need for managers who have ability to make strategic decisions relate to increasing count of staff, intensifying competition, growing market, chain of distribution and product lines are increased. The biggest problem in the growing process of organizations is in the performing of organizational and managerial change which is required for healthy growing and development, and they fail to exhibit attitude and behaviors appropriate to the conditions.

Today, that competition spikes up and technology is advancing rapidly, the ability of organizations keep up with this change and become more efficient necessitate having a qualified workforce as well as creating investments, efforts and expectations for future

Because, the only way that take part in this change with the opinion of the only thing that doesn't change is change itself is human resource that is the most important resource required to be developed in efficiency line. Education underlies of all development and innovation. For this reason, it is possible to develop young executive candidates of the future or current managers to be able to adapt to the complicated, constantly changing and renewed structure of the future with carrying out manager development activities. And this express us the fact that "development occurs with developing".

The need for leaders who will create new values, undertake a risk and consider chaos ambiguity as an opportunity to carry their organization to success is more than ever in this age. Leaders who successfully carry out change management in the information age and carry their organizations to the future will be leaders who build flexible and responsive structures that are quick to respond to these decisions by forming a creative, creating a new power and decision-making center that interacts with each other with wide range and imagination.

These leaders consider the individuals within the organization not as passive elements but as the organization itself. The information age leader sets the vision with his own choices, not with the options offered. These leaders will be successful by changing the system and creating new paradigms themselves. Leaders of age of change must gain various disciplines, sufficient accumulation and awareness, have top-level competence in the technological level, autodidact, have holistic view, learn to integrate meaningful and important things from the information, follow closely external patterns and drivers of change and must develop the perception of complex processes and events with multiple interactions and making healthy decision ability.

In the age of change, it will be possible for organizations to make a breakthrough by leaving the old paradigms as soon as possible. It is necessary to focus on the future technologies with the paradigm shift and join the race beforehand and comprehend that the planning of change is very important fact for growth, success and continuity

As a result, those who pay attention to the call for change will write new rules of the business world. The most effective way to successfully manage change is to create change yourself. All that is needed is the desire to be successful and the courage to start changing.

REFERENCES

Aktan, C. C. (1998).Yeni Yönetim Teknikleri ve Değişimle Baş Edebilmenin Yolları, MESS Yayınları, 30.

Aktan, C. C. (1999). 2000'li Yıllarda Yeni Yönetim Teknikleri, TÜGİAD Ya., İstanbul.

Allen, D. (2001). "Doğal Değişimin Sonuçları", Executive Excellence Dergisi, Y. 5, s. 49, 24-27.

Alpelbaum, S. H., St. Pierre, N. & Glawas, W. (1998). "Strategic Organizational Change: The Role Of Leadership, Learning, Motivation and Productivity", Management Decision, 289-301.

Ateş, Ö. (2005). Aile Şirketleri: Değişim ve Süreklilik, Ankara Sanayi Odası Yayınları, Ankara, Haziran, 104-106.

Bazzoli, G., Dynan, L., Burns, L., & Yap, C. (2004). Two decades of organization change in health care: What have we learned? Medical Care Research and Review, 61, 247–331.

Beeson, I. & Davis, C. (2002). "Emergence And Accomplisment In Organizational Change", Journal Of Organizational Change Management, 55-71.
Budak, G. (1998). Yenilikçi Yönetim Yaratıcı Birey, Sistem Ya., No: 177, İstanbul, 142.
Çalışkan, A. (2007). Organizasyonel Değişim Yönetimi ve Azerbaycan Cumhuriyeti'ndeki Türk Menşeli İşletmelerde Bir Uygulama, Süleyman Demirel Üniversitesi, Sosyal Bilimler Enstitüsü, Yayınlanmamış Doktora Tezi, Isparta.
Daft, D. (2003). "Değişime Önderlik Etmek", Executive Excellence Dergisi, Y. 7, S. 80, 23-24.
Dauphinais, G. W. & Means, G. 2002). CEO'ların Bilgeliği, Sistem Yayınları, No: 331, İstanbul.
Düren, A. Z. (2000). 2000'li Yıllarda Yönetim, Alfa Yayınları, İstanbul.
Eroğlu, F. (1998). Küreselleşme Sürecinde Yönetim Krizi ve Çözüm Yolları, Berikan Yayınları, Ankara, 127.
Fleuren, M., Wiefferink, K., & Paulussen, T. (2004). Determinants of innovation within health care organizations. International Journal for Quality in Health Care, 16, 107–123.
Gibson, R. (1997). Geleceği Yeniden Düşünmek, Sabah Ya., İstanbul.
Gull, G. A. (19979. "Dönüşümsel Değişimi Anlamak", Executive Excellence Dergisi, Y. 1, S. 9, 9-10.
Hanna, D. P. (1988). Designing Organizations For High Performance, Reading, MA: Addison-Wesley, 126-128.
Hazır, K. (2003). Değişim Yönetimi Etkinliğinde Vizyon Belirginliğinin Önemi, Kara Harp Okulu Bilim Dergisi, 80-96.
Herman, R. E. (2004). "Üst Yönetimdeki Boşlukların Giderilmesi", Executive Excellence Dergisi, Y. 8, S. 86, 24-25.
Hill, F. M. & Collins, L. K. (2000). "A Descriptive and Analytical Model Of Organizational Transformation", The TQM Magazine, s. 966-983.
Hussey D. E. (1997). Kurumsal Değişimi Başarmak, Rota Yayınları. İstanbul, 14-15.
Kılınç, T. (2001). "Değişimi Kim Yönetmeli", Executive Excellence Dergisi, Y. 5, S. 49, 21-24.
Koçel T. (2010). İşletme Yöneticiliği, Beta Yayınları, 12. Baskı, İstanbul, 512-514.
Lawler, E. E. (2003). "Değişimi Yönetmek", Executive Excellence Dergisi, Y. 7, S. 80, 12-14.
Lee, S., & Alexander, J. (1999). Consequences of organization change in U.S. hospitals. Medical Care Research and Review, 56, 227–276.
Lemieux-Charles, L., & McGuire, W. (2006). What do we know about health care team effectiveness? A review of the literature. Medical Care Research and Review, 63, 263–300.
Mellina, E. (2003). "Değişimi Yürütmenin Altı İlkesi", Executive Excellence Dergisi, Y. 7, S. 80, 19-20.
Meyerson, D. E. (2003). "Sessiz Sedasız Radikal Değişim", Harvard Business Review – Kültür ve Değişim, 73-74.
Moran, J. W. & Brightman, B. K. 82000). "Leading Organizational Change", International Career Development Journal, 111-119.
Tevruz, S. (1996). Endüstri ve Örgüt Psikolojisi, Türk Psikologlar Derneği ve Kalite Derneği Ortak Yayını, Ankara, 105.

Chapter 84

Defining the Incidents and Their Possible Causes Threatening the Patient Safety in a Training and Research Specialty Hospital

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1. INTRODUCTION

1.1. The Concept of Patient Safety

Health institutions are places established to serve and bring health to sick individuals. Kaya (2005:5) states that according to Donabedian, health care institutions are obligated to provide effective, efficient, affordable, acceptable, legal and optimal health care services to the patients. In many lawsuits that filed against health care institutions, it has been concluded that health care institutions have to evaluate the risks that may be a threat to patient safety and to take care of the necessary precautions so as to provide safety which is accepted as the most important patient right (Annas, 2006: 2063).

While the primary goal of all health care institutions is to provide safe health care, in recent year's research has highlighted the occurence, extent and consequences of the problems in health care services. Patient safety, which means to protect patients from harm caused by health care system, has gained importance in the global dimension (Bellamy, 2005: xii). Especially in the last decade the awareness of unwanted events and medical errors in health, institutions have increased and "patient safety" concept has emerged. **Patient safety** is defined as the best practices to ensure optimal outcomes for patients and the reduction and mitigation of unsafe practices in the health care system (Davies *et al*., 2003: 12). The most important phenomenon that raises awareness about the concept of patient safety is the report published by United States Institute of Medicine (IOM) in 1999. This report emphasizes that, medical errors are one of the most important causes of death in the United States, it further refers to the nature of medical errors and adverse events and the personal and social losses caused by them and gives some suggestions for creating safe health institutions (Magill, 2006: 101).

There are two important terms in patient safety: adverse events and medical errors. **Adverse event can be defined as** any unintended damage, injury or complications which result from the management of health care rather than the condition of the patient or the underlying condition, may cause to death, disability or prolonged in the patient's hospitalization (Kohn et al. et al., 2001, Brennan *et al*., 2004: 145). An adverse event either can occur because of a mistake or without error since the management of health care covers all aspects of health care, not just the decisions and practices of the doctor

or nurse (Massachusetts Coalition, 2006: 4). Even if adverse events arise from management of health care, not all of them can be prevented (Kohn *et al*., 2000:4) According to the American Society of Healthcare Risk Management (ASHRM), **medical error** is the failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim". A medical error can lead to a wound in the patient. A medical error, which does not cause damage, does not result in an adverse event and this is referred to a near miss (Massachusetts Coalition, 2006: 4).

The studies emphasize that each year thousands of people die due to medical errors and results from health care (Leape, 2009: 2). In addition to patients who are injured or lost due to medical errors, adverse events lead to prolonged periods of illness, lack of desired health outcomes, and increased costs of health services (Kohn *et al.*, 2000: 10).

Along with the growing awareness of the importance of patient safety, number of national and international works in this area, researches, congresses and conferences has increased. Health institutions are primarily trying to identify the events that may threaten the safety of the patients they serve. incorrect blood transfusion reactions, patient falls, wrong drug practices, wrong site surgery, forgotten surgical instrument in the body, operation complications, unexpected death, rape, suicide and burn due to medical treatment are the incidents which threatens patient safety and their types and frequencies may change from one institution to another (Ferraco & Spath, 2000: 42-43, Bellamy, 2005: xii).

The complex nature of health care services, inclusion of high-risk practices and decisions, provide the basis for events that threaten patient safety. Their clinical, psychological and sociological dimensions have explained the factors causing patient safety problems. The continuous development of medical science, the changing technology, the human factor, characteristics of health institutions and services constitute the nature of health care services, might cause medical errors and adverse events (Walshe & Boaden, 2006: 3-6).

Dal (2004), reported that studies on the causes of the events threatening patient safety focused on the factors originating from the system rather than the individual errors. Dr. Lucian Leape (Harvard School of Public Health) emphasizes the importance of the hidden conditions arising from the system by saying: "Inadequate health care workers make up 1% of the problems. Qualified employees, who are in the effort to perform a good job, but make very simple mistakes make the remaining 99% of the mistakes. In fact, what causes them to make these mistakes is the system itself ". Dal (2004) stated that the strategic goals of health care institutions in patient safety must be to make designs that prevent the emergence of process errors in a way that will harm the patient and to take measures to capture and rectify the mistakes before they reach the patient.

The provision of patient safety has become the first and most important step in increasing quality of care, which is why the quality programs are also the subject of much concern. In many countries, a number of implementations have been initiated at the institutional and national level for the improvement of patient safety as well as the obligations of quality and accreditation bodies. Reporting of incidents threatening to patient safety, doing root cause analysis, corrective / preventive actions and creating of patient safety culture are the most important of these implementations. Governments allocate budgetary and risk management studies to establish various institutions and

establish patient safety initiatives in order to increase patient safety (Baker *et al*. 2004: 1678).

1.2. Incident Reporting in Patient Safety

It is very important for health institutions to know types, frequencies and causes of incidents threatening the patient safety in order to develop corrective and preventive practices. Incident reporting system is the most effective way to obtain information about the types, frequencies and causes of events that occur in health institutions, which might threaten patient safety.

Incident reporting includes reporting of events that cause unexpected damage or potential damage to patients by health personnel. One of the most important purposes of the incident reporting is to acquire qualitative information, which will increase learning of patient safety culture of the institution as well as epidemiological data. Thus, healthcare institutions have learned institutionally from their own and others' experiences with adverse events and medical errors (Giles *et al.*, 2006: 108-109).

Most of the incidents that happening in health care institutions are not reported by health care workers. Studies show that only from 5% to 30% of incidents are reported in the incident reporting systems (Blegen *et al*., 2004: 69). The events known and reported in health services actually constitute the small and visible part of the existing events, and it is thought that the errors that are not caused harm, ignored or not recognized are much more than known ones. For this reason, iceberg analogy is used for errors in health care services (Department of Health, 2004). Giles *et al.*, (2006: 112) listed the attitudes and barriers to incident reporting in health care system as follows:

- Fear of punishment,
- Concerned about litigation,
- Anxiety about disclosure,
- Event notification forms are not useful,
- Not to recognize incident,
- Incident reporting is less effective in short-term improvement of quality of patient care,
- Assuming that unexpected events occur after the accident and do not need to be reported,
- Not being supported by team members,
- Lack of feedback.

Reporting of events threatening the patient safety and error reduction practices are the basis of continuous quality improvement programs. However, the creation of a safe environment for reporting the errors in a correct way should provide support and involvement of employees. Banja (2004: 17) describes the reason why many safety programs are not successful at present as the lack of the necessary trust environment for the staff.

In order for health institutions to provide safe health services, which are the primary goal of institutions, it is necessary to develop patient safety culture, to make the incident reporting system functional, and to develop measures against errors and accidents. In order to provide data to the administrators, decision-makers and health

professionals in institutions, the researchers have a great responsibility in terms of the type, frequency, reasons, underlying latent conditions, and the development of preventive measures that affect patient safety. Increasing the number of surveys on patient safety and sharing the solution proposals with field staff are necessary in the national patient safety struggle.

The literature review on patient safety has crystal clearly shown that there is no sufficient number of research results related to types, frequencies, reasons and results of the incident threatening to patient safety. This research was conducted to define types, frequencies and possible reasons of incidents threatening to patient safety and to determine their outcomes in patient perspective in a public specialty training and research hospital.

2. MATERIALS AND METHODS

This research is a prospective, descriptive study and conducted to determine the events that threaten patient safety, their possible causes and outcomes of them in patients' perspective at the hospital. The universe of the research was the reported incidents, which have influence on the patient safety within six months (1 September 2008- 28 February 2009) in the Ulucanlar Eye Training, and Research Hospital affiliated to the Ministry of Health in the province of Ankara, Turkey. All of the cases which were reported by hospital personnel within six months were included in the study without any sampling.

In the study, "Patient Safety Related Incident Reporting Form" was used as the data collection tool. The literature review did not reveal an appropriate incident reporting form for specialty hospitals or eye hospitals. For this reason, the researchers created an incident reporting form. In order to determine the face validity (content and language validity) of the incident reporting form, a pilot application was made to Ulucanlar Eye Hospital employees during 10-25 August 2008. After the pilot application, the form was finalized and made ready for the study by the researcher.

The incident reporting form used in the study was introduced by the researcher via educations and model practices given to the health workers working in the hospital in groups. In the literature, there is information that employees who make event notifications are refused to make notifications for reasons like punishment, condemnation, accusation. In preliminary interviews and trainings, the importance of the study was explained to all health workers in the hospital and the results of the study are assured that they will not be used for punishment purposes.

The study was initiated after the trainings and 15 days of pilot study. The research was conducted for six months between 1 September 2008 and 28 February 2009. Employees were asked to report events (that affect or threaten patient safety) that result in out-of-normal care, such as prolonging patient admission, requiring additional treatment and increasing the number of medical monitoring, which are likely to harm patients. To ensure confidentiality, the forms filled in by the employees were collected in a special place determined in the hospital units and there was no information that may reveal the identity of the person who filled in the forms. During the first three weeks of the study, the units of the hospital were visited every day, then once a day or several times in a week, filled incident reporting forms were collected and interviewed with employees and unit supervisiors to identify forgotten or unreported events. If there was an unreported event, it was asked unit supervisior to fill in a form for it. Unit

supervisors are particularly trained and are required to help in recognizing and recording events.

The data obtained from the study were analyzed by SPSS 15.0 program. Descriptive analysis was used. Patients were assessed for encountering an event that affected patient safety. Types, frequencies, possible reasons and results of the incident threatening to patient safety were assessed. In addition, the distribution of events according to patient outcomes is examined.

All the events were tried to be reached within the scope of the research and necessary precautions were taken for the risks or barriers predicted in the literature. Nevertheless, it is thought that there may be undeclared and undetected events. Since the number of events detected was limited to notifications, the number of events actually present may be greater than the number of events detected as the endpoint of the investigation. Another important limitation of the study is that the outcomes for other health institutions will not be generalized because the researching hospital is a public branch (eye) hospital.

3. RESULTS

The total number of patients (82,170) examined at the outpatient clinics and the number of inpatients (3,762) in clinics between 1 September 2008 and 28 February 2009 at the Ulucanlar Eye Training and Research Hospital were 85,932. The number of large and medium-sized surgeries performed in this six-month period is 3101 and the number of small-scale surgeries is 5,060. A total of 256 incident reportings were made during the study period.

The total number of patients served by outpatient clinics and clinics for six months was 85,932. Since a total of 256 event reports were made among these patients, 0.3% of all patients receiving service from the hospital were found to be associated with an incident threatening to patient safety. In the inpatient units, the incidence of incident threatening to patient safety was found to be 6.4%, with the number of cases seen in clinics being 242 and the total number of hospitalized patients being 3,762. The rate of occurrence of the event was determined as 0,01% due to 14 events reported in outpatient units and the laboratory (Table 1).

Table 1: Distribution of incident rates according to hospital units

Hospital units	**Number of Patients**	**Number of Reports**	**Incident Frequency**
Outpatient units and laboratory	82.170	14	0,01%
Inpatient units and operation rooms	3762	242	6,4%
Total	**85.932**	**256**	**0,3%**

When the reported incidents were examined in terms of the place where they were occurred, 49,61% were in the inpatient units, 44,92% in the operating rooms, 4,69% in the outpatient units and 0,78% in the laboratory (Table 2).

Table 2: Distribution of incidents according to hospital units

Place	Frequency (n)	Percentage (%)
Inpatient units	127	49,61
Operating rooms	115	44,92
Outpatient unis	12	4,69
Laboratory	2	0,78
Total	**256**	**100,00**

When the distribution of the cases according to their types was examined, it was observed that 41,32% was delaying or canceling of the planned surgery, 28,10% was complication of surgical operation, 15,70% was medication (drug related) error, 5,79% was procedure failure, 2,48% was patient fall, 1.24% was deterioration in patient status, 1.24% was patients were taken away from the hospital, 0,83% was patient identification failure, 0,41% was accident (burn) and 0.41% was judicial case (theft) (Table 3). In order to be able to evaluate the results more accurately, event analyzes were conducted on 242 events that occurred in patients who were hospitalized.

Table 3: Distribution of incidents according to types

Incident Types	Freqeuency (n)	Percentage (%)
Delaying or canceling of the planned surgery	100	41,32
Complication of surgical operation	68	28,10
Medication error	38	15,70
Procedure failures	14	5,79
Patient fall	6	2,48
Hospital Infection	6	2,48
Deterioration in patient status	3	1,24
Taken away from hospital	3	1,24
Patient identification failure	2	0,83
Accident (burn)	1	0,41
Judicial case (theft)	1	0,41
Total	**242**	**100,00**

The causes of surgery delays or cancels were investigated in two groups: system-related causes (66%) and patient-related causes (34%) (Table 4).

Table 4. Distribution of surgical delays or cancels according to causes

Causes	Frequency (n)	Percentage (%)
1- System Related Causes		
Lack of medical tests	29	29,00
Workload (Excess of surgical operation number)	9	9,00
Havalandırma Sisteminin Bozuk Olması	8	8,00
Renovation of the operating rooms	6	6,00
Malfunction of devices	5	5,00
Lack of material (suitable introcular lenses)	5	5,00
Anesthesia related problems	4	4,00

Total	**66**	**66,00**
2- Patient Related Causes		
High blood pressure	16	16,00
High blood sugar	13	13,00
Infection	4	4,00
Patient abandonment from operation	1	1,00
Total	**34**	**34,00**
Total	**100**	**100,00**

When the distribution of surgical complications according to the types was examined, posterior capsule opening was performed in 66.18%, suture addition in 20.59%, reaction in 5.87% in the eye, intraocular lens replacement in 2.94% 'of the lens was found to fall into the vitreous, and 1.47% was due to early removal of the stitches.

When the distribution of medication errors (drug related events) according to type was examined, 57.89% were given no medication or drug, 18.42% were given the wrong drug, 5.26% had the drug reaction, 5.26% were given drugs at the wrong rate, 5,26% were given drugs without physician order, and 2,63% were given the wrong doses. The most common reason for not giving or omitting the drug, which is the most common drug, was found to be the absence of the drug (36,84%).

When the results of the events were examined, 84.71% of the patients had an increase in the duration of hospitalization, 87.60% of additional procedures were applied, 84.30% of the medical monitoring increased, 87.60% increased in nursing care, 17.77% of changing in vital symptoms, 4,13% of pain related to incident, 2.48% of had discomfort in the body feeling, 0,83% had referral to another unit, and 0,83% had permanent damage (Table 5).

Table 5. Evaluation of Results Caused by Incidents

Evaluation of Results	**YES**		**NO**		**TOTAL**	
	Frequency (n)	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**	**Frequency (n)**	**Percentage (%)**
Extended length of staying at hospital	205	84,71	37	15,29	242	100,00
Additional procedures	212	87,60	30	12,40	242	100,00
Increased in number of medical monitoring	204	84,30	38	15,70	242	100,00
Increased in nursing care	212	87,60	30	12,40	242	100,00
Changing in vital symptoms	43	17,77	199	82,23	242	100,00
Pain	10	4,13	232	95,87	242	100,00
Discomfort in the body feeling	6	2,48	236	97,52	242	100,00
Referral to another unit	2	0,83	240	99,17	242	100,00
Permanent damage	2	0,83	240	99,17	242	100,00

4. DISCUSSION

256 incidents were identified as a result of the study which was conducted to reveal the types, incidence, possible causes and consequences of incidents affecting patient safety in a public owned training and research hospital. The number of reported incidents among inpatients was 242. The great majority of incidents constituted surgical delays, operative complications and drug related events, processing errors, nosocomial infections and other incidents. In a study conducted by Kuş (2004), 1473 incidents were reported in the Acıbadem Health Group between January 1, 2002 and December 31, 2003, and most of the incidents were related to the drug. Thomas and colleagues (2000) reported surgical complications, Forster *et al.,* (2004) reported drug events, Göktaş (2007) reported drug application and treatment errors within HMPS in the majority of cases detected in other studies. In a study conducted in intensive care units, the rate of airway-related incidents was 20% (Beckmann, 1996). It is thought that the results of different researches are related to the characteristics of the research institutions. According to Rivard *et al.,* (2008), the characteristics of the hospital (geographical location, presence or absence of a training hospital, the frequency of high-risk initiatives, insufficient staff and equipment, etc.) affect the types of adverse events seen in patients and their consequences. It can be said that the types of services given by the hospital and the intensive surgical procedures cause the difference between literature results and research findings.

Despite the fact that the researched hospital was an eye hospital and 8161 large, moderate and minor surgical interventions were performed within a six-month period, no false-positive surgeries were found. For a year or so, some safety measures have been implemented in the clinic and the operating room to prevent false-positive surgery, such as authentication, marking of the surgery area, time-out control (authentication just before surgery). It can be said that these practices in the hospital prevent the occurrence of the wrong side surgery.

Because of the survey, 0.3% of all patients receiving service from the hospital and 6.4% of the patients receiving in-service treatment in the six-month period have experienced an incident that may threaten patient safety. This incident rate is low when compared with literature. The reason for this might be that high-risk interventions and treatments are not being performed since it is just an eye hospital.

Since detailed data on the preventability status of the incidents detected in the survey could not be reached, no findings were found for this situation. Bhasale *et al.* (1998) explained that 76% of cases can be prevented, 11% of cases cannot be prevented, 13% are undecided, and 27% of the cases have the potential to cause serious damage. It is considered that further research with more comprehensive and expert opinion should be done in order to determine the real causes of the incidents, to recognize the hidden conditions that cause incidents to come to fruition and to reveal the preventability level of the incidents.

When the incidents were examined through the results, it was found that 84.71% of the patients had an increase in the length of stay, 87.60% had additional procedures, 84.30% had an increase in follow up, 87.60% had an increase in nursing care and 1.77% was found to be changed with vital findings. It has been reported in the literature that adverse events lead to serious consequences that extend the length of hospital stay, increase the cost of care, bring economic burdens to individuals and institutions, and

increase the risk of death (Rivard *et al*., 2008, Zhan *et al*., 2003, Thornlow, 2007).

5. CONCLUSION

Within the scope of the study, 256 incident reports were made during the six-monthes period. It can be said that the research initiated incident reporting as it was not the case before in the hospital, especially the visits made to the units and the trainings given were created awareness for the patient safety among the employees. In the study, the incidence of the incident was higher in the patients receiving inpatient services. Improving the measures to be taken for the inpatients could be suggested. It was also determined that the most common incident among the reported cases was the delayed or canceled operation. Changes that can be made to the system to prevent surgery delays are beneficial. It has been determined that the majority of the incidents lead to longer hospital stay, additional treatment and increased nursing care in the hospitalization period.

It has been observed that the research and the training given during the research have raised an awareness of the patient safety and enhanced the employees' point of views on incidents. Increasing the number of similar research for the improvement of patient safety and collaborating with field staff by researchers in conducting such research is thought to be crucial in accelerating the number of incidents identified by researchers and supporting patient safety practices by helping to develop patient safety culture in institutions.

REFERENCES

Annas, G.J. (2006). The Patient's Right to Safety - Improving the Quality of Care through Litigation against Hospitals. The New England Journal of Medicine, 345: 2063-2066.

Baker, G.R.; Norton, P.G.; Flintoft, V.; Blais, R.; Brown, A.; Cox, J. (2004). The Canadian Adverse Events Study: the incidence of adverse events among hospital patients in Canada. Canadian Medical Association Journal. 170: 1678-86.

Banja, J. D. (2004). Persisting Problems in Disclosing. Medical Error. Harvard Health Policy Review Vol. 5.

Available at: http://www.hcs.harvard.edu/~epihc/currentissue/spring2004/banja.pdf (Accessed: 28 April 2009).

Beckmann, U.; Baldwin, I.; Hart, G.K.; Runciman, W.B. (1996). The Australian Incident Monitoring Study in Intensive Care: AIMS-ICU. An Analysis of the First Year of Reproting. Anaesth Intens Care. 24: 320–329.

Bellamy, M. (2005). Foreword. In: Rozovsky, F.A., Woods, J.R. The Handbook of Patient Safety Compliance. San Francisco: Published by Jossey-Bass.

Blegen, A.M.; Vaughn, T.; Pepper, G.; Vojir, C.; Stratton, K.; Boyd, M. (2004). Patient and staff safety: Voluntary reporting. American Journal of Medical Quality, 19: 67-73.

Bhasale, A.L.; Miller, G.C.; Reid, S.E.; Britt, H.C. (1998). Analysing potential harm in Australian general practice: an incident-monitoring study, MJA, 169: 73-76.

Brennan, T.A.; Leape, L.L.; Laird, N.M.; Hebert, L.; Localio, A.R.; Lawthers, A.G.; Newhouse, J.P.; Weiler, P.C.; Hiatt, H.H. (2004). Incidence of adverse events and negligence in hospitalized patients: Results of the Harvard Medical Practice Study I. Qual. Saf. Health Care, 13;145-151.

Dal, T. (2004). Sağlıkta Kaliteden Beklentimiz Nedir? Available at: www.kalder.org/genel/13ukk/sunumlar/teoman%20dal%20sunum.ppt (Accessed: March 2007).

Davies, J.M.; Hebert, P.; Hoffman, C. (2003). The Canadian Patient Safety Dictionary. Available at: http://rcpsc.medical.org/publications/PatientSafetyDictionary_e.pdf (Accessed: 19 May 2008).

Ferraco, K. & Spath, P.L. (2000). Measuring Performance of High-Risk Processes. In: Spath, P.L. Error Reduction in Health Care: A System Approach to Improving Patient Safety. San Francisco: Jossey-Bass A Wiley Company.

Giles, S.; Fletcher, M.; Baker, M.; Thomson, R. (2006). Incident Reporting and Analysis. In: Walshe, K. Boaden, R. Patient Safety: Research into Practice. Berkshire: Open University Press. England.

Göktaş, S. (2007). Bir Kamu Hastanesinde Hemşire İstihdamının Hasta Güvenliğine Etkisi. Haliç Üniversitesi, Sağlık Bilimleri Enstitüsü Hemşirelik Anabilim Dalı Yayınlanmamış Yüksek Lisans Tezi.

Kaya, S. (2005). Sağlık Hizmetlerinde Sürekli Kalite İyileştirme. Ankara: Pelikan Yayınları.

Kohn, L.T.; Corrigan, J.M.; Donaldson, M.S. (2000). To Err is Human: Building a Safer Health System. Washington. DC. National Academy Press.

Kuş, H. (2004). Sağlıkta Akreditasyon ve Hasta Güvenliği. S.B. Başhemşire ve Eğitim Hemşireleri Hizmet İçi Eğitim Programı Sunumu. 9 Mart 2004, Ankara.

Leape, L. (2009) Errors in Medicine. Clinica Chimica Acta 404: 2–5.

Magill, G. (2006). Ethical and Policy Issues Related to Medical Error and Patient Safety. In: First Do No Harm: Law, Ethics and Healthcare. McLean, S.A.M. Ashgate Publishing Co. England.

Massachusetts Coalition for the Prevention of Medical Errors. (2006). When Things Go Wrong: Responding to Adverse Events. Available at: http://www.macoalition.org/documents/respondingToAdverseEvents.pdf (Accessed: 10 March 2009).

Rivard, P. E,; Rivard, S.L.; Luther, C.L.; Christiansen, S.Z.; Loveland S.; Elixhauser, A.; Romano, P.S.; Rosen, A.K. (2008). Using Patient Safety Indicators to Estimate the Impact of Potential Adverse Events on Outcomes. Med Care Res Rev 65: 67-87.

Thomas, E.J.; Studdert, D.M.; Burstin, H.R.; Orav, E.J.; Zeena, T.; Williams, E.J.; Howard, K.M.; Weiler, P.C.; Brennan, T.A. (2000). Incidence and Types of Adverse Events and Negligent Care in Utah and Colorado. Medical Care, 38: 261-271.

Thornlow, D.K. (2007). The Relationship Hospital Systems and Utilization of Patient Safety Practices to Patient Outcomes. A Dissertation presented to the Graduate Faculty of the University of Virginia in Candidacy for the Degree of Doctor of Philosophy. Virginia.

Walshe, K. & Boaden, R. (2006). Patient Safety Research into Practice. Berkshire: Open University Press. England.

Vincent C,; Neale, G.; Woloshynowych, M. (2001). Adverse events in British Hospitals: preliminary retrospective record review. BMJ 322, 7285: 517-519.

Zhan, C. & Miller, M.R. (2003). Excess Length of Stay, Charges, and Mortality Attributable to Medical Injuries During Hospitalization. JAMA. 290: 1868-1874.

Chapter 85

Total Quality Management in Hospitals

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INTRODUCTION

With advancements in technology, people's expectations from fields of business have increased. As in all industries, increased opportunities of access to healthcare and the nature of healthcare which does not accept errors have caused a surge in people's expectations of satisfaction. In this chapter, we will discuss the concept of quality, total quality management and basics of total quality management in healthcare services.

1. THE CONCEPT OF QUALITY

There is no fixed definition as to the lexical meaning of quality and different interpretations have been brought by different people. Quality stems from the Latin root of "qualis" and helps us understand the true nature of the service or product used (Şimşek, 2001:85). One of the originators of the concept of quality, W. Edwards Deming has phrased quality as a goal that satisfies the needs of the customer (Sarkar, 1998). According to Deming, customer is the essential determiner of quality and quality providers need to meet the expectations of the customer. The Code of Hammurabi is regarded as the first records related to the concept of quality. In fact, the knowledge used in the construction of artifacts and works of art from the ancient Egyptian, Roman and Greek civilizations is an indicator to the fact that the groundwork for the contemporary understanding of quality was laid in the ancient ages, even if indirectly (Şahin, 2012:7).

In short, the concept of quality which is based on the customer's expectations began to be defined in scientific terms only within the twentieth century. Quality evolves and improves in four steps as inspection, quality control, quality assurance and total quality management.

a- **The Inspection step:** After World War I, the increasing complexity of production systems gave way to a necessity of quality control being performed by expert individuals. The profession of inspection was born from this necessity. Inspectors started to prevent problematic products and material to reach the customers. Even though this was good for the customer, it caused losses on the manufacturer's side. As a result, the next step of quality control was taken to also protect the manufacturer (Çelik, 2010:36-37).

b- **The Quality Control step:** Upon the increase in the number of factories,

studies were commenced to improve efficiency and achieve a better management of production systems. While Frederick Taylor set standards on splitting work into small pieces and the duration which is required to finish the work in this manner, Walter Steward commenced statistical quality control studies. The aim of such studies was to conduct entry and interlude controls, stabilize the level of quality and reduce costs (Çelik, 2010; Efil, 2010). In quality control, first the standards are formulated. Then, the product manufactured is made to meet quality standards. The following step is to determine to what extent the standards are complied with and to take corrective action and decisions. The last step of quality control is development works. In this step, new technologies are researched (Kıngır, 2010).

c- **Quality Assurance:** Quality assurance is bringing together the operational functions around a common objective in order to ensure that a product or service meets the expectations and needs of the customer fully and accurately. During World War II, the increasing needs and long durations of quality control processes made it impossible to meet such needs. This gave way to the inception of the concept of quality assurance. While quality control is a product-based approach, quality assurance is an approach that focuses on the process of production as a whole (Halis, 2013:34).

d- **Total Quality Management:** Total quality management is defined as addressing and developing the qualities of management, individuals, the work being performed and the product and the service being provided, which are all essential to fulfill the requests of the customer, through a systems approach and with the participation and consensus of all workers in all works done. In an article published in the "Industrial Quality Control" journal, Armand V. Feigenbaum (1957) used the term "Total Quality Control" for the first time to propound that quality is not under the responsibility of only the quality unit but all workers should be involved in the processes and procedures related to quality (Lawrence, 1998:60-67).

2. THE CONCEPT OF TOTAL QUALITY MANAGEMENT

Total quality management is a philosophical approach. The main purpose of such philosophy is to achieve a continuous improvement of quality and customer satisfaction. The manufacturer has some goals in ensuring total quality management. First and foremost are the accurate identification of consumer needs, achieving the highest standards possible, diminishing grievances, and decreasing the duration and costs of product development. This philosophy is not individual, but is rather a group activity (Yaş, 2009:9).

2.1. Key Elements of Total Quality Management

There are eight key elements of total quality management.

1. Leadership and responsibility of top management: The leader plays a significant role in ensuring quality and developing the system. In order to materialize such philosophy, leaders need to create an environment of trust and act in an assistive manner. They should create an environment wherein workers can enjoy themselves and demonstrate a firm stand (Demirkan, 1997:64). The basic duty of a leader is to formulate strategic plans and guide the organization by communicating such plans down to the workers at the lowest level.

2. Customer Orientation: Total quality management is a system wherein the

production is led not by the wishes, requests and complaints of the managers but those of customers. What is important here is the satisfaction of both the external customer purchasing a product and the internal customer providing such product (Demirel, 2008:27).

3. Participation of all workers: Another key element of total quality management is the workers' active participation in improving the system which they are a part of. Decision making processes can be improved through leaders sharing their decisions with the workers and workers participating actively in such processes (Sims et al., 1995:78). Through conferring responsibilities and giving a voice to workers on the work performed, it is expected that better results would be achieved in improving product quality.

4. Continuous improvement (Kaizen): In Japanese, kai means "change" and zen means "better". The amalgamation of these words, Kaizen refers to a state of continuous improvement. Kaizen is a philosophical approach that denotes making frequent and small changes instead of big changes. The goal here is not the result, but the process. By making small changes during any stage of the process, the flow can be made better at each step (Demirci, 2010:35).

5. Preventive approach: This is an approach that can be defined as correct planning. That is because an approach of not making mistakes is preferred in total quality management; and a great deal of errors and mistakes can be prevented through a meticulous manner of work.

6. Measurement and statistics: One can make mistakes while interpreting something that cannot be measured. In order to improve the total quality, one needs robust measurable data. The main goal of total quality measurement is customer satisfaction. One needs to communicate directly with the customer and receive complaints and recommendations (Küçük, 2010).

7. Group work: Another key element of total quality management is drawing from the energy of workers in the resolution of problems and achieving change and improvement. Through group work, all the workers of an enterprise are asked to participate in works aimed at problem solving, continuous improvement and ensuring and maintaining quality. The purpose here is to have a multitude of ideas and recommendations and to evaluate such ideas and recommendations within groups to be formed in order to make them useful for the enterprise.

8. Training of employees: This is an essential part of total quality management. The purpose of training is to equip the employees with a level of consciousness, knowledge and skills that enables achieving the desired quality in the most economical way possible (Issa et al., 2012:9). Thus, employees who become more qualified would improve their own performance and in turn improve the performance of the enterprise as a whole.

2.2. Differences between the Traditional Management Approach and Total Quality Management

Changes in the desires and expectations of customers necessitated a transition from the traditional understanding of management, which did not consider the desires and expectations of customers, towards the total quality management approach. Total quality management contains features that are the exact opposite of traditional quality management. That is due to the fact that while traditional management systems are

based on an understanding of continuous manufacturing, total quality management is focused on customer satisfaction on the basis of consumer satisfaction. The table below displays the differences between the traditional understanding of management and the total quality management (Çelik, 1995:50-51).

Table. Differences between traditional management and total quality management

Traditional Management	**Total Quality Management**
1. Quality based on inspection	1. Quality based on prevention
2. Increased costs through high quality	2. Reduced costs through high quality
3. Optimum stock	3. Zero stock
4. Production within the limits of specification	4. Goal-oriented production
5. Solutions are developed as problems are faced	5. Management prevents possible problems
6. Systems improvement through expertise	6. Systems improvement through cooperation
7. Distinct separation of functions	7. Ideal execution of works and processes
8. Production with an acceptable level of error	8. Production that aims for zero error
9. Motivation based on reward or punishment	9. Appreciation of honorable work
10. Priorities based on hierarchy	10. Priorities based on customer satisfaction
11. Competitive supply system	11. Mutual understanding and trust
12. Aiming for maximum profit	12. Aiming for high quality
13. Product quality based on standards	13. Catering to customer expectations
14. Product design under the responsibility of the function of quality control	14. Quality assurance under the responsibility of all employees and the management
15. Product design under the responsibility of R&D and marketing unit	15. Product development that contributes to all production and sales functions
16. Optimum waste or recycling	16. No waste or recycling
17. Optimum rate of 1st Quality/ 2nd Quality	17. Manufacturing only 1st Quality products
18. Evolutionary rapid progress	18. Revolutionary rapid progress
19. Performance increase through high-efficiency processes	19. Performance increase through new product designs
20. Knowledge and skills acquired through on-the-job training	20. Knowledge and skills improved through both on-the-job and basic training
21. Investment/operational decisions based on a cost-benefit analysis	21. Management that embraces all practices and investments which improve quality
22. An understanding which deems the manager to be the most knowledgeable on the work performed	22. A management that deems the person most familiar to the work performed to be the most knowledgeable on the work performed
23. A management that develops procedures aimed at the prevention of erroneous practices	23. A management that prevents errors and mistakes with the help of the ideas of employees
24. Managerial decisions based on experience and initiative	24. Managerial decisions based on statistics and quantitative analyses
25. Payment per performance	25. Appreciation of performance

3. TOTAL QUALITY MANAGEMENT IN HOSPITALS

3.1 Definition of Quality Management in Healthcare Services

The healthcare industry was established to attain good health and render the society healthy (Karahan, 1994:11). Since the field of healthcare services is related to human life, it is of vital importance. Quality should be an issue that is given more importance in healthcare services than in other fields (Arslantekin et al., 2007:57). That is because the mistakes made are irremediable and unrecoverable. Moreover, the fact that profit is not the primary objective of healthcare services is the most significant difference thereof from other industries.

It is deemed that the concept of quality in healthcare services was conceived by Florence Nightingale in the 19th Century. Increased individual purchasing power, the competition between healthcare and treatment institutions and increased expectations as to quality care at healthcare institutions caused the inception of quality practices in healthcare (Karahan, 2000:12; Arslantekin et al., 2017:2-6).

According to the definition of the World Health Organization, health is a state of complete psychological, physical and social well-being (Tengilimoğlu et al., 2014:69). As in all industries, quality does not have a single definition within the scope of healthcare systems. The most striking definitions in this regard were made by Avedis Donabedian and the Union of American Physicians.

According to Donabedian, quality in healthcare is the service which is expected to maximize the entire state of well-being of the patient after the consideration of the balance of expected gains and losses at each stage of the service process. The three elements of quality in healthcare were defined as the quality of technical services, a good communication between the service providers and recipients, and the comfort of the medium wherein services are provided (Yusufoğlu, 2008:39).

The Union of American Physicians has set some conditions for quality in healthcare, which it defines as a service that continually contributes to the improvement or maintenance of the quality and/or duration of life. Some of these conditions are ensuring betterment of the patient's state of health within the optimal time, prioritizing early diagnosis and treatment, starting the provision of healthcare services in the shortest time possible and avoiding unnecessary delays, acting in a sensitive manner towards the patient, informing the patient and cooperating with him/her and keeping regular medical records (Kaya, 2013:11).

3.2. Characteristics of Healthcare Services

Consumption of healthcare services is coincidental. It is unsure when and from what party the demand shall arise. Therefore, it is necessary that demand forecasting is performed before the demand arises. But due to the nature of the work performed, this is very difficult. A completely healthy individual can become bedridden as a result of an accident and require home care. Due to the uncertainty of what service will be required at what time, healthcare services are expensive (Tengilimoğlu, 2009:38).

Healthcare services are not substitutable. In the basic sense, substitution is an alternative for a product that meets the demands. One can substitute a product with an increasing price with another product that is cheaper and able to meet the demands. However, no such alternative is possible within the scope of healthcare. The patient is obliged to receive the treatment recommended by the physician. A cheaper treatment

cannot be implemented instead of the treatment that needs to be performed. Due to its being non-substitutable, healthcare is separated from other sectors and industries.

Healthcare services cannot be delayed. Whenever necessary, healthcare services need to be provided immediately. Since the main goal of healthcare services is the protection of human health, delayed healthcare services lead to greater problems, further loss of workforce and sequellae.

The size and scope of healthcare services are set by the physician, not the beneficiary of such services. In other sectors, the recipients are informed about the product which they demand, and the balance of supply and demand follows this. However, in the healthcare industry, the physician determines what ailment the patient is faced with and informs the patient accordingly. Profit is a secondary objective in healthcare services. The physician determines what the treatment is, how long it should continue and what medication should be taken in what dose and manner. This causes a difference in information between the consumer of the service and the physician. And this situation, as distinct from other sectors, bereaves the consumer from its power of negotiation (Aktan et al., 2011).

The behavior of the consumers of healthcare services is irrational. A consumer desires to get a product that caters for its needs at the lowest price. However, due to the restriction of information in healthcare services, the patient is prevented from making an evaluation as to whether the service provided is economical or not. Delaying treatment in cases requiring immediate treatment can be given as an example of irrational behavior.

It is very difficult to predetermine the satisfaction from and quality of a service. Those who demand healthcare services need to trust their physician due to a lack of information on their condition and disease. Healthcare services cannot be demanded and tried out beforehand.

A portion of healthcare services are of a societal nature and can be regarded within the public domain. Even though the patient refuses to receive healthcare services, s/he cannot be excluded from such services under certain circumstances. In the event of a contagious disease or similar situations, the use of healthcare services is mandatory since the health of others would be threatened. When the patient does not have the financial power to pay for healthcare services, such services are covered by the government (Tengilimoğlu, 2009:42).

The output of healthcare services cannot be monetized. Healthcare services can result in recovery, disability or death. For this reason, healthcare services are not negotiable and the outputs thereof cannot be monetized. Healthcare services do not seek to profit (Tengilimoğlu, 2009:42).

Healthcare services are non-warrantable. There is always a possibility that the medication administered can cause allergies or the operation performed can result in complications.

Healthcare services are not pre-testable. No one can experimentalize the conduct of a surgical operation on a healthy individual.

The inadequacy of healthcare services causes social problems. A person who acquires immunity to a disease through inoculation protects not only himself but also the society he lives in (Aktan et al., 2001; Mutlu, 2006:58).

3.3. Principles of Total Quality Management in Healthcare Services

3.3.1. Customer Satisfaction

There are two types of customer in healthcare services. One is the internal customer which refers to healthcare workers who provide the service, and the other is the external customer who is the person receiving healthcare services. In order to achieve customer satisfaction, the expectations of both the internal and the external customers need to be satisfied. Customer satisfaction is the most important indicator of quality. Such satisfaction changes depending on the benefits expected by the customer from the service he receives, the positive developments in his health condition, the performance he expects from the service, and the congruence of the provision of the service with socio-cultural judgments of value (Turaman, 1997:26).

Leebov and Scott have summarized the importance of customer satisfaction under four headings. These are human factors, economic factors, marketing and clinical effectiveness.

Human factors: People who apply to hospitals as a patient can be worried and stressed. They await a quick diagnosis and commencement of their treatment. Since healthcare services are not a service group that can be demanded in advance, the patient is not aware of what s/he will be supplied with. This causes mixed emotional responses on the patient's side. Therefore, one needs to understand the patient psychology and provide sufficient information.

Economic Factors: In healthcare services, the customers are patients. The service that they receive is not their own preference, but what is provided to them. Since there is a risk of losing one's health, the customers act more finicky when compared against other service groups. The customers expect to get their money's worth. The competition between healthcare institutions is based on trying to better satisfy the patients and their relatives.

Marketing: Healthcare institutions need to place emphasis on patient satisfaction in order to increase the customer potential and broaden their market share. Patients who receive healthcare services and their relatives share their experience with their friends and families. With today's technology, it is possible that the satisfaction from a healthcare institute is communicated to others in a very short time; therefore, it is crucial that patients leave the hospital happy. Healthcare institutions need to ensure patient loyalty in order to get patients to prefer their establishment when the need arises once again.

Clinical Effectiveness: Patients who are pleased with the healthcare services provided approach the treatment process in a more positive manner. They follow the instructions and warnings of the healthcare personnel with more attention (Çoruh, 1994).

Factors Affecting Patient Satisfaction

Factors that impact the satisfaction felt by the patient upon receiving healthcare services are as follows:

The interaction between the personnel and the patient: The most important factor affecting patient satisfaction and service quality is the communication with the patient. Patients expect kindness and respect from the physicians and other healthcare

workers and they wish to be listened to. They want to feel that they are being given enough time.

Information: Patients are curious about the processes related to their treatment. Briefing the patients on the diagnosis and treatment processes performed would alleviate the anxiety and curiosity of the patient and bolster his/her trust towards healthcare workers. While making such briefing, a plain language without technical terms should be used.

Catering services: It can be said that catering services is one of the most important factors influencing the patient's thoughts on the quality of a hospital. They are influenced by not only the quality of a meal but also the way it is served and the way it looks.

Trust: Informing the patients and making them feel that they are in an environment of trust gives them a sense of trust and safety. Paying attention to patient privacy is critical in giving them a sense of trust.

Bureaucracy: The multitude of and the time spent for official procedures patients have to go through while applying to healthcare institutions reduce customer satisfaction. The patient expects to receive healthcare services and start treatment within the shortest time possible. Providing appointment systems and increasing the number of polyclinics is critical to increase customer satisfaction.

Prices: For patients with no social security and health insurance, the price is an issue that is to be considered. High prices of healthcare services increase the dissatisfaction of patients.

Physical and environmental conditions: Another factor that impacts patient satisfaction is the physical and environmental conditions. Accessibility of healthcare institutions, parking services, comfortable patient rooms, spacious waiting rooms are very important in terms of customer satisfaction and patients preferring the same healthcare institution for later visits (İnceboz, 2009:36; Sarp, 2007:512-514).

3.3.2. The Principle of Participation

In order to successfully implement Total Quality Management in healthcare services, the participation of healthcare personnel in the services is a must. In healthcare services, the person whom the patients trust the most is usually the physician. Therefore, in order to achieve success in works related to total quality management, the participation of physicians in such works should be ensured. The focal point of the service of quality is people. To ensure that a patient receives quality service depends on all healthcare workers, particularly physicians, embracing the philosophy of total quality management and acting accordingly (Sims et al., 1995:78).

3.3.3. Leadership

Leadership denotes the person whom others gather around in order to achieve a goal. Since customer satisfaction is the most important aspect of quality, the leader needs to have an investigative spirit and be able to follow new developments and advancements. Deming and other authors on the issue of quality have stated that total quality management should start from the top management. Due to the facts that healthcare services are of a very complex nature and that such services are directly related to human health, and because of the existence of an intensive service conception and new technological advancements, the need for a leader becomes more evident in healthcare than in other sectors and industries (Atwater et al., 2014:65).

3.3.4. Continuous Improvement (Kaizen)

As continuous improvement is a dynamic process, workers and leaders need to renew themselves. Since access to information has become easier, customers wish to receive the highest quality service and are able to follow the most current approaches. In our time and day wherein customer satisfaction is the most significant indicator of quality, healthcare institutions are obliged to follow the most current innovations and develop themselves.

The Plan-Do-Check-Adjust (PDCA) cycle is one that is implemented by institutions for changes and developments. In "Plan", the change required for development is identified. In "Do", this change is tested. In "Check", the success of this change is monitored and in the last step, "Adjust", the adaptations required are determined to inform the next cycle (Taylor et al., 2013:3)

3.3.5. The Zero Error Principle

Since an error in healthcare services would bring about serious results, the zero error principle is adopted. Planning should be made to this end and lessons should be learnt from the mistakes made. One needs to follow new and current information and be ready for any bad scenarios which may occur in healthcare services (Kıngır, 2006:64).

3.3.6. Motivation

Motivation is the entirety of efforts made continually by a person or persons towards a set goal or target. It is the process of encouraging employees to work and make them believe that they will feel satisfaction if they work efficiently within the organization. The most contribution in achieving customer satisfaction comes from healthcare workers. Therefore, healthcare workers need to be motivated. Advancements in technology alone is not enough to improve quality in healthcare. Employees being motivated by their leaders and their desire to work being boosted gives a positive momentum to quality management (Fındıkçı, 2002).

3.3.7. The Principle of Continuous Training

Errors cannot be accepted within the scope of healthcare services. Therefore, healthcare personnel are required to follow the current literature and innovations in this field. Trainings given should suit the professions of healthcare personnel and be conducted with the highest contribution possible. The participation of the management team in such trainings would motivate the workers and facilitate the importance of trainings being understood by the personnel.

REFERENCES

Aktan, C., Işık, A.K. (2011). Sağlık Hizmetlerinin Sunumu Ve Alternatif Yöntemler

Aslantekin, F., Göktaş, B., Uluşen, M., Erdem, R. (2005). Sağlık Hizmetlerinde Kalite Deneyimi: Dr. Ekrem Hayri Üstündağ Kadın Hastalıkları ve Doğum Hastanesi Örneği. Fırat Sağlık Hizmetleri Dergisi, C.2, S.6

Atwater, L.E., Day, D.V., Fleenor J.V. et al. (2014). Advances in leader and leadership development: A review of 25 years of research and theory. The Leadership Quarterly. USA.

Best, M., Neuhauser, D. (2005). W Edwards Deming: father of quality management, patient and composer. Qual Saf Health Care. doi: 10.1136/qshc.2005.015289)

Çelik, A. (2010). Toplam Kalite Yönetimi. Ankara.

Çoruh, M. (1994). Toplam Kalite Yönetimi, Hastane Uygulamaları Gerekçeler ve

Güçlükler. Sağlık Hizmetlerinde Değişen Anlayış ve Politikalar. Ankara.
Demirci, H. (2010). Toplam Kalite Yönetimi. İstanbul.
Demirel Etöz, S. (2008). Sağlık Hizmetlerinde Kalite Belgelendirme Sistemleri ve Akreditasyon. Isparta.
Demirkan, M. (1997). Toplam Kalite Yönetimi ve Türk İlişkileri Sistemine Etkileri. Sakarya.
Efil, İ. (2010). Toplam Kalite Yönetimi. Bursa.
Fındıkçı, İ. (2002). İnsan Kaynakları Yönetimi. İstanbul.
Halis, M. (2013). Toplam Kalite Yönetimi. Ankara.
Huggins, L.P. (1998). Total quality management and the contributions of A.V. Feigenbaum. Journal of Management History, Vol. 4 Issue: 1, pp.60-67, https://doi.org/10.1108/13552529810369623
Issa, A.T.E., Siddiek, A.G. (2012). Higher Education in the Arab World & Challenges of Labor Market. International Journal of Business and Social Science. USA.
İnceboz T., (2009). Sağlıkta Kalite Uygulamaları Ve ISO 15189:2007 (Tıbbi Laboratuarların Akreditasyonu) Akreditasyon Uygulamalarının Öncesi ve Sonrası Karşılaştırılması, Sağlıkta Kalite Geliştirme ve Akreditasyon Programı. İzmir.
Karahan A., (2000). Sağlık Hizmetlerinde Kalite İyileştirilmesi Afyon Göğüs Hastanesinde Bir Uygulama. Afyon Kocatepe Üniversitesi Sosyal Bilimler Enstitüsü, İşletme Anabilim Dalı. Afyon.
Kaya, S. (2013). Sağlık Hizmetlerinde Kalite Kavramı. Sağlık Kurumlarında Kalite Kavramı. Eskişehir.
Kıngır, S. (2010). Toplam Kalite Yönetimi. Ankara.
Küçük, F. (2010). Toplam Kalite Yönetiminde Sorunların Önemsenme Düzeyinin Belirlenmesine Yönelik Bir Araştırma. Ankara.
Mutlu, A. (2006). Küresel ve Kamusal Mallar Bağlamında Sağlık Hizmetleri ve Çevre Kirlenmesi: Üretim Finansman ve Yönetim Sorunları. Maliye Dergisi, S.150, İstanbul. s.58)
Peker, Ö. (1995). Toplam Kalite Yönetimi ve Sürekli İyileştirme. II. Kamu Yönetimi Sempozyumu. Ankara.
Sarkar, D. (1998). The Managers Handbook for Total Quality Management. 2nd ed. Calcutta: Beacon Books.
Sarp N., (2007). Sağlık Hizmetlerinde Toplam Kalite Yönetimi. Sağlık Ekonomisi Ve Sağlık Yönetimi, Sağlıkta Umut Vakfı Yayını. Ankara.
Sims, S.J., Sims, R.R. (1995). Total Quality Management in Higher Education: Is it Working? why Or why Not?. Greenwood Publishing Group, Inc. USA.
Şahin, H. (2012). Sağlık Bakanlığına Bağlı Hastanelerde Toplam Kalite Yönetimi Uygulamalarında Karşılaşılan Engeller ve Bir Araştırma. Muğla.
Şimşek, M. (2001). Toplam Kalite Yönetimi. İstanbul.
Taylor, M.J., McNicholas, C., Nicolay, C., Darzi, A. (2013). Systematic review of the application of the plan–do–study–act method to improve quality in healthcare. The Internatıonal Journal of Healthcare Improvement, BMJ Publishing Group Ltd., London, UK. s.3)
Tengilimoğlu, D. (2009). Sağlık İşletmeleri Yönetimi, Ankara.
Tengilimoğlu, D., Işık, O. Akbolat, M. (2014). Sağlık İşletmeleri Yönetimi. Ankara.
Turaman, C. (1997). Eski Törene Yeni Kılık; Kalite. Toplum ve Hekim Dergisi.

Ankara.
Yaş, S. (2009). Toplam Kalite Yönetimi Anlayışının Sağlık Sektöründe Uygulanması: Trakya Üniversitesi Sağlık Araştırma ve Uygulama Merkezi ile Edirne Devlet Hastanesinin Karşılaştırılması. Edirne.
Yusufoğlu, E. (2008). Devlet Hastanelerinde Toplam Kalite Uygulaması Uşak Devlet Hastanesi Örneği. Afyonkarahisar Üniversitesi. Afyonkarahisar.

Chapter 86

Public Hospitals in the Reforms of the Turkish Health Sector

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INTRODUCTION

The health service can fundamentally be stated as the social security reform. The basic logic of the reform is to take the health expenses under control, to provide an additional income and to provide the sustainability of the service presentation. The key element of the reforms, supported by the international institutions such as the IMF and the World Bank, is to form the refictionalization of the health service on the basis of the market. In this new structuring, the public undertakes a role of regulating the health services market, putting rules and providing finance rather than presenting health service. Thus, it can focus attention on the preventive health care which has the main responsibility with the resources which it shall save. Though it is claimed that the reforms have the aim of saving the health service from the financial distress which it is found in, in reality it has the aim of nothing more than the diminution of the public health services, dynamise the market more and open the health services to the global capital in accordance with the neo-liberal policies (Günaydın, 2011). These policies - which shall be seen as a sole health reform programme with its main lines, have not only tried to reduce only the expenditures, but also to increase the productivity have also redefined the duties and responsibilities which the state undertook in the health systems. Thus, every welfare has realized an important conversion in the division of labor among the state-family-market, established in the system in various ways (Ağartan, 2007).

The hospital reform studies; include increasing the management autonomies, converting the public organisations to enterprises. For this reason, the worldwide hospital reforms are qualified as regulations which project the liberalization in the health sector (Top & Şahin, 2004). Also due to the developments experienced and the globalization, the private sector was also included in almost every field of the health service presented. Therefore, accordingly the state sought to share its role of being actor which carries out the management of this field (İleri *et al.*, 2016). The public service logic in the management of the public hospitals in Turkey, which continued its existence for long years before 2003, underwent a change towards a new logic as different from its traditional line after 2003. In the applications of after 2003, significant differences drew the attention with regard to the focus of the service process, measuring of the hospital performance, importance given to the patient satisfaction level, power of the patient against the physician, the criteria used in the personnel assignment and promotion, competence of the hospital directors in their expertises, the way of determining the physician fees, income-service type relation, financing resource of the hospital, the budget assigned for the hospital, the level of focusing on the usage of the

hospital capacity, productivity and whether a standard is used or not in the productivity and efficiency measurements, the hospital directors' sense of rivalry, the application method of the appointment system, the physical environment of the hospital, the importance of the hospital quality standards, the issues which are focused on in hospital audits (Özseven *et al.,* 2014).

According to the 2016 health statistics, as the Ministry Hospital, 876 therapeutical institutions were producing health care and its production was realized with 353.494 health personnel. The Ministry of Health, which is responsible from the production and execution of the Health Care policies, is in the position of the most important employer in the field of health. Yet, in the health sector, where the effective usage of the resources ceased to be an obligation and became a necessity, the inevitability of the reforms in fulfilling the role of the state in social field, have become a necessity. In this study, the changes in the public hospitals in key role of the health reforms in Turkey, shall be assessed under the titles of the public hospitals unions, city hospitals and the university hospitals.

PUBLIC HOSPITAL UNIONS

In the year of 2011, a change was made in the management structuring of the public hospitals. With the aim of the effective and productive usage of the resources, the public hospital unions were established by means of the secondary and tertiary health institutions. It is consisted of the union organization, general secretariat and hospital managements. The hospitals affiliated to the union are managed by the hospital administrators. Within the scope of the law, it can be said that a Ministry of Health Organisation in which the units which produce service and determine policy are separated; the professional leaders are assigned to the service providing units; in which a flexible employment model contractual, open to assignment from the private sector and based on performance was adopted and attaching importance to the performance auditing rather than the hierarchial audit, is being tried to be established (Lamba *et al.,* 2014). The most important change, which the public hospital union structuring brought in the provincial level, was experienced in the hospital management status. The developments oriented towards the professional health management which was most often mentioned in the health reform documents but could not be actualized in any way, were realized in this period. One of these developments was making the occupation definition of the health management in the year of 2014. By the public hospital unions, the professional health manager emphasis became prominent. In the related legislation, as one of the educational fields of the public hospital union directors and the persons who would be assigned in the management staff in the hospital scale, the health management was involved, as well. Notwithstanding that this case which attracts attention in the regulation unfortunately was not reflected in the application, it can be said that in our day, the public hospitals are predominantly managed by physicians. The persons who have taken professional health management education due to the wrong employment policies, tend towards the private health institutions or fields out of their occupations. This case means a waste of human resource for Turkey.

In the public hospital union structuring, directors working in public hospitals are employed as contractual and in case of the contract termination, their being able to return their works as tenured, are at stake. The prevalence of the contractual status

created with this model and the development of the flexible work relations, makes the public personnel regime approach to the private sector personnel regime. Thus, the function of executing the public services with officers and other public officials, is removed. In this scope, the discussion whether the health services are completely the public services which the state is liable to execute as per the general administration rudiments of state or not, affect the health personnel regime. The employment of the personnel who are working in the senior executive position as contractual, the continuity of the public service and whether its being appropriate to its nature or not, are at stake (Özkal Sayan & Küçük, 2012).

By removing the public hospital union, returning to the structuring of the five years ago, can thought to be realized due to not being able to achieve the determined targets. In the study, which assessed the public hospital unions financially, it was determined that the hospitals of the public hospitals unions generally close all their activity periods, however significant improvements were experienced in the net loss of the period due to the structural changes (Sonğur *et al.,* 2016). In another study, in which the productivity of the technical public hospital unions were evaluated, it was determined that the 31% of the public hospital unions were productive and 69% of them were operating unproductively (Yiğit, 2016). And in the study in which the performance of the public hospitals were assessed, it was determined that while the 25% of the union hospitals were displaying good performance, the remaining union hospitals were having weak performances (Çalışkan, 2016). These studies in which the public hospital union were evaluated with regard to productivity, performance and financially, it can be said that the demanded success could not been reached with the union structuring. As the most significant reason for the change in organization structuring, the communication problems, lived in the province administration and the existence of the administration structuring not bound up with the superior-subordinate relationship were shown. With the current administration structuring, the case of the cancelling the contracts of the administrators, cause experiencing the politician-bureaucrat interaction much more (Sevinç & Ozer, 2016). Also by removing the hospital managements in the position of general secretariat, affiliated directorates and the top executives of the hospital, current administrators' losing their managing positions or their being directed to different fields (for example, general secretary's being chief doctor), shall be at stake. Thus, some administrators shall lose their managing statuses which the union structuring shall produce. The lost status and rights may cause the reduction of the work satisfaction, performances and their loyalty to the organisation. Beginning from the month of December, 2017 the administrators in the hospital management shall continue to work in the contractual status and get performance scores. As the contractual employment and performance shall only involve the administrators, this case may cause living conflicts between the administrator and the employee and digressing from the unity of purpose. In the administrative staff, the employee's being in the contractual status, in case of the extension of their work loads and work periods, it may turn into a fee anxiety. And the loss in terms of the employee, and the administrator's being awarded, may cause the producing of work losses.

CITY HOSPITALS

The classical methods, due to the reasons such as development which the public services presented in the fields of education, health in time, rapid population increase, development of the urbanization, raising public opinion demand oriented towards the contemporary public service and limited budget opportunities, are not meeting the requirements of the present day. The alternative financing models were searched in the presentation of these services due to the faults and the deficiencies lived in the effective, productive, qualified and efficient current scarce resources, prevalent application of a great variety of cooperation and financing models based on "providing the best financial resource with the most appropriate financing" by also taking the various interactions such as the dynamism of the private sector into consideration, its rapid adaptation to innovations, synergy it shall create in the cooperation, were at stake (Sarısu, 2014).

The state's digressing from its fundamental duty in the health services with the health reforms done in Turkey and their being left to market conditions paved the way to the health field changing into a field in which profit was gained. As the result of this, it is proceeding rapidly in the process of becoming a country where the health investments are attractive for the multinational companies working in the field of health and the profitability is guaranteed (Erol & Özdemir, 2014).

In the city hospitals, one of the investment activities of the private sector in the health sector, getting the health facilities built by the Ministry of Health or its affiliated institutions and the payment of the rental cost as not exceeded thirty years excluding the fixed investment period and at the end of the period, its passing into the ownership of the Ministry, were predicted. This model is a model which is; pursuant to the tender and private law provisions, within the framework of the public-private cooperation model; within the basic standards of the facilities, required to be built by the Ministry of Health and its affiliated institutions, which shall be determined, getting to be built by establishing the right of construction in an independent and continuous quality as not exceeding thirty years excluding the fixed investment period stated in the contract over the immovable properties under the private ownership of the treasury, providing the renewal of the current facilities and the consultancy that shall be taken for these projects, execution of some services which require high technology or high financial resource with the Research & Development services (Batırel, 2017).

The uncertainties of the providing service as the public-private partnership activity of the city hospitals, are at stake. These uncertainties are:

- The state of the other public hospitals in the cities where the city hospitals are found. The over-capacity of the city hospital shall bring out a need for employment in so many fields of specialization. This case shall cause the closure of the other public hospitals, when the health human power inadequate in quantity in health sector is taken into consideration.
- The issue of what shall be the employment method of the health personnel employed in the public hospitals as tenured or contracted by the public-private partnership and the possible right losses that could be lived according to this or the increase in the working hours (due to the few number of health worker), shall be at stake. The private sector's who is responsible from providing the supportive services

being responsible from the recruitment processes shall bring a discrepancy in terms of the personnel employment models together with it. This case may cause the deteoriation of the work peace and employee dissatisfaction.

- The distance of the city hospitals located on the public territories, to the central settlements may cause an increase of demand to the private hospitals which continue their activities in the centre. This case may cause a discrimination with regard to the attainability of the health services among the ones who benefit from the health service.

- In the activity of the city hospitals, when the demanded patient potential cannot be provided, the financial load which the public is liable to pay against the private sector, may cause a waste of public resource.

With the activity of the city hospitals, it may be said that the experienced uncertainties may gain clearance in the applications in the future periods. Doubtlessly, in case of giving a guarantee of a bed occupancy about 70% concerning the city hospitals having a minimum 475 and maximum 3660 bed capacity and the hospitals' not being filled, the necessity of the payment of the difference between them, shall increase the health expenses (Koçkaya, 2017). It can be said that the public, by its wish to benefit from the management approach of the private sector with the public-private partnership activity in the health sector, is trying to test the privatization and/or autonomise the health management that can be realised in the health sector in future periods.

When the city hospitals are evaluated with the perspective of family practice, which is a preventive health service, the success criteria of these two structures are conflicting with each other. If the patients are directed to the city hospitals, the family practice application, which is tried to be fictionalized with the target of needing the hospitals less, shall be rendered unsuccessful. In the same way; if the family practice shall be developed more, the city hospitals built with high budgets, shall remain inactive. In this case, the state may be obliged to pay a great resource from its case in return of the service which he never takes. In a successful health service, most of the patients are aimed to be treated in their own family practice units and gain their healths in the primary care. The increase of the applications to the branch specialists as bypassing the primary care, is not preferred. However, as there is the cost and profit target in the integrated health facilities fictionalized with the above stated financing model reaching to the number of too many patients, shall be aimed (Cerrahoğlu, 2016).

Besides the uncertainties and risks, activities that could be mentioned as opportunities in the fields of the hotel management services, the usage of the technology in high level according to the current public hospitals with regard to the service that shall be provided in the city hospitals, are also at stake. Especially it shall certainly have a positive effect in providing the patient satisfaction. One of its activities, the increase of the patient satisfaction by "the presentation of the health care in the five-star hotel luxury," is aimed. But the problems which are lived oriented towards the operation of the health service in the complex structure (such as the distance between the units) may cause the patient unsatisfaction. One of the fields which shall be changed into an opportunity by the city hospitals, may be provided in the health management employment field. Though the health management has a 50 years of an occupational past, the increase of the interest towards this field in the last 10 years, has caused the

opening of the health management departments in an increasing way in public and private universities. According to the 2016 SSPC (Student Selection and Placement Center) Application and Preference Guide, in 55 universities as being 31 of them are public and 24 are private, there are health management departments in graduate level. Totally to 5883 students contingents were opened as being the public universities 4630, and private universities as 1253. Students were placed into the whole of the contingents in the public universities and into a large part of the private universities as well. Also, it was determined that totally, 24.817 persons were taken to the public in the year of 2016's centralized hiring (Tarla, 2017). Since the year of 2010, with the graduates of the health management programs opened in public and private universities, the produced qualified human labor with regard to the graduate-to-be with the increasing contingent increments, shall become idle and this case shall make contribution to the number of the young unemployment. By the employment of the potential qualified human labor in the field of the health management in city hospitals, the graduates of the health management may convert into an active labor force. Thus while providing employment with regard to the graduates, contribution can be made to the production of the qualified work output in administrative activities of the city hospitals, as well.

UNIVERSITY HOSPITALS

Besides being different from the profit-oriented private hospitals and the state hospitals which give public service, university hospitals have different features different from the other non-profit hospitals, as well. Among the functions of the university hospitals, in addition to giving tertiary health care services, the presentation of the education and research services are involved in, as well. These features require the management of the university hospitals with an understanding which is different from the other hospitals. Though it is thought that the physicians and the health personnel who are having an education in a good university hospital, the academic personnel who conduct research have no contribution to the profitability of the hospital and even place a burden, the benefits of such activities, which they can provide to the health services and economy of the country in the long term, are high (Hayran, 2011). According to the year 2016 health statistics, there are totally 69 university hospitals and 37.707 actual beds in these hospitals. As of the year 2016, besides the 8.1% of the total applications made to the university hospitals were meeting the needs, these hospitals approximately were employing the 15.5% of the health personnel. This rate was 21.1% in the physicians and in the nurses it was 14.8%. The 47.4% of the total number of the physicians were the assistant physicians (Sağlıkta İnsangücü Yönetimi, 2017).

From the university hospitals, it is expected to fulfill the missions like education and research besides the presentation of the health assistance and this causes a complex structure in which the hospitals have to conduct both academic and clinical activities together. Three important missions are expected from the university hospitals. First of those, is the presentation of the health assistance. Every health care organization; must make an effort for; the best presentation of the health assistance; but the university hospitals have a wider scope of responsibilities in this subject. From the university hospitals, not only presenting health assistance to people from a certain region but also supposed to lead forth in the sector which it presents service. The second significant mission that is expected from the university hospitals is to train the best possible health

assistance presenter, in other words, the education. Finally, it is expected from the university hospitals to maintain the benefits of the research to the whole society and to produce improvements in the diagnosis and treatment methods for the wide- reaching health issues. Besides the fact that they have a significant role in the health assistance presentation in Turkey, the legislative regulations on its organizational structure are quite insufficient. It can be stated that in the constitution and organization of the university hospitals, the procedures of research and application centers have been followed. Moreover, it can be seen that some universities issue bylaws concerning their hospitals and manage their operating activities through their private regulations, and if there are no such regulations, they conduct according to the Health Department Inpatient Treatment Institution's Operating Regulations. Those regulations are applied in defining the structure of administration, management of operation and services in a university hospital that has an operating regulation (Uğurluoğlu, 2015).

University hospitals experience problems in the areas of management, service, personnel and especially in finance. For the reasons of not planning the health assistance just from one person, not defining the real service necessity, not determining which service will be served in which institution in what kind of a fashion and for the fact that the social security institutions have a more significant role in health assistance presentation, every institution have tried to take the measures in the areas that they see imperfect. Because of the insufficient and falsely distributed bed services and doctor, the personnel numbers defining the necessities have become harder. The university hospitals, which their main aim is to educate and research, have been made obligated to play an active role on presenting the health assistance, as well. The fact that the university hospitals, which took a significant role in providing the lacking services, not being taken into consideration in the health planning, which no investment opportunities were provided, which no staffing of physician were given except the academic staff and that they weren't evaluated under the scope of the obligatory civil liability, have brought forth both the economic distress and the personnel employment problems. Even though it is a public enterprise, the reality that it can't get resource procurement as easily as hospitals of the Ministry, the facts that it cannot determine the number of the personnel itself, that it is obliged to provide for the necessities from its own circulating capital even though it is in the same position with the hospitals of ministry, that the charging being in the same condition with other health institutions, are driving the university hospital into a separate position outside the private or public hospitals. This poses an obstacle both for the services to be presented in the desired standards and both for planning and investing (Güven, 2011).

It might be indicated that the public sector expense activity which is aimed with the HTP (Health Transformation Program) had a negative effect on the financial structures of the universities. Due to the HAA (Health Application Announcement) transaction points' not being renewed according to the circumstances, every patient who is treated, leads to the increasing of the expenses faster than the income, against the increase in the patient transaction numbers of the university hospitals. Thereby the fact that the increase of the cost of the services sold, does not increase the financial performance against the realities that the service cost going up and also that the HAA prices being distant from bearing the costs. The university hospitals are usually oriented towards the short termed foreign sources and reduce their overdraft accounts' value

against the increasing costs and the HAA prices which aren't being updated. This case also leads the hospitals' being unable to retort in taking the steps that shall improve the short and long termed medical trainings which they are obliged to and in meeting their important social responsibilities and maintaining them under their potentials such as the R&D (Research and Development) activities which shall improve the social health (Gülşen & Yıldıran, 2017).

In the solution of the problems in the financial structure of the university hospitals, the regulations oriented towards the cooperation between the university hospital unions and the ministry of health, are being made. Apart from this, protocols oriented towards the common use between the university hospitals and the ministry, area available. Within the framework of these protocols, which are also named as affiliation, the mutual cooperation between the universities and the ministry of health and the common use of the related units, are provided. In the study in which the financial effects of the affiliation are evaluated, it was fixed that 7 of the 13 affiliated health institutions, the income-outcome realisation balance was positive oriented and 6 of it was negative oriented (Sonğur & Babacan, 2016). In the study, made by the participation of its 278 employees, in which the personnel satisfaction was evaluated in the hospital where the affiliation was applied, the 72% of the personnel stated that the affiliation application had caused experiencing some conflicts, 69.8% stated that the affiliation caused their work loads and 55.1% of them stated that it lowers their motivation (Ülger *et al.*, 2015). The numerical fewness of the specialized labor force, one of the fields in which the university hospitals live problems, may cause failures in the education activities which are the main aim of the universities. Especially, the 23% of the lecturers' early retirement or leaving from the university throughout Turkey with the full-day law, the loss of the lecturers with a ratio of reaching to 50% in some metropolitan universities, may have caused losses in the sustainability of the education activities. Within this framework, as making an amendment in the full-day law recently, by giving the lecturers in the Ministry and CHE (Council for High Education) the right of laboring in the hospitals affiliated to both institutions, the prevention of the specialized labor force losses is being aimed.

CONCLUSION

The health is the fundamental right of each citizen whether living in the developed or in the undeveloped countries. This right's converting into a health service presentation means, is related to the health systems of the countries and thus the health policies they follow. Especially the problems lived in the health financing, as well as the restriction in the public resources, differentiated expectations of the health service demanders cause changes in the roles of the health care presenters, have changed into hybrid structures in which the public and private sectors take part together. The private sector's starting to take part in the health sector with the conversion program of the sector in health, as going beyond presenting therapy service in our day, have started to continue activity in city hospitals as an investment resource. Besides the opportunities that the city hospitals provide, so many uncertainties are also at stake. Thinking that so many city hospitals shall enter into service till the end of the year 2018, the increase of the uncertainties incrementally, may be at stake. The uncertainties and risks predicted for the other city hospitals by

making the technical evaluations of the city hospitals that entered into service in the year of 2017, may be prevented. A returning in the structuring of the management in the provincial level, which is responsible from the public hospitals management and hospitals and providing therapeutical health service, are at stake. In the decision of returning to the old system, the expectation in the efficiency and high performance in the public resources by administrating the hospitals affiliated to the public hospital unions with an understanding of a professional health management, may not be fulfilled. In the current state, by not digressing from the professional health management and together with the employment of the human power who got health management education, the health management may convert into a qualified state. In bringing the health service presentation of the university hospitals which also play a role besides its role of presenting therapeutical service into a sustainable state, apart from the affiliation model, the central management should take much more part. The presentation of the education and the health service roles of the university hospitals should not be confused. If the university hospitals cannot support the specialized labor force education adequately, the health service decision giver may cause the reduction of the specialized physicians and in this case, the health services may become unsustainable. The health's being a right and the necessity of each citizen's benefiting from it equally, must be in the center of the health policies which determine the changes that the public experience in the health sector. In providing the social welfare, the health policies, which aim at the attainability of the health services having an external benefit, should be generated.

REFERENCES

Ağartan, T. (2007). Sağlıkta Reform Salgını. Akkıyal, B. (Ed.) Avrupa'da ve Türkiye'de Sağlık Politikaları kitabı içinde (bölüm 1, sayfa 37-52). İletişim Yayınları: İstanbul.

Batırel, Ö.F. (2017). Kamu Altyapı Yatırımlarında Kalite ve Kamu Özel Ortaklığı. Journal of Life Economics, 4(2), 1-8.

Cerrahoğlu, A. (2016). Şehir Hastaneleri ve Birinci Basamak. Jour Turk Fam Phy, 7(3), 81-84.

Çalışkan, Z. (2016). Kamu Hastane Birlikleri Performansının PABÓN LASSO Modeli ile Analizi. Sosyal Güvence Dergisi, 5(10), 2-24.

Erol, H. & Özdemir, A. (2014). Türkiye'de Sağlık Reformları ve Sağlık Harcamalarının Değerlendirilmesi. Sosyal Güvenlik Dergisi, 4 (1), 9-34.

Gülşen, M.A. & Yıldıran, M. (2017). Sağlıkta Dönüşüm Programı Sonrasında Uygulanan Sağlık Regülasyonlarının Üniversite Hastanelerinin Mali Yapılarına Etkisi. Ömer Halisdemir Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 10(4), 159-172.

Günaydın, D. (2011). Sağlık Hizmetlerinde Küresel Reform Yaklaşımları. Sosyal Siyaset Konferanslar, 60(1), 323–365.

Güven, M. (2011). Üniversite Hastaneleri ile İlgili Sorunlar, Sorular ve Erciyes Üniversitesi Deneyimi. Sağlık Düşüncesi ve Tıp Kültürü Dergisi, 20(1), 24-29.

Hayran, O. (2011). Hastane İşletmeciliği ve Üniversite Pratiği. Sağlık Düşüncesi ve Tıp Kültürü Dergisi, 20(1), 14-17.

İleri, H., Seçer, B., Ertaş, H. (2016). Sağlık Politikası Kavramı ve Türkiye'de Sağlık Politikalarının İncelenmesi. Selçuk Üniversitesi Sosyal ve Teknik Araştırmalar Dergisi, 12(1), 176-186.

Koçkaya, G. (2017). Türkiye Sağlık Politikalarının Katastrofik Harcama Yapan Hanelere

Etkisi, Fiscaoeconomia. 1(1), 15-20.
Lamba, M., Altan, Y., Aktel, M., Uysal, K. (2014). Sağlık Bakanlığı'nda Yeniden Yapılanma: Yeni Kamu Yönetimi Açısından Bir Değerlendirme. Amme İdaresi Dergisi, 47(1), 53-78.
Özseven, M., Danışman, A., Bingöl, A. S. (2014). Dönüşüm mü, gelişim mi? Kamu Hastanelerinin Yönetiminde Yeni Bir Kurumsal Mantığa Doğru. ODTU Gelişme Dergisi, 41(1), 119-150.
Özkal Sayan, İ. & Küçük, A. (2012). Türkiye'de kamu personeli istihdamında dönüşüm: Sağlık Bakanlığı Örneği. Ankara Üniversitesi SBF Dergisi, 67(1), 171-203.
Sarısu, A. (2014). Şehir Hastanelerinde Kamu ve Özel İşbirliği Neden Yürümüyor? Yaklaşım Dergisi, 22 (257), 251-256.
Sevinç, İ. & Özer, K. (2016). Studies of Restructuring in Ministry of Health in The Context of New Public Administration. International Journal of Social Sciences and Education Research, 2(4), 1697-1714.
Sonğur, C., Kar, A., Top, M. (2016). Türkiye kamu hastane birlikleri hastanelerinin finansal performanslarının değerlendirilmesi. Sayıştay Dergisi, 100 (1), 2-26.
Sonğur, C. & Babacan, A. (2016). Sağlık Hizmetlerinde Afiliasyon ve Mali Yönetim Üzerine Etkisi. Yönetim ve Ekonomi Araştırmaları Dergisi, 14(4), 99-100.
Tarla, Y. (2017). Sağlık Yönetimi Bölümünün Üniversite Sınavında ve Kamuya Personel Alımlarındaki Kontenjanları: 2016 yılı Değerlendirmesi. Sağlık Akademisyenleri Dergisi, 4(1), 17-22.
Top, M. & Şahin, B. (2004). Hastane Endüstrisinde Değişen Sınırlar: Avrupa Ülkelerinde Yaşanan Son Yirmi Yıllık Süreç. Hacettepe Sağlık İdaresi Dergisi, 7(1), 85-106.
URL: Sağlıkta İnsangücü Yönetimi (2017). http://www.metaveri.saglik.gov.tr (accessed: 10 October 2017).
Uğurluoğlu, Ö. (2015). Üniversite Hastanelerinde Uygulanan Organizasyon Yapılarının Değerlendirilmesi. İşletme Bilimi Dergisi, 3(1), 53-55.
Ülger, N., Baldemir, E., Battaloğlu İnanç, B. (2015). Afiliasyon Uygulanan Hastanelerde Çalışan Memnuniyeti- Muğla Sıtkı Koçman Üniversitesi EAH örneği. J Clin Anal Med, 6(2), 168-172.
Yiğit, V. (2016). Hastanelerde Teknik Verimlilik Analizi: Kamu Hastane Birliklerinde Bir Uygulama. SDÜ Sağlık Bilimleri Enstitüsü Dergisi, 7(2), 1-8.

Chapter 87

Multi Criteria Decision-Making Techniques in Health Care (Analytic Hierarchy Process as Example of Establishment Place Selection)

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INTRODUCTION

Today's production structure, with the phenomenon of globalization, got so complicated that it cannot be explained by the influence of only a few factors and it is under the influence of a large number of criteria. It is known that almost every person makes individual or organizational decisions in daily life and a very important part of these decisions requires long-term and large investments. It is therefore inevitable that among the many criteria affecting the decision to be made, it is preferable to emphasize and prioritize the criteria that will have the greatest effect. For instance, a person who has a plan to buy a car will be under the influence of factors such as price, comfort, performance and fuel consumption and many others that affect this choice, he will want to concentrate on the criteria that are most important to him and he will care about this criterion in his decision.

All decisions made in goods and service productions are not different from this simple example. In fact, it should be taken into consideration that the main purpose of this is to provide maximum utility at minimum cost. Effective performance management requires that organizations can present their current situation and meet their needs with scarce resources at the maximum level. A wide variety of performance evaluation methods have been developed and widely used in the literature.

Ratio analysis, which is the simplest of these methods, is an extremely simple and plain method of efficiency analysis that can measure the ratio of output to inputs in the case of single input and single output production. Organizations with profitable and simple production stages with ratio analysis, can measure both their own and their competitors' situation in terms of production results, and by taking possible precautions they can struggle to capture market dominance. Another performance analysis method, regression analysis can be used in situations where single input is produced with multiple inputs. Here too, organizations will make an effort to improve their market share by evaluating their situation by measuring the rate at which they use their inputs and what they have achieved in return.

However, the production conditions are not always as simple as mentioned above. The widespread of multinational organizations has led both to a worsening of the competitive environment and to a continual change in market share. Generally, the most important problem faced in the performance measures of such organizations, where multiple outputs are obtained using multiple inputs, is that the inputs and outputs measured by different measurement units are combined in the same formula. In this

case, it is necessary to weight the inputs and outputs of the organizations such that the efficiency score of the most effective organization will be 1.00 or 100% and the others to be measured accordingly.

Another problem faced in performance evaluation of multiple input and multiple output situations is service organizations and other non-profit organizations. In the process of transforming inputs into service, despite having a counterpart, the service factor has to be weighted as mentioned above. However, there is no clear reason for the service factor of non-profit organizations such as government, government, municipalities; performance evaluations of such organizations are also a separate problem.

This issue becomes even more important in the health sector, especially in the country's economy, as a requirement of social state policies. In this study; multi-criteria decision-making techniques that find application areas in healthcare enterprises faced with fierce competition environment in service production field are introduced. In particular, the economies of underdeveloped and developing countries are seriously affected by the expenditure on health care. Therefore, in the decisions to be made in this area, it comes to the idea of achieving maximum benefit in return for minimum cost.

Health System and Health Institutions

As a concept, health varies considerably over time, depending on the needs and knowledge, and in 1948 the World Health Organization developed a comprehensive health definition. The concept of health, enriched by the inclusion of content, social and psychological dimensions, in its accepted general sense, is defined as "not only the absence of illness and disability, but also a condition of total well-being in the physical, spiritual and social aspects" (Kavuncubaşı and Yıldırım, 2012: 18).

The right to be healthy and to live in a healthy environment is at the heart of basic human rights. Although this basic right differs from its present-day content, there is a history that is based on extreme human history. The famous Hammurabi Law is the most well-known example in this regard. The King of Babylon Hammurabi, who lived in the year 2000 BC, designated the responsibilities of the serving physicians and the awards they will receive in the laws called by his name (URL 1). Today expressions for the health rights are also found in the Constitution of the Republic of Turkey. In this regard, Article 41 of the Constitution indicates; "The family is the foundation of Turkish society and is based on equality between spouses. The State shall take the necessary measures to ensure the peace and prosperity of the family and especially the education of the mother and the children and the protection of the family and the planning of the family, shall establish the organization" and Article 56 indicates; "Everyone has the right to live in a healthy and balanced environment. It is the duty of the State and its citizens to improve the environment, to protect the environment and to prevent the pollution of the environment. To ensure that the state maintains everyone's life in body and soul health; manages and services healthcare organizations from one source in order to realize the cooperation by increasing economy and efficiency in human and substance power. The state exercises this duty by supervising and utilizing the health and social institutions in the public and private sectors. General health insurance can be established by law for the widespread implementation of health services "(URL 2).

As a justification for the understanding of the social state, the state is directly

responsible for ensuring that healthy citizens are living and ensuring a healthy life. Every social state takes all the necessary precautions and strict follow-up to establish the necessary healthcare structure and to operate it regularly in order to fulfill this responsibility.

In general, it is seen that governments have a structure that will have a say in the development, implementation, dissemination and accessibility of health-related policies, and all these activities are carried out under one roof as a ministry. In this context, a desired level of health system has some basic features like not being substituted, not being delayed, not being made for profit purposes, being abstract and uncollectible, having the same production and consumption, the need for high-cost and high-tech equipment, and the extremely complex cost of serving.

It is also necessary to specify some basic characteristics for the health institutions which have the highest concentration within the health system and which are the main pillars of the system. The characteristics of health institutions are can be listed shortly as; the fact that the working principles are very complex and require a dynamic structure that requires expertise, 24/7 uninterrupted service, and the difficulty in identifying and separating these services, the fact that almost all services produced are urgent and indisputable quality and that various functions are functionally intertwined with each other and therefore requires intensive communication and coordination.

Cost Dimension of Health Services

Health services produced in a health system with the features mentioned in the previous section are expensive services that a large majority of individuals are asked to cover for an injury when an accident or illness occurs. It is important to use scarce resources effectively in the health sector as well as in all aspects of the economy. Health services are a service that almost every person has a high possibility to start with preventive health services from the moment when people open their eyes to life (Güvenek, 2015: 9).

The share of health spending throughout the world in the GDP ranges from 5 to 15%. Looking at public spending, such a large share of expenditure confirms the perception of the most important sector of the economy. Given that health spending tends to increase year by year, it is clear that the size of the macroeconomic dimension and the savings it will provide will be a source of significant improvements in other areas of the economy.

It is a necessity to control the health expenditures. For this reason, the most important of the main objectives of the health sector is to control costs. In order to control costs, all health policies have begun to give priority to preventive health services. In addition, the hierarchical health service brought to the market by the step-by-step health organization has opened the way for providing the most possible treatment in the first step (Özcan, 2013: 23-24).

Decision Making and Decision Theory

A selection or decision-making process occurs when there are options with distinct characteristics that can be used to solve certain problems with a particular turnaround (Yozgat, 1994: 2). In general, it is very important to handle all the processes related to the decision to be taken, to handle it with all its dimensions and to examine it carefully, in case there are situations related to the general institution concerned with the decision.

Problems that are constantly faced in daily life can be divided into two categories. In the first category, negative directional decisions can be made that require the effort of removing a certain source of dissatisfaction. Here the person has to take a decision to get rid of a negative influence for himself, for example to avoid a disease. In the second category, there is a decision situation which can be called positive direction decisions. It is the question of taking decisions that will bring a positive result here. In this case, the person is faced with decisions about reaching the money or friend (Ackoff, 1978: 19).

Decision-making methods can be examined in two major groups (Özden, 1989: 29-31);

- Traditional decision-making methods: The decision-making methods that can be examined in this group are usually based on intuition, belief, imitation and test-error. They are often away from creativity and science because they do not consider different environments and conditions.

- Contemporary decision making methods: The common features of the methods in this group are: to deal with each problem, conditions, environment, assumptions, and ways of solving them separately. Regardless of the problem, the understanding of producing solutions by approaching within a certain systematic manner is prevailing.

Decision-making is defined as the process by which different decision alternatives are introduced in response to a problem encountered by a decision-maker or a problem that may later arise, and one or several of them are selected and applied. (Yaralıoğlu, 2004: 2). Therefore, it is necessary to make a decision in two cases in daily life; daily decisions and future decisions. It is clear that a relatively positive environment for daily decisions will dominate here. It will not be too difficult to decide what kind of clothes to wear according to that day's program. However, future-oriented decisions will be more difficult in the uncertain environment than in the other, as the results will be given in less predictable situations. In this case, three types of decision making environment can be mentioned (Aladağ, 2014: 4-5; Aktaş et al., 2015: 23-24);

- To make decisions in the context of determinism,
- To make decisions in a risk environment,
- To make decisions in uncertainty.

In order to be able to make any decision in the setting environment, it is necessary that all the appropriate options to be used in decision making and their results are fully known. Otherwise, there will be problems with the presentation of all appropriate options, and decisions can be made that may result in negative consequences of missing options (Ramalingham, 1976: 36). A decision to be made, especially in the uncertainty environment, will require a comprehensive analysis of all the parameters that can affect it. Therefore, some basic features of such decisions will be. These; complexity, uncertainty, the importance of the effects, the influence of many people, the abstraction, the effects of the long term mediation, the interdisciplinary approach, the multiple decision makers, the consideration of more than one criterion and the difficulty of identifying the alternatives (Aktas et al., 2015: 9-13);

There are four basic models for decision making under uncertainty. (Stevenson, 2007: 208, Aktas et al., 2015: 60-67, Esin and Sahin, 2012: 399-405, Tütek et al., 2012: 69-73);

- Maximin model (Wald): Because it is based on the assumption that worst possibilities will occur, in this model, which requires a pessimistic approach, the ones

with the least return are identified and the alternative with the highest return is selected. According to this approach, which guarantees a minimum return, other choices cannot be worse than the preferred choice. In this sense, the decision maker is rational in choosing the best among the worst.

- Maximax model: In this model, which has an optimistic approach, the decision maker chooses the one with the highest return among the alternatives with the highest return. In this model, the decision maker does not take account of any other alternative.

- Reality Model (Hurwicz Index): This model is a model between maximax and max models. Because of this approach, in the implementation of the model, which is also referred to as the "midway", the decision maker determines an optimality coefficient (α) ranging from 0 to 1, "Decision = α * (largest payment) + (1-α) * (smallest payment)" and decides on the greatest return alternative. However, the most important problem here is that the α optimism coefficient is determined. It is not easy to determine this coefficient, which is directly affected by the decision maker being optimistic or pessimistic.

- Rationality Model - Inadequate Cause Rule (Laplace): In this model, which requires equal approach to each alternative, the decision maker determines the possible implications of all alternatives and chooses the alternative that provides the highest return.

- Minimaks repentance model (Savage): It is a pessimistic model as it is in the maxim's model. Because the decision maker predicts that whatever decision he has made, he will understand that he is wrong in the future and will regret it. So he will try to choose the alternative that will create the least remorse and be rational in this way.

Apart from these models, there are linear programming model, decision tree technique and some other multi-criteria decision making techniques widely used in the literature.

Multi Criteria Decision Making Techniques

The vast majority of decisions taken in daily life are influenced by multiple criteria. Therefore, decisions taken by different people on the same topic also differ from each other. Depending on the number of criteria, the complicated decision making problem becomes more complex if these criteria are influenced by each other. The abandonment of some criteria for some conditions to be met and the question of which of them will be selected will also vary from person to person and will make the decision making activity much more intractable. The use of multi-criteria decision-making techniques at this point ensures that decision problems are handled in small pieces and is greatly facilitated and helps decision-makers make more rational decisions.

The development of high-speed digital computers has also played an important role in the development of decision-making science. For the formulation of decision-making problems, it is natural that the concept of optimal or optimal decision occurs. In such an approach, a single real quantity that summarizes the value of performance or a decision is optimized, i.e. minimized or maximized, depending on the situation, isolated from the different alternatives. The resulting optimal decision is taken as a solution to the decision making problem (Özalp, 2015: 227).

The decision-making process will take some specific steps as outlined below (Aladağ, 2016: 2-3, Öztürk, 2009: 7-13, Özgüven, 2008: 3-20);

- Identification of the problem,

- Collection of information on the problem,
- Classification of information, analysis and interpretation,
- The introduction of options,
- Determination of the most suitable option,
- Decision making and implementation of the option,
- Evaluation.

In the literature, there are a number of criteria decision making techniques that are very numerous, with some advantages and weaknesses in comparison with each other. Generally, these methods, which find application area in each subject that need to choose between location selection, source budget, staff selection and assignment, supplier selection or multiple alternatives are as follows; Analytic Hierarchy Process, DELPHI Technique, DEMATEL Technique, ELECTRE Technique, MOORE Technique, PROMETHEE Technique, TOPSIS Technique, Data Envelopment Analysis, VIKOR Technique. In order to be an example in this study, Analytical Hierarchical Process method is mentioned.

Analytic Hierarchical Process

The Analytic Hierarchy Process (AHP) was first proposed by Thomas L. Saaty in the 1970s. The first work in this area is the work titled "The Analytic Hierarchy Process" published by Saaty in 1980.

In practice, the Analytic Hierarchy Process (AHP) was first introduced by Thomas L. Saaty in the 1970s on the site selection for health facilities. The first work in this area is the work titled "The Analytic Hierarchy Process" published by Saaty in 1980. Following this, a large number of theoretical and practical studies were carried out in various fields. It is one of the most multi criteria decision-making approaches that can help decision-makers in this process, which becomes more complex in situations where more than one factor needs to be included in the decision-making process (Tütek et al., 2012: 329).

It contains the basic rationale of the AHP, which has an intuitive solution process and offers easy implementation for decision makers; the method is essentially analytical, the method involves steps of a specific hierarchical solution and the method requires a process that can be stated that there are 3 components (Golden et al., 1989: 3-36);

A typical AHP process is presented in Figure 1

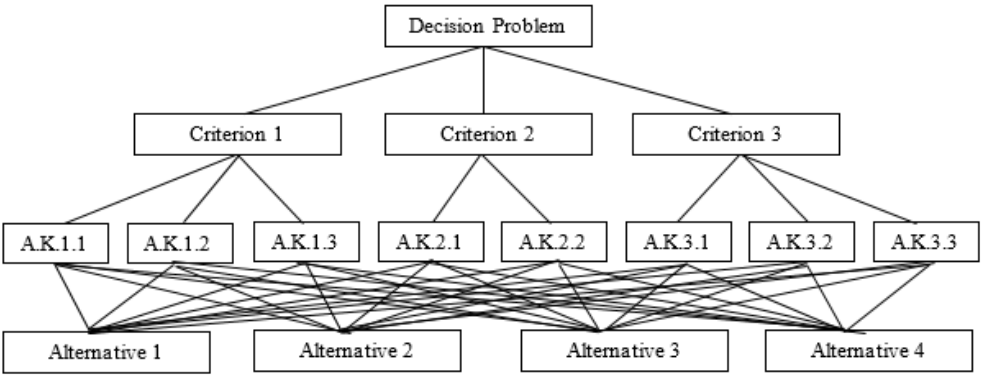

Figure 1: Hierarchical Structure of AHP

When Figure 1 is examined, it can be seen that both the number of criteria, the number of sub-criteria and, if necessary, the number of alternatives can be freely increased without exposure to a constraint. However, as you step downward in steps, the number of comparisons to be made will increase. For example, in the case of an AHP structure prepared as in Fig. 1, an increase in the criterion number will increase this matrix size to 4x8 or an increase to 3x9 in the lower criterion number, while the required matrix size to achieve the result is 3x8.

Considering the application order of multi-criteria decision making techniques, the steps that constitute the process steps of the method can be explained in the following order (Aktaş et al., 2015: 201-205);

- The selection criteria are usually presented in a hierarchical structure that is specific to the subject: The process to be performed at this starting point, which constitutes the first step of the AHP applications, is to isolate the problem pieces by determining all the criteria that the probing can affect.

- Binary comparisons between specified criteria and alternatives: A matrix of squares similar to the one in Table 1 is generated using the coefficients determined in this step as a result of binary comparisons. At the end of the comparison, if the two parameters are given equal importance 1, if the significance level between them is less important, 3 if it is important at a very high level, 5 if it is very strong, or 7 if it is obviously important and 9 if absolutely important. In unstable states, intermediate values of 2, 4, 6 or 8 are given. For inverse comparisons, the value 1 / x takes place in the matrix.

Table 1: Analytic Hierarchy Process Binary Comparison Matrix (Example)

Criteria	1	2	3	…	N
1	w_1/w_1	w_1/w_2	w_1/w_3		w_1/w_n
2	w_2/w_1	w_2/w_2	w_2/w_3		w_2/w_n
3	w_3/w_1	w_3/w_2	w_3/w_3		w_3/w_n
…					
N	w_n/w_1	w_n/w_2	w_n/w_3		w_n/w_n

Taking attention to the preparation of Table 1, a parameter taking 9 significance levels, which is considered to be absolutely important from the other in terms of the binary comparison, will have a 1/9 significance level in the symmetry of the matrix. Therefore, in order to form a matrix with n rows and n columns, [n (n-1)] / 2 binary comparisons will be required.

As a result of these comparisons, the preference ratios of the criteria are determined according to a certain priority order and alternatives are determined according to each criterion: Two different calculations are required at this stage. First of all, the results of the binary comparisons between the sub-criteria that are linked to each criterion are taken. After the process of determining the local priorities, the global priorities are determined. For this, the priorities of the sub-criteria placed at the same level but depending on the different sub-criteria are determined. It is seen here that the global priority of any criterion will be equal to the local priority of that criterion multiplied by the corresponding global priority at the top level, and the global and local

priorities of the criterion at level 2 will be equal to each other.

- Ranking of alternatives on the basis of criterion priorities and consideration of preference ratings: The order of alternatives is determined in the last phase of AHP applications. For this, weighted values are found by multiplying the global priority of the sub-criteria and the preference value of the alternatives according to that sub-criterion. The ranking score of an alternative equals the sum of the weighted values.

- In the next step, a new matrix with the name A_norm is obtained by dividing the elements in each column of this matrix by the sum of all the elements in its column. The sum of the values in the columns of this matrix should be 1.

- In the last step, the average values (w_i) of all the rows of the A_norm matrix are calculated, so that the averages of the elements in the row i are obtained as w_i. In order to find the best decision, the following integrated score is calculated for each decision alternative;

Decision Score = $\sum w_i$ (decision score for objective i)

- The decision having the highest value among the calculated decision scores for each line is selected.

It is clear that if the binary comparison matrix is thought to be based on the decision maker's personal experience and intuition, then the consistency of this matrix, which will be a rational decision-making basis, must also be tested. For the consistency test in the literature; There are two approaches, Logarithmic Least Squares Method and Eigenvector Method. However, the Eigenvector Method which is widely used in practice and developed by Saaty is mentioned below;

- w weights are calculated as Perron Vector of matrix A by the following method. Here is the Peron Vector;

$$w = \lim_{k\to\infty} \frac{A^k e}{e^T A^k e}$$

w weights are calculated using the following formula.

$$A_w = \lambda_{max} w, w_i = \frac{\sum_{j=1}^{n} a_{ij}\, w_j}{\lambda_{max}} \; \forall i = 1, \dots, n$$

- For positive and inverse matrices, λ_max≥n. If λ_max = n, then it is valid only if and only if the matrix A is consistent. Therefore, λ_max-n is used as a sign of the inconsistency degree. Inconsistency Index (CI) as defined and normalized by normalizing Saaty;

$$CI = \frac{\lambda_{max} - n}{n - 1}$$

calculated as above. Here;

$$\lambda_{max} = \frac{1}{n} \sum_{i=1}^{n} (\sum_{j=1}^{n} a_{ij}\, w_j / w_i$$

calculated with the help of the formula.

On the other hand, the Consistency Rate (CR) is defined as the ratio of the Inconsistency Index (CI) to the Random Index Value (RI). Here, the Random Index

(RI) is the average of the Indices of Inconsistency (CI) values. The Consistency Ratio (CR) is calculated as follows;

$$CR = \frac{CI}{RI}$$

- At this stage, when the value of CR ≤ 0.1 is considered acceptable, it is appropriate for the decision maker to re-evaluate the evaluations to reduce the inconsistency if the CR value is greater than 0.1.

Some of the important advantages of AHP to decision makers are; consider personal preferences in reaching decision-making and incorporate resolution, allow sub-criteria specified in several steps to be effective and included in the assessment, not worry about data entry, use qualitative and quantitative data jointly, and enable the decision maker to test the consistency of personal preferences, they can also be applied in group decisions. It is a flexible solution which helps to simplify and solve big problems easily because the problem is solved by the divide-and-rule logic.

In addition to all these advantages, the weaknesses of the method, which are negative, can be listed as follows; it is subjective to the individual bias, it is the subjective basis, if a new criterion is determined, the whole analysis needs to be replicated, the binary comparison which needs to be done in a large number can cause the weakness of consistency, the main result of choice can bring very different situations from the theoretical point of view.

Applying Multiple Criteria Decision Making Techniques in Health Care

In this section, which contains an example application, a settlement site will be selected for a health institution. For this, a list of criteria has been established based on expert opinion. Accordingly, it is estimated that a health institution will be the most important effect in the selection of settlements. Environmental factors, building characteristics, investment costs and demographic structure criteria were used. Based on these criteria in the first phase of the application, the binary comparison matrix prepared in the direction of expert opinions is presented in Table 2.

Table 2. Binary Comparison Matrix

	Environmental Factor	Building Properties	Investment Cost	Demographic structure
Environmental Factor	1	3	1/5	3
Building Properties	1/3	1	5	7
Investment Cost	5	1/5	1	3
Demographic structure	1/3	1/7	1/3	1

Then, each cell of the binary comparison matrix is divided by the sum of the column to which it belongs to form a new normalized matrix. The matrix prepared by normalizing the binary comparison matrix is presented in Table 3.

Table 3. Normalized Matrix

Environmental Factor	0,15000	0,69079	0,03061	0,21429
Building Properties	0,05000	0,23026	0,76531	0,50000
Investment Cost	0,75000	0,04605	0,15306	0,21429
Demographic structure	0,05000	0,03289	0,05102	0,07143

Then the arithmetic average of each row of the normalized matrix in Table 3 is taken. With the column chart created in this way and presented in Table 4

Table 4. Average Values of Normalized Matrix

Environmental Factor	0,27142
Building Properties	0,38639
Investment Cost	0,29085
Demographic structure	0,05134

By the product of the binary comparison matrix in Table 2, the weighted column matrix presented in Table 5 is obtained.

Table 5. Weighted Column Matrix

Environmental Factor	1,64278
Building Properties	2,29047
Investment Cost	1,87925
Demographic structure	0,29396

In this phase, the Relevance Index (CI), Consistency Index (CR) are calculated with the help of the Random Index (RI) value (Aktaş et al., 2015: 208) which is defined as validity and reliability and the consistency of the comparison and the prepared comparison matrix is tested.

As a result of calculations made; CI (Inconsistency Index) = 0.009317 and CR Consistency Ratio = 0.010352. If CR ≤ 0,1, then the binary comparison matrix is quite consistent.

The abovementioned iteration is continued until the weight values repeat themselves and it is revealed that the criterion with the highest scorer in the weight matrix obtained in this last stage is the most important criterion to be taken into consideration. As a matter of fact, when weights in Table 4 are taken into consideration, it is determined that the most important criterion in decision is Building Properties with a ratio of 38,638%. This is followed by Investment Costs with 29,085%, Environmental Factor with 27,142% and Demographic Characteristics with 0,05134%.

There are some important things that should not be forgotten here. First of all, it should not be overlooked that the results of the analysis are dependent on the criteria included in the analysis. It is clear that the results will change if new criteria are added or removed.

In addition, one of the weakest aspects of the method is the subjective ability, that is to say the expert cannot be away from the personal bias, the possibility of biased initially given weights for the criteria. In short, different levels of expertise can affect the results of the analysis.

REFERENCES

Ackoff, R.L. (1978), The Art of Problem Solving, John Wiley & Sons.Inc., New York.

Aktaş, R., Doğanay, M.M., Gökmen, Y., Gazibey, Y., Türen, U. (2015), Sayısal Karar Verme Yöntemleri, Beta Basın Yayım Dağıtım, İstanbul.

Aladağ, Z. (2014), Karar Teorisi, Umuttepe Yayın No.: 45, Mühendislik Bilimleri Dizisi: 2, Umuttepe Yayınları, Kocaeli.

Aladağ, Z. (2016), Yöneylem Araştırması, Umuttepe Yayın No.: 171, Mühendislik Dizisi: 22, Umuttepe Yayınları, Kocaeli.

Çöğürcü, İ., (Ed. Güvenek, B., Sağlık Ekonomisi-Mikro ve Makro Boyutlarıyla) (2015), "Sağlık Hizmetleri Piyasa Arz ve Talebi", Çizgi Kitabevi, Konya.

Golden, B.L., Wasil E.A. ve Harker P.T. (1989), "The Analytic Hierarchy Prosess: Applications and Studies", Springer-Verlag

Kavuncubaşı, Ş. ve Yıldırım, S., (2012), Hastane ve Sağlık Kurumları Yönetimi, Siyasal Kitabevi, Ankara.

Özalp, N. (2015), Matematiksel Modelleme, Gazi Kitabevi, Ankara.

Özcan, A. Y., (Çev. Kavuncubaşı, Ş. ve Yıldırım, S.) (2013), Sağlık Kurumları Yönetiminde Sayısal Yöntemler-Tenikler ve Uygulamalar, Siyasal Kitabevi, Ankara.

Özden, K. (1989), Yöneylem Araştırması, Hava Harp Okulu Yayınları, İstanbul.

Özgüven, C. (2008), Doğrusal Programlama ve Uzantıları – Model Kurma Örnekleri, Detay Yayıncılık, Ankara.

Öztürk, A. (2009), Yöneylem Araştırması, 12. Baskı, Ekin Basım Yayın Dağıtım, Bursa.

Ramalingham, P. (1976), System Analysis for Managerial Decisions, John Willey & Sons Inc., New York.

Saaty, T.L. (1986), "Axiomatic Foundation of the Analytic Hierarchy Process", Management Science, 32(7).

Saaty, T.L. (1996), Decision Making with Dependence and Feedback: The Analytic Network Process, RWS Publications.

Saaty, T.L. (2005), "The Analytic Hierarchy and Analytic Network Process for the Measurement of Intangible Criteria and for Decision Making", Springer, Boston.

Saaty, T.L. ve Sodenkamp, M. (2008) "Making Decisions in Hierarchic and Network Systems", International Journal of Applied Decision Sciences, Vol. 1, No. 1.

Stevenson, W.J. (2007), Operations Management, McGraw Hill/Irwin Companies, New York, USA.

Tütek, H.H., Gümüşoğlu, Ş., Özdemir, A. (2012), Sayısal Yöntemler – Yönetsel Yaklaşım, Beta Basın Yayım Dağıtım, İstanbul.

URL1: https://tr.wikisource.org/wiki/Hammurabi_Kanunlar%C4%B1, Erişim Tarihi: 14.05.2018.

URL 2: https://www.tbmm.gov.tr/anayasa/anayasa82.htm, Erişim Tarihi: 14.05.2018.

Yaralıoğlu, K. (2004), Uygulamada Karar Destek Yöntemleri, İlkem Ofset, İzmir.

Yozgat, U. (1994), Yönetimde Karar Verme Teknikleri, Beta Basın Yayım Dağıtım, İstanbul.

Chapter 88

Creating Positive Work Environment in Health Service

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INTRODUCTION

Rapid developments and changes in the field of technology, globalization and increasing information age affects health care organizations as well as all components of society. In accordance with these changes and developments, it has become a necessity to make continuous regulations in work environments in order to provide high-quality, productive and effective service that can meet the increasing demands and expectations of the society (Bektaş, 1998; Baykal &Seren, 2014). Proper regulation of the work environment and conditions in the institutions and organizations where health care services are provided also helps to maintain and increase the health of the employees as well as to provide better quality care service. At the same time, improving the work environment and presenting information, support and resources to health professionals in implementing practices based on professional standards will help employees to feel more respectable and valued themselves. Health care workers can perform adequately to improve patient care quality when satisfied with their work environment. In order to achieve national and international health goals, especially in health care institutions, it is extremely important that the work environment is therapeutic and the benefit of the patient (Bauman, 2007).

CONCEPT OF WORK ENVIRONMENT

The concept of the work environment includes physical environment, occupational health and safety, wages, working hours, working style (shift, duty, overtime, the on call), It is also a concept that includes factors such as professional identity, autonomy, professional development and learning, participation in decisions, effective communication with managers and colleagues, team understanding, leadership, mutual trust, physical and mental security besides the factors affecting the physical and psychological, social and economic situation of the individual in the field of study (Saygılı & Çelik 2011).

Yıldırım defines the work environment as "living spaces which people experience a significant part of their lives in and which provide economic development as well as realizing personal development, dreams and social responsibilities besides the purpose of obtaining economic profit (Yıldırım, 2014).

According to the World Health Organization (WHO), individuals working in the health sector, of which focal point is the individual and the society and which compose of a multi-component structure, are influenced by many factors in the work environment, mainly environmental and social factors. Health of the employee is affected directly by individual characteristics (hereditary and acquired factors), living

environment (characteristics of settlement area, air water, and soil pollution), work environment (biological, chemical, physical, ergonomic and psychosocial factors) and working conditions (wages, duration of study, working relationships). In addition, the characteristics of the community served and remote environmental factors such as economic, political and cultural systems also affect the health of employees (Fig. 1) (Ergör, 2003).

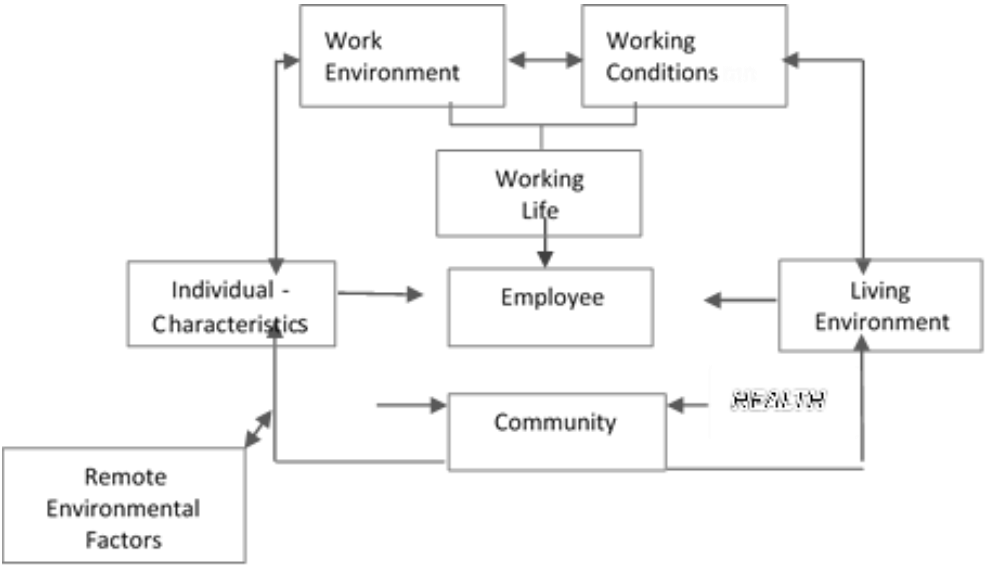

Figure 1: Work Environment, Employee and Health Relationship

Source: Ergör, 2003.

The success of health institutions is closely related to the understanding of the complex nature of the human element and the development of a work environment that is relevant to this. Because individuals are different from each other in the aspect of features, desires, expectations, needs etc. there may be variations in the reactions shown in different situations such as business conditions, working time, physical conditions, groups, possibilities and management style. In environments where health care service offered, it is extremely important and so hard as well to provide high-quality working life conditions compared to other business groups (Yıldırım, 2014).

POSITIVE WORK ENVIRONMENT

Despite rapid developments in science and technology, the most important element for organizations and working life continues to be human. Working is, for a human, a part of life and an inevitable necessity. Humans have to work while getting what they need for maintaining life. Nevertheless, people may experience health problems related to their work or environment from time to time. However, right to work in a positive environment, like right to life, is also a fundamental human right (Parlar, 2008).

The positive work environment in the health sector is defined as the environments in which employees are able to recognize the aims and objectives of the institution through particular processes, policies and systems and to gain individual satisfaction. At the same time, the positive work environment is expressed as a work environment

which is patient-oriented and satisfying, and which entirely supports humans (Shirey, 2006).

Characteristics of positive work environments can be listed as (Baumann, 2007);

- Innovative policies that emphasize the importance of recruiting and retaining work,
- Strategies aimed at supporting education and development, learning atmosphere
- Employees' getting in return for their labor,
- Programs aimed at raising awareness,
- Having adequate equipment and materials
- The presence of a safe work environment

ICN indicates that to have a positive work environment is also very important in terms of protection of patient safety as well as the continuity of employee health, safety, social life and work efficiency by positively influencing them (ICN, 2008).

Creating A Positive Work Environment

Positive work environment requires some applications with the intent of the creation of a job worthy of human dignity. Applications contains regulations; such as;

- Ensuring the health, safety and personal well-being of employees,
- Achieving quality patient care by motivating employees
- Regulations on improving individual, organizational and social performance and productivity (Registered Nurses' Association of Ontario-RNAO, 2008).

Establishing and maintaining positive work environments is a multidimensional process and encompasses the realization of various factors at many levels of the organization. First, each organization should analyze its employees by creating a report about the workforce and this report should include socio-demographic data such as absenteeism and job-leaving rates, vacant positions as well as age and experience. In the second phase, employee is assigned according to his/her individual and professional skills. The next step is creating an ergonomic physical environment and having an unextended, inexcessive and non-exhausting period of appropriate work. Professional development, opportuniy to have a career and to get promoted, and satisfactory remuneration are important parameters in creating a positive work environment (Bauman, 2007).

In the philosophy of creating positive work environments are;

- Creating innovative policies to prevent staff from leaving the workforce,
- Developing continuing education strategies for the staff
- Adequate and suitable payment for the staff
- Providing effective-quality materials and support
- Providing administrator support
- Employees' having autonomy
- Having a balance in rewarding and punitive attitudes
- Disseminating interdisciplinary and in-team collaboration and communication culture
- Regulation the safe work environment provided by workplace and employee safety (Bauma, 2007; ICN, 2008).

Effective strategies for creating and maintaining a positive work environment at health institutions;

- **Organization culture** contains assumptions, principles and beliefs based on how employees are perceived and act within the organization. Values such as courtesy, honesty, transparency, inclusiveness, care and empathy are important to the employee's sense of being valued and respected by the institution.
- **Supporting Professional Development**: It is important to support the professional development of employees and create the appropriate environment.
- **Recognition;** It is important that employees are recognized and supported within the organization (Dastrup, 2017).

Huntington emphasized that, in order to have a positive work environment, it is important to create an environment of open communication and mutual trust between employees and managers, to take the ideas of employees into account, to reward good employees, and to effectively direct employees. The presence of positive work environments is an indispensable requirement for employees to be happy and to have high motivation in their work environment (Huntington, 2018).

The presence of sophisticated tools and qualified employees is not enough to achieve the expected results for establishing and organizing positive work environments in health institutions, ensuring the safety of the personnel, satisfying the service areas, and ensuring a productive work environment. At the same time, these factors are needed to be directed effectively. Effective leadership and organizational support are important for effective direction and the most important task in this regard is undertaken by individuals who are in managerial positions in the institution. Managers, in managing complicated and major health institutions, should be leaders who are open to change and innovative, instrumental and strong in their integration with the environment. They should know where the health staff work comfortable, and how to make the physical conditions of the employees and the physical conditions of the environment efficient (Yiğit, 2004; Lowe & Chan, 2010; Twigg & McCullough, 2014; ICN, 2008).

Organization Atmosphere In The Presence of Positive Work Environments

The organizational atmosphere encompasses the perceptions about working environments shared by employees, the values, beliefs, philosophy and culture of the organization. Though the atmosphere of the organization is an abstract expression, it is useful in describing and understanding the concepts related to the working environment (Bauman, 2007).

Positive work atmosphere means an environment where creative and productive work are supported, team work and cooperation are important, rumors are not allowed. It is defined in seven main dimensions: authorizer, respectful, supportive, integrative, clear, based on principles and trust (Bauman, 2007; ICN, 2008).

Characteristics required for positive work environment are;

- A safe atmosphere for service personnel and service recievers;
- The atmosphere of organizational support for lifelong learning;

- Positive leadership atmosphere

Positive work environments in health institutions provide a safe atmosphere for caregivers and the patients. The security atmosphere contains organizational plan, policy-procedures, awards and safety-related situations and it has physical and psychological characteristics. Physical aspects include adequate equipment, the availability of suitable physical structures and a suitable work environment. The psychological aspect of safety encompasses rewards and incentives for caregivers and requires service providers to be in the comfort of asking questions without fear and hesitation (Bauman, 2007).

It is important that positive work environments in health care systems encourage learning. Institutions become learning organizations when they aim to learn life-long learning by promoting professional development and mutual information sharing.

Leaders are individuals who create vision and mission for the purposes of the organization and guide the delivery of services in line with this vision and mission. It is the responsibility of the managers who are in the leadership position to ensure that the necessary tools, knowledge and skills are present in a work place in order to achieve the determined goals and to increase motivation (Bauman, 2007).

The Effects of Positive and Negative Work Environment in Health Institutions

Making the work environments where individuals live the most active period of their day positively affects health and safety of the employee positively and increases work efficiency. Working in a positive environment provides;

- prolonged life expectancy,
- controlling the health problems that occur in the working life,
- reducing adverse events caused by existing diseases,
- increasing the efficiency of personnel,
- ensuring that the staff has economic freedom and continuity of work,
- Increasing the quality of work. It also provides the continuity of goodness at the life of an employee, from the social life to the service area of the employee. It is an important fact that to have appropriate working conditions and environmental regulations in an institution motivates employees or at least eliminates dissatisfactions, it is also important for keeping them in an organization (Paksoy, 2002; Bauman, 2007; Parlar, 2008; Mollaoğlu et al., 2010; Yaprak & Seren, 2010).

It has been determined that in studies in which the work environments are evaluated, the employees give better quality and qualified care, the satisfaction of caregivers and the patients is increased and the employees are happy and productive in the business environment; in short, the work life quality (WLQ) is high. At the core of the WLQ is the "positive work environment" where employees are satisfied with their work, friends and management styles. It has been determined that supportive, empowering and positive work environments help employees to feel less stressed at work, help them to love their work more, improve job satisfaction, motivation and corporate loyalty and reduce employee turnover (Çam et al., 2005; Duygulu & Abaan 2007; Altınöz, 2016).

Maintaining a healthy and safe environment in health institutions is also necessary for ensuring the well-being and safety of the patient. The method for developing

security, which is effective in providing a more humanistic work environment for employees, is to learn the causes of errors and to use this information in order to design care systems. As a result, researchers, policy makers and providers should intensify efforts to understand and change institutional conditions, components and health system processes in relation to patient safety. Improving the work environment in health institutions promotes new profession members to grow up and choose their profession and to be active in their work. It also improves the quality and safety of patient care by allowing healthcare workers to develop innovative care services models (Stone et al., 2008; Wiskow et al., 2010; Kroth, 2007; Vaughan&Slinger, 2013).

The work environments in which today's health services run include social, psychological, and political risk factors that lead to fatigue and exhaustion, lacking positive qualities. Interpersonal conflict at work, the lack of flexibility in working hours (Extremely long working hours), shift working mode, limited opportunities for promoting, lack of perception of institutional policies as fair and egalitarian, monotonity of work conditions, 7-24 work environment of institutions, feeling of inadequate control, value conflicts or incorrect / improperly matched values, lack of continuity in management, and constant change have been identified as contributing factors to exhaustion (Burnak, 2007; Slater & McCormack, 2007; Lowe & Chan, 2010). It is inevitable to experience underperformance, interpersonal conflicts and job dissatisfaction in the event of negativity in working environment and conditions. When assessed from the standpoint of the institution, experienced problems cause the decrease of work efficiency, lack of attention and concentration, economic losses, increase mistakes and accidents in work, deterioration of interpersonal relations, the care areas to be at risk, and all these factors reflect on the care of the patient, reduce the quality of care (Boston & Köse, 2011; Ayaz & Beydağ, 2014). The elimination of these factors and the establishment of a positive working environment in health institutions are extremely important from the viewpoint of both employees and patients in eliminating the negativities.

CONCLUSION

The importance of quality in health care services is getting more and more important every day because the institutions providing health services can create any shortcomings and disadvantages that may arise in service delivery due to the sector they are in and their specific characteristics and serious consequences threatening human life. However, when measures are not taken at adequate level, factors such as the existence of different patients and diseases, applied processes, complex technology and working environment make health institutions at risk (Tambağ et al., 2015).

Health institutions are unions where the common aims of the service providers are to provide comprehensive and qualified health care for the patients, different health professions come together, each profession member performs his/her duties and the information and experiences are shared and they take and perform co-decision. In these units where team work is important and many different professions are working towards the same goal, positive working environments affect all health care workers, support excellence in services, and ultimately improve outcomes for patients (Saygılı & Çelik, 2011).

Organizational climate in health institutions affects the success of an institution.

Institutions are advised to produce better than their competitors in order to be better, and the employees of a company with a positive work environment can produce more positive outputs than other employees. Institutions can sustain their success by creating a positive working environment (Kroth et al., 2007).

REFERENCES

Altınöz, Ü. (2016), Yoğun Bakımda Çalışan Hemşirelerde Çalışma Ortamına İlişkin Algıların, Ruhsal Sorunların Ve Etkileyen Faktörlerin Belirlenmesi, Gazi Üniversitesi Sağlık Bilimleri Enstitüsü Hemşirelik Anablim Dalı, Yayınlanmamış Yüksek Lisans Tezi, Ankara.

Ayaz, S., & Beydağ K. D. (2014). Hemşirelerin İş Yaşamı Kalitesini Etkileyen Etmenler: Balıkesir Örneği. Sağlık ve Hemşirelik Yönetimi Dergisi, 2 (1), 60-69

Baumann, A. (2007). International Council of Nurses (ICN) Positive practice Environments: Quality workplaces = quality patient care, information and action tool kit. [Electronic version].Available at: http://www.icn.ch/indkit2007.pdf. (Accessed: 25.04.2018)

Baykal,Ü., &Harmancı Seren,A.K. (2014).Yönetim Süreci ve Hemşirelik Hizmetlerinin Örgütlenmesi. Baykal, Ü.T. ve Türkmen, E.E. (ed.) Hemşirelik Hizmetleri Yönetimi kitabı içinde (1.Baskı), İstanbul: Akademi Basın ve Yayıncılık,49-89.

Bektaş, G. (1998). Hemşirelik Hizmetleri Yönetimi. Hayran, O. ve Sur, H. (ed.) Sağlık Hizmetleri El Kitabı içinde (1.Baskı), İstanbul: Yüce Yayım, 337-3358.

Boston,S. &Köse,A. (2011). Hemşirelerin Yönetsel Hizmetleri Ve Çalışma Ortamlarını Değerlendirmesi-Bir Üniversite Hastanesi Örneği, Marmara Üniversitesi Sağlık Bilimleri Enstitüsü Dergisi,1(3),178-183

Burnak, Ö., (2007). Örgütsel Tükenmislik Kamu Ve Özel İşletmelerdeki Çalışanlara Yönelik Bir Uygulama. Dumlupınar Üniversitesi Sosyal Bilimler Enstitüsü İşletme Ana Bilim Dalı Yüksek Lisans Tezi, Kütahya.

Çam, O.; Akgün, E.; Gümüş, A.B.; Bilge, A.; Keskin, G.Ü. (2005). Bir Ruh Sağlığı ve Hastalıkları Hastanesinde Çalışan Hekim ve Hemşirelerin Klinik Ortamlarını Değerlendirmeleri ile İş Doyumları Arasındaki İliskinin İncelenmesi, Anadolu Psikiyatri Dergisi, 6: 213-220.

Ergör, A., (2003), "Birinci Basamakta İş Doyumu ve Bunu Etkileyen Etmenler" 1. Temel Sağlık Hizmetleri Sempozyum Bildiri Kitabı, Manisa, s.27-33.

Duygulu, S. & Abaan, S. (2007). Örgütsel Bağlılık: Çalışanların Kurumda Kalma Ya Da Kurumdan Ayrılma Kararının Bir Belirleyicisi. Hacettepe Hemşirelik Yüksekokulu Dergisi, 61-73.

Dastrup, G. (2017). Improving Workplace Environment in Healthcare Organizations, Available at:https://knect365.com/pharmanext/article, (accessed: 20.04.2018).

Huntington, S. (2018). Creating a Positive Work Environment Available at: https://articles.bplans.com/creating-positive-work-environment/ (accessed:05.05.2018).

International Council of Nurses (2008). Positive practice environments for health care professionals. Fact Sheet. Available at: http://www.icn.ch. (accessed:21.04.2018)

Kroth,M.;Boverie,P.;Zondlo,J. (2007). What Managers Do to Create Healthy Work Environments, MPAEA Journal of Adult Education Volume XXXVI, Number 2,1-12.

Lowe, G. & Chan, B. (2010). Using Common Work Environment Metrics to Improve Performance in Healthcare Organizations, HealthcarePapers, Vol.10 No. 3 Available at:https://www.researchgate.net/publication/45275503, (accessed: 25.04.2018).

Mollaoğlu, M.; Fertelli, KT.; Tuncay, ÖF. (2010). Hastanede Çalışan Hemşirelerin Çalışma Ortamlarına İlişkin Algılarının Değerlendirilmesi, Fırat Sağlık Hizmetleri Dergisi, 5: 17-30.

Paksoy, M. (2002). Çalışma Ortamında İnsan ve Toplam Kalite Yönetimi, İstanbul: Çantay Kitabevi.

Parlar, S. (2008). Sağlık Çalışanlarında Göz Ardı Edilen Bir Durum: Sağlıklı Çalışma Ortamı. TAF Preventive Medicine Bulletin, 7(6) 547-554.

Registered Nurses' Association of Ontario (RNAO). (2008). Healthy Work Enviroments Best Guidelines, Workplace Health, Safety and Well-Being Of The Nurse. Toronto. Canada. Available at:http://rnao.ca/bpg/guidelines/hwe. (Accessed: 21.04.2018)

Saygılı, M., & Çelik, Y. (2011). Hastane Çalışanlarının Çalışma Ortamlarına İlişkin Algıları İle İş Doyumu Düzeyleri Arasındaki İlişkinin Değerlendirilmesi. Hacettepe Sağlık İdaresi Dergisi, 14(1), 39-71.

Shirey, M. (2006). Authentic Leaders Creating Healthy Work Environments for Nursing Practice. American Journal of Critical Care, 15(3): 256-267.

Slater, P. & McCormack, B., (2007). An Exploration of The Factor Structure Of The Nursing Work Index. Worldviews on Evidence - Based Nursing, 4(1), 30-39

Stone, P.W.; Hughes, R.; Dailey, M. (2008).Creating a Safe and High-Quality Health Care Environment, Patient Safety and Quality: An Evidence-Based Handbook for Nurses: Vol. 2, 57-71.

Tambağ, H.; Can, R., Kahraman, Y.; Şahpolat M. (2015). Hemşirelerin Çalışma Ortamlarının İş Doyumu Üzerine Etkisi, Bakırköy Tıp Dergisi, Cilt 11, Sayı 4,143-149.

Twigg, D. & McCullough, K. (2014). Nurse retention: A review of strategies to create and enhance positive practice environments in clinical settings, International Journal of Nursing Studies 5, 85–92.

Vaughan, L. &Slinger, T. (2013) Building a Healty Work Environment: A Nursing Resource Team Perspective, Nurse Leadership, Available at: http//www.ncbi.nih.gov/pumed, 70-77, (accessed: 01.05.2018).

Wiskow, C.; Albreht,T.; Pietro,C. (2010). How to create an attractive and supportive working environment for health professionals, WHO Regional Office for Europe, Denmark, Available at: (http://www.euro.who.int/pubrequest) (accessed: 21.04.2018)

Yaprak, E. & Seren, Ş. (2010). Hemşirelerin İşten Ayrılma Niyetleri ve Örgüt İkliminin Hemşire İstihdamına Etkisi, Hemşirelikte Eğitim ve Araştırma Dergisi, 7(1),28-33

Yıldırım, A. (2014).Çalışma Ortamında İş İlişkilerini Yönetmek, içinde Sağlık Yönetim ve Hemşirelik, Sağlık Sistemi ve Yönetim İlkeleri Işığında Hemşirelik kitabı içinde, Ankara: Hedef Basın Yayın, 76-78.

Yıldırım, A. (2014). Sağlık Çalışma Ortamı ve İş Yaşam Kalitesini Etkileyen Faktörler, Sağlık Yönetim ve Hemşirelik, Sağlık Sistemi ve Yönetim İlkeleri Işığında Hemşirelik kitabı içinde, Ankara: Hedef Basın Yayın.

Yiğit, A. (2004). Lider Davranışlarının Personel İş Doyumuna Etkisini Belirlemeye Yönelik Bir Alan Çalışması Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi Sosyal Bilimleri Enstitüsü, Ankara.

Chapter 89

The Reflections of Environment on Healthcare Organizations in the context of Strategic Management

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1. INTRODUCTION

Organizations carry out their activities in an external environment which includes the interaction of many interrelated factors. It is a critical necessity for the organizations to monitor environmental changes to survive which presents opportunities and threats for them (Ofluoglu, 2006:1). These environmental factors affect and shape the organizations (Guclu, 2003:72). Healthcare organizations develop their own management approach in this environment like the organizations of other sectors. Every healthcare organization needs a strategic management understanding to survive against environmental changes (Swayne et al., 2006:9-10). For this reason, the external environment must be analyzed continuously and systematically (Ofluoglu, 2006:1).

External environment is composed of factors related with the activities of organizations but out of the organization itself. Therefore, the external environment can be defined as "everything related with but out of a system" (Dincer, 2007:71). Organizations are affected by external environmental factors directly and/or indirectly. They can ensure to have competitive advantage by the best positioning and it may only be possible with comprehensive analysis of external environment. In this context, the duty of a manager is to adopt the strategic thinking to forecast potential crisis in the future. This ability will surely make valuable contributions to the survival of the organizations, furthermore it can convert crisis to opportunities. Strategic thinking skills are one of the key componets in the success of a healthcare manager. The responsibility of determining opportunities – threats and forecasting crisis of a healthcare manager includes monitoring and interpreting economical factors, new Technologies, emerging power balances, socio – demographic changes, changes in working motivation and lifestyles also. Consequently, strategic thinking should be directed to "read" the deviations in external environment and determine optimal strategy for the success of the organization under these circumstances (Swayne et al., 2006: 9-10). "Reading" deviations of external environment means to understand the environment, forecast changes and make plans for required reactions (Ginter at al., 1991:35; Swayne et al., 2006:48).

Healthcare organizations have to consider many factors of external environment like economical factors, technology and innovation, governmental pressures, demographic changes, emerging power balances, changing working conditions, changes

in social values, lifestyles and competition between organizations. Taking into account of all these issues, external environmental analysis becomes a process which affects the mission, vision and objectives of healthcare organizations; provides a frame for internal analysis and which directly effects the determination of organizational strategy (Bayın, 2014:102).

1.1. The Components of External Environment in Healthcare

The components of external environment for healthcare organizations can be listed as general environment, healthcare environment and service area (Swayne et al., 2006:48). These components and their relationship are presented in Figure 1.1. Investigating these components and evaluating their reflections on healthcare organizations underpins the external environmental analysis.

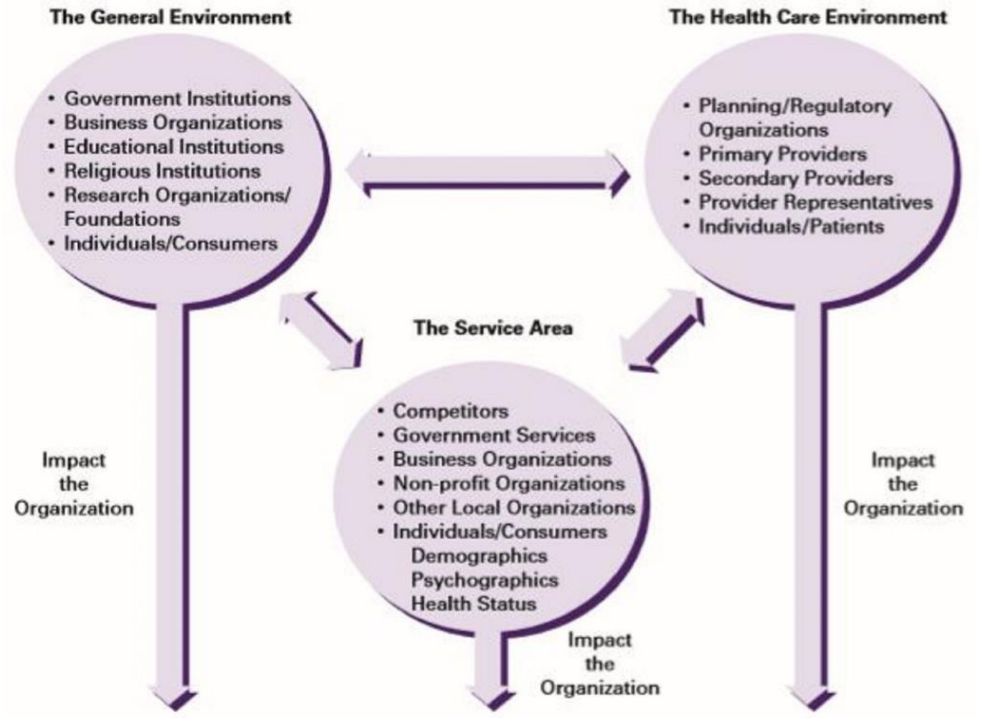

Figure 1. The External Environment of an Healthcare Organizations
Source: *Swayne et al., 2006: 48.*

1.1.1. General Environment

This is the environment which stays out of the service area that the organization operates but has important effects on service area although it does not have a direct relationship with the organization (Evans et al., 2003:168). The organizations have the capability of defining each general environmental factor and the effects of these factors on organizational strategy. They can collect the data for their strategic planning process from the eternal environment (Hitit et al., 2007:36). Some of these general environmental factors should possess relatively more importance and need a comprehensive analysis (Ulgen and Mirze, 2010:81). Every organization has a plenty of

factors in their general environment. The general environment of healthcare organizations was composed of factors such as political and legal environment, economic environment, socio – cultural and demographic environment, technologic environment and competitive environment.

Political and Legal Environment

Political and legal environment is composed of administrative system and political actors. This is the center of official authorities and where the local authorities derive and apply their political power (Ulgen and Mirze, 2010:82). The political and legal facts affect organizations' strategic decisions and actions deeply. These facts are the parameters that regulate the environment which the organization operates in. These parameters include laws, official institutions, interest groups and opponents (Kotler et al., 2008:82). Political and legal environment presents opportunities but may have threats and dangers for the organizations at the same time (Eren, 2005:122). Political and legal environmental facts such as the liabilities raised from international law, legal regulations and political decisions affect the delivery, financement and control of healthcare (Swayne et al., 2006:48).

Healthcare is a fundamental and irrecusable need. The policies related with healthcare are followed closely by the states and governments. They make interventions in accordance with the needs of the society and political aims. These interventions may take the forms of reform studies, development plans and government policies. To accomplish these aims, there is a need to implement legal regulations such as laws, codes and instructions. Healthcare organizations are affected by political and legal regulations (Bayın, 2014:107). They have to analyze the policies and legal regulations of government, construct their strategic plans and adapt these plans in accordance with political and legal developments in the future (Ugurluoglu, 2013). For example, Turkey has experienced an important and large scaled transformation process in healthcare and social security with Health Transformation Programme (HTP) in the direction of World Bank's recommendations. The delivery and financement of healthcare became separate functions of separate institutions with the transfer of hospitals affiliated with Social Insurance Institution to Ministry of Health (MoH). The integration of social security organizations under a single roof, expansion of healthcare delivery, pay-for-performance system directed especially to physicians, building an effective health information system, policies for drug pricing have been the major political steps of HTP. The organizational structure of MoH was reorganized with statutory decree no.633 in 2011. With this regulation MoH have been positoned as a policy-maker. The delivery and control of healthcare services have been carried out by affiliated institutions. But with the statutory decree no.694 in 2017 the organizational structure of MoH was reorganized and ministry has added servşce delivery function to policy making.

Economical Environment

Globalization which annihilate national borders have visible effects on competition, logistics, economy and money markets, economy policies of governments, health policies and pricing of healthcare services and goods (Can et al., 2015). Globalization has changed the World's economic order. Developing and less developed countries have became an open market for developed countries. The developed countries gained "supplier" status of these markets.

The healthcare organizations are directly affected by the development status and economical policy of that country. Global organizations like International Money Fund (IMF) and World Bank (WB) play an important role in structuring health policies especially in less developed and developing countries through the funds and economical subventions they provide (Topkaya, 2016:75).

National or/and international changes directly afect healthcare organizations. The economy policy and financial structure, market conditions and main macro-economic indicators are the other factors affect healthcare organizations directly and/or indirectly (Swayne et al., 2006:48-49; Tengilimoglu et al., 2012; Ulgen and Mirze, 2010:84).

Health expenditures increase in parallel with the increases in health economy. The majority of health expenditures in developed countries have been caused by chronic diseases and cancer treatments. Among the less developed and developing countries the main cost driver have been the treatment of acute and infectious diseases (Celik et al., 2016).

Health expenditures in Turkey have raised at 14.5% in 2016 according to previous year. The share of total health expenditures in Gross Domestic Product (GDP) became 4.6% in the same year. The size of health expenditures by the state in GDP was 3.6%. In 2016, health expenditure per capita raised by 13.3% according to previous year. Health expenditure per capita was $496 in 2015, this amount was calculated as $504 in 2016 (Turkish Statistical Institute, 2016).

The increase in the allocated share to health in a national economy will have positive effects on citizens' life time. There is a visible difference between the health indicators of Turkey and other OECD countries. As an example, in the year of 2016 the mortality rate under five years was 12.1 per thousand for Turkey and OECD average was 4.66. This situation indicates to the need for development in healthcare services in Turkey to close the gap with OECD countries. Primarily, these interventions have to be supported economically (Ugurcan, 2017:6). This approach forces healthcare organizations to control health expenditures, to evaluate health outcomes and performance at individual and institutional levels and also to meaure efficency and effectiveness (Tatar, 2013:353).

Strategic management requires a long term perspective. The planning tomorrow of economic issues is implemented by investigating today. The analysis of economic issues in healthcare organizations has to be carried out by consulting technical experts in case of need. The organizations must monitor developments at economy and be capable of forecasting future (Bayın, 2014:109).

Socio-cultural and Demographic Environment

Globalisation is an important mean fort he development of international relations and this makes people closer. As a result of this interaction, habits, values and perspectives of people changes rapidly. This means major changes in socio-cultural structures of societies. In this context opportunities and threats emerge for the organizations (Ulgen ve Mirze, 2010: 87). It is a necessity for healthcare managers to be aware of these changes and to develop suitable strategies for emerging opportunities and threats.

Demographic environment includes structure and characteristics of the population in the service area. Demographic environment changes rapidly like socio-cultural environment (Ulgen ve Mirze, 2010: 87). Main demographic issues which have the

capicity to affect healthcare institutions are population increase, size of population, population structure (age groups, distribution of gender), education level ve immigrations (Ugurluoğlu, 2013). Demand for healthcare services increases as population increases. World's population quadrupled during 20th century. The main reasons of this increase were better prevention of infectious diseases, developments at sterilization and healthcare service delivery and dissemination of healthcare services as a social policy (Schultz, 009: 4-5). Demand for healthcare services increases faster than population growth. Figure 1.3 presents the statistics of population size and number of applications to healthcare institutions for a five-year time period. As the figure shows, population of Turkey has increased at 5.5% between the years of 2012-2016 and the applications to healthcare services increased at 10.2% at the same period (Turkish Statistical Institute, 2017a).

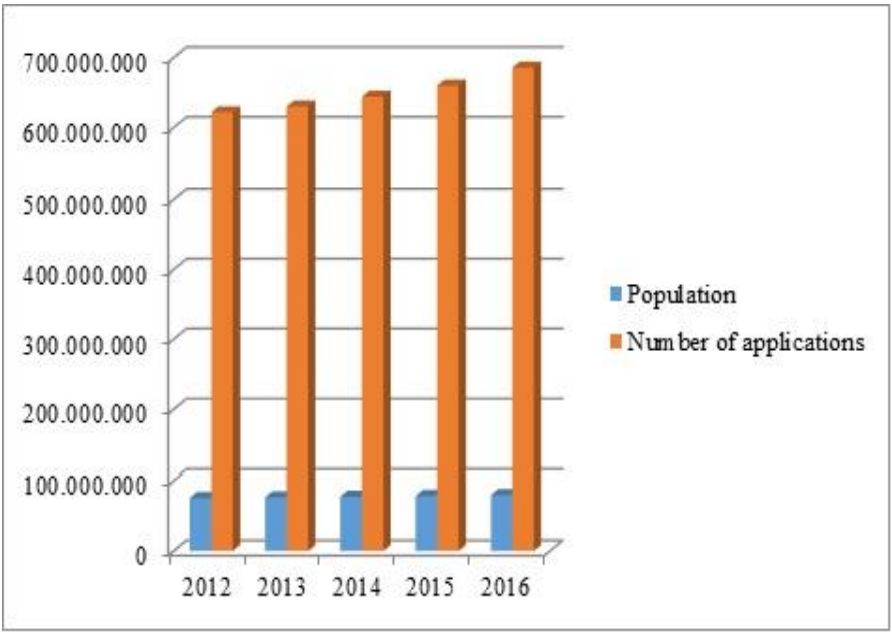

Figure 2. Population of Turkey and Number of Applications to Healthcare Services
Source: Turkish Statistical Institute, MoH Operating Report, 2017.

Demographic changes also have effects on demand for healthcare. Increase in the birth rate means increased demand for pediatrics, child care and surgery in the following time period. Aging population will unavoidably have consequences such as increased demand for geriatric services and rise in number of applications to heatlhcare institutions. Healthcare organizations have to investigate the population characteristics of service area and develop required strategy to respond the heatlhcare demand of that population. Emerging demographic structures force healthcare organizations to expand the range of services which they provide. However, variables of demography exhibit relatively slower change than the other environmental compnents (Ginter et al., 2013: 37; Ugurluoglu, 2013:163).

Technological Environment

Technological environment is a platform where new kinds of information produced and the application of this new information enables organizations to improve productions and service processes (Ulgen and Mirze, 2010:86-87). The borders of heatlh technology overlaps with various engineering disciplines such as chemistry, electrical and electronic, metallurgy, computer and information (Scientific and Technological Research Council of Turkey, 2003:1). Developments in these disciplines have important reflections on healthcare. Technology and innovation prepare the way for many new diagnostic and therapeutic methods (Ugurluoglu, 2013:165). Heatlh technology has been regarded as the medical devices, medicines, medical procedures, automation systems, other organizational systems in healthcare and the related research & development activities (Banta, 2009, 12; Tengilimogu et al., 2012: 97). Health technology makes valuable contributions to health status, quality and average length of life. It also reduces average length of stay (Lichtenberg et al., 2010:4). Healthcare organizations have to endure high investment costs to respond to the demand for hi-tech heatlhcare services. Approximately the half of start-up costs of a new hospital consists of technological infrastructure. The rate of change of technological environment is relatively higher than the other environmental components of external environment because of the shortness of technological improvements' life cycle. Especially the limited life of medical devices increases the healthcare organizations' invesment costs and also the costs of diagnostic and therapeutic processes. Technology can provide competitive advantage to healthcare organizations (Ulgen and Mirze, 2010:87).

Competitive Environment

The enhancements in the quality of healthcare services make the competititon between healthcare organizations more intense. The competititon have the potential to contribute to the development of heatlhcare sector and motive organizations to provide more quality heatlh services. Minimization of costs and simultaneously providing services at better quality are the main expressions of competition for healthcare organizations. Healthcare organizations are anly be able to adapt these expressions with creating value-adding strategies (Dogan et al., 2017).

1.1.2. Healthcare Environment

Healthcare environment is a dynamic and complex environment which includes the institutions responsible for legal regulations, developing technologies used for service delivery, providing services, financing services, acting as the representatives of beneficiaries, associations, professional bodies, suppliers and international stakeholders. The number and kind of stakeholders are relatively higher than the other sectors. Managers of healthcare organizations should monitor all the changes related with these stakeholders because of the directly effects on healthcare services. This monitoring process will act as a guide for strategic decisions. It is not easy to categorize the stakeholders of healthcare. The institutions and other stakedolders in Turkish Health System were categorized under five main groups as seen at Figure 1.2.

Healthcare Regulatory Authorities

Regulatory authorities of healthcare are the institutions or groups which directly authorize healthcare operations and supports organizations for political, legal, financial and technical issues (Ministry of Health, 2012). The authorities responsible for planning and regulating healthcare services in Turkey are, MoH, Turkish Grand National

Assembly (TGNA), prime ministry, related ministries, judicial bodies and other governmental agencies.

Table1. Agencies of Turkish Healthcare Environment

1. Healthcare Regulatory Authorities	
▪ Turkish Grand National Assembly ▪ Prime Ministry ▪ Ministry of Health ▪ Ministry of Finance ▪ Ministry of Development ▪ Ministry of Family and Social Policies ▪ Ministry of National Education ▪ Minisrty of Food, Agriculture and Livestock ▪ Ministry of Labour and Social Security ▪ Ministry of Environment and Urbanisation ▪ Ministry of European Union ▪ Ministry of Forestry and Water Affairs ▪ Ministry of Justice	▪ Council of State ▪ Constitutional Court ▪ Court of Accounts ▪ Court of Chancery ▪ Department of Disaster and Emergency Management ▪ State Personnel Presidency ▪ Presidency of the Council of Higher Education ▪ Tobacco and Alcohol Market Regulatory Authority ▪ Turkish Accreditation Agency ▪ Municipalities
2. Institutions of Healthcare Delivery	
Primary Care Services	▪ Family Health Centers ▪ Community Health Centers ▪ Private policlinics and offices ▪ Tuberculosis Control Dispensary ▪ Maternal and Child Health and Family Planning Centers ▪ Early Diagnosis of Cancer and Education Center
Secondary Care Services	▪ State Hospitals Affiliated with MoH ▪ Private Hospitals
Tertiary Care Services	▪ University Hospitals ▪ Education and Research Hospitals ▪ Specialty Hospitals
3. Funding Organizations	
▪ Faculties of Medicine ▪ Faculties and Colleges related with Healthcare Services ▪ Pharmacies	▪ Social Security Institution ▪ Private Insurance Firms ▪ Pharmaceutical Companies ▪ Medical Stuff Firms
4. Representative Organizations	
▪ Employee Associations (Turkish Medical Association, Turkish Dental Association, Turkish Pharmacists' Association etc.) ▪ Unions	▪ Associations (The Red Crescent, The Green Crescent, Association of Private Hospitals and Healthcare Organizations ets.) ▪ International Stakeholders (World Health Organization, United Nations, UNICEF etc.)
5. Representative Organizations of Patients	
▪ Organization of Patients and Patients' Relatives ▪ Rheumatism and Pain Association ▪ Healthy Life Organization	▪ Patients' Rights and Helathy Life Association ▪ Solidarity of Lung Disease Patients Association etc.

References: Adapted from Swayne et al., (2006) and MoH Strategic Plan 2013 – 2017

The regulations oriented to healthcare services are implemented by MoH in Turkey. These regulations can be listed as; policy making, strategic planning,

international and intersectoral cooperation, delivery and auditing of services and lastly ensuring the coordination between these functions.

Health policies are legislated by TGNA (State Planning Organization, 2006:3; Mollahaliloglu et al., 2007:98). The control of the convenience of legal regulations and financal auditing functions are carried out by related governmental agencies.

Heatlhcare Delivery Organizations

Healthcare delivery organizations include all organizations have a part in production and delivery of heatlhcare services. It may be possible to categorize these organizations according to indicators like characteristics of services they provide, ownersip and scale (Ugurluoglu, 2013:169). Healthcare services are provided in three levels: primary, secondary and tertiary.

Primary care healthcare institutions are generally located in the social environment of people (Aydin, 2004:43). These institutions can be listed as; family health centers, communtiy health centers and private policlinics.

In the secondary care, specialits are employed. These are healthcare organizations which provide in-patient care without a necessity for high level medical technology (Tengilimoglu et al., 2012:80). State hospital affiliated with MoH and private hospitals are the institutions of secondary care.

Intensive medical knowledge, utilization of high level medical technology and education and research activities are the main characteristics of tertiary healthcare services. Education and research hospitals, specialty hospitals and university hospitals are the examples of healthcare institutions in tertiary care.

Funding Organizations/Suppliers

This group of organizations includes institutions of education, reimbursement, pharmacies, pharmaceutical and medical stuff companies which supports healthcare organizations in service delivery processes. Pharmaceutical companies act as an important supporter of research activities and supplier of material requirements for healthcare organizations. These institutions include pharmaceutical production, distribution and research organization (Swayne et al., 2006:62-64). Human resource need for healthcare is met by related education institutions at the levels of upper secondary, prelicence, licence, over licende and doctorate. Besides these, work force is supported with certificate programmes.

In Turkey, healthcare is majorly financed by general health insurance. Private and supplementary insurance schemes are the other funds for healthcare with out-of-pocket payments.

Representative Organizations of Service Providers

Organizations representing service providers are organizations that care the interests of healthcare service providers and who provide financial and moral support to their members, aiming to create a professional discipline. These organizations meet under the roof of an association, union or trade union. Examples of these organizations in Turkey, professional associations, associations, trade unions and international stakeholders are given.

Patients and the Institutions Representing Patients

Patients are the reason for the existence of health organizations. Institutions representing patients have been treated as a component of the health system in the past. With the emergence of competition in health care, patients are able to direct the health

sector according to their needs and wishes (Swayne et al., 2006: 68). These institutions, which are NGOs, can ensure that the demands of patients' rights are met at the political level.

1.3. Service Area

The service area can be defined as the geographical borders surrounding the healthcare organizations. However, it is difficult to define the service area of healthcare organizations. For healthcare, consumers could afford to travel far distances. The definition of the service area includes a detailed analysis of related geographical and economic variables. Service area analysis consists of competition analysis, identification of special service domain and service category issues, definition of competitors, determination of strengths and weaknesses of competitors, planning of strategic moves and identification of the organization environment. Healthcare organizations also have to focus on competitors in their service areas (Ugurluoglu, 2013:171). The collection of data related to competitors will ensure that the organization is positioned strongly in the market it is in and that the necessary strategies are identified. An organization that conducts competitive analysis will have a general idea of the competitors within the service area so that they can identify the vulnerabilities of the competitors. This will contribute to the organization setting its own strategic moves against its opponents (Swayne et al., 2006: 98-102).

2. ENVIRONMENTAL ANALYSIS PROCESS

There are many methods for environmental analysis. The process of environmental analysis used, whichever approach or method is used, is generally addressed in four basic stages. These are (Swayne et al., 2006:68-69);

1. Scanning of the external environment to determine the environmental change signals,
2. Screening of the detected results (monitoring),
3. Forecasting on the identified and monitored issues,
4. Assessing the estimated issues in terms of organizational interests.

2.1. Scanning

Environmental screening is a tool for the collection and organization of data in the decision-making process. The organization is used to learn about events, trends and relationships in the external environment. Scanning is used to identify short- and long-term changes in current political, economic, technological and social conditions (Graham et al., 2008:1022). External factors, which are seen as the key to success and affect the future of an organization, are investigated. The information obtained from environmental scanning is a strategic resource for the decision-making process. In order for environmental scanning to be effective, organizational managers and employees need to learn the scanning process (Rubcic and Sekan, 2012, 1139).

Environmental scanning allows organizations to identify future demands and threats and transform them into opportunities. Competitive advantages or potential pitfalls can be identified. The changing environmental conditions make it possible to recognize unexpected changes that will affect the organization. Environmental uncertainties can be reduced by improving organizational skills (Ford et al., 2013, 40).

The healthcare environment is part of the general environment. Any change in the general environment may cause direct impact on healthcare. Decision makers in

healthcare can use the environmental scanning process as a window. Decision makers through this window can;

• Display external environmental data,
• Can divide into categories of data,
• Identify problems in each category (Swayne et al., 2006, 70-71).

Organizations can scan and identify various distributed, uncategorized, and untested data generated by other organizations or individuals via this window. The result obtained at the end of the scan will generate the information to be used at other stages.

While some individuals and organizations in the external environment directly influence the health sector through their activities, the influence of some can be indirect. Changes and developments in the global environment can affect the health care environment. This condition is referred to as environmental shift (Ginter et al., 1991: 36). Healthcare is a technology use intensive industry. When we look at the development process of the technologies used, most of the technology has been developed for services in different fields and has started to be used in the health sector over time. For example, with the development of robot technology, robots have begun to take place in healthcare, operating theaters, laboratories and other areas.

2.2. Monitoring

The monitoring process includes tracking the issues, events and trends identified in the screening process that are important to the organization. Four important functions are fulfilled during the monitoring process. These are;

• Identifying and exploring additional sources of information about the issues identified in the relevant areas that have potential for the organization in the screening process,
• Adding the findings to the created environmental database,
• Proof of whether the specified subjects are valid,
• Determining the rate of change of subjects (Swayne et al., 2006, 73-74).

The monitoring function has a narrower area than the scanning function. The aim is to establish the necessary information bank for the important issue for the organization. This database allows the rate of change in the external environment to be determined about the developments, events and trends in the subject (Ginter et al., 1991, 38). Complexity and uncertainty are higher than in other sectors, as the health care field is a multi-disciplinary field. Health organization decision makers will need more information.

2.3. Forecasting

The forecasting process has a preliminary view of how long it may be in terms of what matters to the organization during the screening and monitoring process. The forecasting process takes place in three steps. These are;

• Predicting trends, occurrences, developments or dilemmas of the topic,
• Determining the relationships between environmental categories and topics,
• Development of alternatives (Swayne et al., 2006: 74; Ginter et al., 1991: 39).

If the conditions exist in the current situation, the conclusion is drawn about the future position of the organization.

2.4. Assessing

Environmental effects are often present, but the effects are often unclear. Since it is often not possible to measure environmental changes, interpretation is necessary. The crowd of collected data, the fact that the process is blurred and the decision makers in the same situation make different interpretations are indications that there is no certainty in the process (Swayne et al., 2006: 74-75).

Screening, monitoring and forecasting processes are important for understanding the dynamics of the general and healthcare environment. The way to create a policy for the interests of organizations will be opened with the evaluation to be made.

4. CONCLUSION

Like all organizations, healthcare institutions also set goals in line with their own mission and vision and develop various strategies to achieve these goals. Healthcare institutions are in interaction with an external environment in which change is constant. Environmental dynamics provide opportunities and threats to health organizations. Decision makers in health organizations must constantly monitor and analyze environmental changes. Due to the multidisciplinary nature of healthcare services and the high intensity and severity of environmental impact, managerial decision-making skills of health care managers must be developed. It is necessary to monitor and analyze developments that directly and indirectly affect the health care net from changes in the external environment and to develop strategies against those situations. Strategies to be identified and healthcare organizations will avoid the adverse effects of external dynamics. It is also necessary to make the necessary plans to ensure that the internal environment in which they produce healthcare services is least affected by these negative changes. Healthcare organizations must take the necessary precautions against the adverse effects of the external environment and internal environment dynamics in order to sustain their existence.

REFERENCES

Aydın S. (2004). Aile Hekimliği Türkiye Modeli. Sağlık Bakanlığı, Ankara.

Banta D. (2009). What is Technology Assessment ? International Journal of Technology Assessment in Health Care, 25 (1), 7–9.

Bayın G. (2014). Sistem Yaklaşımı Bakış Açısıyla Sağlık Kurumlarında Dış Çevre Analizi. Çankırı Karatekin Üniversitesi, İktisadi ve İdari Bilimler Fakültesi Dergisi, 4 (2), 99-120.

Can H. Azizoğlu Ö.A., Miski E.A. (2015). Örgütsel Davranış (Gözden Geçirilmiş ve Genişletilmiş 2. Baskı). Siyasal Kitabevi, Ankara, ISBN: 9786059221030.

Çelik Y., Khan M., Hikmet N. (2016). Achieving Value for Money in Health: A Comparative Analysis of OECD Countries And Regional Countries. The International Journal of Health Planning and Management, 32 (4), e279-e-298.

Devlet Planlama Teşkilatı (2006). Kamu Kuruluşları İçin Stratejik Planlama Kılavuzu (2. sürüm).

Dinçer Ö. (2007). Stratejik Yönetim ve İşletme Politikas. Alfa Basım Yayım Dağıtım, İstanbul, ISBN:9789752979338.

Doğan İ.F., Bakan İ., Havya S. (2017). Sağlık Sektörünün Temel Aktörleri Olan Hastanelerde Rekabet Stratejilerinin Kaliteye Etkisi. Elektronik Sosyal Bilimler Dergisi, 16 (2), 817-835.

Eren E. (2005). İşletmelerde Stratejik Yönetim ve İşletme Politikası (7. Basım). Beta Yayım Dağıtım A.Ş., İstanbul, ISBN:6053779100.
Evans N., Campbell D., Stonehouse G. (2003). Strategic Management for Travel and Tourism. Butterworth-Heinemann, Burlington, ISBN:9780750648547.
Ford E.W., Huerta T.R., Menachemı N., Babik D. (2013). Aligning Strategic Orientation with Information Resources. Journal of Management and Strategy, 4: (4), 33–43.
Ginter P.M., Duncan J.W., Richardson W.D., Swayne L. E. (1991). Analyzing The Health Care Environment: You Can't Hit What You Can't See. Health Care Manage, 16: (4), 35-48.
Ginter P.M., Duncan J.W., Swayne L. E. (2013). Strategic Management Of Health Care Organizations (Seventh Edition). Jossey Bass, USA, ISBN:9781118466469.
Graham P., Evitts T., Maclean R. (2008). Environmental Scans: How Useful Are They For Primary Care Research? Canadian Family Physician, 54, 1022-1023.
Güçlü N. (2003). Stratejik Yönetim. Gazi Eğitim Fakültesi Dergisi, 23 (2), 61–85.
Hitt M.A., Hoskisson R.E., Ireland R.D. (2007). Management of Strategy: Cases (International Student Edition). Thomson South-Western, Ohio, ISBN:9781285375533.
Kotler P., Shalowitz J., Stevens R.J. (2008). Strategic Marketing For Health Care Organizations: Building, A Customer Driven Health System. Jossey-Bass, San Francisco, ISBN:9780787984960.
Lichtenberg F., Tatar M., Çalışkan Z. (2010). Türkiye'de Yenilikçi İlaçların Yaşam Süresi, Hastaneye Yatış ve Sağlık Harcamaları Üzerine Etkileri. 1999–2010.
Mollahaliloğlu S., Hülür Ü., Yardım N., Özbay H., Çaylan A., K., Ünüvar N., ve diğ.. (2007). Türkiye'de Sağlığa Bakış. Sağlık Bakanlığı, Ankara.
Ofluoğlu G., Arslan G., Aydemir S. (2006). Küreselleşme Sürecinde İşletmelerde Dış Çevre Analizi. Kamu İş, 8 (4).
Rubcic N., Sekan S., B. (2012). Business Environment Scanning: Prerequisite For Sustainable Learning Company. 6th International Conference An Enterprise Odyssey: Corporate Governance and Public Policy? Path To Sustainable Future?. June 13-16, 2012, University of Zagreb, Zagreb, p. 31-52.
Sağlık Bakanlığı (2012). Stratejik Plan 2013-2017.
Schultz P.T. (2009). Population And Health Policies, Economic Growth Center, Yale University, Center Discussion Paper, No: 974, p. 1-85.
Swayne L.E., Duncan W.J., Ginter P.M. (2006). Strategic Management Of Health Care Organizations (Fifth Edition). Blackwell Publishing, Oxford, ISBN:9781405124324.
TATAR M (2013). Sağlık Ekonomisi. İçinde: H. Sur, T. Palteki (ed.) Hastane Yönetimi, Nobel Tıp Kitabevi, İstanbul, ISBN:9789754209501.
Tengilimoğlu D., Işık O., Akbolat M. (2012). Sağlık İşletmeleri Yönetimi (Beşinci Basım). Nobel Yayın, Ankara, ISBN:9786051331843.
Topkaya Ö. (2016). Sosyal Politika Bağlamında Dünyada Sağlık Politikalarının Tarihsel Gelişimi. Süleyman Demirel Üniversitesi, İktisadi ve İdari Bilimler Fakültesi Dergisi, 21: (2), 707-722.
TÜBİTAK (2003). Vizyon 2023, Teknoloji Öngörü Projesi Sağlık ve İlaç Paneli Sonuç Raporu.
TÜİK (2017a). 31 Ocak 2017 Adrese Dayalı Nüfus Kayıt Sistemi Sonuçları. Nüfus ve Vatandaşlık İşleri Genel Müdürlüğü,
TÜİK (2017b). Haber Bülteni (İstatistiklerle Yaşlılar, 2016). 16 Mart 2017, Sayı: 24644.
TÜİK (2017c). Haber Bülteni (Sağlık Harcamaları İstatistikleri, 2016).16 Kasım 2017, Sayı: 24574,

Uğurcan S., Sayman Ö.A., Vehid S., Köksal S.S., Erginöz E. (2017). Türkiye Ve OECD Ülkelerini Sağlık Göstergeleri Ve Sağlık Harcamalarının Karşılaştırılması. Online Türk Sağlık Dergisi, 2 (3), 1-12.

Uğurluoğlu Ö. (2013). Sağlık Kurumlarında Dış Çevre Analizi. Toplum Ve Sosyal Hizmet, 24 (2), 155-177.

Ülgen H., Mirze K.S. (2010). İşletmelerde Stratejik Yönetim (5. Basım). Beta Yayınları, İstanbul, ISBN: 9786053337218.

Chapter 90

Strategic Leadership in Healthcare

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1. INTRODUCTION

The leadership behavior demonstrated by managers are among the key factors that either boost or diminish the performance of employees (Türk and Akbaba, 2017). The environment wherein institutions are situated is quite variable and vague. Organizations need to adapt to this variable environment as quickly as possible. This variable and vague environment also necessitates that more flexible management styles are adopted in the future. All these necessities connote the concepts of strategic management and strategic leadership (Altınkurt and Yılmaz, 2017:170). Definitions and cultural interpretations related to leadership change constantly (Şahin, 2009; Harrison, 2010:56). At the most basic level, leadership is the skill of guiding, influencing and inspiring individuals to achieve a goal (Harrison, 2010:25). The definition for strategic leadership assumes that a leader has the skill of influencing their subordinates, peers and superiors (Rowe, 2001). The strategic leader should form a team of managers and guide this team. The strategic leader needs to determine the purposes and goals of the organization and ensure that employees embrace such purposes and goals (Barutçugil, 2013:24). A person with exceptional skills, be it a football player or a consultant, must first of all guide the members of their team. No matter how skillful they are, without the support of the team it is out of the question that they achieve even their personal goals. Healthcare too is a team play (Jasper and Jumaa, 2005: 48). Hospitals make great expenditures for medical applications, purchase new equipment and expand and renovate their facilities. However, relatively less time is spent or efforts are made to achieve a better understanding of the employees (Gundermann, 2009:5). Institutions that work for an end goal of high performance but make scarce investments in their employees display a good performance only for a very short time. Conversely, firms who make great investments in their employees each year constantly demonstrate high levels of performance (Gundermann, 2009:14). Stimulating the members of the organization to play an active role in their work helps each worker to develop their own potential at their field of work. Investing in the employees and getting them to have a part in the decision-making process is important not only in the ethical sense, but also for a robust and continual work performance. In our time wherein rapid developments and changes occur, it is very important that healthcare institutions find leaders with a strong inner compass.

One of the main distinguishing features of a healthcare institution is the skills and managerial abilities of their leaders (Strauss and Mayer, 2017:2). The healthcare sector is a sector that is directly impacted by technological, legal and global changes. These impacts need to be fended off by some radical decisions taken by the healthcare institutions; or in other saying, the institutions should be made to adapt to such changes as soon as possible. At this point, the importance of the concept of strategic leadership for healthcare institutions becomes evident (Şeremet, 2013:43). As in other institutions, in healthcare institutions the leader should be aware of the importance of the participation, contribution and ideas of each individual in the team in order to achieve the end goal and to provide constantly improving services and should ensure that this participation is actualized (Budak, 2018:36).

A strategic leader should be able to draw upon their own experience and guide healthcare workers. Attaching tightly to what we do is not always the best way to achieve the desired goal. Flexibility and innovation are inseparable for whomever seeks to achieve development. Physicians need to position themselves as the shining examples of innovative and visionary leadership in healthcare services (Gundermann, 2009:24). Healthcare systems find themselves situated in environments with ever more restricted capacities. Therefore, diversification of the healthcare institutions bears great importance. The innovative skills of the leader are also effective in this regard. For the leaders of healthcare institutions, discovering, implementing and maintaining the necessary strategies are of vital importance. In order to achieve great success in healthcare institutions, one needs to take small steps and make innovations.

2. STRATEGIC MANAGEMENT

Strategy is an exhaustive action plan that defines the long-term orientations of an organization and guides the utilization of resources in order for it to achieve a sustainable competitive edge (Schermerhorn, 2007:207). And strategic management is the entirety of the managerial decisions and activities that manifest the long-term performance of the organization (Tengilimoğlu et al., 2012:353). Strategic management can also be defined as a managerial process that is focused on long-term activities and final outputs. Strategic management is intended to determine the environmental factors threatening the organization and to take the suitable precautions aimed at such threats in order to ensure the long-term sustainability of the organization. The strategic management process can be expressed as an analytic process that commences with information gathering and goes on with analysis, decision-making and implementation (Ülgen and Mirze, 2013:28). Strategic management encompasses both profit-oriented businesses and non-profit but income and service-oriented organizations.

Strategic management can be deemed as a process that encapsulates strategic planning and that seeks to guide the organization and formulate, implement and evaluate strategies for the organization (Uğurluoğlu and Çelik, 2009). Within the strategic management process, strategic planning plays a great role. Strategic planning is becoming increasingly important for a general organizational success in the rapidly changing healthcare sector. Strategic planning consists of developing organizational goals, managing action plans and measuring continual performance (Harrison, 2010:26). An organization's keeping pace with the changes that happen enable the development of the organization. The leader plays a very important role in the formulation and actualization of strategic plans (Şahin, 2009).

Strategic management integrates various functions. It necessitates making an effort for the success of the organization or business as a whole. It considers a wide array of stakeholders. In short, strategic management means taking action right now for the future of the organization or business. Strategic management draws a road map for organizations when environmental changes are rather vague and risky and enables correct decision-making under said circumstances.

Table 1: Strategic Management Model for Healthcare Institutions (Swayne et al., 2006: 18)

Strategic Thinking	Strategic Planning	Strategic Momentum
-External Orientation -Analyse Data -Question Assumptions -Generate New Ideas	**Situational Analysis** -External Analysis -Internal Analysis -Directional Analysis **Strategy Formulation** -Directional Strategies -Adaptive Strategies -Market Entry Strategies -Competitive Strategies **Planning the Implementation** -Service Delivery Strategies -Support Strategies -Action Plans	-Managerial Action -Strategy Evaluation -Emergent Learning -Re-initiate Strategic Thinking

All activities comprising these components interact with one another; therefore, when one of them is impacted the others are similarly affected (Swayne et al., 2006:18).

3. STRATEGIC LEADERSHIP

Leadership plays a vital role in the implementation of strategies as much as it does in the formulation or generation thereof. The business world, which has become a competitive and dynamic medium in our day, has boosted the importance of leaders who are responsible for actualizing change (Eren, 2005:443).. A leader is a person who draws together, materializes and effectively guides the efforts of the employees of an organization to achieve the goals of that organization. Moreover, a leader motivates people to produce and enables them to come together in a way that they can work efficiently and reveal all of their skills. The leading person acts as a bridge between the organization and the employees and endeavors to meet the needs of both parties in the best way possible (Barutçugil, 2013: 563). Managers are expected to lead, show leadership behavior and become managers with leading skills, rather than solely filling an executive role based on the authority of the formal position granted to them (Koçel, 2015:667). The essence of the leadership process comprises of the leader's skill of influencing those around him/her. In the truest sense, the duty of the leader is not solely managing, executing or protecting a status. The leader exists to influence and to change the end result. A leader is a person who can affect people, who shows them what steps to take and what purposes and goals to aspire after; thus, s/he guides them (Baltaş, 2013:45). In short, a leader is a person who leaves a mark and causes change.

The skill of guiding an organization towards the desired goal by seeing into the future and identifying the correct strategies, implementing such strategies and selecting

the right leadership behavior at the right time with the purpose of ensuring and maintaining the sustainability and competitive edge of the organization within a chaotic environment is called strategic leadership; and the person who stands at the center of this process to manage it, who contributes to the development of their followers and who agilely selects and masterfully implements the correct leadership behavior suitable for the environment and the circumstances is called a strategic leader (Aydın, 2012:23). Strategic leadership is all kinds of strategic activity performed with relation to strategic alternatives and symbolic actions set forth by the senior managers of an organization. Strategic leadership is a more specific and more complex type of leadership. Therefore, all features that are necessary for leadership is also valid for strategic leadership. However, the main responsibility of a strategic leader relates to the survival and competitive edge of the organization. A strategic leader is expected to contain guiding skills and features that benefit the organization in a future-oriented manner, rather than other ordinary leading features (Ireland and Hitt, 2005; Ülgen and Mirze, 2013: 413; Güçlü et al., 2017). Strategic leader is a person who guides a team s/he has established with the purpose of achieving a distinct goal, with his/her unique manner of leadership.

The long-term strategic success of organizations is only possible through the endeavors of their managers. Achieving such success is the duty of the leader at the helm of the organization. In large and complex organizations, department or unit managers also fulfill this duty (Barutçugil, 2013: 24). Even though the origin of the concept of strategic leadership is untraceable, it is thought that this concept underwent changes throughout the course of history in parallel with the changes experienced in the business world and global economies and within the framework of organizational requirements. Strategic leaders need to have a set of skills such as strategic decision-making, effective communication, subordinate guidance, risk-taking, knowing their colleagues very well, analyzing the internal advantages of the business dextrously and seeing through the external opportunities and threats (Bektaş, 2016). In the contemporary world, where change is instantaneous, all organizations need to develop effective strategies that suit the developments. Improving these strategies is the duty of the leaders of organizations, who hold the skill of adapting to change. Strategic leaders achieve the vision by considering the history of the institution, perceiving the opportunities available at the environment where the organization is located and understanding the strategic capacity of the organization in order to gain the upper hand with relation to such opportunities. Upon feeling confidence in their vision, mission and values, strategic leaders should take steps in relation to the issue at hand and set strategic goals (Uğurluoğlu and Çelik, 2009; Barutçugil, 2013: 38). The most significant role that strategic leaders play is guiding the organization in a clear and understandable manner and ensuring that this guidance is shared and embraced. This is generally done through a moving, concise and catchy vision and mission statement (Barutçugil, 2013:565). Strategic leadership assumes a common vision as to what will become of an organization. So, the current decision-making or emergency strategy processes are in line with this vision (Rowe, 2001).

A strategic leader needs to hold transformative powers, act ethically and, whenever necessary, politically, give importance to the relationship between the organization and its environment and have high managerial skills (Güçlü et al., 2017). In recent years, the medical leadership industry has embraced “transformational” leadership instead of

"charismatic" leadership (Shale, 2012:10). Even though it can seem like leadership is about the same features in essence, there are different types of leadership differing in accordance with their areas of implementation and the behaviors displayed. It would be wrong to choose one out of the many various types of leadership and call it the truest one. Below are the most prominent types of strategic leadership.

3.1. Ethical Leadership

Leaders are deemed to be obliged to hold some certain ethical values and principles. In addition to this, the organizational culture should also bolster and support such values and principles (Güçlü et al., 2017). The prevention of medical malpractice or intervention therein and concerns related to the ability or reliability of one's colleagues are among the foremost ethical concerns of a medical leader.

In the field of medicine, an ethical leader does not necessarily need to be a physician. Potentially, any member of a professional healthcare services group can be called in to act as the ethical leader. Likewise, ethical leadership does not connote a high-level position within the professional hierarchy (Shale, 2012:8). Ethical, or moral leadership has to do with providing a care that suits the ethical associations of everyone, determining at what point an action is necessary, identifying the circumstances where an action is needed in order to improve or sustain the ethical quality of the care given, and regulating the activities performed accordingly. There are three stages of ethical leadership. At the first stage, ethical leaders accept the need for acting ethical upon starting to gain a feeling of experience. At the second stage, ethical leaders urge others to consider the circumstances with a deeper ethical understanding. And at the third stage, ethical leaders materialize a shared vision (Shale, 2012:35).

3.2. Political Leadership

Political leaders can reach a wide environment and at the same time resonate with people due to their importance as managers. Political leaders can easily perceive social cues and interpret the behaviors of their followers. Moreover, it is said that political leaders have skills of influencing and controlling people and conditions. These leaders actively build the communication networks within the institution (Treadway et al., 2004). A leader with politic skills can effectively address the needs and expectations of his/her followers and thus the trust in and support for this leader will increase, in turn also increasing work satisfaction (Uğurluoğlu and Çelik, 2009).

3.3. Managerial Leadership

Managerial leadersip is a type of leadership that encompasses finance management, employee management and time and resource management with strategic and functional planning roles. Managerial leaders are more invested in the organization, execution and supervision functions of the management process (Akdemir, 2016:344). In addition, increasing the motivation of employees, improving working conditions, providing the integration of the workers of the organization, analyzing the external environment, networking outside of the organization and developing the organization are among the duties of the managerial leader (Yeşilyurt, 2007). These leaders do not demonstrate a distinct effort to come up with a creative vision (Akdemir, 2016:345).

3.4. Visionary Leadership

The term vision expresses a situation that people or organizations desire to come true in the future (Akdemir, 2016:345). A visionary leader is someone who enables the achievement of the organization's goals and purposes, who guides and shapes the organization during this process and who formulates a vision (Sert, 2015:26). Leaders with a vision are people who dream of and design the destination which their institution shall arive at (Aksu, 2009). A visionary leader makes people embrace a common dream; s/he shows them the greater picture and tells them about their destination; however, s/he does not explain how to get there. Visionary leaders give freedom to their employees in matters related to innovation and risk taking (Barutçugil, 2013: 580).

A visionary leader should be able to express and explain the vision to their followers through behavior and adapt such vision to situational and ambient variables (Akdemir, 2016:346). At this point, visionary leadership does not mean only a conveyance of all the skills the leader holds orally or in writing. A visionary leader conveys the vision to his/her employees both orally and through his/her behavior (Şeremet, 2013:31).

Leadership encompasses seeing into the future, setting achievable visions and goals for the future and organizing people to realize all this. Visionary leaders strive to carry their followers into the future with their vision (Aksu, 2009).

3.5. Transformational Leadership

The concept of transformational leadership has to do with transforming the needs, beliefs and judgment standards of the followers. Transformational leaders are the one who brings about this transformation. At the same time, transformational leader is a person who enables organizations to achieve superior performance through transformation and innovation. This success is possible through the leader having a vision and the vision being adopted by the followers (Koçel, 2015:696). Transformational leaders boost the self confidence of their followers in terms of reaching the goals. In this type of leadership, the dedication level of followers is rather high.

The leader and the follower satisfy each others needs and motivate each other, thus they are able to achieve goals that seem difficult to achieve. Transformational leadership behavior requires an intense interaction between the leader and the follower. Basic features of transformational leadership behavior are the charisma of the leader, his/her being a source of inspiration, achieving an intellectual stimulation on the follower and personalized attention (Çakar and Arbak, 2013). The most significant result of transformational leadership is the leaders' supporting the employees for a better performance and effort surpassing even their own expectations for the goals of the organization, motivating and coaching them and forming an environment of trust through respect for each other (Çakınberk and Demirel, 2010).

Transformational leaders are those who can change their environments. These leaders do not only react to environmental situations, but also create a new environment. Transformational leadership comprises of the reassessment of the missions and visions of people, the refreshment of their responsibilities and the restructuring of the system in order to achieve a goal. There is a relationship based on mutual motivation, wherein followers are brought to the same footing as the leader and the leader acts as a spiritual intermediary (Eraslan, 2006). Charisma is a key structure

for transformational leadership. That is because the transformational leader's wish to transform his/her followers and the high performance s/he expects from them requires a strong emotional bond between him/her and them (Çakar and Arbak, 2013). Transformational leadership is seen as a leadership approach that can grant the organizations the momentum they require. It is a leadership approach that is based on a leader who can transform his/her followers and s/he himself/herself can also transform during such process.

4. STRATEGIC LEADERSHIP IN HEALTHCARE

The leader plays an important role in the success of the organization. Leadership directly impacts the culture of an organization and all its strategic decisions. The leaders demonstrate the skill of starting and maintaining change throughout the organization through the mission and vision shared with the employees (Barutçugil, 2013:563). No matter what type of leadership is adopted, the leader has to influence and guide the followers (Koçel, 2015:697). In a changing working environment, the leader who had been seen as a supervisor in the past is now regarded as a guide or facilitator. Nowadays, in order to be a successful leader, rather than implementing strict bureaucratic rules on the employees, one needs to remove hindrances, provide coordination and facilitate team work (Uğurluoğlu and Çelik, 2009). Leadership has transformed with time into a strategic activity which encompasses conveying the vision, developing organizational structures and processes, managing transformative initiatives and creating skills. Fulfilling such duties of leadership requires the skills of inspiring people and mobilizing resources (Wooten et al., 2006). Strategic leadership is a type of leadership that has come to existence within the scope of strategic decision-making processes. Strategic leadership is a leadership process that is based on anticipating events, which gives one a long-term perspective and enables believing in the necessity of creating a vision, mission and strategy in order to maintain and actualize organizational goals and gravitating towards that purpose (Şeremet, 2013:48). A strategic leader is someone who takes upon the responsibility of managing not only a small group but the entirety of the institution. It is someone who plans, formulates and implements the strategic management process and efficiently uses the returning resources through re-evaluation and who is responsible for analysis. Strategic leaders are those who ensure the maintenance of the short-term stability of the institution through goals, visions, missions and strategies, who resist pressures during transformation, who determine the way of management in line with the goals and targets set forth by the senior management and who are integrated with the culture and policies of the organization (Jasper and Jumaa, 2005:51; Sert, 2015:11). The success of each step taken and each plan formulated during the strategy development process depends on strategic leaders (Şeremet, 2013:47).

A strategic leader does not just manage an institution with reports and analyses; s/he also needs to manage the organization with a future-oriented manner and determine how and when to utilize resources in order to achieve the long-term goals of the institution (Sert, 2015:46). Influencing the employees who are on the right track or who wish to take aim at strategic goals and guiding them as if they are pieces on a chessboard is among the duties of a strategic leader (Jasper ve Jumaa, 2005:49). In our time and day, leaders need to provide motivation to their employees and enhance their creativity. Moreover, they need to form health working environments in which people

can feel proud of their work and take pride in the success of the institution (Çakınberk and Demirel, 2010).

All organizations need a strong leader in order to proceed in line with the goals of the organization. Likewise, this requirement is also evident for healthcare institutions. Upon the gradual increase in life expectancy, healthcare institutions have gained great importance (Ülker, 2017:53). Without a doubt, leadership in healthcare institutions is more difficult when compared with sectors other than healthcare. That is due to the fact that healthcare sector contains a complex structure in terms of both the environment and the organizations. This complexity of the healthcare sector creates specific challenges for leadership development and applications stemming from an amalgamation of environmental and organizational factors (McAlearney, 2006; Budak, 2018:32). The challenges faced by healthcare institutions can be so great in size and number that they cannot be left up to chance or addressed through approaches based on segmentation. It is believed that through a cooperation formed with healthcare and social care institutions in order to address this important issue, leadership strategies that enable a confident look to the future can be developed and high-quality and compassionate care services can be provided (West et al., 2014: 28). Healthcare institutions feel the need for leaders who can understand the nature of the external environment, cope with change in every aspect thereof, and most importantly, develop effective strategies for the maintenance of sustainability and actively carry out the organizational management process of the institution (Şeremet, 2013:53). In healthcare institutions, a strategic leader manages and regulates the complex conditions that the institutions face. S/he formulates detailed plans, determines the processes and allocates resources in order for the institution to achieve its goal. A strategic leader determines a strategy that canalizes the healthcare institution towards change. Therefore, strategic leaders in healthcare institutions need to be persons who are not afraid to take risks and with high flexibility and adaptation skills.

The healthcare sector entails interdisciplinary work and, occasionally, services complementing each other. The strategic leader needs to guide different employee groups and form a communication network that contains all parties. Teamwork is of vital importance in healthcare institutions. In healthcare institutions, strategic leaders need to be convincing and enable cooperation between different employee groups. Whenever necessary, strategic leaders in healthcare institutions can communicate with working groups to achieve quicker resolution of problems.

Strategic leadership in healthcare institutions also necessitates being open for change and developing new strategies. Embracing change requires tackling healthcare workers who resist change. For this reason, the leader should explain the vision to the employees, get them to adopt such vision and guarantee that the employee acts in line with the vision. In healthcare institutions, the strategic leader is expected to show determination and achieve success through employee groups with high levels of expertise.

5. CONCLUSION

As old an issue as leadership is, the interest in this concept has gradually increased, creating new types of leadership intended for the changing conditions. In our time and day, the success of organizations depends on the skills and success of senior

management and leaders. For healthcare institutions, leadership does not pushing employees towards a certain direction, but arousing them to achieve the main goal of healthcare services.

Strategic leadership encompasses transformational leadership, managerial leadership, ethical leadership, visionary leadership and political leadership. Each of these types of leadership contains some features necessary for strategic leaders to succeed in the conditions and circumstances they are under. Foreseeing the future is getting more difficult with each passing day. Leaders are unable to address the problems faced with the same solution proposals each time. In order to come up with solutions suitable for the changing problems, one needs to fulfill the duties of strategic leadership.

In periods when healthcare institutions go through changes, the need for the presence of a strong leader with a strategic role and influence within the organization becomes explicitly evident. Competition between institutions providing healthcare services has also increased. A healthcare institution gaining the upper hand in competitiveness depends on the existence of a strong leader. What is desired in healthcare institutions is that leaders demonstrate the vision not through words but through their behavior and actions. In healthcare institutions, the strategic leader is expected to monitor the success of the organization both in theory and in actual terms. The presence of strategic leaders who can develop strategies which will enable the congruence of the occupational objectives of healthcare professionals and their contribution to strategic planning and management processes is essential for the continuity of the organization's success.

REFERENCES

Akdemir, A. (2016). Stratejik Yönetim. Orion Kitabevi, Ankara.

Aksu, A. (2009). Kriz yönetimi ve vizyoner liderlik. Journal of Yaşar University, 4(15), 2435-2450.

Altınkurt, Y., & Yılmaz, K. (2017). Stratejik Yönetim Ve Stratejik Liderlik. Hasan Basri Memduhoğlu, Kürşad Yılmaz (Ed.), içinde, Yönetimde Yeni Yaklaşımlar, 3rd Edition, Pegem Atıf İndeksi, 154-171.

Aydın, M. (2012). Kamu Ve Özel İlköğretim Okulu Müdürlerinin Stratejik Liderlik Özellikleri İle Kurumlarının Örgütsel Öğrenme Düzeyleri Arasındaki İlişki. Unpublished Master's Thesis, Gazi University, Institute of Educational Sciences, Ankara.

Baltaş, A. (2013). Sağlık Hizmetlerinde Yöneticilik ve Liderlik containing: Sur, H., Palteki T. (Ed). Hastane Yönetimi pp. 43-52. Nobel Tıp Kitabevleri, İstanbul.

Barutçugil, İ. (2013). Stratejik Yönetim 101, 1. Baskı, Kariyer Yayıncılık İletişim, İstanbul.

Bektaş, Ç. (2016). Liderlik Yaklaşımları Ve Modern Liderden Beklentiler, Selçuk Üniversitesi Akşehir Meslek Yüksekokulu Sosyal Bilimler Dergisi 2 (7), 43-53.

Budak, F. (2018). Sağlık Yönetiminde Klinik Liderlik, 2nd Edition, Siyasal Kitabevi, Ankara.

Çakar, U., Arbak, Y. (2013). Dönüşümcü Liderlik Duygusal Zekâ Gerektirir Mi? Yöneticiler Üzerinde Örnek Bir Çalışma. Dokuz Eylül Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 18(2).

Çakınberk, A. Demirel, E.T. (2010). Örgütsel Bağlılığın Belirleyicisi Olarak Liderlik: Sağlık Çalışanları Örneği, Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 24.

Eraslan, L. (2006). Liderlikte post-modern bir paradigma: dönüşümcü liderlik. Journal of

Human Sciences, 1(1).
Eren, E. (2005). İşletmelerde Stratejik Yönetim ve İşletme Politikası, 7th Edition, Beta Basım Yayın Dağıtım, İstanbul.
Gunderman, R.B. (2009). Leadership in Healthcare, Springer-Verlag London Limited.
Güçlü, N., Çoban, Ö., Atasoy, R. (2017). Okul Yöneticilerinin Stratejik Liderlik Özellikleri İle Örgütsel Sessizlik Arasındaki İlişkinin Öğretmen Görüşlerine Göre İncelenmesi. Milli Eğitim Dergisi, 46 (215), 167-191. Retrieved From http://dergipark.gov.tr/milliegitim/issue/36134/405904
Harrison, J. P. (2010). Essentials of strategic planning in healthcare. Health Administration Press.
http://www.ctrtraining.co.uk/documents/DevelopingCollectiveLeadershipKingsFundMay2014.pdf
Ireland, R.D.; Hitt, M.A. (2005). "Achieving and Maintaining Strategic Competitiveness in the 21st. Century: The Role of Strategic Leadership". Academy of Management Executive, 19(4):63-74.
Jasper, M., & Jumaa, M. (Eds.). (2005). Effective healthcare leadership. Blackwell Publishing Ltd.
Koçel, T. (2015) İşletme Yöneticiliği, 16th Edition, Beta Basım Yayın Dağıtım, İstanbul.
McAlearney, A.S. (2006). Leadership development in healthcare: A qualitative study. Journal of Organizational Behavior, 27, 967–982.
Rowe, W. G. (2001). Creating Wealth in Organizations: The Role of Strategic Leadership, The Academy of Management Executive Vol. 15, No. 1, pp. 81-94
Schermerhorn, J. R. Jr. (2007). Management 9e, John Wiley&Sons, Inc., Hoboken New Jersey.
Sert, Ş. (2015). Stratejik Liderlik - Çağ ve Nema Öğretim İşletmeleri Genel Müdürlüğü Stratejik Liderlik Uygulamaları, İstanbul Gelişim Univeristy Institute of Social Sciences Department of Business Management Master's Thesis.
Shale, S. (2012). Moral leadership in medicine. Cambridge UP, Cambridge.
Strauss, R.W., Mayer, T.A. (2017). Liderlik, Yönetim ve Motivasyon, Acil Servis Yönetimi, Ş. Gökhan, Tran. pp.1-6.
Swayne, E.L., Duncan, W.J., Ginter, M.P. (2006). Strategic Management of Healtcare Organizations**.** 5th. Cornwall: Blackwell Publishing.
Şahin, B. (2009). Örgütsel Gelişmenin Sağlanmasında Dönüşümcü Liderlerin Rolü, Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 11(3), 97-118
Şeremet, M. (2013). Sağlık Sektörü Yöneticilerinin Stratejik Liderlik Özelliklerinin Değerlendirilmesi: Balıkesir İli Kamu Hastanelerine Yönelik Bir Uygulama, Beykent University Institute of Social Sciences Department of Business Management Hospital and Healthcare Institution Management, Master's Thesis, İstanbul.
Tengilimoğlu, D., Işık, O., Akbolat, M. (2012) Sağlık İşletmeleri Yönetimi, Nobel Yayın, 5th Edition, Ankara.
Treadway, D.C.; Hochwarter, W.A.; Ferris, G.R (2004). "Leader Political Skill and Employee Reactions". The Leadership Quarterly, 15:493-513.
Türk, M., Akbaba, M. (2017). Stratejik Liderlik Algılamalarının Çalışan Performansına Etkisi: Konaklama İşletmeleri Üzerine Bir Araştırma. Sosyal Bilimler Dergisi, 4(16), 2017, pp. 182-196
Uğurluoğlu, Ö., Çelik, Y. (2009). Örgütlerde stratejik liderlik ve özellikleri. Hacettepe Sağlık İdaresi Dergisi, 12(2).
Ülgen, H. ve Mirze, K. S. (2013). İşletmelerde stratejik yönetim. 6th Edition, İstanbul: Beta Yayınları.

Ülker, H.B. (2017). Sağlık Kuruluşlarında Yöneticilerin Stratejik Liderlik Özelliklerinin Değerlendirilmesi (Sivas İli Numune Hastanesi Örneği), Cumhuriyet University Institute of Social Sciences Department of Healthcare Managemet, Master's Thesis, Sivas.

West, M. A., Eckert, R., Steward, K., & Pasmore, W. A. (2014). Developing collective leadership for health care. King's Fund.

Wooten, L.P., Anderson, L., Pinkerton, J., Noll, T., Lori, J., Ransom, S. (2006). Strategic Leadership in Healthcare: The Role of Collective Change Agents in Closing the Gap of Healthcare Disparities, Ross School of Business Working Paper Series Working Paper No. 1060 https://deepblue.lib.umich.edu/bitstream/handle/2027.42/49241/1060-Wooten.pdf?sequence=1&isAllowed=y

Yeşilyurt, E., (2007). Akademik ve Yönetimsel Liderlik. Doğu Anadolu Bölgesi Araştırmaları Dergisi, 5(3), 76-80.

Chapter 91

Healthy Lifestyle Behaviours and Improving Health

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INTRODUCTION

Health is a multidimensional concept, and it is affected by many factors. Increasing the awareness of health leads the individual to increase control over his / her health, to abandon negative behaviors that may cause illness, and to adopt healthy lifestyle behaviors. Healthy lifestyle behaviors include all the behaviors that an individual believes and practices to be protected from illness and stay healthy. Balanced nutrition, regular exercise, coping with stress, avoidance from smoking, alcohol and substance are among healthy lifestyle behaviors and contribute the process of improving health. Improving health enables individuals to acquire the ability to restore and control their own health and to optimize their physical, mental and social well-being, and raises their levels of conscious decision-making. The individual adopting healthy lifestyle behaviors as life style both achieves a state of sustainable healthiness and it is possible for him/her to protect from illnesses and improve his/her health.

In this chapter, the concept of health and the factors affecting health will be explained, improving healthy lifestyle behaviors and the models effective during this process will be stated, and improvement and importance of health will be emphasized.

THE CONCEPT OF HEALTH AND THE FACTORS AFFECTING HEALTH

Health is valuable in terms of both individuals and societies and it is believed that achieving the highest possible level of health will make life easier and more meaningful (Öztek, 2011). The health level of a community is measured by the presence of healthy individuals in that community (Ayaz et al., 2005; Cihangiroğlu, Deveci, 2011). The right to be healthy (Açıksöz et al., 2011; Ayaz et al., 2005) and to live in a healthy environment is regarded as one of the basic human rights (Bulut and Erdöl, 2016; Hayran, 2013; Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010), And although it was slightly different from today's content, it is pointed out that this right is as old as human history (Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010). Prevention of diseases and creation of a healthy environment and increasing the level of the health of the community is among the priority targets of the governments. This has led the concepts of health and disease to become more important and many studies in this regard to be conducted (Kavuncubaşı and Yıldırım, 2010).

There are different approaches to the definition of the concept of health (Kavuncubaşı, 2000). The traditional understanding has brought the concept of disease

into the forefront while it defines health (Tengilimoğlu et al., 2011). According to this point of view, health is defined as not being ill and disabled (Tengilimoğlu et al., 2011), and disease is defined as not being healthy (Kavuncubaşı and Yıldırım, 2010). When the definition is examined, it is seen that everyone who does not have symptoms of a disease and who does not have any disability is considered healthy (Tengilimoğlu et al., 2011). However, the concepts of health and disease must be defined; and it is seen that these concepts differs in terms of both individuals and societies, and they change in time even in the same society (Hayran, 2013).

How to define the concepts of health and illness in the process of establishing health policies, defining healthcare services and determining the ways of organizing in a country is of great importance. Therefore, there are many studies and different definitions on what health and illness are in the literature (Hayran, 2013). According to another definition made in this process defines health as a dynamic process that can change during life, and it expresses the ability of the individual to maintain and adapt his physical, psychological and social functions. When considered from this point of view, health indicates that the individual can meet his needs and cope with the environment as well as the physical competence; and at the same time, it contains the ability of changing the environment. Since being healthy does not affect only the individual himself but also the adaptability to the environment, it is very important to protect the inner balance, to decrease environmental factors that threat human life and to strengthen defense mechanisms, because health is defined as the capacity and success of the individual to adapt environmental conditions and possible dangers. In the case of decreasing this adaptation, it is stated that the state of being healthy will be impaired and diseases will emerge. In the event of emerging diseases, the life functions of the individual that are qualified as the physical, mental and social functions of the individual will change, his adaptation and interaction with the environment will be impaired, his performance and productivity will decrease, and his quality of life will be affected in a negative way (Ay, 2011).

The universal definition of health has been made by the World Health Organization (WHO), and health has been defined as not only the lack of illness and disability, but as a state of complete well-being physically, mentally and socially (Ay 2011; Baysal, 2017; Bozhüyük, 2010; Çan, 2016; Hayran 2013; Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010; Özyazıoğlu et al. 2011; Şimşek, 2013; Tengilimoğlu et al., 2011; Yardım et al., 2009). This definition handles health as a multidimensional concept, and states that many factors affect the state of health of the individual directly or indirectly (Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010).

According to Henrick Blum, health is affected by mainly four factors (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010), and these factors are environment, life style, heredity and healthcare services (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011). These factors are also under the effect of some systems such as population, cultural systems, natural resources, economic system and political system (Kavuncubaşı, 2000; Kavuncubaşı, Yıldırım 2010). Environment contains mainly three groups as biological, physical and social (Kavuncubaşı, 2000; Tengilimoğlu et al., 2011), and it is indicated as the most important factor affecting the individuals' states of health (Kavuncubaşı 2000; Kavuncubaşı and Yıldırım 2010). Individuals pollute environment by their activities and cause a risky environment for

health to be created as well as environment is a threat for the health of individuals. Therefore the relation between environment and health should be considered as bilateral (Ay, 2011). Biological environment suggests microorganisms, vectors, plants and animals. While microorganisms cause diseases such as tuberculosis and cholera, vectors, which are described as arthropods or rodentia, lead to the transport of diseased microorganisms to the human body (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011). Plague contaminated by fleas and malaria contaminated by mosquitos are the examples for the diseases contaminated by vectors (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010). Physical environment contains factors such as noise, foods (Ay, 2011), climate changes, soil structure, air pollution, environmental pollution, water resources and waste (Ay 2011; Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010; Tengilimoğlu et al., 2011). Disasters such as drought, flood, landslide, earthquake, volcanic eruption and dam collapse occur in the physical environment and they affect the society's state of well-being (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010). Social environment refers the socio-cultural environment in which individuals live (Tengilimoğlu et al., 2011). Socio-demographic characteristics and economic conditions also gain importance in the social environment conditions (Kavuncubaşı, Yıldırım 2010). Population increase, population mobility, aging, unfair distribution of income, education level, poverty (Kavuncubaşı, Yıldırım 2010), society's norms, roles, positions and family are among the social environment characteristics affecting health (Ay 2011). ***Life style*** is the starting point of the Behavioral Model (Hayran 2013), and expresses the values, attitudes, behaviors and habits (Hayran, 2013; Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011) that individuals have developed according to their view of life (Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010). Factors such as smoking, alcohol drinking, lack of personal hygiene, driving fast, not applying for healthcare services or delaying it (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım, 2010; Tengilimoğlu et al., 2011), not using work tools and equipment carefully, drug addiction, disobedience to physician recommendations (Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010), adequate and balanced nutrition, doing regular exercise and taking care to have safe sex reflect the personal behaviors and habits of individuals and affect their states of health (Hayran, 2013). ***Heredity*** affects individuals' biological and organical structure that they have naturally and the state of susceptibility to diseases (Kavuncubaşı, 2000; Kavuncubaşı and Yıldırım, 2010; Tengilimoğlu et al., 2011). The basis of the opinion that Biomedical Model defends is heredity, and it is stated that health and diseases emerge depending on the genetic structures of individuals (Hayran, 2013). Heredity does not contain only the inborn diseases, but also affects the risk of contracting many diseases such as cancer, diabetes and cardiovascular system diseases (Tengilimoğlu, 2011). Healthcare services involve all services given in order to protect health and prevent diseases to emerge, to perform the early diagnosis and treatment of diseases, to perform rehabilitation activities in order to treat permanent impairments and to improve health (Kavuncubaşı 2000; Kavuncubaşı, Yıldırım 2010; Tengilimoğlu et al., 2011). According to another definition, healthcare services are the whole of the services given to meet the needs related to the health of the society (Kavuncubaşı and Yıldırım, 2010). Blum states that only healthcare services are not sufficient in the process of protecting and improving both individuals' and community's health and health sector should be handled with a system approach, and he points out

the cross-sectoral collaboration (Kavuncubaşı, 2000; Kavuncubaşı andYıldırım, 2010). Also in Alma-Ata Manifesto prepared by WHO in 1978, the importance and necessity of cross-sectoral collaboration in the process of improving public health was indicated (Kavuncubaşı and Yıldırım, 2010).

IMPROVING HEALTHY LIFE STYLE BEHAVIORS

Health policies that aim to maintain, sustain and improve the state of being healthy, which is one of the basic human rights, defends the necessity of individuals' taking the responsibility of their own health, acquiring healthy life style behaviors and performing health improving behaviors (Açıksöz et al., 2013). More clearly, to reduce some health risks such as high-calorie nutrition, low physical activity, smoking, alcohol and drug use and unsafe sex (Spring et al., 2012; Yalçınkaya, 2007), and to make people gain healthy life styles are among the priority functions of healthcare professionals (Erol and Erdoğan, 2007). It is stated that healthy life styles need to be acquired (Yıldız et al., 2012) by the concept of protecting and improving health, which is an important part of the public health and preventive medicine (Özvarış, 2013; Yıldız et al., 2012).

Shortly, healthy life style behaviors are defined as the whole of the behaviors that individuals adopt and perform in order to stay healthy and to be protected from diseases (Cihangiroğlu and Deveci, 2011; Karadamar et al., 2014; Yalçınkaya et al., 2007), and it is believed that disease related deaths will decrease by this means (Özyazıoğlu et al., 2011). According to another definition, healthy life style is defined as individuals' controlling all their behaviors affecting their health and choosing the behaviors consonant with their state of health (Erdoğan et al., 2016; Esin 1999). Doing adequate and regular exercise, balanced nutrition, using the methods of coping with stress and relaxing, taking the responsibility of one's own health (Açıksöz et al., 2013; Cihangiroğlu, Deveci 2011; Erdoğan et al., 2016; Karadamar et al., 2014), not smoking and being careful about hygiene are among the main healthy life style behaviors (Açıksöz et al., 2013; Erdoğan et al., 2016; Esin, 1999).

Increasing healthcare expenses and the existence of the diseases emerging depending on the life styles such as hypertension, coronary heart diseases and diabetes have caused healthy life style behaviors and implementations for improving health to gain more importance (Açıksöz et al., 2013). It is stated that the most important step to be protected from these diseases is to change the life style (Açıksöz et al., 2013) and to transform the healthy life style behaviors into daily life habits (Cihangiroğlu and Deveci 2011). It is stated that the development of healthy life awareness in individuals, improving lifestyle, taking responsibility for protecting their health and avoiding risky behaviors also accelerates the process of the emergence of health protective and improving activities (Ayaz et al., 2005). The importance of adopting healthy life style behaviors that reduce the risk of contracting diseases and the need for the behavioral changes in a positive way is indicated in the studies conducted in the recent years. It is stated that especially nurses' working with all age groups and both patients and healthy individuals is an important opportunity in terms of determining risky behaviors for health and planning the attempts aiming to provide behavioral changes (Erol and Erdoğan, 2007).

Health behaviors are accepted as a life style and have an important effect on the quality of life. The opinion that individuals' avoiding the behaviors that risk their health and their adaptation to the behaviors for improving their health will contribute the health of the individuals and their state of well-being in a positive way has become prevalent gradually today. Therefore, the opinion of increasing individuals' control abilities on their health and the necessity of adoption of a healthy life style has come into prominence in health related regulations. There are various models developed for this purpose (Şahin, 2012).

Social Cognitive Model: The term was first used by Miller and Dollar in 1941, and the model was improved by Bandura in 1986. It claims that both internal and external factors are effective in behaviors' emerging, and that a behavior cannot be explained by an only single factor. According to this model, the information owned related to the factors affecting health and the effect of the behaviors on health has a great impact on adopting healthy life styles. When considered from this point of view, if people do not have the information about the life styles they adopt, they will not be eager to quit their harmful habits or to adopt a healthy life style (Şahin, 2012).

McMaster Model of Family Functioning: It handles the system approach and points that family has an important role on health. According to this model, changes in the family, family crisis and problems destroy the family dynamics. As a result, it is stated that it is possible for individuals to reveal some behaviors such as changing their nutrition style, non-compliance with medicine times and to hide their emotional problems and that delay their healthy life styles. When the importance of the family in the process of both fighting against diseases and gaining healthy life styles is taken into consideration, the importance of developing psycho-social intervention programs is emphasized (Şahin 2012).

Health Improvement Model: According to this model, health behaviors are explained as the whole of the behaviors that improve their well-being and let them improve themselves and which they believe and practice to stay healthy, sustain it and to be protected from diseases (Açıksöz et al., 2013). This model supports protection of health (Bulut and Erdöl 2016; Özcan and Bozhüyük, 2013), and aims to enhance health, improve health behaviors and determine the behaviors that improve health (Özcan and Bozhüyük, 2013). The model also defends that the personal characteristics of individuals, the environment they live in and their levels of information and knowledge are effective in acquiring new behavior styles (Özcan and Bozhüyük, 2013). According to this model, individuals are responsible to control their health (Bulut and Erdöl 2016).

Health Belief Model: It was developed by psychiatrists in 1950 (Sağlık Bakanlığı 2011), and it is one of the methods that has been applied frequently to understand the health behaviors conceptually especially for the last 50 years (Bulut, Erdöl 2016). According to this model, the perception of health status focuses on health behaviors and the responsibility of health, and it defends the process of health improvement aiming at giving and sustaining healthy life behaviors (Açıksöz et al., 2013). The Health Belief Model, which is based on that the health behaviors of individuals are affected by their beliefs, value judgements and attitudes, states that in the event of determining the beliefs and attitudes that are considered as problems, these problems can be solved by health trainings to be given or treatment methods to be practiced (Gözüm, 2013).

When the literature is viewed, it is seen that some factors such as social support and self-efficacy are also effective on individuals' development of healthy life style behaviors except the models mentioned above. It is a fact that individuals need support to cope with the difficulties in life and to reduce the negative effects of the stress. Family members, relatives, friends and some communities are among the important social support resources. By means of social support, the health of the individuals is affected in a positive way, their quality of life is improved, their mental health is protected and their self-confidence is increased. It is stated that an effective social support will contribute individuals' compliance with medical advice, adopting healthy life style behaviors and preferring health improving practices (Şahin, 2012).

Another factor affecting the adoption of individuals to healthy life style behaviors is self-efficacy. Self-efficacy refers to the individuals' own judgement of the ability to perform in a particular way, to co-ordinate certain activities, and to be successful. Individuals with high sense of self-efficacy set higher goals and believe they will achieve them. According to this model, it is stated that individuals with high sense of self-efficacy are more eager and successful about adoption of healthy life style behaviors (Şahin, 2012).

THE CONCEPT OF HEALTH IMPROVEMENT AND ITS IMPORTANCE

Health improvement started to be accepted around the world in the 1st Health Improvement Conference held in Ottawa, Canada in 1986 (Bozhüyük, 2010; Öztek, 2011; Özcan and Bozhüyük 2013; Yardım et al., 2009). However, there is no definition of the concept of health improvement that everyone has agreed on (Sağlık Bakanlığı 2011). Health improvement is defined as the process of gaining all kinds of knowledge, attitudes and abilities that improves health (Açıksöz et al., 2013) including health training (Özvarış 2013). With health improvement, increasing the states of health of individuals and communities is aimed (Bulut, Erdöl 2016; What is Health Promotion 2017). According to another definition, health improvement is the science and art of helping individuals to change their life styles in order to reach the best level of healthiness status (Baysal 2017; Erol and Erdoğan 2007; Yardım et al., 2009). It is stated that health improvement affords should be adopted so that individuals can maximize their health behaviors (Cihangiroğlu and Deveci, 2011). According to another point of view, healthy life style is accepted as a component of health improvement, and health improvement activities refer to behaviors that increase the state of well-being of individuals and provide self-actualization (Esin, 1999).

Health improvement activities are the whole of the activities carried out to qualify people in order to improve their health, to control it (Ayaz et al., 2005; Çan 2016; Şimşek 2013) and to reach the health potential entirely (Ayaz et al., 2005). With the health improvement, it is aimed to spread the right health behaviors to large masses of people (Baysal 2017) and to strengthen individuals in order them to lead an effective and productive life (Sağlık Bakanlığı 2011). These activities also defend that individuals should take responsibility to protect and maintain their health (Ayaz et al., 2005; Bahar et al., 2008; Öztek, 2011). The responsibility related to health is defined as individuals' feeling of responsibility to protect and improve their own state of well-being. Taking care of their health, obtaining information about their health and applying

for professional assistance are among the best examples of individuals' feeling for responsibility (Bahar et al., 2008).

There are several factors that influence the emergence of health improvement strategies. These are ranked as the increase in non-communicable diseases, emerging of new infectious diseases, decreasing in the life expectancy at birth locally, having environmental changes and risks of them, restriction in the effect of health training programs and social determiners of health (Şimşek, 2013).

Strategies adopted for the purpose of health improvement have five main principles. These principles are stated as that health improvement depends on current conditions, the WHO targets the three dimensions of the definition of health, governments have some responsibilities in the field of health, they are accepted to be for the benefit of the society since they help in terms of social and economic improvement to the whole of the society and the individuals constituting the society improve their health improvement awareness and behaviors and increase their participation in protecting their health and defending their rights (Bozhüyük 2010; Özcan, Bozhüyük 2013; Yardım et al., 2009). Some decisions were made related to health improvement in the Sixth Global Health Improvement Conference held in Bangkok in 2005. Accordingly, agreements based on international collaboration for health improvement should be made, health improvement should be the primary liability of governments, non-governmental organizations should be active in health improvement activities and contribution to the national and international arrangements to protect and improve the health of the employees and their families should be provided by private sector (Yardım et al., 2009).

Another approach effective in forming health improvement practices that target to improve the health of individuals and society is the strengthening approach. Accordingly, health improvement strategies adopt strengthening approach at individual, organizational and social level. ***Strengthening individuals*** enables individuals to increase their control abilities on their own health to define their needs and to increase their quality of life. It is stated that increasing in the educational levels of individuals and raising awareness will contribute this process. ***The approach of strengthening societies*** targets to determine the health problems and their reasons to change the life and environment of a society and to take action to solve these problems. For this purpose, public health studies are being carried out and strategies are being developed to ensure that the groups at risk have access to services. ***Organizational strengthening*** activities are aimed at strengthening the health system, developing the capacity and ensuring intersectoral cooperation. It is argued that strengthening the health system will only be possible with the establishment of an effective health system. Therefore, it is emphasized the necessity of a healthcare system that especially those at risk can access to the healthcare, that have sufficient human power, support community participation, well-financed and is managed by an effective leadership skill. The approach of capacity improving is aimed at producing the information that is able to improve health, having adequate ability and improving an effective leadership. For this purpose, the health problems of the society should be determined, strengths and weaknesses should be defined and afterwards the capacity of health improvement should be stated. In intersectoral co-operations, it is thought that every sector is responsible for raising the

health level of the society, and it is stated that this approach is one of the main principles of public health (Şimşek, 2013).

WHO emphasizes that nurses are also responsible in the process of gaining knowledge, ability and attitudes to protect and improve health (Açıkgöz et al., 2013; Ardahan, Temel 2006; Ayaz et al., 2005), therefore they should comprehend the purpose of health improvement and that it is important their being guides and role models in gaining these behaviors (Açıkgöz et al., 2013; Ayaz et al., 2005; Yalçınkaya 2007). For this purpose, nurses should determine the prevalence of the habits affecting health in a negative way should attempt for gaining the awareness of healthy life and should adopt health improvement behaviors (Ayaz et al., 2005).

There are some activities carried out within the frame of health improvement. Some of these activities are making arrangements to prevent chronic and infectious diseases in primary healthcare, raising the health and quality of life by the arrangements in living, working and learning environments, developing programs to prevent smoking and use of tobacco products and struggle with HIV (Yardım et al., 2009). In addition, it is possible to make some arrangements in the fields such as maternal and infant health, adolescent health, oral and dental health, public relations and information campaigns, drug addiction, obesity, geriatric health, sedentary lifestyle, reproductive health, hypertension and diabetes by determining the priority problem areas and groups (Baysal 2017).

In the process of health improvement, there are three main approaches as medical approach, behavioral approach and the approach of social environment. According to ***medical approach***, healthcare services involve preventive, therapeutical and rehabilitation services, and the health level of the society improves depending on these services. However, it is stated that the concept of health improvement has an understanding beyond preventive services. So, it is indicated that individuals and societies should take a more active role and should protect their own health; and it is argued that it will be possible to get rid of being dependent in terms of health by this means. At this point, there are some responsibilities for healthcare workers and they are expected to contribute the process of raising awareness in individuals by health training and increasing awareness related to their health. ***Behavioral approach*** argues that some different life styles such as tobacco and alcohol use, inadequate physical activity and fat-rich diet are effective on emerging some diseases. According to this approach, which was become prevalent in 1970s, it is stated that it is possible for individuals to change their preferences, and some programs were organized in this way. The main purpose of such programs is to provide the behaviors to be the life style that is accepted by the whole society instead of changing the behaviors of individuals one by one. According to ***social environment approach***, societies' being in the state of full well-being depends on the existence of some conditions and resources. Ottawa Declaration argues that concepts such as peace, shelter, education, food, income, sustainable resources, a continuous ecosystem, social justice and rightness are the prior condition for individuals' and societies' being healthy. Although many of these topics are in the scope of different sectors, their reflections are felt in health sector. Therefore, it is necessary to act as intersectoral cooperations about the topics such as providing peace, actualizing a fair income distribution, increasing the level of education and protecting the ecosystem (Öztek, 2011).

In this context, it is thought that health improvement activities should not be limited only to the Ministries of Health, but some arrangements as handling them in intersectoral cooperations, assigning professionals of social sciences such as sociology, psychology, anthropology and behavioral sciences in these activities as well as healthcare workers and educationalists, placing importance to education in adoption of healthy life styles and supporting education with social learning and behavioral theories will also contribute in the process of improving public health and having effective results in this direction (Yardım et al., 2009).

CONCLUSION

When the definition of health is examined, it is seen that it is a multidimensional concept and is affected by many variables. Understanding that many diseases seen in individuals and communities and the impairment at the health level are related to life styles has led to change in life styles and the studies of health improvement to be accelerated (Özvarış, 2013).

Health improvement activities vary depending on the conditions, changes seen in the society and global developments, and they are described as a dynamic process in this sense (Kıvanç, 2015; Yardım et al., 2009). Therefore, it is necessary to be careful in the process of preparation and implementation of plans and policies, all variables must be taken into consideration (Yardım et al., 2009), and health improvement activities must be evaluated with a holistic view (Piyal, 2013).

It is considered that taking adequate interest in health improvement activities provides not only contribution to the improvement of health level of individuals and society, but also to the decrease in a large expense item in the economies of countries, and that it will be possible to protect health and prevent diseases by this means. Therefore, each country must determine its own national targets and carry on systematical studies to increase the quality of life, gain healthy lifestyle behaviors, improve, protect and sustain health. It is foreseen that the expected improvement in the health status of the society will be realized only by this means.

REFERENCES

Açıksöz, S., Uzun, Ş., Arslan, F. (2013). Hemşirelik Öğrencilerinin Sağlık Algısı ile Sağlığı Geliştirme Davranışları Arasındaki İlişkinin İncelenmesi. Gülhane Tıp Dergisi, 55, 181-187.

Ardahan, M., Temel, A.B. (2006). Prostat Kanserli Hastalarda Yaşam Kalitesi İle Sağlıklı Yaşam Biçimi Davranışı İlişkisi. Ege Üniversitesi Hemşirelik Yüksekokulu Dergisi, 22(**2**), 1-14.

Ay, F.A. (2001). Mesleki Temel Kavramlar, In: F.A. Ay (ed.), Sağlık Uygulamalarında Temel Kavramlar ve Beceriler, Nobel Tıp Kitabevleri, İstanbul: 2-28.

Ayaz, S., Tezcan, S., Akıncı, F. (2005). Hemşirelik Yüksekokulu Öğrencilerinin Sağlığı Geliştirme Davranışları. C.Ü. Hemşirelik Yüksekokulu Dergisi, 9(**2**), 26-34.

Bahar, Z., Beşer, A., Gördeş, N., Ersin, F., Kısal, A. (2008). Sağlıklı Yaşam Biçimi Davranışları Ölçeği II'nin Geçerlik ve Güvenilirlik Çalışması. C.Ü. Hemşirelik Yüksekokulu Dergisi, 12(**1**), 1-13.

Baysal, S.U. (2017) Sağlığın Geliştirilmesi.
xa.yimg.com/kq/groups/.../Kitap+Saðlýðýn+Geliþtirilmesi.pdf

Bozhüyük, A. (2010). Çukurova Üniversitesi Sağlık Bilimleri Öğrencilerinin Sağlıklı Yaşam Biçimi Davranışlarının Değerlendirilmesi.Çukurova Üniersitesi Tıp Fakültesi Aile Hekimliği Anabilim Dalı Uzmanlık Tezi, Adana.

Bulut, H.K., Erdöl, H.Ş. (2016). Sağlığı Koruma ve Geliştirmede Kullanılan Hemşirelik Modelleri, In: B.C. Demirbağ (ed.), Sağlığı Koruma ve Geliştirme, Göktuğ Basın Yayın Dağıtım, Amasya: 431-450.

Çan, G. (2016). Toplum Temelli Sağlığı Koruma ve Geliştirme, In: B.C. Demirbağ (ed.), Sağlığı Koruma ve Geliştirme, Göktuğ Basın Yayın Dağıtım, Amasya: 1-11.

Cihangiroğlu, Z., Deveci, S.E. (2011). Fırat Üniversitesi Elazığ Sağlık Yüksekokulu Öğrencilerinin Sağlıklı Yaşam Biçimi Davranışları ve Etkiyen Faktörler. Fırat Tıp Dergisi, 16(**2**), 78-83.

Erdoğan, Z., Kürtüncü, M., Yıldız, H., Sert, H. (2016). Romanların Sağlıklı Yaşam Biçimi Davranışları ve Yaşam Kalitelerinin İncelenmesi. I. Uluslar arası Kadın Çocuk Sağlığı ve Eğitimi Kongresi, 14-15 Nisan 2016, Kocaeli, s.111-112.

Erol, S., Erdoğan, S. (2007). Sağlık Davranışlarını Geliştirmek ve Değiştirmek için Transteoretik Modelin Kullanılması. Atatürk Üniversitesi Hemşirelik Yüksekokulu Dergisi, 10(**2**), 86-94.

Esin, M.N. (1999). Sağlıklı Yaşam Biçimi Davranışları Ölçeği'nin Türkçe'ye Uyarlanması. Hemşirelik Bülteni, 12(**45**), 87-96.

Gözüm, S. (2013). Sağlık Davranışlarının Geliştirilmesinde Bir Rehber: Sağlık İnanç Modeli. 16. Ulusal Halk Sağlığı Kongresi, 27-31 Ekim 2013, Antalya, s. 80-88.

Hayran, O. (2013). Sağlık ve Hastalık, In: H. Sur., T. Palteki (ed.), Hastane Yönetimi, Nobel Tıp Kitabevleri Ltd.Şti., Ankara: 11-16.

Karadamar, M., Yiğit, R., Sungur, M.A. (2014). Ergenlerin Sağlıklı Yaşam Biçimi Davranışlarının Değerlendirilmesi. Anadolu Hemşirelik ve Sağlık Bilimleri Dergisi, 17(**3**), 131-139.

Kavuncubaşı, Ş. (2000). Hastane ve Sağlık Kurumları Yönetimi. Siyasal Kitapevi, Ankara.

Kavuncubaşı, Ş., Yıldırım, S. (2010). Hastane ve Sağlık Kurumları Yönetimi, Siyasal Kitabevi, Ankara.

Kıvanç, M.M. (2015). Evrensel Sağlık Bildirgeleri ve Türkiye'de Sağlık Reformları. Sağlık ve Hemşirelik Yönetimi Dergisi, 2(**3**), 162-166.

Özcan, S., Bozhüyük, A. (2013). Sağlığın Geliştirilmesi ve Aile Hekimlerinin Rolü. Turkish Journal of Family Medicine and Primary Care, 7(**3**), 46-51.

Öztek, Z. (2011). Sağlığın Geliştirilmesi Çalışmalarının Sağlık Hizmetlerine Entegrasyonu. Sağlık ve Toplum, 21(**1**):3-6.

Özvarış, Ş.B. (2013). Sağlığı Geliştirmede Tarihsel Süreç ve Kavramsal Çerçeve. 16. Ulusal Halk Sağlığı Kongresi, 27-31 Ekim 2013, Antalya, s.46-52.

Özyazıoğlu, N., Kılıç, M., Erdem, N., Yavuz, C., Afacan, S. (2011). Hemşirelik Öğrencilerinin Sağlıklı Yaşam Biçimi Davranışlarının Belirlenmesi. Uluslar arası İnsan Bilimleri Dergisi, 8(**2**), 278-288.

Piyal, B. (2013). Uygulamadaki Sorunlar ve Engeller. 16. Ulusal Halk Sağlığı Kongresi, 27-31 Ekim 2013, Antalya, s.53-56.

Spring, B., Moller, A.C., Coons, M.J. (2012). Multiple Health Behaviours: Overview and Implications. Journal of Public Health, 34(**S1**), i3-i10

Şahin, P. (2012). Hipertansif Hastaların Sağlıklı Yaşam Biçimi Davranışlarının Aile İşlevselliği, Çok Boyutlu Algılanan Sosyal Destek ve Öz Yeterlilik ile İlişkisinin İncelenmesi. Okan Üniversitesi Sosyal Bilimler Enstitüsü Psikoloji Anabilim Dalı Klinik Sağlık Psikoloji Programı Yüksek Lisans Tezi, İstanbul.

Şimşek, Z. (2013). Sağlığı Geliştirmenin Tarihsel Gelişimi ve Örneklerle Sağlığı Geliştirme Stratejileri. TAF Preventive Medicine Bulletin, 12(**3**), 343-358.

Tengilimoğlu, D., Işık, O., Akbolat, M. (2011). Sağlık İşletmeleri Sağlık İşletmeleri Yönetimi. Nobel Yayın Dağıtım Tic. Ltd. Şti., Ankara.

Toplum Sağlığı Merkezi Çalışanlarına Yönelik Sağlığın Geliştirilmesi Eğitimi Rehberi. T.C. Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü Sağlığın Teşviki ve Geliştirilmesi Daire Başkanlığı, 2011, Ankara.

What is Health Promotion? (2017). https://booksite.elsevier.com/samplechapters.pdf

Yalçınkaya, M., Özer F.G., Karamanoğlu, A.Y. (2007). Sağlık Çalışanlarında Sağlıklı Yaşam Biçimi Davranışlarının Değerlendirilmesi. TSK Koruyucu Hekimlik Bülteni, 6(**6**), 409-419.

Yardım, N., Gögen, S., Mollahaliloğlu, S. (2009). Sağlığın Geliştirilmesi (Health Promotion): Dünyada ve Türkiye'de Mevcut Durum. İstanbul Tıp Fakültesi Dergisi, 72, 29-35.

Yıldız, A.N., Çaman, Ö.K., Esin, N. (2012). İşyerinde Sağlığı Geliştirme Programları. TÜRK-İŞ Türkiye İşçi Sendikaları Federasyonu, Aydoğdu Ofset, Ankara.

Chapter 92

Communication Management in Health Services

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INTRODUCTION

Today, rapid developments in economic, social, technological and medical fields have increased the need for knowledge and have caused organizations to be in need of continuous change in their methods and techniques of doing work. In this dynamic environment that organizations are exposed to, elimination of information asymmetry between the organization and its environment has been precondition of sustainable outmaneuvering. And a successful management and organization system can be possible with the existence of efficient communication system. For executing organizational purposes, as systematic, active and efficient, the success of the functions planning, organizing, directing, coordinating and controlling, which are main management functions, depends on the success of communication. Managers have to make communication active and efficient - in relation to all stakeholders - to be able to motivate workers, create shared vision and organization culture, on the other hand to be able to make healthy relationships with relevant individuals and establishments apart from the organization and to reach organizational purposes while performing management functions. Well established and operated communication systems will affect organizational outputs' quality and quantity, in short organizational success.

The hospitals, which are one of the service establishments, also significantly affect from this change and transformation. Health facilities are also become one of the fastest growing service industry areas of our time. In modern societies, managers of health facilities must have more knowledge, skills and competence than those in the past. Communication skills are one of the most important skills and competencies that mangers of the health facilities use to increase their efficiency and activeness. Thanks to rapidly evolving technology, the institutions and organizations that give health service have become larger and more complex. Thus, for organizational success, managerial and health services have become more important and necessary than ever since the existence of a healthy established and operated communication system has always existed, as well as the undertaking of more qualified managers and employees.

1. THE CONCEPT OF COMMUNICATION, ITS PROCESS AND TYPES

Communication is a phenomenon that is as old as human history; from the very first moment that human beings are existed, he always found himself in a communication network, communication activities in his relations with himself and his surroundings. Communication, both personal and social, is a process that enriches or

impoverishes our lives in interactions with both ourselves and others. With our communication behaviors, which are the essence of human relations, we try to transfer the message that we want to give to person who we want to communicate in a form that we wanted and also try to get the reaction that we expected. The lifelong two-way transfer struggle is actually aimed at achieving a life of satisfaction and harmony (Özarallı, 1997).

The communication comes from the Latin word "communis" and means form a partnership. Accordingly, with communication it is aimed that forming a partnership between giver and taker. Whether the communication is disseminate, educate, influence or just tell the information, its main purpose is to give the information (Hicks & Place, 1963). The shortest definition of communication is "a person transmits a piece of information clearly to another person" or it can be defined as "a communication system between individuals for giving and taking the information" (Erdoğan, 1997). Like many concepts in social sciences, it is not possible to make a decision on the definition of communication concept that is accepted by everyone. However, when we look at the definitions, it will true to qualify their common ground is an effort of ***making meanings mutual*** between giver and taker.

1.1. Communication Process and Elements

Communication requires, in the simplest sense, givers who express their feelings, thoughts, and information with certain symbols, that is the source, and a taker who analyzes, perceives, and understands these symbols. For this reason, communication process is a two-way process. This process consists of factors such as source, message, coding, channel, target, code opening and feed back. Giver (source) sends the topic he/she want to transfer (message), in an understandable way with symbols (coding) with a way that he/she would choose (channel) to taker (target). Giver expects that the taker will behave according to the message that he/she has sent. If the taker perceives the message from the giver and interprets (code opening) and sends his/her reaction to this message in coding as a feedback, the communication process will be completed. The first stage consists the processes of understanding that is mentally creating the message he/she wants to give by the source and coding and then sending. And second stage consists the processes of perceiving, code opening, interpreting, coding and feedback.

1.2. Communication Types

Communication can be reviewed by classifying it from different angles. It is explained briefly down below, with the titles, in terms of functioning, face-to-face, from distance, by the group structure, by the flow of the message, by the used tool and method, by the party and by the used codes.

1.2.1. Communication in terms of Functioning

Communication in terms of functioning is separates into two as one way communication and two way communication. ***One Way Communication*** is a form of communication from a source to a taker without active feedback of the taker. One way communication is established between a source and one and more targets, it is more of a information flow than communication. ***Two Way Communication*** is established between two individuals as "written" or "verbal" and in here there is a feedback opportunity between the interaction of source and taker.

1.2.2. Face-to-face Communication and Communication from Distance

This type of communication is classified according to whether the communicating parties -the giver and the taker- are in the same environment.***Face-to-face Communication*** is communication in the same environment without using any tools between source and target. ***Communication from Distance*** is the type of communication that the party initiating communication and the target person/audience are in different locations. Since there is no way of getting face-to-face in the same environment, there is an absolute need for a tool in order to communicate.

1.2.3. Communication by the Group Structure

It is a classification of the communicating parties according to the creation of the group feature as formal (official) or informal (natural). If communication is in between individuals and groups who are arranged by organizers, it is ***formal*** and if the communication is in between individuals and groups and happens with the natural ways, it is ***informal***.

1.2.4. Communication by the Flow of the Message

It is a classification of communication as horizontal, vertical and cross in terms of the way the message's flow within the organization. If the communication is in between the managers and functional departments of the same hierarchical level it is ***Horizontal***, if it is in between superiors and juniors to provide the flow of order and information it is ***Vertical***, if it is happening without using the channels of the layers it is ***Cross***.

1.2.5. Communication by the Used Tool and Method

In this communication classification; we can say there are three communication types and they are visual, audio and audiovisual. ***Visual*** communication is communication without audio content, interpreting the writings, drawings, figures and symbols etc., ***Audio*** communication is just making sounds with no visual content, and if the message is for both ear and eye it is ***Audiovisual*** communication.

1.2.6. Communication by the Party

If we make a classification with taking account the parties who are participating the communication; we can talk about, internal communication, communication with individuals, group communication, organizational communication, mass communication and intercultural communication. ***Internal Communication*** is the communication with oneself. ***Communication with Individuals*** is message exchange between two or more people. ***Group Communication*** is in between small groups or teams. ***Organizational Communication*** is the exchange of information and thoughts between the organization’s unit/individuals (internal environment) and organization’s external environment for the execution of organizational activities. ***Mass Communication*** is a form of communication established by means of mass media in order to reach the target people who are in the majority, which can not be reached quickly, effectively and economically with other methods. ***Intercultural Communication*** is the type of communication between different communities and cultures.

1.2.7. Communication by the Used Codes

The most common classification of communication is written, verbal and non-verbal communication according to the used codes to transfer the message.

Writtencommunication is using writings because of the features, disburdening the human beings' memory, permanence and provability etc.All kinds of talking between giver and taker is ***verbal***communication. ***Verbal*** communication can be with radio, television and telephone as well as face-to-face. On the other hand, human communication can not be limited to words alone. Body language, external appearance, distances, spaces and colors are called ***non-verbal*** communication and they increase the efficiency of communication by undertaking the task of taking place, completing and supporting the words.

2. ORGANIZATIONAL COMMUNICATION

2.1. The Purpose and Importance of Organizational Communication

Today, modern organizations maintain their activities in a variable and dynamic environment. The dynamic environment forces organizations to organize as open systems. The situation that organizing as open system, gives a vital importance to communication in establishing a relation between organization and its environment. This importance is due to the need of develop policies and strategies for the future by constantly monitoring the environment and analyzing environmental changes. The relation between environment and environmental changes can be through communication. Today organizations seem as "units that process information", and the primary provision of organizations to regulate the relations which are vital with environment is to transfer the information about environment to organization through communication (Milli Eğitim Bakanlığı, 2011).

With the development, change and complexity of organizational structures, communication has become a matter to take care of for businesses. The success of today's businesses operating in a global and ever-changing environment depends on the healthy, active and efficient operation of communication networks established by the internal and external environment of the business.

Organizational communication is a social process which enables the establishment of necessary relations between the various departments and elements that make up the organization, the continuous exchange of information and thoughts between the organization and its environment, or the establishment of the necessary relations between the departments in order to ensure the organization and functioning of the organization (Göral, 2002). Information, which is needed by both individuals and organizations, has an important role on creating a harmonious relation with environment. Sharing of knowledge is the basis of interaction. Both individuals and organizations are exchanging information in order to be able to establish relations with their environments and to follow developments (Gürüz & Yaylacı, 2004).

We often see organizational communication by information as a process of changing the attitudes of two or more people or influencing their behavior (Dawn, 2000). It is up to this process that organizations can achieve their aims. For this reason, it can be said that organizational communication is one of the main functions of management. Because, organizations to be able to reach these aims needs the organizational elements come together around these aims, and these activities are happen with management's organization function. The essential element of any organizing and coordination function is communication. Organization and coordination cannot carried out without communication (Atak, 2005).

Organizational communication includes: the transfer of information, data,

perception, understanding, approach and intuition between various parts of an organization and staff; all methods, tools and techniques used in this transfer; the various systems (channels) related to this transfer, and all forms of message in written, verbal and non-verbal form. Therefore, communication is a process that has many problems in its own right, despite its use and simplicity (Koçel, 2005). For this reason, communication is a main mechanism in an organization and plays a very important role in planning, decision making, motivation, supervision, sharing of vision and coordination.

2.2. The Functions of Organizational Communication

Communication does not just provide news and message exchange; it provides all kinds of thinking and information are shared. Intra organizational communication functions can be gathered in four main groups; information supplying, persuasion and influence, hectoring and instructive communication, and unification. These are (Gürgen, 1997):

Communication's information supplying function; information transfer is accepted as communications basic function. Information is necessary to establish a relationship with the individual's environment. On the other hand, in order to carry out organization's aims, for carrying out certain activities, workmen need to get information about what, how and why to do.

Communication's persuasion and influence function; *Persuasion* is a process of influencing and modifying the behavior, thoughts and attitudes of person and people in the desired way. *Influence* can be defined as an attempt to change the attitudes and behaviors of people for a longer period of time, not to contradict their wishes and aims.

An important part of the communication that takes place in various forms in organizations is to change people's thoughts, attitudes and behaviors. The ability of the members of the organization to work effectively and efficiently in the direction of their organization is largely dependent on their identification with organizations and their adoption of organizational aims.

Hectoring and instructive communication function; Managers in organizations communicate with subordinates not just to inform them also tell the what and how to do and give them direction or direct their behaviors. In order to subordinates show performance on the organizational aims, the educational necessities must have provided.

Communication's unification and providing coordination function; Another function of the communication is unification and providing coordination. It is possible through communication that the individuals, who are culturally involved in a social system, can maintain their mutual relation and commitment. Communication, which allows individuals to gather around organizational aims, also has an important role in protecting the psychological integrity and balance of individuals.

Improvement of management starts with communication. In organizations, managers use communication functions to carry out; many managerial and organizational activities such as decision making, problem solving, forming initiative, activity acquisition, empowerment, motivation, organization development, advising, mediation, management of conflict, raising, informing, planning, determining aim and target (Bahar, 2006).

2.3. Functioning of Organizational Communication

Intra-organizational communication can be studied within two titles: formal communication and informal (natural) communication.

2.3.1. Formal Communication

Formal communication system, which is in relation with hierarchical authorization structure in organization, refers to channels which are providing the information flow between intra organization and organization's environment. Within this structure, each member has a different formal role and status than the others. Formal communication tends to pass a large amount of information through the filter (Dennis, 2005). Formal communication through vertical, horizontal and cross directional channels based on the organizational chart enables the sharing official information between employees and units. The functioning of formal communication (vertical, horizontal and cross) and the benefits provided by this communication system are summarized in Table 1.

Table 1. Formal Communication Channels

Communication Format	Vertical Communication		Horizontal Communication	Cross Communication
	Downward	Upward		
Definition	From the top brass to lower lever	From lower level employee to the top brass	Between the people and divisions of same authority and responsibility	Between the people of different level of authority and responsibility
Types	Work instructions, logical description of work, organizational procedures and rules, feedback to subordinates, description of organizational culture	Ideas of subordinate employees, suggestions of solutions for problems, feelings about work etc.	Coordination of works, problem solving, information sharing, conflict management, report preparation	Descriptions about work, sharing about work process, finding solution to conflict and problems
Potential benefits	Correcting/preventing employee mistakes, increasing work satisfaction, model development.	Providing solutions to problems, increasing the acceptance of management decisions	Providing cooperation among employees in different duties, ensuring that the organization's mission is understood.	Allowing people in different levels to work together, feeling organizational unity and integrity.

Source: Adapted from Ronald B.Adler, Jeanne Marguard Elmhorst, Communication at Work, McGraw Hill, (1996, p.13).

2.3.2. Informal (Natural) Communication

Intra-organizational communication usually takes place in a formal way, but sometimes it goes out of the strict rules of the formal communication to quickly exchange information in order to speed up the work. In order to speed up work and increase its efficiency by being under the pressure of time, and sometimes

communication that is not organized by a person or unit authorized to operate and which results in the natural end of unofficial groups formed in the organization is called ***natural (informal) communication*** (Şimşek et al., 2001***)***. This type of communication arises from sincere relations within the organization and is established off the record except for certain form. They are rumors and they are more influential and work faster than formal communication channels in organization.

2.4. Organizational Communication Tools

The use of communication tools for healthy conducted organizational activities has now become compulsory beyond necessity. It is also important how and by which tools these relations are realized as well as the regular and conscious relations in the organizational structure. Messages sent to individuals and unit within organization and individuals, institutions and organizations outside the organization are delivered by means of ***written, verbal and electronic (visual-audio)*** communication tools (Bahar, 2006). The selected communication tools should facilitate the transfer of information and convey the messages in a complete, clear and fast manner. Some of them are these:

Written Communication Tools are; letters, notes, written circulars, announcements, documents and reports, written publications, brochures, handbooks and annuals, banners, posters, announcement boards and questionnaires. It is the main communication form that organizations use which is in formal communication because of the features permanence and provability.

Face-to-face interviews, phone calls, talks in meetings, verbal briefings, public presentations, and conferences are examples of ***Verbal Communication Tools***. The biggest advantage of verbal communication is speed, the effectiveness of the message can be checked and saved time.

Electronic (visual-audio) Communication Tools include; voice, picture productions and computer communication used in communication and education. These; multi-media tools, Internet, intranet, extranet, electronic mail, web page, telephone, mobile communication tools, video-conference, in-house announcement and radio system. The most important benefits of communication technology are speeding up communication, providing great convenience in written communication, and significantly reducing costs in creating, transferring and storing messages.

2.5. Organizational Communication's Obstacles

2.5.1. The Elements that Prevent Effective Communication

In communication parties are humans and the differences between humans are the very first reason that decreases the effectivity of communication process. The other obstacles are physical and technological. The main elements that prevent effective communication are:

Personal differences can effect message's coding, perception and attitude towards it, personal characteristics such as message's giver's and taker's individual aims, feelings, attitudes and habits, standard of judgement, perceptions. People perceive and interpret the messages they receive according to their own knowledge and experience.

Cultural differences; communication between the same culture people is easy and rapid. Cultural differences can make communication difficult.

Physical conditions; it is more about the communication channel and the

environmental conditions that prevents it.

Language difficulties-semantic factors; it is related to symbols used to formulate the message, meaning that the giver gives a word or a grip and the meaning that the taker gives this symbol or concept may be different.

Filtering; means that the message is being manipulated by the giver in such a way that the taker would like.

Timing errors and overloading information; it is also important that the message arrive on time, as well as reach the other side in a correct, clear, straight and understandable way. Excessive information overload also causes individuals to choose, refuse or forget information, causing the information get lost and incomplete communication.

2.5.2. Obstacles Encountered in Organizational Communication

In organizations, there are lots of different factors that prevent the establishment of efficient and healthy communication process. We can examine these factors under five titles; individual obstacles, technical obstacles, psycho-social obstacles, organizational obstacles and other obstacles.

Individual obstacles; it can be in the form of inadequately defined purpose or information, illusion, use of the wrong environment, and incorrect timing as well as it can be entirely from individual differences.

Technical obstacles; noise from environmental factors, technical disturbances, choosing wrong channel and tool. It also includes technical errors that occur during the message creation and feedback process.

Socio-cultural and psychological obstacles; personality structure and language are the main elements. Socio-cultural structure one of the most important factors that gives directions to peoples behaviors, personalities, knowledge level, attitude and habits and communication skills. The environment and cultural values people live in are reflected in the language they use. The obstacles such as meaning differences (semantics), selective perception, cultural differences and gender differences can be examples.

Organizational obstacles; as the number of hierarchical levels increases in an organization, and as the distance between the giver and the taker increases, it becomes more difficult to communicate. The need for communication in an organization where over-centralization is dominant (decisions are taken by one hand and by top management) will increase. On the other hand, the values, beliefs, norms, thoughts and attitudes of the organization's employees will affect the organization's culture and therefore the organizational environment. Organizational culture has an important effect on communication because it is a concept that keeps the members of the organization together and affects their relations and sometimes causes disruptive and disturbing situations which may disturb the communication. In addition, status differences, management style, excessive information overload and filtering also create communication obstacles.

Other obstacles; Apart from the communication obstacles described above that negatively affect the communication process; media, economy and time pressure, mass culture and technological loneliness.

When communicating, it is important that where are we and what kind of environment that we are in. In order to understand correctly, it is necessary to communicate in the right place. Time pressure can cause problems in coding,

transferring, or detecting the message. In addition, the presence of delays, or the transfer of information before time, significantly changes the effect of the message. Economic obstacles can also be in communication. Saving money at creating or sending messages will negatively impact communication

The mass media that produce mass culture remove the collective life possibilities of individuals and the individual living spaces are developing. As a result of these developments, today's people are transformed into a mechanical tool which is reticent, less-smiling and less-thoughtful. Today, people tend to communicate face-to-face less in their daily lives (Akgöz & Sezgin, 2009). With the technological opportunities provided, individuals on the other side of the world can become communicative at any moment, but -the face-to-face relations are getting weaker and weaker. The point reached today is the increase in the relation between "individual-technology" or "individuals-individuals in the technological environment/individual" while “face-to-face” communication between individuals is decreasing.

3. COMMUNICATION IN HEALTH SERVICES

3.1. Health Care Management

Healthcare Management; Is defined as "the planning, organizing, directing, controlling and coordinating the resources and processes that are possible to meet by medical care and healthy environment demands by providing specific services to individuals, organizations and societies" (Schultz & Alton, 1976). Health management requires that many different activities such as human resources planning and management and financial management be carried out together. There are some unique conditions in the management of health services that function both as a management area and in the health and medical care sector. These conditions increase the importance of the profession (Austin, 1978).

The presence of two types of administrators at the hospital leads to the define the structure of hospitals as a Matrix Organization. 'Functional manager' is the manager who has undertaken the management of a group of activities and therefore the department. 'Project Manager' is the manager who has undertaken the responsibility of planning, organizing and carrying out all activities related to the production of a certain goods/service. In Matrix Organization structure, the staff working in the project are up to both managers. Therefore, the project manager, the functional manager are the administrators who have the same staff (Seçim, 1994). Hospitals are Matrix organizations give us clues about how important it is to coordinate and communicate within and between teams. This two manager situation shows how difficult it is for the hospital management to work. Medical activities and dominance on one side and administrative staff and legislative control on the other. The high level of specialization in health institutions and the necessity of high level functional dependency between different occupational groups also make effective organizational communication difficult. In this dual management system, knowing who you are responsible to prevents confusion.

There is a large and heterogeneous target audience that health facilities should be pleased to, and the sustainable success and continuity is largely dependent on the ability of this audience to meet its wishes and expectations. It is also not possible to achieve this without communication skills.

3.2. Health Services and Communication

Health communication defines as; raising awareness of individuals, institutions, and communities in matters related to health and health; creation of awareness; eliminating the need for information; giving accurate information; creation of health consciousness; creation/promotion of health literacy; the recognition of the right to health as a patient or individual and the use of communication strategies and methods to raise awareness and protect the right to live in a healthy environment (Sezgin, 2010).

Health communication is the practice of the concepts and theories of communication to interactions and processes that occur in relation to health among the individuals with the aim of developing health (Tabak, 2003; Schiavo, 2007). The concept of health communication has begun to debate the need for communication in the field of health for the past twenty-five to thirty years and has shown a rapid development.

The communication skills in interpersonal relations have great importance, especially in the field of health services, which should be more coexistent with people, to perform in a healthy way of communicating with the treatment team, patient and patient relatives (Erigüç et al., 2013). Communication skill, which exists in every period of life, gains more importance in illness and it is a skill that has to be known by health employees and taking into consideration before the first encounter with the patient (Babadağlı et al., 2006). Health professionals use communication in many areas such as meeting ill/healthy individual, get medical history, decide the treatment, administer this treatment, direct the care and raise its effectiveness (Bingöl & Demir, 2011İ; Babadağlı et al., 2006; Kumcağız et al., 2011) In situations where communication is inadequate, negativity can be seen in consequences related to health and patient satisfaction.

One of the important factors determining patient satisfaction is to provide the best information and communication between patients, their relatives and health personnel. To show a patient that he/she get understand and his/her expectations are approved increases patient's compliance and satisfaction (Williams, 1994). In gained and sustained in positive health behavior, interpersonal communication is a considerable influence and should be based on empathic bases (Kartaloğlu, 1992).

Health communication today uses many principles such as prevention of diseases, defense of important points about health, production and marketing of health services, treatment processes of health care consumers, treatment options and informing about health care quality and training. Also, the subjects such as the widespread access to new computer-based technologies for access to health information, the effective use of these new technologies and the provision of equal access are in the scope of health communication. Some of the elements such as awareness raising and provide information related to a health issue and its solution, motivate individuals on positive health behavior, raise efficiency in health services can be count as the aims of the health communication (Koçak & Bulduklu, 2010).

On the other hand, computer-based systems have become one of the necessary features in the health sector today. Especially, the development of clinical information systems, communications and Internet connections has made these technologies widely available in the health sector. The creation of new software for clinical-based computers has facilitated the practical application of clinical information systems in hospitals (Pemberton et al., 2003). However, in this study, the communication provided by

information and communication system in healthcare field will be excluded, it will be talked about only interpersonal relations (relation between healthcare provider and healthcare taker), with the titles; medical doctor patient communication, nurse patient communication, communication between patient and other health personnel, communication between patient and hospital administration.

3.2.1. Medical Doctor-Patient Communication

Medical doctor-patient communication is a process which is different than others because the both side are affecting each other -effective on diagnosis and treatment-. Establishing communication on strong bases will increase the satisfaction level of the patient and the possibility of getting positive results on treatment.

An effective communication between medical doctor and patient supports an approach which is patient is in as a participant and shares his/her opinion instead of controlling the patient, for providing positive behavior and cooperation of the patient. It is only possible through communication that gathering the information which would help medical doctor to diagnose, and for providing the cooperation of patient in diagnosis and treatment and in order to medical doctor to understand the patient and explain himself/herself to the patient. It can be said that it is the key point on carry out of the correct communication to establish relationship between medical doctor and patient. Correct communication will provide the principles of medical ethics such as being beneficial, respect for autonomy and informed consent (Atıcı, 2005).

In medical practice, relationship between medical doctor and patient is the basis for every approach and every treatment initiative. Also, the success of the treatment depends on medical doctor-patient relationship's form and strength. It is considered as an indicator of clinical susceptibility that medical doctors have the necessary skills assess patient's needs and expectations and to respond effectively as well as clinical practices (Hardoff &Schonmann, 2001). It does not matter that medical doctor has a good technical knowledge, if there is a problem in communication, this will decrease the quality of patient care. The most important obstacles in the healthy establishment of medical doctor-patient communication during sometimes successive repeated medical interventions are; lack of empathy of the medical doctors, use of medical terminology, shortness of time for the patient, inadequate informing of the patient and lack of confidence.

The conditions, such as the inefficient use of communication skills in the methods interviewing the patient, getting medical history and physical examination, inefficient listening of patient and lack of time spending on seeing the patient, directs medical doctors to want investigation and analysis results. And medical doctors' tendency to rely on laboratory results cause a vicious cycle which is less beneficial, less satisfactory and causes more time, labor and money (Coombs et al., 1990). Highly specialized medical doctors diagnose and treat patients based on the latest technological developments. As a result of this, while the technical nature of medical care has advanced, patients often say that something is missing in relation to medical doctors. And this deficiency is more apparent in the communication between the patient and the medical doctor and it consists major problems in terms of fulfilling the requirements of the treatment and the trust of patient to medical doctor (Tekiner &Ceyhun, 2008). As a result of this negativities, the medical doctor communicates with the illness rather than communicate with the patient. Behind every success is the fact that it is science and art;

patient medical doctor relationship and treatment process should not be regarded only as the practice of medical information and at the same time should be approached with the conscious that interpersonal relationships are arts. More importance should be given for gaining this art in medical education.

3.2.2. Nurse-Patient Communication

The World Health Organization Nursing Expert Committee defines a nurse as a qualified and competent person on nursing field who had completed basic nursing education program and for prevention of disease with the help his/her country's society, patient care and raising health level (aof.anadolu.edu.tr). The basic function of nurses is to help healthy or ill individuals in the giving of health services. This includes activities to maintain the healthy life of the healthy person, to obtain the information, will and strength necessary for the patient's rehabilitation (Tatarlı, 2007).

Nurses are health workers who interact most with patients. Therefore, they are the people who are the most important in the field of health, training is organized and focused on. In this context, the health institution managers have begun to give importance to the units of the health institution, the units of the public relations, and to the health workers especially the nurses to train in this respect, recognizing the importance of communication with the patient and providing more efficient results and better quality services when a good communication environment is provided (Parlayan &Dökme, 2016).

As a caregiver, the nurse must be able to express himself/herself and communicate effectively with the caretaker while trying to understand that the individual is live through with verbal and non-verbal communication (Ortabağ et al., 2010). Many nurse theorists defined nurse-patient relationship differently. According to Sheppard it is stated that it includes more than information flow and according to Peplau and Thorsteinsson it is stated that this communication is the basis of nursing and the positive relationship between nurse and patient will increase the quality of care. In patient centered communication, with providing the participation of patient in care and the decisions to make will increase the quality of care, the satisfaction with nursing service and conformity to illness and treatment. Nevertheless, studies show that nurses cannot communicate goodly with the patients and the communication they have make are just for performing administrative tasks. The reason for this is that the nurses are not aware of the importance and necessity of communication with the patient. While the nurse cares for the patient, he/she does not ask questions such as what the patient needs or wants, and this type of communication is preventing the patient centered care from being performed. Studies suggest that nurses think that patient centered care is important and necessary, but obstacles which are originating from the patient or employee prevent the establishment of this relationship when doing it. The nurse-patient relationship cannot be performed properly because of the obstacles encountered (Tutuk et al., 2002; McCabe, 2004; West et al., 2005).

Nurses are constantly in contact with patients and patients' relatives 24 hours a day. Nurses and all healthcare workers serve a very broad and heterogeneous target audience. It is expected that nurses will use empathic communication skills effectively to improve their quality of patient care and improve patient satisfaction so that they can fulfill their responsibilities successfully. Effective communication, understanding and helping individuals are the behaviors that the nurse must gain in the educational

process. Also, in the profession of nursing, it is necessary that the skills emotional control and management alongside effective communication skills.

3.2.3. Communication between Patient and Other Health Personnel

In the scope other health personnel, midwives, dentists, dietitians, social service specialist, laboratory technician, x-ray and radiotheraphy technician, physiotheraphy technician, mental health technician, pathology technican etc. can be counted. Direct and indirect communication is carried out between patients and health workers entering this group.

Hospital services require a team service. Quality service is the responsibility of all staff working at the hospital. If there is disruption or irregularity in one part of the service or in one of the service providers, the perception of the customer on these disruptions affects other areas and affects the image of the hospital (Yanık, 2000). The quality of service will be low if the labor is not qualified enough even if they are developed in terms of technology and technique. Health personnel, who are in direct contact with the patients\customers in every stage of service providing, are influential on patients'\customers' perspective of the hospital and satisfaction with the services (Korkmaz, 2003). Health personnel, who has the ability of effective communication, has the ability of creating more healthy and permanent solutions to the problems.

3.2.4. Communication between Patient and Hospital Administration

Hospital administration is managerial group which consists of physician in chief, deputy chief physicians, hospital's head manager, hospital's manager, hospital's deputy manager and head nurse. The aim of hospital administrators to carry out organizational aim effective, efficient and economic with directing hospital's resources and hospital's personnel's information, skill and experiences to hospital's aim in maximum level. For this reason, hospital administrators must accomplish their duties well (Ak, 1992).

Patient satisfaction is the most important thing in providing health services in hospitals, because they provide health services first of all carrying out analysis and treatments which are necessary for patients' treatments, in other words, they are service institutions who give benefit to their customers. In order to provide this, health institutions' health services that they present to patients must be of high quality (Gülmez, 2005). One of the important factors determining patient satisfaction is to provide the best information and communication between patients, their relatives and health workers and administrators. Hospital administration must have effective communication skills alongside technical and managerial skills in order to provide institutional sustainability.

4. CONCLUSION AND RECOMMENDATIONS

It is not enough for health professionals to have only cognitive and psychomotor skills when providing services to individuals, families, and colleagues. It is expected that they will have basic skills such as effective speaking and listening, accepting society without judgement, convincing society to make their own decisions, establishing a two-way communication taking into account the opinions and thoughts of the opposite individual, and identifying obstacles in communication (Hacıalioğlu, 2012). Today, communication skills education is seen as an inseparable part of medical education programs. It is revealed with the conducted studies that improvements in communication skills have created significant differences in healthcare. Thus, teaching

of communicational skills in health education should not be an optional practice, it should be taught studiously like professional technical skills.

REFERENCES

Ak, B. (1992). Sağlık Bakanlığı Devlet Hastaneleri Hastane Yöneticilerinin Yönetsel Başarı Düzeyleri Hakkında Bir Araştırma, Hacettepe Sağlık İdaresi Dergisi, Cilt:1 Sayı:1, s. 110, Ankara.

Akgöz, E. ; Sezgin, M. (2009). Genel İletişim, Gazi Kitabevi, s.183.

Atak, M. (2005). Örgütlerde Resmi Olmayan İletişimin Yeri ve Önemi, Havacılık ve Uzay Teknolojileri Dergisi, Temmuz 2005, Cilt: 2, Sayı: 2, s. 60.

Atıcı, E. (2005). Erişkin Lösemili Hastalarda Hasta-Hekim İlişkisinin Tıp Etiği İlkeleri Açısından İncelenmesi. Doktora Tezi, Uludağ Üniversitesi, Bursa.

Austin C.J. (1978). What is Health Administration, New York S.P. Medical and Scientifics Books, Spectrum Publications, p.105-106.

Babadağlı, B.; Erim, S.; Erdoğan, S. (2006). Hekimlerin ve Hemşirelerin Hastayla İletişim Becerilerinin Değerlendirilmesi. Fırat Sağlık Hizmetleri Dergisi,1: 52-69.

Bahar, E. (2016). İletişim, Detay Yayınları, Ankara, s.105-134.

Bingöl, G.; Demir, A. (2011). Amasya Sağlık Yüksekokulu Öğrencilerinin İletişim Becerileri. Göztepe Tıp Dergisi, 26:152-59.

Coombs, R.H.; Perell, K.; Ruckh, J.M. (1990). Primary prevention of emotional impairment in medical training. Academia Medica; 65: 576-81.

Dawn, K. (2000). Using vision to improve organisational communication, Leadership & Organization Development Journal; 21, 1/2; ABI/INFORM Global, p. 92.

Dennis Tourish, D. (2005). Critical Upward Communication: Ten Commandments for Improving Strategy and Decision Making, Long Range Planning, vol:38, (5), p. 485-503

Erdoğan, İ. (1997). İşletmelerde Davranış, İ.Ü.İşletme Fakültesi Yayınları, İstanbul, s.278.

Erigüç, G.; Şener, T.; Eriş Ş. (2013). İletişim becerilerinin değerlendirilmesi: Bir meslek yüksekokulu öğrencileri örneği. Hacettepe Sağlık İdaresi Dergisi, 16:46-65.

Göral, R. (2002). Büro Yönetimi ve İletişim Teknikleri, Mikro Basım-Yayım, Ankara, s.133.

Gülmez, M. (2005). Sağlık Hizmetlerinde Memnuniyet Ölçümü ve Cumhuriyet Üniversitesi Araştırma Hastanesi'nde Ayakta Tedavi Gören Hastalara Yönelik Bir Uygulama, C.U.İktisadi ve İdari Bilimler Dergisi, 6(2), s. 148.

Gürgen, H. (1997). Örgütlerde İletişim Kalitesi, Der Yayınları, İstanbul, s.25-28.

Gürüz D.; Özdemir Yaylacı, G. (2004). Halkla İlişkiler Yönetimi, Ege Üniversitesi İletişim Fakültesi Yayınları, No: 10, İzmir, s.49 .

Hacıalioğlu, N. (2012). İletişim ve Danışmanlık. Halk Sağlığı Hemşireliği, Erci B. Eds 1. Baskı. ed, Amasya, Göktuğ Yayıncılık Ltd.; s.252-56.

Hardoff, D.; Schonmann S. (2001). Training physicians in communication skills with adolescents using teenage actors as simulated patients. Med Educ; 35(3): 206-10.

Hicks, C.B.; Place, I. (1963). Office Management, 2.Edition, Allyn and Bacon Inc., Boston, p.57.

Kartaloğlu, Ü. (1992). Temel Sağlık Hizmetlerinde Toplumu Tanıma ve İletişim. Ankara Türk Tabipler Birliği Yayınları Sürekli Tıp Eğitimi Dizisi 1, s.41-8

Koçak, A.; Bulduklu Y. (2010). Sağlık İletişimi: Yaşlıların Televizyonda Yayınlanan Sağlık Programlarını İzleme Motivasyonları, Selçuk İletişim, 6, 3, s.4

Koçel, T. (2005). İşletme Yöneticiliği, 10.Bası, Arıkan Basım Yayım Dağıtım Ltd.Şti., İstanbul, s.530.

Korkmaz, Ş. (2003). Sağlık Kuruluşlarında İnsan Kaynakları Yönetimi Uygulamaları ve Konuya İlişkin İstanbul İl sınırları İçinde Yer Alan 50 Yatak ve Üstü Kapasiteli Özel Sektör Hastanelerinde Bir Araştırma, Yüksek Lisans Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü Hastane ve Sağlık Kuruluşlarında Yönetim Bilim Dalı, s.1, İstanbul.

Kumcağız, H.; Yılmaz, M.; Çelik Balcı, S.; Avcı, A. (2011). İ. Hemşirelerin İletişim Becerileri: Samsun ili örneği. Dicle Tıp Dergisi; 38:49-56.

McCabe C. (2004). Nurse-patient communication: an exploration of patients' experiences. J Clin Nurs.; 13(1): 41-49.

Milli Eğitim Bakanlığı, (2011). Gazetecilik, İletişim Süreci ve Türleri, Mesleki Eğitimi Güçlendirme Projesi, Ankara, s.46.

Ortabağ, T,; Tosun,N.; Bebiş ,H.; Yava, A.; Çiçek H.S. Akbayrak N. (2010). Yatağın Diğer Tarafı: Hemşirelik Yüksek Okulu Birinci Sınıf Öğrencilerinin Eğitim Amaçlı Hastaneye Yatma Deneyimleri. Gülhane Tıp Dergisi; 52(3): 189-197.

Özarallı, N. (1997). Etkin Örgütsel İletişim Olarak Etkin Kaynak Alışverişi, Endüstri ve Örgüt Psikolojisi (Ed.Suna Tevrüz), Türk Psikologlar Derneği Yayınları, 2.Baskı, Ankara, s.69.

Parlayan, M.A.; Dökme, S. (2016). Özel Hastanelerdeki Hemşire ve Hastaların İletişim Seviyelerinin Değerlendirilmesi: Bir Hastane Örneği, KSÜ Sosyal Bilimler Dergisi Cilt:13 Sayı:2

Pemberton, J. and Others. (2003). Issues and Trends In Computerisation Within UK Primary Health Care, Logistics Information Management, Volume 16, Number 3/4, p. 181.

Schiavo, R. (2007) Health Communication From Theory to Practice, A Wiley Imprint, San Francisco, p.5

Schultz, R.; Alton, C.J. (1976). Management of Hospitals. New York: Mc Graw Hill Book Company, p.86-87.

Seçim, H. (1994). Hastane Yönetim ve Organizasyonu, Eskişehir: Anadolu Üniversitesi. Basımevi. s.24

Sezgin, D. (2010). Sağlık İletişimi Paradigmaları ve Türkiye: Medyada Sağlık Haberlerinin Analizi. (Doktora Tezi). Ankara: Ankara Üniversitesi Sosyal Bilimler Enstitüsü, s.117

Şimşek, M.Ş.; Akgemici,T.; Çelik, A. (2001). Davranış Bilimlerine Giriş ve Örgütlerde Davranış, Nobel Yayım Dağıtım, Ankara, s.110.

Tabak, R S. (2003). Sağlık İletişimi, 2. Baskı, Literatür Yayınları, İstanbul, s.29.

Tatarlı, N. (2007). Sağlık Hizmetlerinde Hasta Tatminini Etkileyen Unsurlar ve Sağlık Sektöründe Bir Uygulama, Yüksek Lisans Tezi, Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu, s.55.

Tekiner, S.; Ceyhun, G. (2008). Sağlığa Biyopsikososyal Yaklaşım. Aile Hekimliği Dergisi; 2 (1): 52-7

Tutuk, A.; Al, D.; Doğan, S. (2002). Hemşirelik Öğrencilerinin İletişim Becerisi ve Empati Düzeylerinin Belirlenmesi. Cumhuriyet Üniversitesi Hemşirelik Yüksek Okulu Dergisi; 6(2): 36-41.

West, E.; Barron, D.; Reeves, R. (2005). Overcoming the barriers to patient-centered care: time, tools and training. J Clin Nurs.; 14(4): 435–443.

Williams, B. (1994). Patient satisfaction: a valid concept? Soc.Sci Med.;38(4):509-16

www.aof.anadolu.edu.tr/kitap/EHSM/1208/unite02.pdf. (Accessed June 2014)

Yanık, A. (2000). Sağlık Bakım Hizmetlerinde Hasta Bakım Tatmini ve Haydarpaşa Numune Eğitim ve Araştırma Hastanesinde Hasta Tatmini Üzerine Bir Araştırma, Doktora Tezi, İstanbul Üniversitesi Sosyal Bilimler Enstitüsü İşletme Yönetim ve Organizasyonu Anabilim Dalı, s.64, İstanbul.

Chapter 93

Health Informatics: E-Health, Telemedicine and M-Health

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INTRODUCTION

The rapid development and advancements in information and communication technologies has given new dimensions to the world order. Advancing and changing technology and information opportunities cause changes in many fields such as education, military, healthcare and security systems. The innovations born out of information technologies have also become significant for the quick and effective provision of healthcare services, which is one of the essential aspects of human life (Öner, 2014:5).

With each passing day, healthcare services become more complex and computerized. The amount of compiled and archived medical data on errors is constantly increasing and the access to, use of and processing such data also becomes more difficult and important. In turn, the need for the use of systematic information processing methods and computer and information technologies, models and techniques that resolve complex problems becomes more evident (Baykal, 2005).

Technology is of the utmost importance in this respect for healthcare professionals who aim to accelerate the recovery process of patients, alleviate pain, improve general health and well-being and provide quality care services. Current studies and developments have given way to a rapid change within the field of healthcare and particularly the research done in the fields of genetics, medicine and environment have caused advancements in treatment processes and policies. As a result of an effective use of technology, medical processes such as decision support for treatment procedures, drug interaction warnings and delivering laboratory results to the physician have become faster (Mendi, 2012:76).

INFORMATICS AND HEALTH INFORMATICS SYSTEMS

Informatics systems are defined as computer aided information systems that enable the collection from different sources, storage, processing and reporting of data in order to inform a managerial body during the decision making process. Informatics systems are made up of interrelated components called inputs, processes, data files and outputs, which are controlled by the hardware and human personnel (Hicks, 1993:2; Bülbül, 2003:121).

Health informatics is the entirety of the processes of producing, collecting,

evaluating, analyzing, saving, processing, displaying and storing information in the field of medicine (Sur, 2012:44). In addition to this, health informatics can be defined in a broader sense as the production, development, application and testing of information and communication principles, techniques, theories and technologies in order to improve the provision of healthcare services (Sainfort et al., 2007:138). The purpose of health informatics is to use computer and communication technologies jointly with other disciplines in order to ensure the effective and efficient use of information on healthcare, analyze and manage such information in a way that enables new structuring endeavors and make it broadly available (Sur, 2012:44).

Health informatics systems combine and integrate the elements of personnel, principles, software, hardware and other factors to manage, collect, transform and disseminate information within healthcare institutions. Moreover, they are also effective in maintaining the organizational and functional activities of the institution and improving record keeping on patients (Chen, 2006:10).

In order to successfully transfer the information and data created by informatics systems and to share them with patients and other healthcare institutions, some data standards are required. For clinicians, medical technology specialists, public health nurses and physicians who are the usual users and sharers of clinical data and information, standards have been developed such as HL7 (Health Level 7) on healthcare services and clinical data formats, DICOM (Digital Imaging and Communications in Medicine) on keeping medical information and images, and PACS (Picture Archiving Communication Systems) on facilitating the storage and transfer of medical data, text and images (Tan, Cheng and Rogers, 2002:8).

CLASSIFICATION OF HEALTH INFORMATICS SYSTEMS

Generally, health informatics systems are classified under two categories as Clinical Informatics Systems and Diagnosis and Treatment Systems. Apart from that, HIS applications are classified as service-oriented systems and patient-oriented systems according to their users.

1. Clinical Informatics Systems

Clinical informatics is defined by the Institute of Medicine (IOM) as a system that gathers, keeps and makes available the important clinical information on patients. It is also emphasized that CIS are focused more on clinical data than monetary and billing information. Clinical informatics can be restricted to a single field of clinical information (e.g. pharmaceutical data) or encompass clinical fields that address all aspects of patient care (Raymond and Dold, 2002:8).

The structure and functions of clinical informatics systems have undergone changes in the course of time. Previously, the system contained only patient files. In our day, however, with advancements in computer, medicine and communication technologies, it encompasses contemporary applications such as “artificial intelligence”, “computer aided diagnosis” and “telemedicine” (Kavuncubaşı and Yıldırım, 2010:434).

The use and proliferation of clinical informatics systems that include electronic patient record systems, clinical decision support systems, medical imaging and communication systems is of great importance in achieving a successful implementation of healthcare services reforms that encompass home care, primary care and integrated care networks. Through adoption of clinical informatics systems within

healthcare institutions, several outcomes such as a higher level of efficiency among the healthcare personnel, better integrated care processes, improved patient safety and quality of care arise (Pare et al., 2011:2).

Components of clinical informatics can be summarized as follows:

Electronic Medical/Patient Records: These are all kinds of information acquired, stored, delivered, accessed, correlated and processed via electronic systems, which have to do with the past, current and future physical and mental well-being or ailments of individuals. In our day, the patient-oriented and computerized patient records which can be easily accessed whenever the need arises and correlated in order to sustain the care provided are at the core of all health informatics systems (Turkey Health Information System Action Plan, 2004:19).

Clinical Decision Support Systems: These are manual or computer-aided systems that support physicians with the decisions they will make by formulating suggestions on care services to be provided to the patients when the data are input to the system. These systems improve prescription practices, reduce serious drug errors, enhance the provision of preventive care services and compliance with the suggested care standards (Kawamoto et al., 2005:1).

Nursery Informatics Systems: According to the American Nurses Association, nursery informatics systems are applications wherein computer, information and nursery sciences are utilized together in order to assist the processing and management of data and information on nursery while providing nursing care and supporting related practices (Mutluay and Özdemir, 2014:181).

Medical Image Management and Storage Systems: As much as documents like prescriptions and laboratory results need to be archived in hospitals, medical images also need to be digitally archived. PACS (Picture Archiving and Communications System)is used for the archiving of medical images (Ömürbek and Altın, 2009:215).PACS is a system that enables storing medical images in its original state and quick, total and safe access to such images when necessary. With PACS, the need for physical storage of radiographs is eliminated, reducing imaging costs (Yıldırım and Arıöz, 2005:154).

Patient Monitoring Systems: These systems are also called intensive care systems and are designed specifically in terms of their layout and equipped with high technology medical devices and specially trained medical personnel. These systems are different and more exclusive than other services within the hospital in terms of the treatment and patient care given. Within the scope of patient monitoring systems, the vital signs of the patient such as heart rate, blood pressure, respiratory functions, body temperature etc. are followed continually through display units (Ömürbek and Altın, 2009:215).

Clinical Communication Systems: These systems work in coordination with patient monitoring systems. With the advancement of mobile technologies, telephone communication which is one of the traditional methods fell back and mobile communication devices began to be used in clinical communications. Through the use of mobile communication devices, healthcare professionals are able to easily reach patients and other service providers and all types of necessary visual and written information and documents are shared with stakeholders in rapid fashion (Öner, 2014:79).

Telemedicine: Telemedicine is the provision of healthcare services intended for the improvement of the health status of individuals and societies, diagnosis, treatment and prevention of diseases and injuries, research and evaluation and provision of continuous training for healthcare personnel through the use of information and communication technologies in cases where distance is an aspect to consider (WHO, 2010:9).

Case Consolidation: Case consolidation systems are informatics systems that strike a connection and balance between the clinical aspect of healthcare services and the financial aspect of policymaking activities, and that categorize the outputs of a health system and patients' statuses according to similar characteristics in a clinically and economically significant manner (Ömürbek and Altın, 2009:216).

Virtual Reality Applications: Virtual reality is defined as the accumulation of technologies that enable people's efficient interaction with three-dimensional computerized databases in real time by using their natural senses and skills (McCloy and Stone, 2001:912). Virtual reality can also be defined in short as "a reconstruction of reality" (Kayabaşı, 2005:151). The use of virtual reality applications in medical education has enabled students carrying out countless studies and tests on a virtual cadaver and physicians understanding better the impacts of the treatment process on the patient especially by conducting vital operations within a virtual environment (Bayraktar and Kaleli, 2007:4).

Smart Card Applications: The aim of these applications is to transfer all health-related data of individuals to chip cards and to store all such data in a centralized and consolidated manner. Such applications can be utilized to get information on many aspects of an individual's health such as personal health information, the drugs the patient uses, blood type or previous laboratory results and radiological examinations when individuals apply to any domestic or foreign healthcare institution or organization (Öner, 2014:81).

Hospital Information Systems: Hospital Information Systems enable the provision of hospital services via a computer medium, the electronic and automatic exchange of information, and the recording and conversion of financial data and information in a digital manner (Köksal and Esatoğlu, 2005:54). Besides that, hospital information systems are institutional resource planning systems that are specialized and upgraded to meet the requirements of the healthcare industry (Mendi, 2012:93). A Hospital Information System is made up of modules such as patient registration/admission and information module, ambulatory patient (polyclinic) module, radiology module, operating room module, pharmacy module, warehouse, storage and stock (goods) module, teller module, revolving funds, billing and accounting module, personnel and payroll transactions module and statistics module (Işık and Akbolat, 2010:369).

Clinical Guidelines and Care Maps: Clinical guidelines are guidelines put into place by hospitals, government agencies or professional organizations in order to avoid undue and non-advantageous medical services. These guidelines, which include strategies that facilitate the physician's diagnosis and treatment related decision making processes, are algorithmic recommendations developed in a systematic manner in order to identify and resolve a certain clinical problem (Mendi, 2012:99).

And care maps are tools utilized in the improvement of the quality of clinical

processes and the inspection of the effectiveness of treatment-related interventions. Care maps are a definition of the minimum standards of care to be provided to patients who are already diagnosed or arrive with a distinct symptom, which is formulated jointly by a group of clinical experts from different disciplines (Akgün, 2007).

Care maps are multidisciplinary care plans that are drawn up with the purpose of supporting the implementation of clinical guidelines and clinical protocols. These are prepared for clinical and resource management, clinical control and as a financial management support (Tapan et al., 2015:20).

2. Diagnosis and Treatment Systems

Extensive health systems and equipment used in identifying, monitoring and treating health problems that affect individuals are named as health technologies or medical technologies. Such technologies enable early diagnosis of diseases, options for less invasive treatments, reduction of hospital stay and rehabilitation durations and increase the quality of the healthcare services provided (Mendi, 2012:100).

Some examples for diagnosis and treatment systems follow:

- **Laboratory Informatics System:** Laboratory informatics is an information management system that tracks and manages laboratory processes starting from the testing decision up to the reporting stage. Laboratory informatics systems accelerate the workflow and provide many benefits to the users of the system and those affected by the system such as online access to laboratory results, creating a patient archive or generating statistical reports from recorded data (Sümen et al., 2005:103).
- **Medical Image Archive and Communication System:** This is an information management system wherein medical images requiring a high storage capacity are stored and quickly accessed whenever necessary (Bayraktutan et al., 2010:14).
- **Radiotherapy Informatics System:** These systems which enable the treatment of cancer with ionizing radiation play a supportive role in decision making and perform a rapid information exchange with other information systems (Bayraktutan et al., 2010:14).
- **Nuclear Medicine Informatics System**: These are electronic systems that enable the storage of findings acquired through nuclear medicine treatments and make such findings available to users at different positions when required (Bayraktutan et al., 2010:14).
- **Electronic Document Management System:** Electronic document management system is defined as a system that enables the circulation, keeping in databases, evaluation and archiving of all kinds of documents produced originally within an electronic medium or digitally converted from traditional record keeping media in line with the workflow structure defined within the framework of business processes (Odabaş, 2009:4).

e-HEALTH

e-Health is the use of current information and communication technologies, particularly internet, in improving healthcare services or enhancing access thereto (Turkey Health Information System Action Plan, 2004: 26).

According to WHO, e-Health is “the cost-effective and secure use of information and communication technologies in support of health and health-related fields, including health-care services, health surveillance, health literature, and health

education" (WHO, 2016:11).

The "e" in the term e-Health stands for "electronic"; however it also represents the concepts of Efficiency, Enhancing quality, Evidence based, Empowerment, Encouragement, Education, Enabling information exchange, Extending the scope of healthcare, Ethics and Equity (Eysenbach, 2001:20).

The main purpose of e-Health services is to enable the sufficient and balanced use of administrative and financial resources to enable the provision of equitable, effective, efficient, inexpensive, quality healthcare services that enable the exchange of information for healthcare professionals and those who benefit from such services (Öner, 2014: 92).

There are certain advantages of using e-Health systems which are based on information and informatics systems. These are (Turkey Health Information System Action Plan, 2004: 26):

- Contributing to improvement of health by supporting a healthy lifestyle and ensuring that correct decisions are made when it comes to health,
- Reducing the costs for healthcare services by contributing to the improvement of the effectiveness of preventive and remedial healthcare services,
- Encouraging individuals towards taking informed decisions on their health and taking due care in this regard and thus ensuring that they control their health better,
- Supporting clinical care and public health services by facilitating the workflow and communication within healthcare institutions and for people who provide healthcare services,
- Ensuring the implementation of new approaches aimed at improving the health of the sections of society which cannot benefit from healthcare services in a sufficient manner and thus contributing to the elimination of inequalities within the scope of healthcare,
- Access to e-Health data and ensuring the quality of such data plays an important role in forming a healthy society for the future.

e-Health technologies, which bear the potential of having a significant future in the field of patient care, contain internet enabled applications for chronic diseases which can help to empower citizens and enhance the decision making process related to self-care. At the same time, e-Health involves virtual reality, robotics, multimedia (e.g. CDROM), digital imaging, computer aided surgery, wearable and portable monitoring systems and health portals. The application fields of e-Health can be summarized as follows (Pagliari, 2005):

- Electronic Health Records (Patient records, Clinic management systems, medical imaging and archiving systems, e-prescription, e-appointment etc.)
- Telemedicine and telecare services,
- Healthcare networks,
- Decision support tools,
- Internet-based technologies and services.

As stated above, there are many benefits of e-Health applications. However, there are also some unfavorable and negative aspects. These can be formulated as follows (Jung, 2008:7-10):

- e-Health removes direct social and physical relationships.
- It is not time-sensitive.
- "Online" health information can be of a low quality.
- Health information on the internet can be of a low quality, incorrect or obsolete.
- Privacy and security issues.
- The possibility of wrong treatment.
- Difficulties faced in physician refunding.
- The inability of those who have no access to internet or cannot use the internet to benefit from these services.

In Turkey, the Ministry of Health has put an e-Health portal named *sağlık-net* in service. Through this portal, individuals are able to be informed on who their family doctor is and get in touch with them, get an appointment from the central hospital appointment system and access their own medical records. In addition to this, healthcare personnel are also able to follow up on information and arrangements related to their own fields, make data declarations and access the health report details and statistics drawn up for them (Yücel, 2010:39). There are also applications like family doctor information system, drug follow up system, the Ministry of Health contact center, core resources management system and e-prescription, which are all provided by the Ministry of Health (Mendi, 2012:117).

Some of the e-Health applications implemented within the USA health system are the e-health network and health data exchange, electronic prescription, clinic messaging, patient index, patient medical history, drug history, outbreak alert system, stimulation programs for health informatics and administrative and financial transactions center (Gong, 2008:15).

Some e-Health applications executed in the European Union are: NHSDO (Direct Online Division) program in the United Kingdom which provides services such as helping citizens understand health and healthcare, giving advices on nutrition and self-protection, and displaying the healthcare services provided and the best treatment sites located in a given area. In Germany, patients with chronic health problems are followed up in home with the help of wearable and portable devices. In Italy, the National Electronic Health Programme provides healthcare services of active disease prevention, national appointment system, electronic patient records and telemedicine (e-Health Europe, 2007).

TELEMEDICINE

Factors such as the increase of healthcare costs in direct proportion to the population, the patient's need of reducing the frequency of applying to a hospital, benefiting from specialist physicians in an efficient way and determining more effective methods of treatment by accessing statistical data on diseases have caused the conception and proliferation of telemedicine applications (Işık and Güler, 2010:2).

Telemedicine is the transfer of information from one point to the other carried out within the scope of the provision of healthcare services and through the use of electronic signals (Ataç et al., 2013:116). Telemedicine involves the use of information and communication technologies in the provision of healthcare and medical advice (Darkins, 2014:761). Therefore, telemedicine is an extension of the hospital

environment which provides communication between the healthcare personnel and gives access to a medium wherein patients are monitored from afar with the help of diagnosis devices for home care or emergency applications. With advancements in informatics technologies, a new generation of telemedicine systems was developed to encompass mobile, wearable and flexible health monitoring systems (Dilek and Özdemir, 2014:10). Telemedicine has begun to be used quite commonly in all disciplines of modern medicine, particularly traumatology and orthopedics (Vladzymyrskyy, 2004:189).

While in previous years telemedicine applications were prioritized for areas where healthcare services were provided in an insufficient manner or not at all, nowadays it has become commonly preferred for home follow up of patients and in military medicine, and also to increase the quality of care in prisons (Turkey Health Information System Action Plan, 2004:25). Savings in time and money were achieved through telemedicine, wherein healthcare institutions bring healthcare services to the patients' doorstep.

Some examples for telemedicine applications are as follows: tele-consultation where people's inability to access healthcare services is minimized (Young-Hughes, Simbartl, 2011:154); tele-surgery where the surgeon conducts the operation remotely with the help of a robot s/he controls (DeKastle, 2009:94); tele-radiology where radiological images are transferred via an electronic medium in order to make a diagnosis or consultation (Hawk, 2011:71); tele-pathology where pathological practices are performed between remote locations (Mendi, 2012:90) and biotelemetry where personal biological and physiological data are transferred from the location the patient is to another location where someone who can interpret such data and inform the decision making process is present (Güler, Übeyli, 2002:159).

Telemedicine applications contain some common features. These are (Turkey Health Information System Action Plan, 2004: 25):

- The actions contain factors related to medicine and health,
- Informatics and communication technologies are utilized,
- The purpose is to achieve a higher quality and more economical service provision, training and management,
- At least one of the parties participating in such processes are at a different location.

Telemedicine eliminates the physical barriers between the patient and the physician during information transfer and enables the connection between such two parties by establishing a communication with patients located at rural places where healthcare services cannot be extended to and by ensuring that healthcare providers utilize the skills they have acquired during medical training (Dikmetaş, 2004: 46). Thanks to remote patient follow up opportunities, the congestion at healthcare institutions caused by large numbers of patients is prevented, loss of time and labor force is reduced and more rational solutions can be produced by allowing more time for patient care (Öner, 2014:95). Moreover, through telemedicine, information can be accessed at any desired time and from any desired location, recovery periods are shortened, undue use of drugs is minimized, savings from patient and hospital costs are made, and patients can get more information on their ailments via sites prepared specifically for them (Altın, 2008:81).

Some problems can be faced in telemedicine applications, such as the necessity to develop standards for hardware and software which will ensure that different components work systematically and smoothly, achieving sustainability of telemedicine programs, unclear business objectives and strategic plans for applications thereof, the lack of legislation on the protection of personal data and information in developing countries, and failing to eliminate the idea that face-to-face patient-doctor communication is the most reliable method in this regard (Burney et al., 2010:28).

m-HEALTH

Technological changes and advancements also encompassing the field of healthcare services give way to the transformation traditional healthcare service provision models and significant changes in patient expectations. One of such technologies are mobile technologies (Arslan and Demir, 2017:18). Individuals who use devices such as smart phones and tablet computers are now able to monitor and follow information on how many steps they have taken, what their heart rate is or their regular medicine schedule (Güler, 2015:83).

Mobile applications in healthcare came to the light for the first time in 1920 when it was written in the "Radio News Magazine" that "a doctor would be able to examine a patient remotely". Mobile applications progressed in time, with monitoring the vital signs of astronauts in space in 1960 and the first heart rate monitor being invented by Gregory Lekhtman in 1975. With the invention of smart phones in the 2000's, mobile health applications were also developed for such devices, and during the 2010's, integrated applications developed by the manufacturers of smart phones and smart phone compatible medical devices also started to be manufactured and marketed. Currently, along with portable medical devices, wearable technologies have also entered our daily lives and found a wide area of utilization in the field of medicine (TÜSİAD, 2016: 31,32).

In its lexical meaning, mobile stands for "moving, portable"; and the concept of mobile health is defined as healthcare services that are moving, portable and allow remote treatment. In the m-Health workflow involving devices designed for healthcare purposes, networks are utilized in order to optimize applications and healthcare services. Mobile health services encompass numerous sub-components ranging from those related the stage where the patient goes to a hospital to examinations and preventive healthcare services required for remote diagnosis and treatment. Examples for such sub-components are mobile health services (ambulance, mobile health units), mobile health applications (apps developed for smart phones, tablet computers, PCs etc.) and home care services (Şimşek, 2016:43).

Mobile health reduces the costs of healthcare services, support health research and studies and improves the outputs. m-Health applications can be utilized in many fields including the treatment of diabetes, asthma, obesity, cigarette addiction, depression or for stress management (Kumar et al., 2013:228,229).

The conveniences provided to patients through mobile health technologies can be summarized as follows (Aytı, 2014):

- With mobile applications, patients live with a better connection to their health and wellbeing.
- Applications which can be downloaded to devices enable patients to

automatically upload and download health data and information with the help of sensors.

- Mobile applications enable patients to access health data and information from any location.
- Access conditions of applications using the GPS or camera functions of mobile devices can be better.

One of the mobile applications being developed by the National Health Service, My Medication Passport aims to reach the highest rate of use in the United Kingdom. This application will be easily accessible through android and IOS devices. With this application, patients will access general health information with ease, and be informed about which medication should be taken in what doses, allergies, vaccination schedules and healthcare institutions in the United Kingdom (Ceylan, 2013).

With HealthTap used in the USA a doctor is able to visually see his/her patient, carry out an examination within certain restrictions, receive images and make a diagnosis. This application, which also provides appointment options, is not free of charge. As of 2014, this network contains 62,000 doctors.

eNabız, which is Turkey's first personal health platform, was established in 2015 by the Ministry of Health. With this application containing personal health records, individuals can access their medical data via smart phones, tablet computers and the internet and authorize such data for the doctor's consideration.

The Social Security Institution (SGK) has a mobile application called "Hastaneni Seç, Doktoruna Ulaş" (Choose your hospital, reach your doctor) where individuals can see additional prices at hospitals, their locations, the contracted specialty areas of doctors and their workplaces, calculate additional fees to be paid after treatment and be informed of which hospitals provide what medical services. SGK also has other mobile applications titled "SGK Mobil kitaplık" (Mobile library), "SGK Çocuk" (for children, SGK TV, Service Scheme 4/A and "Ne Zaman Emekli Olabilirim?" (When am I entitled to pension rights?) (TÜSİAD, 2016:42-68).

CONCLUSION

Today, technology advances rapidly and thanks to such rapid advancements businesses and institutions become more competitive and are able to provide more efficient and higher quality services. Sectors and industries such as the military and health are greatly impacted by technological advancements. Particularly the health sector, being a technology-intense industry, has now achieved facilities to provide more effective and cost-efficient services.

Technological advancements also affect information and communication systems. Thanks to health informatics, the provision of faster, more cost-efficient and higher quality healthcare services is now enabled. In addition to this, the reuse of medical data belonging to patients and access to such data at any time and from any place is enabled through such advancements.

With e-Health, telemedicine and m-Health, which are part of health informatics applications, the situation of patients can be remotely monitored and individuals are able to access their own health data and find answers and solutions to their questions and problems and particularly the elderly can receive home care services. Moreover, individuals are also able to access their health data both within their countries and

abroad through the ability to transfer data between two separate locations.

REFERENCES

Akgün, S. (2007). Sağlık Hizmetlerinde Kalite Uygulamaları Nasıl Olmalı? SD Sağlık Düşüncesi ve Tıp Kültürü Dergisi, Sayı:4. http://www.sdplatform.com/Dergi/84/Saglik-hizmetlerinde-kalite-uygulamalari-nasil-olmali.aspx

Altın FG. (2008). Sağlık SektöründeBilgiTeknolojilerininUygulanması: İzmir Örneği. Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi. Isparta. pp.81.

Arslan ET. Demir H. (2017). Üniversite Öğrencilerinin Mobil Sağlık veKişisel Sağlık Kaydı Yönetimine İlişkin Görüşleri. Dokuz Eylül Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 18(2). 9 (2) 17-36

Ataç A. Kurt E. Yurdakul SE. (2013). An Overview to Ethical Problems in Telemedicine Technology. Procedia - Social and Behavioral Sciences 103:116– 121.

Aytı C. (2014). Mobil Sağlık Verileri [İnfografik]. http://www.tekdozdijital.com/sayilarla-mobil-saglik.html. Erişim:17.05.2018.

Baykal N. (2005). Değişen Dünya Tıp ve Teknoloji, Sağlık ve Bilişim Dergisi, https://www.sisoft.com.tr/haber/page? SYF=Detay&hb=1197Erişim: 17.05.2018.

Bayraktar E. Kaleli F. (2007). Sanal Gerçeklik ve Uygulama Alanları. Akademik Bilişim. Dumlupınar Üniversitesi, Kütahya. http://ab.org.tr/ab07/bildiri/160.pdf

Bayraktutan Y. Arslan İ. Bal V. (2010) Sağlık Bilgi Sistemlerinin Hastane Performanslarına Etkisinin Veri Zarflama Analizile İncelenmesi: Türkiye'deki Göğüs Hastalıkları Hastanelerinde Bir Uygulama, Gaziantep TıpDergisi, 16(3):13-18.

Burney MA. Mahmood N. Abbas Z. (2010). Information and Communication Technology in Healthcare Management Systems: Prospects for Developing Countries. International Journal of Computer Applications. 4 (2):27-32.

Bülbül H. (2003). Rekabet Üstünlüğü Sağlamada Ürün ve Süreç Yeniliği: Bilişim Teknolojileri Uygulaması. Selçuk Üniversitesi Sosyal Bilimler Enstitüsü. Doktora Tezi. Konya. pp.121.

Chen C. (2006). Factors Affecting Physicians' Use of Medical Informatic System. University of South Carolina Department of Health Services Policy and Management Doctor of Philosophy Thesis, U.S.A. s.11.

Ceylan B. (2013). İngiltere Ulusal Sağlık Merkezi'nden Yeni Bir Mobil Uygulama. http://www.tekdozdijital.com/ingiltere-ulusal-saglik-merkezinden-yeni-bir-mobil-uygulama.html. Erişim: 17.05.2018.

Darkins A. (2014). The Growth of Telehealth Services in the Veterans Health Administration between 1994 and 2014: A Study in the Diffusion of Innovation. Telemedicine and e-Health 20(9):761-768.

DeKastle R. (2009). Telesurgery: Providing Remote Surgical Observations For Students. Association of Operating Room Nurses. AORN Journal, 90(1): 93-101.

Dikmetaş E. (2004). Elektronik Bilgi Sistemi ve Çalışma Yaşam Kalitesi: Ankara Üniversitesi Tıp Fakültesi Hastaneleri İbn-İ Sina Hastanesi Çalışanlarına Yönelik Bir Araştırma. Hacettepe Üniversitesi Sağlık Bilimleri Enstitüsü Doktora Tezi. Ankara. pp.46.

Dilek S. Özdemir S. (2014). Sağlık Hizmetleri Sektöründe Kablosuz Algılayıcı Ağlar.

Bilişim Teknolojileri Dergisi. 7(2):7-19.
e-Health Europe (2007). Italy's National Electronic Health Programme. http://www.ehealtheurope.net/Features/item.cfm?docId=201. Erişim: 17.05.2018
e-Health Europe (2007). Telemedicine growing in use in Germany. http://www.ehi.co.uk/news/primary-care/2787. Erişim: 17.05.2018.
Eysenbach, G. (2001) What is e-Health? Journal Medical Internet Research 3(2):e20.
Gong, X. (2008). eHealth: A New Economic Growth Point, A New Gold Mine", United Nations Public Administration Network, http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan031130.pdf. s.15.Erişim:17.05.2018.
Güler E. (2015). Mobil sağlık hizmetlerindeoyunlaştırma.AUAd 1(2): 82-101
Güler NF. Übeyli ED. (2002). Theory and Applications of Biotelemetry, Journal of Medical Systems, 26(2):159-178.
Hawk P. (2011). Teleradiology: Friend or foe? What imaging's now indispensable partner means for radiology's future and for the quality of care. Journal of Health Care Finance, 37(4), s.71.
Hicks JO. (1993). Management Information Systems: A User Perspective. 3rd.Edition.West Publishing Co. New York. Pp.2
Işık O. Akbolat M. (2010). Bilgi Teknolojileri ve Hastane Bilgi Sistemleri Kullanımı: Sağlık Çalışanları Üzerine Bir Araştırma. Bilgi Dünyası. 11(2):365-389.
Işık AH. Güler İ. (2010). Teletıpta Mobil Uygulama Çalışmasıve Mobil İletişim Teknolojilerinin Analizi. Bilişim Teknolojileri Dergisi. 3(1):1-10.
Jung, M. (2008) "From Health to e-Health: Understanding Citizens' Acceptance of Online Health Care", Luleå University of Technology, Department of Business Administration and Social Sciences, Division of Industrial Marketing, eCommerce and Logistics, Doctoral Thesis, Sweden, s.7-10.
Kawamoto K. Houlihan CA. Balas EA. Lobach DF. (2005). Improving Clinical Practice Using Clinical Decision Support Systems: A Systematic Review Of Trials To Identify Features Critical To Success. BMJ. doi:10.1136/bmj.38398.500764.8F. pp.1-8.
Kavuncubaşı Ş. Yıldırım S. (2010). Hastaneve Sağlık KurumlarıYönetimi. 2.Baskı. SiyasalKitabevi. Ankara. s.434.
Kayabaşı Y. (2005). Sanal Gerçeklik ve Eğitim Amaçlı Kullanılması. TOJET. 4 (3): 151-158.
Köksal A. Esatoğlu E. (2005). Ankara İlindeki Üniversite ve Özel Hastanelerde Kullanılan Elektronik Hastane Bilgi Sistemlerinin Analizi. Ankara Üniversitesi Dikimevi Sağlık Hizmetleri Meslek Yüksekokulu Dergisi. 7(1):53-65.
Kumar S. Nilsen WJ. Abernethy A. Atienza A. Patrick K. Pavel M….and Swendeman D. (2013). Mobile Health Technology Evaluation. Am J Prev Med, 45(2), 228-236.
McCloy R. Stone R. (2001). Virtual reality in surgery. BMJ. : 323. 912-5.
Mendi O. (2012). E-Dönüşüm Sürecinde Sağlık Bilişimi Uygulamalarının Yeri ve Hastaların E-Sağlık Uygulamaları Kapsamındaki Tutumlarını Belirlemeye Yönelik Bir Araştırma. Marmara Üniversitesi Sosyal Bilimler Enstitüsü Yüksek Lisans Tezi. İstanbul pp.76-99.
Mutluay E. Özdemir L. (2014). Sağlık Bilişim Sistemleri Kapsamında Hemşirelik Bilişiminin Kullanımı. F.N. Hem. Derg. 22 (3):180-186.
Odabaş H. (2009). Bilgi Kaynaklarının İşletiminde Elektronik Doküman Yönetimi ve Elektronik BelgeYönetimi Sistemlerinin Rolü. Akademik Bilişim, Harran Üniversitesi, Şanlıurfa.

Ömürbek N. Altın FG. (2009). Sağlık Bilişim Sistemlerinin Uygulanmasına İlişkin Bir Araştırma: İzmir Örneği. SDÜ Fen Edebiyat Fakültesi Sosyal Bilimler Dergisi. Sayı:19:211-232.

Öner F. (2014). Sağlık Bilişimi, Türkiye'de Sağlık Bilgi Enformasyon Sistemleri Ve Dijital Hastaneler. Beykent Üniversitesi Sosyal Bilimler Enstitüsü. Yüksek Lisans Tezi. İstanbul. pp.5-95.

Pagliari, C. (2005). e-Health. Open Clinical Knowledge Management for Medical Care, http://www.openclinical.org/e-Health.html .Erişim: 17.05.2018.

Pare G. Sicotte C. Poba-Nzaou P. Balouzakis G. (2011). Clinicians' Perceptions of Organizational Readiness For Change In The Context of Clinical Information System Projects: Insights From Two Cross-Sectional Surveys. Implementation Science 6(15):2.

Raymond B. Dold C. (2002). Clinical Information Systems: Achieving the Vision, Kaiser Permanente Institute for Health Policy. 1-35.

Sainfort F. Jacko FA. Edwards PJ. Booske BC. (2007) Human-Computer Interaction: Designing for diverse Users and Domains (içinde) Human-Computer Interaction In Healthcare. (Ed: Sears A., Jacko SA.). CRC Press.138-152

Sur H. (2012). Sağlık BilişimiveTeknolojilerininMeslekleşmesi: Ülkemizde Durum. Sağlık Düşünceve Tıp Dergisi. Sayı: 23:44-45.

Sümen E. Zayim N. Saka O. (2005). Laboratuar Bilgi Sistemi (LBS) Uygulaması: Benimseme ve Kullanıcı Memnuniyeti. 2. Ulusal Tıp Bilişimi Kongresi.pp.102-107.

Şimşek F. (2016). Sağlık Turizmi Kapsamında Yaşlı Turizmi Ve Mobil Sağlık Hizmetlerinin Uygulanabilirliği ve Önemi Üzerine Bir Araştırma. Acıbadem Üniversitesi Sağlık Bilimleri Enstitüsü Yüksek Lisans Tezi. İstanbul. pp.43.

Tan J. Cheng W. Rogers WJ. (2002) From Telemedicine to e-Health: Uncovering New Frontiers of Biomedical Research, Clinical Applications & Public Health Services Delivery, Journal of Computer Information Systems, 42(5):7-18

Tapan B. Yıldırım N. Alıcı S. (2015). Klinik Bakım Haritalarının Bakım Sürecinin İyileştirilmesine Etkisinin İncelenmesi: Bir Hastane Örneği. FNG & Bilim Tıp Dergisi. 1(1):18-27

Turkey Health Information System Action Plan. (2004). Türkiye Cumhuriyeti Sağlık Bakanlığı Bilgi İşlem Daire Başkanlığı. Ankara. pp. 19-26.

TÜSİAD (2016). Sağlığa Yenilikçi Bir Bakış Açısı: Mobil Sağlık Raporu. Yayın No: TÜSİAD-T/2016-03/575.

Yıldırım P. Arıöz U. (2005). PACS (Picture Archiving and Communications System) Analizi. 2. Ulusal Tıp BilişimiKongresi/ Medical Informatics '05 Turkey. 153-159.

Young-Hughes S. Simbartl, LA. (2011). Spinal cord Injury/Disorder teleconsultation outcome study. Rehabilitation Nursing, 36(4): 153-172.

Yücel G. (2010). Sağlık Bilişim Sistemleri Etkinliğinin Bulanık Modellemesi. İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü Doktora Tezi. İstanbul. pp.39

Vladzymyrskyy AV. (2004).Our experience with telemedicine in traumatology and orthopedics. Ulus Travma Derg; 10(3):189-191.

World Health Organization (WHO) (2010). Telemedicine: Opportunities and developments in member states, Global Observatory for A Health Series, WHO Press, Switzerland, 1-93.

World Health Organization (WHO) (2016).Global diffusion of eHealth: Making universal health coverage achievable. (içinde) eHealth foundations. 11-21.
http://apps.who.int/iris/bitstream/handle/10665/252529/9789241511780-eng.pdf?sequence=1. Erişim: 17.05.2018.

Chapter 94

Health Economics and Economic Evaluation Techniques

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INTRODUCTION

Economics is a branch of social science which is within the scope of social sciences and which studies human economic behaviour; production, apportionment, distribution, trade, consumption of wealth; and services sectors. Economics studies how to meet infinite human needs with finite resources and strives to redress balance between scarce resources and infinite needs. Its aim is to minimize problems, develop good policies and maximize the benefits gained from daily endeavours, ensure all the resources be used in the most efficient and effective way and fulfill as many wishes as possible (Ak, 2015).

Economics is divided into branches as macro, micro, positive and normative economics. Macroeconomics involves studies on macro-scale magnitudes such as inflation, economic growth and foreign trade while microeconomics studies the behaviour of individual decision-making units such as firms, manufacturers and consumers. Positive economics rather strives to understand what the case is and therefore does not involve economic value judgements. Normative economics on the other hand focuses on what is ideal and involves value judgements. A sub-discipline of economics that is within its application area is health economics (Ak, 2014), Ak, 2016).

Economics is interested in limitation. People cannot do everything they want or have everything they want to possess. The aim of economics is to work on this problem/dilemma and produce the best solution (Normand, 1993; Parkin, 1990; Lipsey, 1992; Browne, 1987; Normand, 1991; Mills and Gilson, 1998).

Especially in developing countries, a substantial part of resources allocated to healthcare services is devoted to hospitals. Also, hospitals use approximately half of the total healthcare expenditures and employ a very large part of highly educated personnel (Newbrander, 1992; Mills, 1990, Part-I; Mills, 1990, Part-II). The large majority of healthcare personnel in Turkey work in inpatient care institutions (Uz, M.Hulki 2007). Hospitals are the most important consumers of the general healthcare system. This is the reason why administrators of hospitals and even clinics need to have knowledge of basic economy and health economics, in order to use allocated resources efficiently and effectively.

HEALTH ECONOMICS

The common goal of all the healthcare systems is to provide the best service to the communities under their responsibility within the limits of available resources. However, health technology which has been developing with dizzying speed and costs that are brought about by new and expensive medications prove challenging for all the

healthcare systems in the world. Also, the increase in life expectancy and proportionately the continuous increase in the need for necessary resources for the treatment of chronic diseases make it inevitable for the decision-making mechanisms to work in a more scientific and transparent fashion. Accordingly, health economics is using science as a tool that supports decision-making mechanisms in an increasingly prevalent manner.

Health economics is a specialized discipline and application area of economics. Health economics is a scientific discipline that aims to study how all the resources such as healthcare work-force, capital, buildings, medical devices etc. that are allocated to the healthcare sector can be utilized in the most effective and efficient manner in order to provide healthcare service in the highest level and how these healthcare services can be best distributed for the society. Health economics aims to show the way to choices oriented towards deriving the highest possible returns out of the available resources. Economic evaluation methods aim to evaluate various health programs and technologies in terms of cost and -efficacy, compare with existing alternatives and ensure the optimal health return for the society. For this, there needs to be a common evaluation unit that makes it possible for different health programs to be compared. (Fidan, 2007). One of the most important reasons behind the development of health economics as a separate discipline is the increase in pressure of the health sectors from all societies on the resources and that a non-negligible part of resources are being used in this sector both in developed and developing countries (Ak,.2016-43).

Despite the fact that people wish to live in a better health status and/or longer; the limitations in the healthcare area is gradually becoming more and more apparent. In no country of the world can a health policy provide all the healthcare services demanded or needed. This is why it is necessary to find and prefer the option that has the best cost-benefit ratio.

The coming of quality-related evaluations to the fore in all fields has also raised the importance of healthcare services. This is because healthcare services value "human capital" with regard to both the individual and the society. In parallel to this increase in significance, "health economics" is in development as a sub-discipline which is a blend of the fields of economy/business and healthcare services. The evaluation of services provided in terms of cost/efficiency/efficacy enables more service to be provided with a specific resource allocated to healthcare services and/or a specific service to be provided with less resources. When the scarcity of resources in Turkey that will enable economic development is reckoned with, it becomes clear that healthcare services provided should be evaluated with the perspective of health economics. The fact that sufficient improvements cannot be achieved despite discussions on healthcare reform constantly occupying the agenda raises the importance of the issue. Elevation of a society's health status is related more to the rational use of resources and the country's socio-economic circumstances than to the magnitude of resources allocated to this area. Taking this fact into account in evaluations related to healthcare and utilizing the analytical methods put forth in health economics would be instrumental in solving healthcare issues in countries.

Although the relationship between money and health is considered a taboo by some, it is not realistic to ignore this relationship in the process of improving societal health. The specification of the portion that governments allocate to healthcare from the

general budget is a political process and determines the healthcare system's spending and investing power in health. As for health economics, it aims to choose the investment and service deliveries that will enable the societal health to be brought to the highest level. Health economics in essence is nothing but the science of utilizing limited resources in the best way just as the other branches of economics, beyond the many meanings and purposes attributed to it (Ak, 2016-61)

BASIC DOMAINS OF HEALTH ECONOMICS

The rapid and constant increase in healthcare expenditures has been an important problem of every society after the 1980s and this is why prioritizing the use areas of these resources and analysing the forms and results of the utilization of these resources have gained importance. Health economics in general intends to show the way to decision-makers while making selections and aims to provide scientific data based on evidence in determining these resources' priorities of usage.

Within this scope, the basic domains of health economics are listed as:

-Amount of resources that are used in providing healthcare services,

-Efficient use of resources,

-Analysis of demand and supply in healthcare services,

-Evaluation of the providing and financing of healthcare services in terms of equality and fairness,

-The use of economic evaluation techniques,

-Measurement of health etc. (Ak, 2016-34)

Healthcare expenditures have reached considerable proportions in all societies and the extent of these expenditures, healthcare programs, healthcare institutions and their distribution to various segments of the population have become some of the most important endeavours of health economics. In order to make evaluations on the use of resources, it is primarily necessary to examine the total amount of these resources and the distribution between healthcare service providers and their functions. The 2018 Ministry of Health budget is 71.497 million TRY: 37.914 of which is the central administration budget while 33.583 is working capital budget. According to 2015 data, it is stated that Turkey's total healthcare expenditures are 60 billion US dollars. In Turkey, according to the year 2016, the ratio of total healthcare expenditures to GDP is 4.6%. The share of current healthcare expenditures within the GDP is 16.9% for the USA, 12.1% for Sweden, 11.2% for Germany, 11.1% for France, 9.9% for England, 8.4% for Greece and 4.3% for Turkey (Sağlık Bakanlığı, 2018-5, 233).

In this day and time with the rise of information societies, individuals with higher levels of education and better health is gaining more significance. From the aspect of other socio-economic developments, having better education and health has gained importance. The "human capital approach" that developed in recent years has brought a different perspective to issues of economic growth/development. With this approach, it is shown that the basic reason for the growth rate differences between countries is the variances between investments made on human capital (Schultz, 1971-24). In terms of socio-economic development theory, human capital which is evaluated as a factor of personnel infrastructure has a key importance. In other respects, expenditure oriented towards personnel infrastructure which constitutes the subject matter of health economics exhibits characteristics of consumption with regard to individuals while it

has the characteristics of investment with regard to society (Erkan, 1994-27). When healthcare services and health in general are addressed from the viewpoint of information society, this bidirectional relation occurs in the following way: while the health sector gradually becomes more important as services provided to the individual, technological developments render the services provided in this area more complicated. On the other hand, the importance of healthcare services as investment is gaining importance. Depending on these two dimensions, health economics is developing as a sub-discipline.

Healthcare services are gaining importance and more economic resources are being allocated to this area gradually. Both from the economic aspect and from the aspect of healthcare services becoming more widespread, it is imperative that care be taken for the effective usage of these resources. This particular imperativeness has developed health economics as a sub-discipline gradually growing in significance. Health economics is presented as a belated branch of economics since it has arisen as an autonomous discipline beginning only from the 1960s. Health economics has more of a micro-level perspective since it studies the behaviours of patients and physicians, health status of the population or the effects of health expenditures on economic growth. (D'ıntıgnano, Béatrice Majnoni, 2001-3). That being said, the sector is also analysed from a macro perspective.

One of the main factors that play an important role in the development of health economics is that the health sector is increasingly using more resources. These can be listed primarily as:

· That demand for healthcare services are increasing in line with the increase in health consciousness,

· That societies are becoming older as a result of the lengthening of life expectancy,

· That the technology used in health sciences are developing and gradually becoming more expensive,

· The decrease in contagious diseases and the increase in long-term chronic diseases.

The increase in spending that these reasons cause has raised the alternative costs of resources used in the health sector. With the increase in alternative costs, the answer to the question whether resources used in the healthcare field are utilized effectively has naturally become more important. All in all, a value such as human life is at stake, which cannot be measured in monetary terms. However, if it is taken into consideration that the fundamental issue here is not "whether human life is worth preserving" but "with which method can the most lives be saved" or "by allocating resources on which areas can healthier lives be ensured"; the logic of approaching health services with economic evaluation methods will come into view more saliently.

Resources used in the health sector can be grouped as: members of the health profession such as physicians, nurses, health technicians, i.e. "healthcare professionals"; "medical devices" such as ECG device and X-ray machine; "medical consumables" such as medicine and medical dressing materials; and "healthcare buildings" such as community clinics and hospitals. Apart from these, another resource that hold more significance compared to other sectors is "time". Time cannot be stopped, fast forwarded, reversed, used twice, stored or purchased with money and it gets drained

away even when not used. Time is something that is raced with for health personnel while it is a delicate resource between life and death for patients. Healthcare services need to be provided more efficiently and in time; and thus, in order to ensure efficacy in resource utilization, the resources need to be used at the optimum level. This optimality does not mean the use of resources in full capacity. This is because of the fact that demand with regard to time is indefinite in healthcare services and an emergency case can be encountered at any moment. For this reason, keeping idle capacity so as to meet emergency service demands is a requisite originating from the nature of healthcare services.

Studies related to efficiency in healthcare services are not conducted on the sectorial level but on the micro level (Akın, 1985-8). The fundamental reason for this is the fact that the output secured in healthcare services is not in a homogeneous structure and that phenomena of concern show great variance according to different hospitals and even different services in the same hospital.

The configuration brought about by the information society enables easier access to information, even in fields requiring expertise. This will increase the frequency of individuals turning to physicians for help. Therefore it can be expected that the demand for healthcare services as an economic sector will gradually increase. The demand for healthcare services exhibits much different characteristics than the demand for other commodities and services in the economy (Mazgit, 1998-61-70). The demand for healthcare services has caused an increase in the portion of health expenditures within total expenditures in virtually all countries in the last 20-30 years. Before anything else, in normal circumstances when there is a demand for a commodity and service, the demander has a certain knowledge on the benefit to be derived. Conversely in healthcare services, the demander does not have a clear idea about the benefit to be derived. In other words, there is asymmetric information. On the other hand in normal circumstances, the demand is not taken into account by the market when there is no purchasing power. In essence, demand is out of the question as long as it is not supported by purchasing power. Whereas in healthcare services, a demand can still arise even when there is no purchasing power by favour of insurance companies, social security or welfare systems. In this increase in spending, the developments in medical technology have an important contribution (Çetinkaya, 1995-33).

While all these developments cause denser use of technology/capital in healthcare services, they also result in considerable increases in the costs of healthcare services. This increase in costs is also reflected in prices. Indeed, while the prices of tangible industrial commodities have been decreasing on a regular basis since the World War II, the inflation-adjusted prices of basic information commodities have tripled. (Drucker, (2001). This increases the importance of the healthcare services as a consumption factor and the health sector as a sector.

T.W. Schultz considers healthcare services and facilities at the forefront of human capital investment. (Schultz, 1966-414). Other writers who have contributed to the human capital approach evaluated healthcare services as human investment since it increases work efficiency by preserving and improving the human working ability. For instance, according to S. J. Mushkin, resources such as labour and commodities used in healthcare services are a part of health investments. Expenditures made for this purpose preserve operating power and pay dividends for years on end. Health investments

ensure savings from health spendings in the future by preserving operating power and reducing diseases that are to emerge in the future. Human health capital stock which develops in this way comprises an important part of human capital (Mushkın, 1975-390). Accordingly, healthcare services and investments which are to augment health capital stock assume a pivotal function by enabling human capital to increase. The ultimate goal of all countries is to ensure economic growth and thereby enhance public welfare. Healthy longevity is not only a prerequisite for prosperous living but also the most important objective at individual level. Conventionally, partial indicators of the level of development are aggregated in four groups (Penouıl, 1972-7). These are: life standard indicators, comparative indicators concerning social structure, comparative indicators concerning production and indicators related to foreign commerce. Indicators concerning the standard of living are grouped as: the level of income per capita, the level of consumption of foodstuffs and the state of health conditions. In this context, in order to decide whether a country is developed or not, the state of health conditions needs to be taken into account (UNDP, 1996-106).

THE DEVELOPMENT OF HEALTH ECONOMICS IN THE WORLD

In 1931, the Bureau of Medical Economics has been established by the American Medical Association. The chief goal of this bureau is to train medical professionals on issues concerning economics. Milton Friedman between 1929-1936 and Selma Mushkin in 1958 have striven to define the field of health economics, drawn attention specifically to the rapidly emerging medical technology as well as the corresponding issue of costs, and have systematically tackled issues such as market and prices in healthcare for the first time. Mushkin has delivered the opinions that view healthcare as an investment for the first time in another paper she has written in 1962 and this study has later been the basis of a study published by Grossman in 1972 which would later be accepted as one of the most important works on health economics. Nonetheless, the turning point for health economics is accepted as the paper written by Kenneth Arrow in 1963. (Ak-52) Arrow has investigated the subject of indefiniteness which is one of the most important features of the health sector and discussed the reasons why the rules of the free market economy do not apply to the health sector. Until the 1980s, the adaptation of concepts and techniques of economics to the health sector has been the subject of many publications by being intensively discussed and the theoretical framework of health economics has taken shape. After the 1980s, especially through developments made in the area of health measurements and with coming of complex and controversial concepts such as QALY (Quality-Adjusted Life Years) and DALY (Disability-Adjusted Life Years) to the fore, an upsurge has occurred in the number of studies and publications concerning virtually all aspects of health economics.

In Turkey, the initial entering of concepts related to health economics into the agenda has occurred in 1989 with the Master Plan Study prepared by Price Waterhouse for the State Planning Organization. For the first time with this plan, concepts such as the separation of efficiency, quality, service provision and financing as well as home market has been brought to the agenda. For the first time in 1993, Turkey's most comprehensive preliminary health policy document has been published and treated in detail as a reform package that separates service provision and financing, secures the whole population with general health insurance, where hospitals have the autonomy to compete with one another in a home market and which is based on family practice. In

the syllabus of Hacettepe University's School of Health Administration, health economics has been included as a course. Between the years of 1996-1998, comprehensive studies were conducted on health expenses and the magnitude of resources allocated to healthcare services and how these resources are distributed according to their places and functions have been put down to the fact. Studies that can be put into comparison with OECD (Organisation for Economic Co-operation and Development) have followed these studies in the 2000s. National Health Accounts which is compatible with OECD System of Health Accounts and National Disease Burden and Cost-effectiveness studies, two important studies that have contributed to the development of health economics in Turkey have been conducted by the lecturers of health administration departments of Hacettepe and Baskent Universities and completed in 2003 (Ak, 2016-53-56). The results of both of the studies have provided important data to the ones who determine health policy in a phase when reform movement in health has gained momentum and when suggestions are concretely implemented. The National Health Accounts Study, for instance, has indicated that resources set aside for health in Turkey are at much higher levels from what is earlier known in comparison to its development level, therefore using available resources more effectively and efficiently should be the primary policy.

HEALTH ECONOMICS STUDIES IN TURKEY

Turkey has entered a new period called "Health Transformation" beginning from 2003. In this period, one of the areas in which concepts related to health economics is discussed most intensively has been medication expenditures. Within the framework of generally acknowledged government spending retrenchment policy, important changes have been made on medication policies at the outset. (Ak, 2016-57). In Turkey, health economics has not developed in parallel with global developments and the utilization of concepts in health economics has entered Turkey's agenda with approximately 40 years of delay. Starting to use health economics with the aim of decision-making/policy-formulation can both play a role that enhances the quality and quantity of data and help speed up the development of health economics capacity in the country. Turkey's health economics system is as is seen in figure1.

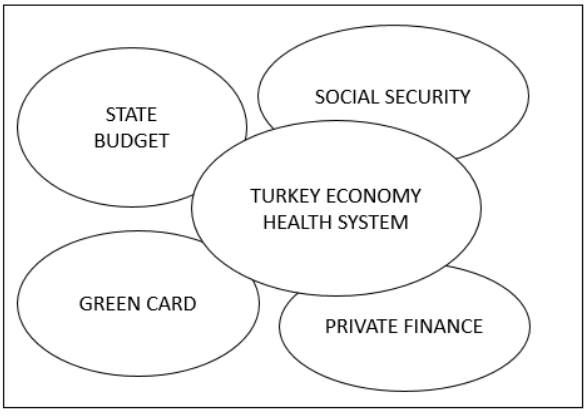

Figure 1. Turkey's Health Economics System

The gravitation towards general increase in health expenditures and lack of resources are common problems of every country no matter how high their level of affluence. Among the most mentioned reasons behind this increase, we can enumerate the increasing demand for healthcare services in line with the development of public health consciousness, the service provision of newly developed medications (and of other medical technologies) and increasing research costs (Ak, 2016-59). The responsibility of decision makers in the national healthcare system is to utilize the limited resources available to them in the best way so as to bring the health levels of the community of their incumbency to the highest possible level within what these resources allow. In this direction, it is necessary to develop and apply transparent and reliable scientific methods in the process of developing and prioritizing national health programs and determining the optimal healthcare provision packages. The science of health economics offers this procedural framework to decision makers (Ak, 2016-60).

ECONOMIC EVALUATION

Economic evaluation is the comparative analysis of alternative activities in terms of costs and outcomes. That is to say, the primary duty of any economic evaluation procedure is to determine, measure, evaluate and compare the costs and outcomes of available alternatives. In this context, economic evaluation in healthcare services can be defined as "the evaluation of alternative treatment options on the basis of resources used and results obtained". Put another way, economic evaluation in healthcare services is "the process of allocating scarce healthcare resources available so as to obtain the best outcome". Economic evaluation in healthcare services strives to find answers to the following questions:

1-What is the cost of providing a particular healthcare service or a specific treatment method?

2-What are the benefits derived from the service or treatment in question?

3- Is this healthcare service or program worth doing when compared with other activities that can be carried out using the same resources?

4- Is there any use in using resources allocated to healthcare services in this particular way as opposed to another way?

As is seen, in order to carry out economic evaluation, firstly there needs to be alternatives that can be compared to one another and the costs and benefits of these alternatives need to be evaluated and compared using viable techniques. In addition, when economic evaluation is being carried out, the alternative interventions should be analyzed not only with regard to individuals and organizations but also the whole society. For instance, in a vaccination program for epidemic roseola and epidemic parotitis diseases, the vaccine, the application of the vaccine and other expenses for the treatment of side effects have been taken as costs. As for benefits, income losses that are caused by acute illnesses when vaccine programs are not applied, treatment costs of the injured as well as the special training and care expenses of the injured have been estimated.

There is use in analyzing these two concepts since the chief aim of economic evaluation is to provide information to administrators by evaluating alternative health programs in terms of criteria such as efficiency and effectiveness in order to obtain the best output out of scarce resources. Data and/or information related to costs can be

utilized to make the most correct decision in activities such as budget preparation, accounting transactions, planning, putting a new service into practice and shutting down a service of a hospital or an entire hospital. (Normand C.1993-10). For instance, if a hospital is put into service with a large building and an excessive number of beds and/or if it is equipped with expensive technological devices in order to provide service to a demand higher than the potential demand, overall costs will increase since fixed costs will already be high and the hospital will start to lose money. Similarly, since each of them will have a particular fixed cost, more than one hospital which has been established in order to serve the same potential demanders will not work efficiently and will lose money. The solution can be decreasing costs by gathering these under a single roof (Le Grand et al., 1992).

Economic evaluation is the comparative analysis of alternative activities which are being applied or will be applied both on the basis of costs (inputs) and results (outputs) (Mills, 1988; Drummond, 1987; Robinson, 1993-670-673).

In evaluating healthcare services, knowledge of economics generally helps in three ways :

- Predicting the effects of changes to be made n application, strategy and/or policy (supply, demand, flexibility and market conditions are analyzed for this purpose)
- Comparing the need for healthcare services and the usefulness of services provided
- Calculating the costs and benefits of healthcare services.

The economic evaluation of healthcare services is used both in comparing different options in solving a problem and showing which problems need to be solved. While doing this, as noted above, the costs of the activities, results or both are taken into account (Newbrander, 1992; Mills 1988; Drummond, 1987; Robinson, 199670-673). In the calculation of costs, missed opportunities should always be borne in mind. Care should be taken when resources are calculated in their current monetary values in determining their actual values. Although the relationship between money and health is considered a taboo by some, it is not realistic to ignore this relationship in the process of improving societal health. The specification of the portion that governments allocate to healthcare from the general budget is a political process and determines the healthcare system's spending and investing power in health. As for health economics, it aims to choose the investment and service deliveries that will enable the societal health to be brought to the highest level. Health economics in essence is nothing but the science of utilizing limited resources in the best way just as the other branches of economics, beyond the many meanings and purposes attributed to it. Germany and North Korea has made health economics evaluations obligatory in national drawback systems. In other words, new treatments of which the cost utility has not been proven using scientific methods are excluded by healthcare systems from the scope of service provision (Ak, 2016-50).

THE UTILIZATION OF ECONOMIC EVALUATION TECHNIQUES

The purpose in the utilization of economic evaluation techniques as a rapidly developing field in recent years is to transfer scarce resources to the place where public benefit will be the highest by evaluating the benefits and costs of health technologies

that are developing and still being used (Ak, 2016-50). In conjunction with the utilization of economic evaluation techniques, the measurement of individual and societal benefits that healthcare services provide confronts us as the most topical and complicated area of health economics (Ak, 2016-51).

Another dimension of economic evaluation methods is that the medication effectiveness is evaluated with life quality scales in addition to conventional scales such as that of mortality and morbidity in cost-utility studies which are very frequently used in drawback systems. The measurement of the effect of health technologies provided to life quality presents a holistic approach that enables the evaluation of health with all of its dimensions as well as from the perspective of the patient. That most of the treatment options have the effect of alleviating symptoms rather than ensuring complete recovery as is the case for chronic diseases and the obligation to evaluate treatments such as chemotherapy with its possible toxic effects which are suggested for some diseases and which yields limited benefits have caused the importance given to studies on life quality to increase. For this reason, it is of paramount importance that studies on this subject become prevalent and that country-specific life quality scales be developed and used. In studies concerning health economics, health priorities of each country and individual differences in health choices should be taken into account without fail. (Ak, 2016-62)

NATIONAL HEALTH ACCOUNTS AND TRANSITION TO HEALTH ECONOMICS

Almost all of the health markets are neither entirely competitive nor completely monopolistic. While the private sector functions in health markets, there is an extensive government fraction and government health expenses. The fundamental logic underlying extensive state intervention is that none of the ideal assumptions of perfect competition markets function properly in health markets. According to economic theory, the state can and should function in the market in protecting public property, controlling monopolist power, directing externalities and dealing with information asymmetry. Also, the lack of information on the side of the service receiver in health markets, unethical practices defined as "Adverse selection and moral hazard" in health insurance, externalities that cannot be priced and paternalism (parens patriae) which can be defined as the consensus on the consumption of certain goods entail that state should play a role in these markets. Governments can use various policies and tools to affect the allotment of resource or income distribution. The basic categories concerning healthcare can be considered as selective commodity taxes and subsidies, public expenditures oriented towards healthcare, transfer programs and regulations (Ak, 2016-63)

ECONOMIC EVALUATION TECHNIQUES

Four fundamental economic evaluation techniques are applied in studies of economically evaluating healthcare services, alternative health programs or projects.

1-Cost Minimization Analysis,

2-Cost Effectiveness Analysis,

3-Cost Benefit Analysis,

4-Cost Utility Analysis.

The place of health economics and economic evaluation techniques in the science system is as shown in figure-2.

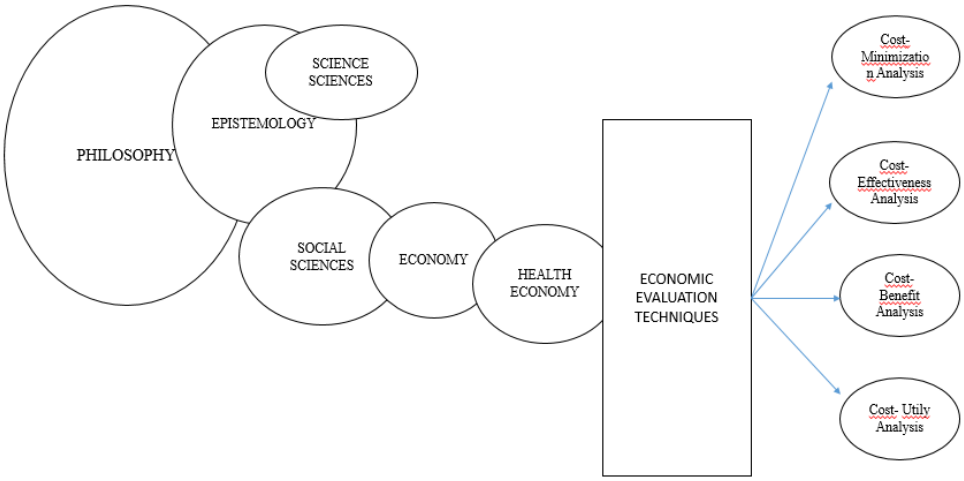

Figure 2. The place of health economics and economic evaluation techniques in the science system

COST MINIMIZATION ANALYSIS

Cost minimization analysis is based on the principle of choosing the least-weight option by calculating the costs of programs, proceeding on the basis of the assumption that alternative health programs or medical interventions produce the same result. It can be referred to in comparing two health programs, the results of which are known or assumed to be the same. Cost minimization analysis should be used in the case that the results of alternative programs are either the same or similar to one another. Since the results are the same, the efficiency of the lesser-weight alternative will be higher. However, it is ill-advised to take it as a success criterion that activities have been carried out with the least possible costs. In a study conducted in Canada's Alberta province, the immunization services provided by public health nurses and by the doctors in the province of Ontario have been analyzed so as to determine which service has the lower cost. Assuming that the results of the work are similar, a cost minimization analysis has been carried out. The average variable cost per fully vaccinated child has been ascertained as 67.7 US dollars in Ontario while it was 31.5 US dollars in Alberta. The comparison of the conventional method which defends staying in hospital for a while after treatments of hernia, haemorrhoids and varicocele and the method of discharge right after operation can be given as an example for cost minimization analysis (Uz, 2007). If the results are the same in practice, there is no difference between the techniques. However, as a matter of principle, it should be assumed that that there are no differences or that the differences are insignificant in complete economic evaluations to be carried out through cost minimization analysis (Çelik, 2013-280-281).

COST EFFECTIVENESS ANALYSIS

Cost effectiveness analysis which has been in use for more than twenty years and which is used to solve resource distribution problems is one of the tools which aids the determining of inefficient areas in the health program and which helps create better

programs. Cost effectiveness analysis is a technique which determines the most effective use of limited resources and in which the costs and effectiveness of the programs which are applied or which are to be applied in reaching a predetermined objective are compared. The determining of details in projects on which the investment decisions are made and through which alternative methods will the desired benefit will be derived is an especially important question confronting health administrators. At this point, factors of decision support system are required. It can be said that cost effectiveness analysis has been developed in order to facilitate decision making in cases where the targeted benefit can be obtained through different alternatives. While the costs are measured in monetary terms in cost effectiveness analysis; effectiveness is put down to the fact as varying output measurements such as life years gained or days spent without illness. In conducting the analysis, which cost are to be included and which benefits are to be scaled affect the result of the analysis.

In cost effectiveness analysis, the output (e.g. life-years gained) is common for all the options. Nonetheless, the success of programs in reaching this output may differ as well as the costs. In such a case while programs are being compared, proceeding on the basis of this example, unit costs per years gained are calculated. Unrelated options which produce the same result can also be compared in cost effectiveness analysis. For instance, coronary bypass surgery and hypertension treatment approach can be compared (Uz, 2007).

Cost effectiveness analysis involves the evaluation of gains of the alternative ways of realizing a specific objective (effectiveness) and resource output requirements (costs). The results are generally expressed as cost per effectiveness unit for every alternative. The alternative that has the lowest cost per effectiveness unit is the most effective and generally the preferred option because of economic efficiency.

In this method which is used in the health sector, while the costs are expressed in monetary terms; the common output arrived at via different routes is evaluated on the basis of measurable units such as lifespan gained and the decrease in the number of days with illness. Some of the criteria for effectiveness evaluation are as follows:

. Lives preserved (the number of deaths prevented),
. The number of persons protected from disease
. Years added to the length of life,
. Prevented complications,
. The number of people diagnosed,
. The number of people who are treated properly,
. Days spent without aching and symptoms.

Modern-day competitive environment continuously gives rise to a new technological development and innovation. While these innovations can be made through ensuring a number of new features and cost advantages, they also necessitate different consumables and reporting units in the case that an entirely different technological infrastructure is preferred.

Many factors such as problems encountered in transition phases, compatibility issues along with monetary costs, education deficiencies, infrastructure insufficiencies etc. can hinder the obtainment of the desired effect out of the new investment. Reporting procedures are needed in which such problems are tackled and analyzed from all aspects. That health administrators have a level of knowledge sufficient to carry out

and report cost effectiveness analysis should be considered important in terms of criteria such as cost control, performance, accountability etc. as well as being able to make long-term plans and measure benefits.

Cost effectiveness analyses are a point of consideration for lawmakers, public authorities and institution administrators in making decisions about health policies. Other compelling reasons may take effect and lead choices in adopting a certain policy even though it is not the most cost-effective option. For instance, policy makers may intend to target populations that are uninsured or where a chronic disease of a severe level exists. Sometimes the most cost-effective policy may not be politically and socially acceptable or even practicable (Ak, 2016-68-70; Çelik, 2013-281-284).

COST-BENEFIT ANALYSIS

The monetarily measurable value of various production factors which are spent by the hospital administration to provide healthcare service comprising its subject of activity such as capital, labor force, medical devices, medical systems, medical consumables, time, information, location and building is defined as financial cost. Costs in healthcare services are divided into three as direct, indirect and intangible costs. Direct costs consist of personnel salaries and expenditures made depending on the disease such as those on medication and medical consumables. Indirect costs include losses of work force or production encountered due to disease. Intangible costs are the pain and distress suffered by patients and families which are rather difficult to express in monetary terms. Economic benefits in healthcare services are also divided into three as direct, indirect and intangible benefits. Direct benefits are costs prevented through successful application of a health program. Indirect benefits on the other hand relate to the prevention of income and production losses that occur due to premature death or injury. Positive changes in the lives of patients or families due to the application of healthcare service program comprise the intangible benefits.

The expansion in the diversity and volume of healthcare services results in the constant expansion of the budgets of these services and the expansion of their share in the overall budget. Especially in the making and finalizing of government budgets, certain decision support mechanisms are used. It is seen natural that decision-makers demand certain numerical calculations and reportings on what kind of benefits are to be derived out of the allocated share when allocating the limited means of the budget. Cost benefit analysis is among the most important techniques that allow for comparisons in these reports.

Cost benefit analysis is the economic evaluation method that monetarily evaluates the costs and results of alternative health programs or treatment methods. In cost benefit analysis which can be referred to in cases where the outputs are different, outputs such as gained longevity and prevented complications are often put into common terms by being converted into a single monetary unit and compared with costs. It is mostly used to determine priorities in health and healthcare services. For instance, the expansion of a hospital's neonatal intensive care unit can be compared with the employment of a new surgeon to the hospital or the treatment of mental illnesses in the hospital or in the society.

One of the most convenient ways of measuring benefit is to ask the value of the benefit to the beneficiaries with questions such as "how much would you be willing to

pay or can pay for this benefit?" or other similar questions. This is called 'willingness to pay'. Also through human capital approach, the monetary values of the person or persons who are to make use of the benefit can be put down to the fact (Uz.2007).

The projected costs and the projected benefits to be ensured for the investment to be made on the basis of cost benefit analysis are digitized into monetary units. The lifetime benefits and costs attributable to a certain investment project are monetarily determined. Following this monetary conversion, the current values of benefits and costs are compared by discounting with a suitable rate of discount and decisions are made on the feasibility of the investment project. In this way, the comparison between the alternative project and spending means are aimed to be carried out according to more objective criteria.

Timely, sufficient and correct information is needed in order to be able to carry out a comprehensive cost benefit analysis. Among the information necessary for these analyses, data including income information pertaining to age and gender, participation in workforce and rate of unemployment pertaining to age and gender, life tables that will enable the calculation of survival likelihood into the retirement age, information regarding direct spendings in healthcare services and the distribution of death and morbidity rates pertaining to diseases in question prepared specifically for age and gender can be given. For instance, in the United States of America, the cost benefit analysis of the vaccination program for rubeola, epidemic parotitis and epidemic roseola as been carried out according to data from 1983. While the vaccine, the application of the vaccine and the expenses for the treatment of vaccine-induced side effects are calculated as costs; the income losses that the injured or deceased are to cause in cases where the vaccination program is not applied are calculated as benefits. As a result, the overall cost of the vaccination services is determined as 96.192.043 US dollars while the savings made by preventing diseases and injuries through vaccination is determined as 1.338.164.476 / 96.192.043 = 14,4:1. To put it in a different way, 14,4 dollars worth of benefits have been derived in exchange for 1 dollar of expenditure.

In contemporary approaches where the concepts of transparency and accountability are increasingly acquiring currency, the non-existence of these types of analyses is already out of the question. It would not be consistent with the contemporary approaches to administration that healthcare institution administrators who control considerable budgets due to their spending structure engage in certain analyses without having the knowledge of or applying these techniques (Ak, 2016-66-68). Although cost benefit analysis presents an advisable perspective, that it is very difficult to express all the results in the health sector in monetary terms hampers the feasibility of this method (Çelik, 2013-278-280).

COST-UTILITY ANALYSIS

Cost value analysis is also called cost utility analysis. Value is defined as the worth of enhancing health status and measured by the preferences of the individual or the society. In cost value analysis, the costs of the options and the results as in QALY (quality adjusted life-years) or DALY (disability adjusted life-years) that persons gain are put into comparison. Many economic analysts prefer the evaluation of results in terms of life quality rather than in monetary terms as is the case for cost benefit analysis. In cost value/utility analysis, the results obtained are expressed in terms of

"healthy days" or "cost per quality adjusted life-years" (Uz, M.H., 2007). Governments need to determine the resources they are to allocate to healthcare according to the priorities of the needs of the country. What is important here is how many healthy (of good quality) life years are gained by the healthcare services financed and provided. The measurements of these are made through determining what types of diseases and injuries cause losses in life years and what type of medical interventions, with how much resources and how successfully these problems are eliminated. The most important characteristic that separates this method from cost effectiveness analysis is that the effect of the medical intervention on the life quality of the patient is also taken into consideration. The cost of a program is compared hereby with the ameliorations in the health status depending on the program and this is measured by QALY (Quality Adjusted Life Years). The results are evaluated according to the cost per quality adjusted life year. In this way, the alternative treatment methods of a disease can be compared while different diseases and treatment methods can also be compared (Çelik, 2013-285-293).

EVALUATION AND CONCLUSION

The process that has arisen in conjunction with the information society produces much different effects in much different fields. Information society is bringing a human-centered approach to the agenda and by extension highlights quality at the level of society starting from the individual. The coming of quality-related evaluations to the fore in all fields has also raised the importance of healthcare services. This is because healthcare services value "human capital" with regard to both the individual and the society.

In parallel to this increase in significance, "health economics" is in development as a sub-discipline which is a blend of the fields of economy/business and healthcare services. The evaluation of services provided in terms of cost/efficiency/efficacy enables more service to be provided with a specific resource allocated to healthcare services and/or a specific service to be provided with less resources.

When the scarcity of resources in Turkey that will enable economic development is reckoned with, it becomes clear that healthcare services provided should be evaluated with the perspective of health economics. The fact that sufficient improvements cannot be achieved despite discussions on healthcare reform constantly occupying the agenda raises the importance of the issue. It is assumed that taking a general misevaluation into account should reveal the magnitude of the problem. When healthcare services come into question, a frequently made criticism pertains to the deficiency of resources allocated to healthcare services. However, the studies conducted reveal that the elevation of a society's health status is related more to the rational use of resources and the country's socio-economic circumstances than to the magnitude of resources allocated to this area. Taking this fact into account in evaluations regarding the healthcare sector and utilizing methods of analysis put forth by health economics such as Cost-Minimization Analysis, Cost Effectiveness Analysis, Cost Benefit Analysis and Cost Utility Analysis will make important contributions to solving health problems in countries.

The results that health programs will yield can be addressed under three main headings. The first is that health conditions of patients change, namely, it is desired that

they get better. This result or outcome is evaluated as effective and measured by life years gained or reduced days of disability. While these outcomes are evaluated as value (benefit-use-util) in cost value analyses, they are striven to be evaluated in terms of willingness-to-pay in cost benefit analysis. Secondly, apart from the benefits that health programs yield for the patient, another benefit is the information gained and making sure of the health statuses of individuals. Thirdly, savings can be made on resources through the evaluation of health programs and these saved resources can be used in other areas. (Çelik, 2013-276).

The common thread that is discussed in economic evaluation methods is how the evaluation of costs and benefits can be carried out. Another point at issue is the subject of marginal analysis. When carrying out economic evaluations in healthcare services, what needs to be decided upon is not transferring resources to a certain program but considering whether to allocate more or less resources to an already available program according to the means at hand. What needs to be evaluated in this situation is not the benefits or costs of the whole program but these incremental or marginal costs and benefits. Another point that needs to be taken into consideration is the necessity of including the costs of expenditures such as building, land and location on which the program will be actualized in the analysis. The main problem source in the evaluation of costs and benefits in healthcare services pertains more to the evaluation of benefits rather than that of costs. With regard to this, human capital approach and willingness-to-pay approach have been developed (Çelik, 2013-293). However, the evaluation techniques applied to the healthcare field have certain inadequacies. These are inadequacies such as: that the economic analysis is not based upon quality medical findings such as randomized clinical trials, the improper use of average costs especially in the estimation of savings made due to the estimation of hospital costs or the restricting of hospital stay, errors made in the consideration of the costs pertaining to families or volunteers, the inability to distribute indeterminacy in the estimation of costs and earnings, the inadequacy in taking into account the relationship between healthcare service planning and evaluation results regarding clinical applications and decisions, inadequacies in taking factors outside of economic effectiveness (concerning subjects such as equality and procedural processes necessitating change of policy) into consideration.

That there are ever-increasing expenditures made in the healthcare field will result in the adoption of strict approaches emphasizing the necessity of making economic evaluations as well as clinical ones when deciding upon the application of any treatment or program. (Çelik, 2013-293). For this reason, it has been rendered compulsory for healthcare authorities to employ professional healthcare and hospital administrators who have had education and training in healthcare and hospital administration and who know hospital management, clinic management, hospital external and internal systems, health technologies, economics, health economics, accounting, healthcare accounting, hospital costs and DRG (Diagnosis Related Groups), health law and public health.

REFERENCES

Ak, B. (2015). Sağlık Ekonomisi, Sunu. Toros Üniversitesi Sağlık Bilimleri Yüksekokulu, Sağlık Yönetimi, Mersin,)

Ak, B. (2014). Sağlık İçin Sosyal Bilimer, Toros Üniversitesi Sağlık Bilimleri Yüksekokulu, Sağlık Yönetimi, Mersin, 2015)

Ak, B. (2016). Sağlık Kurumlarda Finansal Yönetimi, Ders Sunusu, Toros Üniversitesi Sosyal Bilimler Enstitüsü,Sağlık Kurumları İşletmeciliği Yüksek Lisans Programı,Mersin,s.13-17,50)

Akın, Ü., Aksoy, S. (1985). Sağlık Hizmetlerine Verimlilik Açısından Bir Yaklaşım, MPM Yayını No:332, Ankara, 1985, s.8

Browne M N, Haas P F. (1987). Modern Economics. Principles, Goals, and Trade-offs. Prentice-Hall International Inc. London. 1987.

Çelik, Y. (2013). Sağlık Ekonomisi, 2. Baskı, Siyasal Kitpevi, Desen Ofset, Ankara, s.278-280

Çetinkaya, M., Uysal, Y., Mazgit, İ. (1995). Türkiye'de Araştırma-Geliştirme ve Teknoloji Üretimi Nasıl Yaygınlaştırılabilir, İstanbul Ticaret Odası Yayın No: 1995-3, İstanbul, 1995, s. 33.

D'Intignano, B.M. (2001). Économie de la Santé, Thémis Économie, Presses Universitaires de France (PUF), Paris, 2001, s.3.7

Drucker, P. (2001). "The Next Society", the Economist, 1 November 2001

Drummond M F, Stodart G L, Torrance G W. (1987). Methods for the Economic Evaluation of Health Care Programmes. Oxford Medical Publications, 1987.

Erkan, H. (1994). Bilgi Toplumu ve Ekonomik Gelişme, Türkiye İş Bankası Kültür Yayınları, 2. Baskı, İstanbul, 1994, s.27

Fidan, D. (2007). Sağlıkta yaşam kalitesinin sağlık ekonomisi içindeki yeri: tercihe dayalı ölçekler ve maliyet yararlanım, 2. Sağlıkta Yaşam Kalitesi Kongresi, 5-7 Nisan 2007, Kongre Özer Bildirisi, s.36 E.Ü.AKM, İzmir, dogan@totalise.co.uk

Le Grand J, Propper C, Robinson R. (992). The Economics of Social Problems. 3rd Ed. MacMillan, Hong Kong, 1992.

Lipsey R G. (1992). An Introduction to Positive Economics. 7th Ed. Weidenfeld and Nicolson, London, 1992.

Mazgit, İ. (1998). Ekonomik Kalkınma Sürecinde Türkiye'de Sağlık Sektörünün Yeniden Yapılanması, (Doktora Tezi), Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, İzmir, 1998, s. 61-70.

16-Mills A., Gilson, L. (1998). Health Economics for Developing Countries: A Survival Kit. EPC Publication No:17, London. 1988.

Mills A. (1990). The Economics of Hospitals in Developing Countries. Part 1 : Expenditure Patterns. Health Policy and Planning 5(2): 107-117, 203-218

Mills, A., Gilson, L. (1988). Health Economics for Developing Countries: A Survival Kit. EPC Publication No:17, London. 1988.

Mushkın, Selma J. (1975). "Health as an Investment", Investment in Human Capital, Ed. By B.F. Kiker, University of South Carolina Press, s. 390

Newbrander W, Barnum H, Kutzin J. (1992). Hospital Economics and Financing in Developing Countries. WHO/SHS/NHP/92.2. Geneva, 1992.

Normand C. (1993). Health Economics Lectures' Handouts. LSHTM. London. 1993. pp. 8, 10

Normand C. (1991). Economics, health, and the economics of health. BMJ. Vol.303, 1572-77, 1991.
Parkin M. (1990). Economics. Addison-Wesley Pub. Co. 1990.
Penouıl, Marc,(1972). Economie du Développement, Librairie Dalloz, Paris, 1972, s. 7.
Robinson R. (1993). Economic Evaluation and Health Care. What Does it Mean. BMJ. Vol. 307, 670-673, 1993,
Sağlık Bakanlığı 2018 Bütçe sunumu, (Aralık 2017) TBMM Plan ve Bütçe Komisyonu, TBMM, Ankara,s.5, 233)
Schultz, Theodor W. (1966). "Beşeri Sermayeye Yapılan Yatırımlar", İktisadi Kalkınma Seçme Yazılar, Çeviren Fahir Gürkan, Ankara, 1966, s.414
Schultz, T. W., (1971). Investment in Human Capital, The Free Press, New York, 1971, s.24
UNDP, Human Development Report 1996, Oxford University Press - New York, 1996, s. 106.
Uz, M.H. (2007) "Sağlık Ekonomisi ve Hastanelerdeki Uygulamaları" http://www.merih.net/m1/whulkuz25.htm 11.12.2008

Chapter 95

Factors Affecting the Level of Student Nurses' Anger and Conflict Resolution Styles

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INTRODUCTION

Nurses providing service at various levels of the healthcare system must provide care for the individuals with various problems and needs (Kavaklı, 2018). This situation does not only cause the occurrence of conflicts between the service takers and providers, but it requires the employees to be able to manage anger along with the skills of conflict resolution so as to provide high quality, safe (Günüşen & Üstün, 2011) and effective care. While the other members of the nursing team can experience conflict with their superiors or subordinates throughout the working life of nurses, they can also experience conflict with the other members of the multidisciplinary health care members since the characteristic of the health care services necessitate mutual dependence.

Student nurses can experience conflict during the clinic training with their peers, patients, nurses and supervisors for various reasons. In this aspect, conflict management is among the important fundamental skills needed for the student nurses to manage. Understanding the conflict management styles and conflict resolution styles of the student nurses as well as the factors impacting them will provide them a foresight for the conflict management styles to be used when they start working as nurses (Chan, et al., 2014).

There are many classifications within the literature in regard to conflict analysis methods. Rahim's model (Rahim, 1986), which contributed a classification similar to the approaches of Blake-Mouton, Follet (2003) and Thomas (1992) (cited in Rahim, 2002) to the literature, has an important place. Interpersonal conflict resolution style, which is described as two-dimensional model, is two-dimensional as in concern for self and concern for others as well as consisting of five methods as in integrating, obliging, dominating and avoiding, and reconciliation (Rahim, 1986). Generally, integrating or problem solving styles must be used so as to increase the effectiveness in conflict management (Rahim, 2002). When these methods are analyzed:

Integrating: It is a method used when an individual is concerned for both parties. This method, which is mostly based on problem solving, is related to the correct diagnosis of and correct intervention to the problem. In order to achieve this, differences must be analyzed, alternative solution methods must be searched, a process that includes clarity and information exchange must be operated so as to reach an effective solution that will be accepted by both parties (Rahim, 2002).

Obliging: It is a situation in which the individual has low concern for himself and

high concern for others, and the person neglects his own concern so as to satisfy the other party's concern. This style will be useful when one of the parties does not have command of the problem being interfered, when the other party is right and the situation is more important for the other party. It can be a strategy when there is a party that is willing to give up certain things so as to benefit from the other party when necessary. It can also be suitable when a party is in a weak position or when it is necessary to protect the relationships (Rahim, 2002).

Domination: It is a conflict resolution method that occurs when the individual feels high concern for himself and low concern for the opposite party and when a win-lose method is needed to be used. The person that gains dominance by ignoring the needs and expectations of the other party wants to possess everything so as to achieve his own goals. It is suitable when the subjects that generally create conflict are important for the organization or when an unfavorable decision of the opposite party can be harmful for this party. It is a suitable style if the problems are routine and a fast decision making is needed. It will not be a suitable style if the problems creating the conflict are complex or when there is no sufficient time to make a good decision. Using this style when both parties have equal power complicates the process and this problem cannot be solved unless they change their styles (Rahim, 2002).

Avoiding: It is a style in which the individual has lower concern for himself and for others. Avoiding is a non-collaborative attitude. It is a style in which the person retreats from or stays indifferent towards the conflict. This style, which can be used for the solution of certain unimportant or small problems, necessitates the passing of a certain period for the solution of more complex problems. It is an unsuitable conflict resolution style when the parties do not want to reach a decision, when the parties do not want to wait or when immediate action is needed (Rahim, 2002).

Compromising: In this situation, when the individual is concerned for himself and for the others, it is a style in which both parties give up something so as to reach a decision that is mutually acceptable by both parties. It is a useful method when both parties have equal power and when the negotiation processes reach a dead end. It is a style that can be used when the parties are required to find a temporary solution for a complex problem or when different styles are used but effective solution to the problem could not be found. It is one of the most useful methods in the prevention of long-term conflicts (Rahim, 2002).

Along with that, it is seen as the most effective integrating style. This style requires focusing on common subjects and it is important in mutually presenting a productive solution that is based on cooperation (Gross & Guerrero, 2000). A strategy that is seen effective by a person cannot always be seen effective by the partner of that person (Canary & Spitzberg, 1990). Anger, as a factor that prevents the efforts of the anger management process, frequently creates a barrier before the solution including mediation (Friedman, et al., 2004).

Anger is an important point of anxiety and hierarchical dual relationships revealed by individual perception such as inequality, injustice and dissatisfaction, a factor in group conflict and an organizational phenomenon that differs interculturally (Fitness, 2000; Glomb & Hulin, 1997; Ohbuchi, et al., 2004; Gibson & Callister, 2010). Anger is among the subjects that interests researchers due to having both positive and negative results. Anger, which was defined by Ekman (2014) as one of the universal moods, was

defined as one of the eight fundamental emotions in Plutchik (2001) model.

Emotions can be revealed during the agreement processes but generally in the solution of the disagreements, he parties start the process with their emotions strongly felt (Brett, 2001). This situation shows that the emotional dynamics can operate differently in the solution of the disagreements and the first communication can be important in disputes (Friedman, et al., 2004). This is an important structure for the health care workers and causes unwanted results when it cannot be managed well. The waiting time, painful treatments, long treatment times and similar many reasons cause anger for the patients and their families that come to the health care centers for various problems. Similarly, anger is an emotion that can be experienced by the health care workers that provide service to the individuals with problems.

Anger experience is an indicator of an emotional situation felt together with the physiological reactions. Anger expression means the behavioral dimension of emotional coping process of the person. In that sense, living the anger and expressing the anger are different structures (Han, et al., 2015).

Anger expression styles are classified in three types as in controlled anger, anger expression-out and anger expression-in. Anger expression-in is the self-redirection of the anger, rejection of the thought and memories regarding the situation that triggers the anger or the rejection of the own feelings of the anger. Anger expression-out is the anger expression towards other person or object in various forms such as physical, criticism, insult or verbal abuse. Controlled anger is defined as the controlling and managing of the anger, feeling the anger and anger expression through showing respect towards the rights and emotions of the other party (Spielberger, et al., 1985).

Anger is a reaction against deceit and disappointment. If the individual is under threat or when his demands are not meant, he counters attacks. A person's thought under a provocative situation creates a diminishing or intensifying factor for the reaction. The individual will be able to develop his interpersonal relationships in regulating his emotions, foreseeing the intensity and direction of his and others' emotions, internally changing, preventing his negative emotions and moving them towards compromising by acquiring restructuring skill and controlling his emotions. This will help the individual achieve success in various areas of life (Pellitteri, 2002).

Having knowledge about the conflict solution styles and anger expressions used by the nurses - that make the majority of the workers in the health care system - as students will help trainers with skills that need to be instilled in the students throughout this training period. This study was planned to examine the socio-demographic characteristics of nursing students in identifying and influencing conflict resolution styles, anger levels and anger expression styles used by the nursing students because of the importance of emotion and emotion management in terms of organizations.

METHOD

This study was planned in a descriptive and sectional style. The research data was collected in October-November 2017 following the permissions taken by the institution.

Sample

The population of the study consisted of the students of the department of nursing in vocational school of health of a university. 299 students, who willingly accepted to participate in the study with a non-probability technique and who filled in the scale

questions fully, made up the sample of the study. Institutional permission and verbally informed approval by the students were taken to be able to conduct this study.

Evaluation Tools

Socio-Demographic Data Form: It was created with questions regarding the students' age, gender, General Weighted Point Average (GWPA), Transition to Higher Education Exam (THEE) result, average monthly income of the student's family.

Conflict Resolution Styles Form

This form, which was used to determine the emotion, behavior and attitudes shown in the conflict, was prepared by Ohio Commission on Conflict Resolution. Sargın, who prepared the form in Turkish, consulted experts for the validity of the form following the necessary permissions. Conflict Resolution Styles Form was used in a study conducted by Sargın et al. (2007). Form consisting of 29 articles is conducted with a 5 Likert type scale. Test-retest method was used for the reliability study of the form, and it was stated that the reliability coefficients of the items varied between .73 and .96. Generally in the evaluation of the form, each item is handled one by one and a break point of 3,40 was used for the weighted mean. Points acquired over 3,40 show that this particular behavior is displayed at a high rate. Izgar (2013) in a study he conducted with this scale tested the validity and reliability through "Organizational Conflict Inventory II", which was developed by Rahim and Magner (1995) and translated into Turkish by Kozan and İlter (1994) and Kozan (2002) and found that there was a .79 correlation between the two forms. Bozoğlan (2010) grouped the scale items in his thesis study as integrating in: 3, 16, 17, 18, 22, 27, 29, obliging in: 5, 6, 7, 24, 25, compromising in: 8, 9, 11, 21, 26, 28, domination in: 12, 13, 14, 15, 19, 20 and avoiding in: 1, 2, 4, 1, 23. In this study, the Cronbach's Alfa value of the scale was found to be .86.

Trait Anger (T-Anger) and Anger Expression Scales (AngerEX)

State-Trait Anger Expression Inventory (STAXI-2) developed by Spielberger et al. (1983) consists of 44 items. Özer (1994) translated the Trait Anger (T-Anger) and Anger Expression Scales (AngerEX) part of the scale into Turkish. The Scale consists of 34 items in total that measures the state anger - anger expressions including the anger expression-out (anger-outside) with 10 items, anger expression-in (anger-inside) with 8 items and controlled anger (anger-control) with 8 items. A scoring of 4 with "Almost never" (1) and "Almost always" (4) points is used. In the evaluation of the scale, the total of the items belonging to each part is used. While the high points taken from the state anger, anger expression-in and anger expression-out have a negative characteristic, high points taken from the sub test of controlled anger are considered to be positive (Özer, 1994). In the study of Spielberger et al. (1983), the internal consistency values vary between .82 and .90 (Özer, 1994). Özer (1994) stated that the T-Anger and AngerEX acquired from various samplings varied between the Cronbach's Alpha values of .67 and .92. Savaşır and Şahin (1997) stated that in regard to the internal consistency of the scale, the trait anger was .79, controlled anger was .84, anger expression-out was .78 and anger expression-in was .62. In this study, trait anger was found to be α=.88, controlled anger was found to be α=.81, anger expression-out was found to be α=.81, anger expression-in was found to be α=63. Özdamar (2013) states that an alpha value between the values of $.60 \leq \alpha < .70$ had a sufficient reliability level of a scale and that this scale can be used for the social review.

The Analysis and Evaluation of the Data

Statistical Package for Social Science (SPSS, 20.0) package program was used for the evaluation of the data. In the analysis of the data; frequency, percentage, arithmetic mean, standard deviation, minimum, maximum and median values were used. One Sample Kolmogrov-Smirnov was used to test whether the data distributed normally. Based on the result; independent sample t test and Mann Whitney U were used for groups of two, One-Way ANOVA and Kruskal Wallis test were used for the multiple groups. Correlation analysis was run for the determination of the relationship between the variables.

FINDINGS

299 people participated in the study. 78.9% of the participants were female (236 women, 63 men), and the age average was 20,22±1,49 (min:18, max:25), and 29.8% of them were second grade students. GWPA was 2,70±0,49 (min:1,86, max:3,65). THEE was 337,09±27,73 (min:287, max:462). 47.5% of the students reside in the city. 69.6% of them stay in the dormitory. 60.5% of them defined their economic status as income and outcome being equal. 7.29% of them have nuclear family. 49.8% of them defined their family as "caring". The average of number of siblings of the students was found to be 3,11±1,74 (min:1, max:12). 51.8% of their families resolved the conflicts occurring within the family through talking. Mother education level was primary school for 43.1%, while 71.6% were housewives. Father education level was primary school for 34.4%, while 26.8% were retired. 50.2% chose their job willingly, and 59.2% were satisfied by the department they were studying.

Table 1: Distribution of the Trait Anger - Anger Expressions Scale Points of the Student Nurses (N: 299)

	$\bar{X}$	Sd	Min-Max
Trait anger	22,17	6,62	10,00-40,00
Controlled anger	21,47	4,77	11,00-32,00
Anger expression-out	18,10	4,71	9,00-32,00
Anger expression-in	19,10	4,18	10,00-32,00

Table 2: Distribution of the Conflict Resolution Style Points of the Student Nurses (N:299)

	$\bar{X}$	Sd	Min-Max
Integrating	**3,43**	0,67	1,00-5,00
Obliging	3,01	0,71	1,00-4,80
Compromising	**3,45**	0,72	1,00-5,00
Domination	2,39	0,61	1,00-4,00
Avoiding	2,69	0,71	1,00-4,20

In Table 2, the conflict resolution style of the students that was above the break point of 3,40 was found to be integrating and compromising.

Table 3: Distribution of the Conflict Resolution Styles Based on Gender of the Student Nurses (N: 299)

STRATEGY	STYLE	Female (n:236)	Male (n:63)	p_{MWU}
INTEGRATING	3. I try to understand the point of views of other people.	**3,73***	**3,87***	
	16. I talk with my family about my emotions.	3,04	2,52	0,004
	17. I am rather aware of the requirements of other people in a conflict.	3,04	2,97	
	18. I focus on the problem, more.	**3,56***	**3,48***	
	22. I can define what I feel.	**3,67***	**3,49***	
	27. I am aware of what I and the opposite person feel.	**3,73***	3,30	0,001
	29. I develop new skills in order to help the people who experience conflicts around me.	**3,50***	3,37	
OBLIGING	5. I accept my mistake even if I do not believe.	2,26	2,75	0,003
	6. I give up.	2,03	2,59	0,003
	7. I apologize.	3,06	3,19	
	24. I happen to be aware of the emotions of the persons on the opposite end.	**3,63***	**3,63****	
	25. I act respectfully toward other people.	**3,88***	**3,52***	0,011
COMPROMISING	8. To mitigate the conflict, I try to find the subjects that I agree on and disagree with.	**3,66***	**3,62***	
	9. I try to reach a compromising.	**3,69***	**3,75***	
	11. I accept help from other people in deciding who is right.	3,12	3,08	
	21. I use verbal expressions to my friends.	**3,64***	3,30	0,005
	26. When there is an increase in the conflict, I become more open for compromising.	3,35	3,10	
	28. In the conflict, I try peaceful and affectionate resolutions.	**3,42***	3,21	
DOMINATING	12. I threaten the other person.	1,59	1,84	
	13. I physically fight.	1,86	2,05	0,023
	14. I grunt and complain until finding a solution.	2,07	2,14	
	15. I give up but also show the other person how much I suffer.	2,19	2,51	
	19. I am more aware of what I feel.	**3,63***	3,29	0,007
	20. I use non-verbal communication skills.	2,82	3,24	0,030
AVOIDING	l. I avoid the person.	2,39	2,75	0,013
	2. I change the subject.	2,53	2,63	
	4. I try to turn the conflict into a joke.	2,68	3,00	0,048
	10. I seem to agree.	2,54	2,79	
	23. I postpone the solution when I see the conflict is worsened.	3,01	**3,44***	0,008

p_{MWU}: p values of Mann-Whitney U test

*The items, with an average above 3,40.

In Table 3, the conflict resolution style and strategies of the students were given according to genders. It was found that women adopted integrating, compromising and obliging strategies more, whereas they used the styles, belonging to the domination strategy, less. It was found that men also adopted the styles, belonging to integrating, compromising and obliging strategies more, but they also adopted the styles, belonging to the avoiding strategy, at a low rate.

It was found that there was not any significant difference in the point levels of T-Anger and AngerEX, according to genders ($p>0,05$).

When the difference level between the points that were obtained from the age-based variables is taken into consideration, the mean rank of total controlled anger points, taken from the students, were found to be significantly different between the persons above the age of 20 and those under this age ($p<0,01$).

Among those, who use integrating as a conflict resolution style, it was found that the mean rank of those above the age of 20 was at a statistically significant level, compared to those under this age. ($p<0,05$).

When the relationship between academic success levels and T-Anger and AngerEX and Conflict Resolution Styles Form points is taken into consideration; it was found that the mean rank of integrating and compromising strategies of the conflict resolution styles were at a statistically significant level, when those, with GWPA above 2,71, are compared to those who were below this point ($p<0,05$). It was found that the total anger expression-in point, held inside, is statistically significant for those, who had 2,70 GWPA and below, in comparison to others ($p<0,05$).

It was found that the total controlled anger point of the students who had THEE point of 328 and above, was higher at a statistically significant level among those who stated their THEE results ($p<0,05$). It was found that the anger expression-out point of the students who had THEE point of 327 and below were higher at a statistically significant level compared to those above this average mean rank ($p<0,01$). It was found that the anger expression-in point of the students who had THEE point of 327 and below were higher at a statistically significant level compared to those above this average total point ($t=1,986$ $df=126$, $p=0,049$).

It was determined that the mean rank of domination as a conflict resolution style was higher at a statistically significant level, when the students, with THEE point above 327, are compared to those above this point ($p<0,01$).

It was found that the total point average of trait anger and mean rank of anger expression-in who had 3 or more siblings, were at a statistically significant level ($p<0,05$). It was found that the conflict resolution style of integrating point of those, who had 2 or fewer siblings, was at a statistically significant level ($p<0,001$).

While the maternal education level of the students did not have any difference on the variables, it was found that there was a difference between those who used the integrating and avoiding strategies of the conflict resolution styles according to their paternal education levels ($p<0,05$). It was found that the anger expression-in level was statistically significant between those whose fathers' education level was at the elementary school level and below and those whose fathers' education level was at the undergraduate and postgraduate levels ($p<0,05$).

It was found that the trait anger level was different between years as the mean rank of the first year students' anger level was lower than others and it was caused by their

differences from the second and third year students (p<0,05).

It was found that there was a connection between the location that the students lived for a long time and their conflict resolution styles; it was determined that the mean rank of those who lived in villages was higher for the obliging strategy and of those who lived in cities was higher for the avoiding strategy (p<0,01).

It was found that the external anger levels of those whose families had very good income rates was different at a statistically significant rate (p<0,05).

It was found that the averages of obliging and compromising strategies of conflict resolution styles of those, who had broken families, were lower at a significant level in comparison to those who had nucleus and large families, and their averages of domination strategy of conflict resolution styles were higher at a significant level (p<0,05).

It was determined that the averages of trait anger points were at a significant level on the basis of the difference between those who had authoritarian families and those who had caring families (p<0,01). It was found that the controlled anger, external anger expressions and obliging and domination conflict resolution levels were at a significant level between the students groups, created on the basis of the family structures (p<0,05).

It was determined that there was a significant difference between the related groups based on the trait anger and external anger and the conflict resolution styles inside the families (p<0,05).

It was determined that the conflict resolution styles of obliging, compromising, domination and avoiding are different between the students, originating from the conflict resolution style, used in the student's family.

It was found that the averages of trait anger and external anger points of those who chose the department willingly and those who did not choose it so were different at a statistically significant level (p<0,05).

It was found that the mean ranks of the conflict resolution styles of integrating and domination of those who chose the department willingly and those who did not choose it so were different at a statistically significant level (p<0,05).

Table 4. The Relationship between the Style of Trait Anger-Anger Expressions and Conflict Resolution Style

	Trait anger	**Controlled anger**	**Anger expression-out**	**Anger expression-in**
Integrating	**-,134***	**,233****	-,008	-,039
	,020	,000	,889	,504
Obliging	**-,256****	**,173****	**-,179****	,032
	,000	,003	,002	,577
Compromising	**-,232****	**,315****	**-,239****	**-,134***
	,000	,000	,000	,021
Dominating	**,229****	**-,196****	**,213****	**,190****
	,000	,001	,000	,001
Avoiding	-,049	,078	-,052	**,163****
	,400	,181	,372	,005

Spearman Rho , *p<0,05, **p<0,01

In Table 4, it is seen that Trait Anger level is negatively related with the conflict resolution strategies of integrating, obliging and compromising, while being positively related to domination. It was found that controlled anger is positively related with integrating, obliging, compromising, while being negatively related to domination. External anger is negatively related to obliging and compromising, while being positively related to domination. Anger expression-in is negatively related to compromising, while being positively related to dominating and avoiding ($p<0,05$).

DISCUSSION AND CONCLUSIONS

This study was made to examine the conflict resolution styles that the student nurses used, their anger levels, and anger expression styles and the socio-demographic features that affected them.

In the study, it was found that the students used the styles of integrating and compromising as resolution styles, more often. The strategy, which had the lowest average, was dominating. Kantek and Gezer (2009) found, in the study that they made on the student nurses, that integrating and obliging styles to be higher, and domination style was the lowest. Sportsman and Hamilton (2010) found, in their study, that the student nurses preferred compromising as a conflict resolution style. These results display that the student nurses had the tendency to use similar conflict resolution styles in different samplings.

In this study, it was found that when the point averages of the students' trait anger and anger expression styles are taken into consideration, they had trait anger point averages in the mid-tier and the anger expression style, which took the highest point among the anger expression styles, was the controlled anger. Kaya et al. (2015) and Şahin Altun et al. (2017) reported that they found similar findings in their studies. The fact that the high rate of the student nurses' controlled anger level shows that they have the potential to control anger in case of any negative circumstance.

Among the findings of the study, it was found that gender did not constitute a meaningful difference in terms of T-Anger and AngerEX points. In the study of Şahin Altun et al. (2017), it was stated that female students expressed anger less than male students. Gündoğdu (2010) found that the point averages of anger expression-in was high at a significant level in comparison of female students to male students, among teenagers. Hamdan-Mansour et al. (2012) stated that there was not a significant difference between the anger levels of female and male university students. It is possible to find studies in the literature that support and negate this study. It is thought that the result, which was obtained in this sampling was affected by some variables, such as male population, age, cultural structure and nursing training etc.

While the mean ranks of integration and compromising among the conflict compromising strategies were higher among women, the mean ranks of avoiding was found to be higher among men. In the study that Chan et al. (2014), it is stated that gender is an important predictor in terms of the strategies of integrating, domination and compromising. Gündoğdu (2010) stated in the study that was conducted among teenagers that female students had higher points in terms of conflict compromising, compared to male students. It can be said that women mainly have tendency to constructive conflict compromising styles toward problem solving.

In this study, it was found that the controlled anger points of those, above the age

of 20, were at a meaningful level compared to younger persons. Dil and Aykanat Girgin (2016) stated in the study made on the student nurses that there was no difference between age groups in terms of T-Anger and AngerEX points. That the controlled anger points get higher as the ages of the groups increase is considered to be an indicator for the students' having improved themselves in the sense of anger management and avoided the impulsive behaviors that came with the teenage years.

The students' mean ranks of trait anger were found to be significantly low in the second and third year students. Dil and Aykanat Girgin (2016) stated in their study that the anger expression-in points of the fourth year students were significantly different and higher, compared to other years. Kaya et al. (2015) found in their studies that the trait anger points of the 3rd year students were higher compared to the 1st and 2nd years; the 1st year students' controlled anger points were higher compared to the 3rd and 4th years; and the external anger points of the 1st year students were at a significant level in comparison to the 3rd and 4th years. Increase of the trait anger points toward the last years can be associated with the students' graduation process, uncertainties about the future and the related anxieties.

The mean ranks of those who chose their department willingly was found to be significantly lower than those who chose their department unwillingly and partially willingly. Kaya et al. (2015) found in their study that the points of those who chose their department willingly were significantly lower than those who did not chose willingly, and it supports the result of this study. The job choice is important, and it is thought that the inner turmoil that the students experience as the result of the unconscious choices that are made in this process can impact their anger level.

The mean rank of the point of the integrating conflict resolution style was found to be at a significantly lower level among those who chose their department willingly, in comparison with those who chose unwillingly. The mean rank of the point of the domination strategy of was found to be at a significantly low level among those who chose their department willingly, in comparison with those who chose unwillingly. Aral and Kadan (2016) reached the conclusion in a study made about teachers that the use of confrontation and emotional expressions increased the inner satisfaction. It can be said that those who are satisfied with their current situations tend to conflict resolution styles that provide very positive features.

As in this study the relationship between Trait Anger-Anger Expressions and Conflict Resolution Styles is considered: It was found that trait anger level was negatively related to integrating, obliging, compromising and positively to domination; controlled anger positively to integrating, obliging, and negatively to domination; external anger level negatively to obliging and compromising, and positively to domination; and anger expression-in negatively to compromising, and positively to domination and avoiding. Gündüz et al. (2013) remark in a study which was made with school principles that the point of domination is positively related to trait anger, negatively to anger control, and the point of avoiding is positively related to trait anger.

As the result of the data gathered in this study, it was found that the student nurses experienced trait anger at a mediocre level and as an anger type, it was seen that their controlled anger levels were higher than others. Because anger is a kind of emotion which is experienced by human nature but which needs to be controlled with correct techniques, it is a skill which needs to be taught with convenient methods and

techniques. It is seen that integrating and compromising are preferred as conflict compromising styles. These conflict resolution styles are convenient styles, in the aspect of conducting positive relations in terms of interpersonal relations. It is thought that it is necessary to teach the techniques, such as role play and demonstrations that will allow the student nurse to direct the anger related energy to constructive emotions. Considering anger's relation to some health problems, it is also thought that the convenient discharge methods must be taught to the students in order to allow them to be healthy individuals.

REFERENCES

Aral, N., & Kadan, G. (2016). Analysis of the impact of conflict resolution skills of teachers on job satisfaction. *Journal of Research in Education and Teaching*, 5(4):264-278.

Bozoğlan, B. (2010). *Awereness level concerning conflict and violance and their conflict resolution styles of university students in Balkan Countries*. Unpublished doctoral dissertation, Selçuk University Social Science Institute, Konya, Turkey.

Brett, J.M. (2001). *Negotiating globally: How to negotiate deals, resolve disputes, and make decisions across cultural boundaries.* San Francisco: Jossey-Bass.

Canary, D. J. , & Spitzberg, B. H. (1990). Attribution biases and associations between conflict strategies and competence outcomes. *Communication Monographs*, 57:139-151.

Chan, J.C.Y., Sit, E.N.M., & Lau, W.M. (2014). Conflict management styles, emotional intelligence and implicit theories of personality of nursing students: A cross-sectional study. *Nurse Education Today*, 34;934-939.

Dil, S.& Aykanat Girgin, B. (2016). An examination of the relationship between anger, stress, hopelessness and perceived social support in nursing students. *Journal of Psychiatric Nursing*, 7(3):121-128.

Ekman, P. (2014). Introduction. In: Ekman P, editor. *Darwin and facial expression*. New York: Academic Press. 7-7.

Eslamian, J., Fard, S.H.H., Tavakol, K., & Yazdani, M. (2010). The effect of anger management by nursing staff on violance rate against them in the emergency unit. *Iran J.Nurs. Miwifery Res*. 15 (1):337-342.

Fitness, J. (2000). Anger in the workplace: An emotion script approach to anger episodes between workers and their superiors, co-workers, and subordinates. *Journal of Organizational Behavior*, 21:147-162.

Follett, M.P. (2003). Constructive conflict. M. C. Metcalf ve L. Urwick (Ed.). *Dynamic administration: Collected papers of Mary Parker Follett*. New York: Harper & Brothers, 1-23.

Friedman, R., Anderson C., Brett, J., Olekalns, M., Goates, N., & Lisco, C.C. (2004). The positive and negative effects of anger on dispute resolution: Evidence from electronically mediatd disputes. *Journal of Applied Psychology*, 89(2):369-376.

Gibson, D.E. & Calliter, R.R. (2010). Anger in organizations: Review and integration. *Journal of Management*. 36(1): 66-93.

Glomb, T M., & Hulin, C.L. (1997). Anger and gender effects in observed supervisor-subordinate dyadic interactions. *Organizational Behavior and Human Decision Processes*, 72:281-307.

Gross, M.A. & Guerrero, L.K. (2000). Managing concflict appropriately and effectively: An applcation of the competence model to Rahim's organizational conflict styles. *Internatioal Journal of Conflict Management*, 11(3):200-226.

Gündoğdu, R. (2010). Assessment of conflict, resolving, anger and aggressiveness levels of 9th grade students in terms of certain variables. *Çukurova University Institute of Social Scciences*, 19(3):257-276.

Gündüz, B., Tunç, B., & İnandı, Y. (2013). The relationship between the school administrators' anger control and stress coping methods and their conflict management style. *International Journal of Human Science*, 10(1):641-660.

Günüşen. N.P., & Üstün, B. (2011). The relationship between problem solving skills levels and locus of control in nursing students. *DEUHYO ED*, 4(2):72-77. Available from: https://dspace.deu.edu.tr/xmlui/handle/12345/4587.

Hamdan-Mansour, A.M., Dardas, L.A., Nawafleh, H., Abu-Asba, M.H. (2012). Psychosocial predictors of anger among university students. *Children and Youth Services Review*, 34(2):474-479.

Han, A., Won, J., Kim, O. & Lee, S.S. (2015). Anger expression types and interpersonal problems in nurses. *Asian Nursing Research*, 9:146-151.

Izgar, H. (2013). Research about school managers' conflict resolution styles. *Bayburt Üniversitesi Eğitim Fakültesi Dergisi*, 8(2):107-126.

Kantek, F., & Gezer, N. (2009). Conflict in schools: Student nurses' conflict management styles. *Nurse Education Today*. 29:100-107.

Kavaklı, Ö. (2018). The relationship between a proactive personality of intern nursing students and conflict resolution. *Journal of Education and Research in Nursing*, 15(1):9-15.

Kaya, N., Kaya, H., Yalçın Atar, N., Turan, N., Eskimez, Z., Palloş, A., & Aktaş, A. (2015). Nursing and midwifery students' anger and loneliness characterictic. *New Symposium Journal*, 51(2):70-79.

Kozan, M.K. (2002). Subcultures and conflict management style, *Management International Review*, First Quarter, 42(1):89-105.

Kozan, M.K., & Ilter, S.S. (1994). Third party roles played by Turkish managers in subordinates' conflicts, *Journal of Organizational Behavior*, 15:453-466.

Ohbuchi, K-I., Tamura, T., Quigley, B.M., Tedeschi, J.T., Madi, N., Bond, M. H.,& Mummendey, A. (2004). Anger, blame, and dimensions of perceived norm violations: Culture, gender, and relationships. *Journal of Applied Social Psychology*, 34:1587-1603.

Özdamar, K. (2013). Paket Programlar İle İstatistiksel Veri Analizi. Cilt 1. Yenilenmiş 9. Baskı. Ekişehir; Nisan kitabevi.

Özer, A. K. (1994). Trait anger and anger expression scales preliminary study. *Turkish Journal of Psychology*, 9(31):26-35.

Pellitteri, J. (2002). The relationship between emotional intelligence and ego defense mechanisms. *J. Psychol*., 136(2):182–94.

Plutchik, R. (2001). The Nature of Emotions: Human emotions have deep evolutionary roots, a fact that may explain their complexity and provide tools for clinical practice. *American Scientist*, 89(4):344-350.

Rahim, M.A. (1986). Referent role and styles of handling interpersonal confliict. *The Journal of Social Psychology*, 126(1):79-86.

Rahim, M.A. (2002). Toward a theory of managing organizational conflict. *International Journal Of Conflict Management*, 13(3):206-235.

Rahim, M.A., & Magner, N.R. (1995). Confirmatory Factor Anlysis of the styles of handling interpersonal conflict: First-Order Factor Model and its invariance a cross groups, *Journal of Applied Psychology*, 80:122- 132.

Rahim, M.A., & Magner, R.N. (1995). Confirmatory factor analysis of the styles of handling interpersonal conflict: First-order factor model and its invariance across groups, *Journal*

of Applied Psychology, 80 (1):122-132.
Sargın,T., Tor,H., Bozoğlan, B., & Köroğlu, M. (2007). The methods that teacher candidates use in solving conflıcts have been searched from the point of different variables. *Selçuk Üniversitesi Eğitim Fakültesi Dergisi*, 23:379-389.
Savaşır, I., Şahin, NH. (1997). *Bilişsel-Davranışçı Terapilerde değerlendirme: Sık kullanılan ölçekler*. Ankara: Türk Psikologlar Derneği Yayınları.
Spielberger CD, Jacobs G, Russell S, & Crane RS. (1983). Assessment of anger: the state-trait anger scale. In: Butcher JN, Spielberger CD, (editors). *Advances in personality assessment*. Vol. 2. Hillsdale (NJ): Lawrence Erlbaum Associates; 159-187.
Spielberger, C.D., Johonson, E.H., Russell, S., Crane, R.S., Jacobs, G.A., & Worden, T.J. (1985). The experience and expression of anger: construction and validation of an anger expression scale. In: Chesney MA, Rosenman RH, (editors). *Anger and hostility in cardiovascular and behavioral disorder*. New York: Hemisphere;5-30.
Sportsman, S. & Hamilton, P. (2007). Conflıct management styles ın the health professıons. *Journal of Professional Nursing*, 23(3):157-166.
Şahin Altun, Ö., Asi Karataş, S., Okanlı, A., Olçun, Z., Yurttaş, A., & Bolat, M. (2017). The relationship between nursing students' anger expression and feelings of loneliness. *International Refereed Journal of Nursing Researches*, 9:17-32.
Thomas, K.W. (1992). Conflict and conflict management: Reflections and update. *Journal of Organizational Behavior*, 13:265-274.

Chapter 96

Content Analysis of Newspaper Coverage of Medical Malpractice

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INTRODUCTION

People seek to get a good quality care, yet medical errors are an inevitable reality of healthcare (Karthikeyan *et al.*, 2015). In 1999, the Institute of Medicine indicated in the report "To Err Is Human" that up to 98 000 people in the United States of America (USA) die each year from medical errors (Kohn *et al.*1999:26). After publication of the report, US Congress held hearings on medical errors and patient safety, the general public became aware of the serious health problems, physicians, nurses, and hospitals became alerted, motivated, and active in attempting to improve the quality and safety of healthcare (Peters & Peters, 2007:2).

Various terms are chosen to designate inappropriate care and adverse outcomes experienced by patients during their hospital care such as adverse or untoward events, complications, medical injuries, therapeutic misadventures, substandard care, unexpected outcomes, preventable deaths, iatrogenic injuries, mishaps, errors, negligence, or malpractice (Andrews *et al.*, 1997). Medical malpractice is defined as any act or omission by a healthcare professional during treatment of a patient that deviates from accepted norms of practice in the medical community and causes an injury to the patient (Bal, 2009). Negligence is the keyword in the definition of medical malpractice. Medical error can be defined as deviations from the process of care, which may or may not cause harm to the patient (Reason, 2001). Medical error is failure of a planned action to be completed as intended or the use of a wrong plan to achieve an aim (Rothschlid *et al.*, 2005). Medical error is an umbrella term given to all errors that occur within the healthcare system including burns, diagnostic errors, equipment failures, falls, hospital acquired or treatment related infections, medication errors, mishandled surgeries, pressure ulcers, surgical injuries, transfusion errors, wrong patient, wrong site surgery, etc. (Kohn *et al.*1999:35; Ghaleb *et al.*, 2006).

Medication/drug related errors are one of the most common medical errors reported. Drug use is a complex process and there are many drug related challenges at various levels, involving physicians, pharmacists, nurses and patients. Medication related errors, also called adverse drug events (ADE) occur frequently in hospitals; not all result in actual harm, but those that do are costly (Kohn *et al.* 1999:27). Not all ADEs are attributable to errors. For instance, a patient with no history of allergic reactions to drugs, who experiences an allergic reaction to an antibiotic, has suffered an

ADE, but this ADE would not be attributable to error. However, an error would have occurred if an antibiotic was prescribed to a patient with a history of documented allergic reactions, because the medical record was unavailable or not consulted (Kohn *et al.*1999:33). Medical errors represent an important public health problem and pose a serious threat to patient safety. The growing awareness of the frequency, causes and consequences of error in medicine reinforces an imperative to improve our understanding of the problem and to devise workable solutions and prevention strategies (Grober & Bohnen, 2005).

Patient safety incidents have been reported to National Reporting and Learning System (NRLS) of National Health Service (NHS) since October 2003. According to the report, 10,6% of the incidents occurred in October 2016 to September 2017 was in medication category, 74,1% of the incidents are reported in acute/general hospitals (NRLS, 2018). In a report from Joint Commission International total number of sentinel events which also include cases other than malpractice such as criminal event, fire, infant abduction, suicide, etc., reviewed between 2005 and 2017, there is no continuous increase or decrease in the number of cases. As of 2017, of 805 sentinel events reported 8,2% was about delay in treatment, 4,0% was about medication error and 11,8% was about wrong patient, wrong site and wrong procedure, 67% of the incidents were occurred in hospitals, while 4% were occurred in ambulatory care, 52,1% of the incidents resulted with death, while 25.7% of the incidents caused unexpected additional care (JCI, 2018). According to report "Medication without Harm", globally, the cost associated with medication errors has been estimated at US$ 42 billion annually and patients living in low income countries experience twice as many disability adjusted life years lost due to medication related harm than those in high income countries (WHO, 2017).

Medical errors and patient safety are an important concern for patients and physicians (West *et al.*, 2006). A physician or surgeon had a duty to use reasonable diligence and best judgment in the exercise of the skill (Peters & Peters, 2007:16). Physicians are the primary targets of malpractice claims. Although there are legal regulations claim that physicians and healthcare facilities may be jointly liable for medical malpractice, in practice, individual physicians are the central defendants in a majority of claims (Studdert et al., 2006). A nurse also owes a patient certain duties of care, including having skill similar to that ordinarily used by trained and skilled members of their profession. The hospital also has a duty to use reasonable care in selecting and reviewing competent medical staff, providing reasonable care and attention to the patient, and meeting the needs of the patient. The hospital is legally responsible for the acts of its employees over which it exercises work control (Peters & Peters, 2007:17).

Media is seen as an important tool to disseminate health information to the population and print and electronic news media are major sources of health information (Winett & Wallack 1996; Caburnay *et al.*, 2003; Matamoros *et al.*, 2007). Distribution of health information through newspapers is a very effective way of reaching the general public (Matamoros *et al.*, 2007). News coverage of health related stories is intended to raise public awareness and promote greater consideration or public discourse about individual, social, or policy change (Morton & Duck, 2001; Pierce & Gilpin, 2001; Caburnay *et al.*, 2003; Asbridge, 2004; Cho, 2006; Marinescu & Mitu,

2016:1). The more often the news takes place on the internet, the more it can remain on the agenda which will eventually contribute to the awareness of the target population.

Due to the growing numbers of people having access all over the world at any time on anywhere, the internet has evolved into a valuable source of knowledge in the everyday life of many people (Grutter, 2002:11). Newspapers are now routinely stored in various digital formats, which means it can be searched comprehensively and quickly and majority of them provide free access to up-to-date news reports. Thus, people might prefer to follow the news from online news websites. Therefore, the present study is aimed to better understand the online news coverage of medical malpractice incident in detail.

MATERIALS AND METHODS

In the present study it is aimed to reveal the distribution of medical malpractice news by year, country, the care setting, its ownership and the healthcare department in which the incident reported, medical malpractice field, medical malpractice incident, the healthcare staff who is accused of the incident, degree of harm as a result of the incident, sanction, sanction subject and the source of news. The study is designed as a retrospective, descriptive study. Document review is used for data collection and content analysis is used for data analysis. Furthermore, textual analysis is used in order to identify the most frequently used words in the titles of news reports.

In sampling, alexa.com which has a website ranking algorithm was chosen to determine the news websites to scan the news reports. According to the website, the 1 month rank is calculated using a combination of average daily visitors and page views over the past month. The site with the highest combination of visitors and page views is ranked number one. As of 06/04/2018, top news websites listed on alexa.com is reviewed and some of the websites excluded from the list due to not having "search on website" option (huffingtonpost.com, news.yahoo.com, usnews.com), not having free access to all news reports (nytimes.com, washingtonpost.com), having multiple news sources (news.google.com), being forum type website created with user contributions (reddit.com), having news on only economy and finance (wsj.com, bloomberg.com, money.cnn.com, economictimes.indiatimes.com) and having news on only weather forecast (weather.com, accuweather.com, wunderground.com). After removal of these websites, cnn.com, guardian.com, bbc.com, foxnews.com and usatoday.com are listed as top five news website in alexa.com. Thus, these news websites are included for the study to scan the medical malpractice news.

Selected news websites are scanned using keywords such as "adverse event", "doctor error", "healthcare error", "medical error", "medical incident", "medical malpractice", "medical mistake", "medicine error", "misdiagnose", "never event", "nurse error", "patient safety error", "physician error", "physician mistake", "unnecessary treatment", "wrong diagnosis", "wrong drug", "wrong surgery", "wrong patient" and "wrong site". These keywords were chosen according to MeSH terms (MeSH Unique ID:N02.421.450), an extensive literature review on medical malpractice and patient safety reports and (Medical Errors, 2018). No limit was placed on year of news reports. After scanning the news websites with selected keywords, duplicated news reports of identical medical malpractice incidents from different news websites were removed and the key words produced 160 news reports which the oldest news date back to 1999.

The analysis was made in four steps. Firstly, each news reports were read several times to get a better understanding of the incident. Secondly, the text was divided into analysis units. Thirdly, the units were summarized and labeled with codes. Finally, the codes were sorted into categories. There are two units of analysis that include total of 17 coding categories: descriptive and content variables. Descriptive variables in the coding schema include 9 coding categories such as the code that assigned to the news report, news website, year, title, link (to return to the source, if necessary), country, visual use, care setting, care setting ownership. Content variables in the coding schema include 8 coding categories such as medical malpractice field, medical malpractice incident, accused healthcare staff, harm caused by the incident, healthcare department in which the incident is reported, sanction, sanction subject and the source of the news report. Coding process of these variables is described below:

As a first step, a code was given to each news report such as BBC1, BBC2, ….CNN23, CNN24, etc. Afterwards, the news website, the year and the link of the news report were coded. Each word in title was saved in order to find out the overall frequency of the words used. Then, the country in which the medical malpractice is reported was coded. In order to determine the visual use of news reports, the news report was scanned and coded as "image" if it had image, as "video" if it had video, and "image" and "video" coded separately the news report had them both. The news report was examined in detail and the data necessary for coding were deducted from the text during coding the care setting, care setting ownership, medical malpractice field, medical malpractice incident, accused healthcare staff, degree of harm, healthcare department, sanction, sanction subject and the source of the news report. This deductive process is described below with instances from news reports:

Care setting: "... for a routine scan at Alder Hey **Hospital** in Liverpool when the incident happened."

- From the coding categories for care setting of hospital, clinic, primary care, nursing home, pharmacy, etc., "Hospital" was chosen according to the news report.

Care setting ownership:"... for a routine scan at **Alder Hey Hospital** in Liverpool when the incident happened."

- From the coding categories for care setting ownership of public hospital, private hospital, university hospital, teaching hospital, community hospital, private hospital, private clinic, private nursing home, etc., "Public Hospital" was chosen according to the internet search of the hospital name.

Medical malpractice field: "… mistakenly **injected** a toddler with a powerful muscle relaxant which stopped his heart beating …"

- From the coding categories for medical malpractice field of Medical Treatment, Surgical Treatment and Diagnosis Related, "Medical Treatment" was chosen according to the news report. These field categories are determined according to literature review.

Medical malpractice incident: "… **mistakenly injected** a toddler with a powerful muscle relaxant …"

- From the coding categories for medical malpractice incidents of medication error, misdiagnose, unsuccessful surgery, unnecessary surgery, wrong surgery, wrong patient, wrong site, forgotten surgical instrument, transfusion error, etc., "Medication error" was chosen according to the news report. A classification of medical malpractice

examples were not created or used due to the lack of commonly agreed extensive classification and also to include all kinds of incidents without excluding any case.

Accused healthcare staff: "… **nurse** mistakenly injected a toddler ..."

- From the coding categories for accused healthcare staff of physician, nurse, dentist, pharmacist, midwife, caregiver and intern, "Nurse" was chosen according to the news report.

*Degree of harm: "*mistakenly injected a toddler with a powerful muscle relaxant which **stopped his heart beating**"

- From the coding categories for degree of harm of no harm, low harm, moderate harm, severe harm and death, "Death" was chosen according to the news report. The categories of harm were used according to NRLS which indicates there are five categories for the degree of harm (NRLS, 2018):

No harm -a situation where no harm occurred: either a prevented patient safety incident or a no harm incident

Low harm - any unexpected or unintended incident that required extra observation or minor treatment and caused minimal harm to one or more persons

Moderate harm - any unexpected or unintended incident that resulted in further treatment, possible surgical intervention, cancelling of treatment, or transfer to another area, and which caused short term harm to one or more persons

Severe harm - any unexpected or unintended incident that caused permanent or long term harm to one or more persons

Death - any unexpected or unintended event that caused the death of one or more persons.

Healthcare department: "A **paediatric** intensive care unit nurse…"

- From the coding categories for healthcare department of Medical sciences, Surgical sciences and other departments, "Medical Sciences" was chosen since Pediatrics department is part of Medical sciences.

Sanction: "The **trial** continues."

- From the coding categories for sanction of under investigation, dismissal, imprisonment, compensation, license cancellation (of care setting), physician decertification, recall (of drug) from market, "Under investigation" was chosen according to the news report.

Sanction subject: "The **nurse** was arrested in connection with his death in June 2004. She has pleaded not guilty to manslaughter."

- From the coding categories for sanction subject of physician, nurse, dentist, midwife, intern, hospital, etc., "Nurse" was chosen according to the news report.

Source: "…a **court** heard yesterday..", "Liverpool crown **court** heard that…", "Peter Wright, **prosecuting**, said …"

- From the coding categories for source of news reports of hospital officials, court, patient, patient relative, governmental, news agency, physician, etc., "Court" was chosen according to the news report.

During coding it was found that some of the necessary information for coding is missing in the news reports. Therefore, the variables that have missing information were labeled as "unknown" during coding phase. After news reports analyzed individually as described above, frequencies of each category have been determined and

distribution of variables into years have been examined. Then, cross relations between variables were examined in order to reveal the relationships between the variables and thus, $\chi 2$ (the Chi-Square test of independence) tests have been performed to determine the significance of the relationships between them.

RESULTS

As mentioned earlier, 5 news websites included for the present study. As a result of scanning the news via key words, total of 160 news reports were found. Table 1, 2 and 3 shows the distribution of medical malpractice news by variety of variables. Distribution of these news by news websites is as follows: BBC (60,0%), CNN (13,8%), Fox News (11,9%), The Guardian (9,4%) and USA Today (5,0%) (Table 1). It is seen that 18,8% of news reports are published between 1999 and 2003, 20% of news reports are published between 2004 and 2008, 26,3% of news reports are published between 2009 and 2013, 35,0% of news reports are published between 2014 and 2018. The majority of medical malpractice reported in England (56,3%) while 25,0% of incidents reported in United States of America (USA).

Schneider and Raue (2002: 134-135) stated that; the visuals have a different power of description comparing to the text, that it requires interpretation and that it creates the desire to learn more about the background of the visual. Thus, it is examined whether the news reports used any visuals and found that majority of news reports used images (79,0%) and a few used videos (10,5%) while only 2 news reports used both image and video in a single news report (Table 1). The care setting in which the medical malpractice is reported is examined and it is found that 78,8% of the incidents are reported in hospitals, 6,3% of the incidents are reported in clinics and 2,5% of the incidents are reported in primary care health settings. No information about the care setting in which the medical malpractice is reported in 17 news reports was found. The care setting ownership is also examined and it is found that 38,1% of the incidents are reported in public hospitals, 18,8% of the incidents are reported in university hospitals and 10,0% of the incidents are reported in private hospitals. Other care setting ownerships include community hospital, pharmaceutical company/pharmacy, private nursing home, private primary care, public primary care (5,0%). No information about the care setting ownership in which the medical malpractice is reported in 26 news reports was found (Table 1).

Textual analysis also was made for the titles of news reports in order to find out the most frequently repeated words and terms in the titles. Thereby, the most frequently used are: Wrong (n=43), error (n=32), doctor (n=31), hospital (n=30), patient (n=29), dies/died (n=29), drug (n=18), surgery (n=15), woman (n=14), nurse (n=12), surgeon (n=10), baby (n=8), over dose, cancer and diagnosis (n=7). The findings are not listed in a table.

Table 1: Distribution of news by descriptive variables

News websites (n=160)			Visual use[2] (n=162)		
Variable	**n**	**%**	**Variable**	**n**	**%**
BBC	96	60,0	Image	128	79,0
CNN	22	13,8	Video	17	10,5
Fox New	19	11,9	No visual	17	10,5
The Guardian	15	9,4	**Care setting (n=160)**		
USA Today	8	5,0	Hospital	126	78,8
Year (n=160)			Clinic	10	6,3
<2003	30	18,8	Primary care	4	2,5
2004-2008	32	20,0	Other[3]	3	1,9
2009-2013	42	26,3	Unknown	17	10,5
2014-2018	56	35,0	**Care setting ownership (n=160)**		
Country (n=160)			Public hospital	61	38,1
England	90	56,3	University hospital	30	18,8
USA	40	25,0	Private hospital	16	10,0
Scotland	12	7,5	Private clinic	10	6,3
Ireland	4	2,5	Teaching hospital	9	5,6
Netherlands	3	1,9	Other	8	5,0
Other[1]	11	6,8	Unknown	26	16,3

[1]Other countries include: Australia, Brazil, Canada, India, Japan, Kenya, Mexico, Russian Federation, Saudi Arabia and Sweden.

[2]There are 2 news reports used both image and video in a single news report, total is not equal with number of total news reports (n=160).

[3]Other care settings include: Pharmaceutical industry/pharmacy and nursing home.

In order to determine the field of medical malpractice, the news reports are examined and it is found that 48,8% of the incidents are related to medical treatment, 39,4% of the incidents are related to surgical treatment and 11,9% of the incidents are related to diagnosis (Table 2). Medical malpractice incidents are also examined and it is found that 32,5% of the incidents are medication errors, 15,0% of the incidents are misdiagnose incidents, 11,9% of the incidents are related to unsuccessful surgery and 8,8% of the incidents are about wrong site treatment and surgeries. Other medical malpractice incidents include unnecessary surgery, complication, disinfection failure, treatment failure, denial of treatment, early discharge, instrument malfunction, production failure, sample loss, surgery without consent and unnecessary treatment (11,9%).

The healthcare staff who is accused for the medical malpractice is mostly mentioned in the news reports (85,6%). Physicians are the most accused healthcare staff (62,1%), and 50,0% of the physicians are surgeons. The number of accused nurses is up to half of the number of accused physicians and surgeons. There were two different healthcare staff were accused in only one news report. No information about the healthcare staff who is accused for the medical malpractice in 23 news reports was found. Medical malpractice poses a threat to patient safety (Grober & Bohnen, 2005). The degree of harm is examined according to five categories determined by National Reporting and Learning System. Accordingly, the degree of harm reported in the news is examined and it is found that 3,1% of the incidents are reported no harm, 19,4% of the incidents reported moderate harm and 45,6% of the incidents are reported that the medical malpractice caused the death of the patient (Table 2).

The healthcare department in which the incident reported is also examined. It is found that 77,5% of the news reports mentioned the healthcare department. It is also found that 34,4% of the incidents are reported in medical sciences and 36,9% of the incidents are reported in surgical sciences. In the medical sciences; medical malpractice news reports are reported more often in Internal Medicine (32,7%), Pediatrics (23,6%), Cardiology (10,9%) and Radiology (10,9%) departments. In the surgical sciences; medical malpractice news reports are reported more often in General Surgery (33,9%) which also includes transplantation and vascular surgery, Obstetrics and Gynecology (29,4%) and Orthopedics and Traumatology (10,2%) departments (Table 2). When a medical malpractice occurs, legal actions are taken in most cases. In the study it is examined whether there was any legal sanction. It is found that 37,5% of the incidents are/were under investigation, 13,8% of the incidents resulted in dismissal of the accused healthcare staff, 6,9% of the incidents resulted in imprisonment of the accused healthcare staff and 5,0% of the incidents resulted in compensation (Table 2).

Table 2: Distribution of news by content variables

Medical malpractice field (n=160)			**Healthcare department (n=160)**		
Variable	**n**	**%**	**Variable**	**n**	**%**
Medical treatment	78	48,8	Surgical sciences	59	36,9
Surgical treatment	63	39,4	Medical sciences	55	34,4
Diagnosis Related	19	11,9	Other[2]	10	6,3
Medical malpractice incident (n=160)			Unknown	36	22,5
Medication error	52	32,5	**Sanction (n=160)**		
Misdiagnose	24	15,0	Under investigation	60	37,5
Unsuccessful surgery	19	11,9	Dismissal	22	13,8
Wrong site	14	8,8	Imprisonment	11	6,9
Wrong patient	12	7,5	Compensation	8	5,0
Forgotten surgical instrument	10	6,3	Other[3]	3	1,8
Transfusion error	5	3,1	Unknown	56	35,0
Wrong surgery	5	3,1	**Sanction subject (n=160)**		
Other	19	11,9	Physician	62	38,7
Accused staff[1] (n=161)			Nurse	16	10,0
Physician	100	62,1	Hospital	6	3,8
Nurse	26	16,1	Dentist	5	3,1
Dentist	5	3,1	Other[4]	5	3,1
Pharmacist	4	2,5	Unknown	66	41,3
Midwife	3	1,9	**News source[5] (n=204)**		
Unknown	23	14,3	Hospital officials	66	32,4
Degree of harm (n=160)			Court	49	24,0
No harm	5	3,1	Patient relative	22	10,8
Low harm	15	9,4	Patient	18	8,8
Moderate harm	31	19,4	Governmental	14	6,9
Severe harm	36	22,5	News agency	13	6,4
Death	73	45,6	Other[6]	16	7,8
			Unknown	6	2,9

[1]There is 1 news report has more than one accused healthcare staff, total is not equal with number of total news reports (n=160).

[2]Other healthcare departments include: Dentistry, laboratory, nursing services and pharmacy.

[3]Other sanctions include: License cancellation of the care setting, physician decertification and recall (of drug) from market.
[4]Other sanction subjects include: Midwife, intern, pharmaceutical company and pharmacist.
[5]There are 35 news reports have more than one source of news, total is not equal with number of total news reports (n=160).
[6]Other sources of news reports include: Physicians, lawyers and journal articles.

Sanction subject is also examined and it is found that 38,7% of the sanctions addressed physicians (20,6% of them are surgeons), 10,0% addressed nurses, 3,8% addressed hospital and 3,1% addressed dentists (Table 2). No information about sanction subject in 66 news reports was found. Thus, it is examined the source of medical malpractice news. While 35 news reports having multiple sources (21,9%), 6 of news reports did not mention the source of the news (3,8%). It is found that hospital officials are the source of 32,4% of the news reports, court is the source of 24,0% of the news reports, patients and patients' relatives are the source of 19,6% of the news reports.

After determining the frequencies of the variables, distribution of them into years have been examined. Hospitals are the settings with the highest incidence of medical malpractices in all year sets. Medical incidents reported in pharmaceutical industry only in last five years.

Table 3: Distribution of medical malpractice field by year

Medical malpractice field				
	Medical Treatment	**Surgical Treatment**	**Diagnosis Related**	**Total**
	n	**n**	**n**	**n**
<2003	18	10	2	**30**
2004–2008	20	10	2	**32**
2009–2013	19	19	4	**42**
2014-2018	21	24	11	**56**
Total	**78**	**63**	**19**	**160**

Distribution of degree of harm by years also examined and it is found that medical malpractices that caused death, severe and moderate harm were reported more frequently than the other degrees of harm (Table 4). All degrees of harm except no harm are on the rise in the recent years.

Table 4: Distribution of degree of harm by year

Degree of harm						
	No harm	**Low**	**Moderate**	**Severe**	**Death**	**Total**
	n	**n**	**n**	**n**	**n**	**n**
<2003	0	4	6	6	14	**30**
2004 – 2008	2	1	6	6	17	**32**
2009 – 2013	1	4	8	8	21	**42**
2014 - 2018	2	6	11	16	21	**56**
Total	**5**	**15**	**31**	**36**	**73**	**160**

Cross relations between variables were examined in order to reveal the patterns and the relationships between the variables and χ^2 (the Chi-Square test of independence) tests have been performed to determine the significance of the relationships between them. Firstly, distribution of medical malpractice field by care setting is analyzed and it is found that in hospitals the most frequent medical malpractice field that reported is medical (51,6%) and surgical treatment (38,1%). No significant relationship between medical malpractice field and care setting was found (χ^2= 18,127; p=0,053). Secondly, distribution of medical malpractice field by care setting ownership is analyzed and it is found that incidents under category of medical treatment are reported more frequently in public (63,9%), university (46,7%) and teaching hospitals (66,7%) while in private hospitals surgical treatments are more frequently reported (75,0%). No significant relationship between medical malpractice field and care setting ownership was found (χ^2= 26,666; p=0,145).

Thirdly, distribution of medical malpractice incidents by care setting is analyzed and it is found that medication error (35,7%), misdiagnose (11,9%), wrong site (9,5%), wrong patient (8,7%), forgotten surgical instrument (7,1%), unsuccessful surgery (7,1%) and transfusion error (4,0%) are the most frequently reported medical malpractice incidents in hospitals. No significant relationship between medical malpractice incident and care setting was found (χ^2= 74,523; p=0,784). Afterwards, distribution of medical malpractice incident by care setting ownership is analyzed and it is found that medication error is the most frequently reported medical malpractice incident in public (44,3%), university (26,7%), private hospitals (31,2%),while unsuccessful surgery is the most frequently reported medical malpractice incident in private clinics (60,0%). No significant relationship between medical malpractice incident and care setting ownership was found (χ^2 = 185,009; p=0,086).

Distribution of degree of harm by care setting is analyzed and it is found that death is the most frequent degree of harm in all care settings. No significant relationship between degree of harm and care setting was found (χ^2 = 11,091; p=0,944). Distribution of degree of harm by medical malpractice field is also analyzed and it is found that death is reported more often in medical treatment field (65,8%) than surgical (21,9%) and diagnosis related field (12,3%). No significant relationship between degree of harm and medical malpractice field was found (χ^2 =5,414; p=0,713).

Distribution of sanction by harm is analyzed and it is found that launching investigation (32,9%), dismissal (17,8%) and imprisonment (11,0%) of healthcare staff are the most frequent sanctions reported for the incidents caused death, while compensations are reported more frequently for the incidents caused severe (50,0%) and moderate harm (37,5%). No significant relationship between degree of harm and sanction was found (χ^2=16,502; p=0,958).

Lastly, distribution of accused healthcare staff by degree of harm is analyzed and it is found that physicians (42,5%), nurses (23,3%) and surgeons (13,7%) are the most accused healthcare staff for the medical incidents caused death. It is also found that surgeons are the most accused healthcare staff for severe (74,3%) and moderate (38,7%) degree of harm. Significant relationship between degree of harm and accused healthcare staff was found (χ^2=65,327; p<0,000).

DISCUSSION AND CONCLUSIONS

How to define a safety related event and how to apply the definition in practice can have critical implications for a hospital's ability to gather and analyze information (Tamuz *et al.*, 2004). Due to differences in the definition of medical malpractice and the methods used to identify it, researches and patient safety reports of countries to date have revealed varying findings. There are limited studies that review medical malpractice news on online news websites. Thus, the findings of the present study were compared with findings of studies with different methodologies.

Total of 160 news reports about medical malpractice news reports were reviewed and it is found that the oldest medical malpractice incident was reported in 1999. It is found that news reports on medical malpractice are on the rise when examined in 5 years intervals until 2018. Li *et al.* (2015) and Ertem *et al.* (2009) also pointed out that number of medical malpractice news reports are increasing.

Studies show that almost everyone including physicians and public often confronted with medical malpractice. A study aimed to enhance understanding of the incidence and scope of adverse events as a basis for preventing them found that, of the 1 047 patients in the study, 17,7% were said to have had at least one serious adverse event (Andrews *et al.*, 1997). In another study, hospital records were examined and 13 hospitals in Utah and 15 in Colorado included. Among the 2 820 total records 21,1% of the Colorado records and 20,1% of the Utah records had adverse events (Thomas *et al.*, 2000b). Blendon *et al.* (2002) conducted a survey on 831 practicing physicians and 1207 members of the public in order to learn viewpoints of them on medical errors. In the study it was found that, 35% of physicians and 42% of the public reported that they had experienced an error in their own care or that of a family member, 18% of physicians and 24% of the public reported an error that had serious health consequences, including death (Blendon *et al.*, 2002). In another study, a systematic review was performed on hospital adverse events and 8 studies including a total of 74 485 patient records were selected. The median overall incidence of in hospital adverse events was 9,2%, with a median percentage of preventability of 43,5% (Vries *et al.*, 2008).

A study was carried out by West *et al.* (2009) to assess the frequency of self-perceived medical errors among resident physicians and it was found that, 34% of participants reported making at least 1 major medical error during the study period. In another study it was found that, of 356 participants providing error data (93,7%), 139 (39%) reported making at least 1 major medical error during the study period (West *et al.*, 2009). Peng and Tang (2010) aimed to examine a representative sample of newspapers in China for 2 weeks in 2007 on health topics. In the study, 558 news scanned and it was found that 2,3% of the news were about medical malpractice. While 7,2% was about complications of medicine and 1,8% was about unsafe practice. In the present study, the medical malpractice incidents were reported mostly in England and USA. While this might be due to the origins of the news website that scanned, there are several studies with different approaches found similar results. In the above-mentioned study which reviewed 64 news reports, it was seen that majority of news were reported in United Kingdom, USA, Australia and Canada (Li *et al.*, 2015). A computerized systematic literature was conducted in order to examine the epidemiology of malpractice claims in primary care and it was found that, 15 studies from 34 were based

in the USA, 9 in the UK, seven in Australia, one in Canada and two in France (Wallace *et al.*, 2013).

Distribution of news reports by care setting is also examined and it is found that more than half of the incidents were reported in hospitals. There are other studies have the similar findings which majority of the incidents are reported in hospitals (Thomas *et al.*, 2000b; Vries *et al.*, 2008). Hospitals are owned by nonprofit and for-profit corporations and by government entities. Debates and researches on how the type of ownership affects the quality of medical care have existed for years (Thomas *et al.*, 2000a). Brennan *et al.* (1991) conducted a study in which two-stage sampling process was used to develop a representative sample of 31 429 records of hospitalized patients from a population of 2 671 863 non-psychiatric patients discharged from nonfederal, acute care hospitals in New York during 1984. The percentage of adverse events due to negligence was much lower in proprietary hospitals than nonprofit or governmental hospitals. More than 35% of adverse events were due to negligence in governmental hospitals. In another study, random sample of 15 000 hospital discharges in Utah and Colorado were reviewed to determine if hospital ownership is associated with preventable adverse events and medical record (Thomas *et al.*, 2000a). It was concluded that, non-teaching public hospitals had higher preventable adverse event rates than for-profit and nonprofit hospitals. However, a study conducted by Thornlow and Stukenborg (2006) included all discharges from hospitals in a 10% subsample of the Nationwide Inpatient Sample (NIS) for the year 2000 in 28 states in USA. The study found inconsistent relationships between hospital type and potentially preventable complications and adverse events. Likewise, in another study in which the medical malpractice news reports were reviewed and it was found that incidents were reported in private hospitals more frequently than public and university hospitals (Ertem *et al.*,2009). These differences might be due to the study sample, definitions of medical malpractice, patient profile etc.

Medical malpractice news reports were categorized by the incident field as medical treatment, surgical treatment and diagnosis related. It is found in the present study that incidents from medical and surgical treatment field were reported more than diagnosis related incidents. Studies with different approaches and samples have variety of findings on medical malpractice fields. According to a study which uses a sample of 30 195 randomly selected hospital records, nearly half the adverse events were found to be associated with an operation (Leape *et al.*, 1991). Another study stated that diagnostic error accounts for the majority of malpractice claims in primary care (Wallace *et al.*, 2013). Gupta *et al.* (2018) used a malpractice claims database to examine incidence and examined paid malpractice claims filed between 1999 and 2011. They found that 35,8% of the incidents were surgery related, 21,8% were diagnosis related and 17,9% were treatment related (Gupta *et al.*, 2018). Andrews *et al.* (1997) found in their prospective, observational study that 13,4% of the adverse events were medical treatment related, 10,5% were surgery related and 7,5% were diagnosis related (Andrews *et al.*, 1997). In another study hospital records were screened and it was found that 44,9% of the incidents were operative and 19,3% were drug related (Thomas *et al.*, 2000b). Likewise, Vries *et al.* (2008) conducted a systematic review to gain an insight into the overall incidence and it was found that 39,6% of the adverse events were operation related, 15,1% were drug related and 7,5% were diagnosis related (Vries *et al.*, 2008).

In the present study medical malpractice news reports were also distributed by incident field. Incidents related to medication error, misdiagnose, unsuccessful surgery, wrong site and wrong patient were found to be reported more frequently. Concordantly, studies show that medication errors are probably the most common type of patient safety incidents worldwide and cause harm to patients, distress to medical staff and costs to the healthcare system (Ghaleb *et al.*, 2006; Björkstén *et al.*, 2016). According to a study, drug complications were the most common type of adverse event followed by wound infections and technical complications (Leape *et al.*, 1991). In an another study, among adverse drug events 7,9% were related to use of wrong dose, 5,0% were related to missed dose and 74,2% of the hospital records about adverse events were misdiagnose related (Thomas *et al.*, 2000b). Rothschild *et al.* (2002) conducted a retrospective analysis of a New England malpractice insurance company claims records from 1990 to 1999. In the study, adverse drug events represented 6.3% of claims. Forster *et al.* (2004) conducted a study to determine the incidence, preventability, severity, type and timing of adverse events affecting patients in a Canadian teaching hospital and found that 50% of the incidents were related to adverse drug events and 9,0% were diagnosis related. According to a systematic review relating to medication errors in prescribing, transcribing, dispensing, administration and documentation in adults and children it is found that, among medication errors occurred; 25,3% were in the category of wrong dose, 21,2% were wrong drug, 19,7% were wrong patient (Karthikeyan *et al.*, 2015).

In a study it was found that computerized physician order entry decreases harmful adverse drug events in a pediatric hospital, leading to improved patient safety and healthcare quality (Upperman *et al.*, 2005). In another study, the authors tested whether hospital wide computerized physician order entry in a pediatric hospital would lead to a decrease in medication errors. As a result, the rates of potential adverse drug events decreased by 63% (Poon *et al.*, 2006). Thus, healthcare managements should take action to increase the awareness of medication errors of healthcare professionals and analyze the environment well, try to make use of the latest technological developments as much as possible. A study conducted on medical malpractice news reports found that 19,8% of the news reports were about wrong surgery, 17,4% were about wrong treatment and 10,5% were about wrong diagnosis (Ertem *et al.*, 2009). Fenn *et al.* (2004) found that the most common error in primary and secondary care was a failure or delay in diagnosis. Likewise in another study, as a result of a systematic review the most frequently cited error cause of malpractice claims were missed or delayed diagnoses and medication (Wallace *et al.*, 2013).

In the present study it was found that physicians and nurses are the most accused staff among healthcare staff. Studies also found that physicians, surgeons and nurses are the most accused healthcare staff in healthcare settings (Thomas *et al.*, 2000b; Rothschild *et al.*, 2002; Ertem *et al.*, 2009; Li *et al.*, 2015). Medical malpractice incidents mostly cause harm to patients in several degrees. In this study, majority of the incidents included in the news reports were mostly resulted as death of the patient and cause severe (permanent/long term) harm. While medical malpractice cases resulting in death or cause severe harm may take place in the news more often, this might be due to the nature of journalism. In order to find out if medical malpractice cases often cause death and severe harm, findings from studies with different methodological approaches

should be examined and their findings should be compared.

Studies with different approaches show that majority of medical malpractice cases cause death or severe harm to patients (Ertem *et al.*, 2009; Li *et al.*, 2015; Gupta *et al.*, 2018). Rothschild *et al.* (2005) conducted an observational study and two physicians independently assessed incident type, severity, and preventability of adverse events. Of 120 adverse events 2,0% was fatal, 41,0% was severe. In another study, from the sample of 30 195 randomly selected hospital records, 1 133 patients with disabling injuries caused by medical treatment was identified (Leape *et al.*, 1991). Vries *et al.* (2008) found from the systematic review that 7.4% of incidents were lethal, 7,0% were severe (Vries *et al.*, 2008). Forster et al. (2004) found that of 3 of 502 patients died because of an adverse event, 9 had permanent disabilities, and 52 had temporary disabilities. Brennan *et al.* (1991) reviewed 30 121 randomly selected records from 51 randomly selected acute care, non-psychiatric hospitals in New York State in 1984. Most adverse events resulted in minor impairment with complete recovery in one month. Another 13,7 percent led to disabilities that lasted more than one but less than six months. However, 2.6 percent of the adverse events gave rise to permanent total disability, and 13,6 percent caused death (Brennan *et al.*, 1991). Medical malpractice cases were analyzed in a study and it was found that the most common recorded outcome of errors in primary care was the death of the patient and in secondary care was unnecessary pain and death (Fenn *et al.*, 2004). According to the study by Rothschild *et al.* (2002), among reviewed 2 040 adverse drug events, 46% were life threatening or fatal.

In the present study, medical malpractice incidents from surgical sciences were more frequently reported than medical sciences. Among surgical sciences, departments of General Surgery, Obstetrics and Gynecology, Orthopedics and Traumatology, among medical sciences departments of Internal Medicine, Pediatrics, Cardiology and Radiology were reported medical malpractice more frequently. Zuckerman (1984) stated that annual medical malpractice claims per 100 physicians were 11,8 in surgical sciences while claims per 100 physicians were 4,5 in medical sciences. Brennan *et al.* (1991), Thomas *et al.* (2000b), Rothschild *et al.* (2002), Vries *et al.* (2008) and Ertem *et al.* (2009) also found that incidents from surgical sciences occur more than medical sciences. In an observational study of 502 patients, 64 of them experienced adverse events and 22,0% of the incidents occurred in medical sciences, 12,0% occurred in surgical sciences (Forster *et al.*, 2004). There are several studies show that there are number of incidents occur in the department of General Surgery and in Obstetrics and Gynecology (Thomas *et al.*, 2000b; Forster *et al.*, 2004; Vries *et al.*, 2008; Ertem *et al.*, 2009).

Patients harmed by a medical malpractice might bring the accused to the trial. In the present study, medical malpractice news were reviewed by sanction and it was found that, majority of incidents were brought to trial and the rest mostly caused dismissal or imprisonment of the accused healthcare staff. In the study by Blendon *et al.* (2002), it was found that if the patient was harmed, physicians were significantly more likely to support medical malpractice lawsuits against the surgeon, the nurse, and the hospital, and the public was substantially more likely to support lawsuits and suspension of the surgeon's license (Blendon *et al.*, 2002). He also stated that 48% of physicians reported that they had been named in a malpractice lawsuit at some time in

their career. Zuckerman (1984) analyzed the data collected from 1240 physicians on the number of malpractice claims against each physician and it was found that, the increase in the annual rate of claims was statistically significant for general and family practitioners, surgeons, and physicians. These results indicated that, on average, physicians have been under a greater threat of incurring a medical malpractice claim since 1978 than earlier in their careers (Zuckerman, 1984). Studies show that legal actions (investigation and compensation) taken by patients, their relative or public authorities against the medical errors were common among the medical malpractice incidents (Zuckerman, 1984; Blendon *et al.*, 2002; Rothschild *et al.*, 2002; Studdert *et al.*, 2006; Ertem *et al.*, 2009; Jena *et al.*, 2011).

Medical malpractice claims and compensations cause defendant to lose time and money. Studdert *et al.* (2006) states that, when claims not involving errors were compensated, payments were significantly lower on average than were payments for claims involving errors. For every dollar spent on compensation, 54 cents found to be went to administrative expenses (including those involving lawyers, experts, and courts). After a claim is filed, physicians incur a certain amount of costs to defend themselves. Court costs (file and lawyer), the opportunity costs associated with the time lost for depositions, court appearances, and meetings with attorneys. The total time lost to legal activities per physician for the years between 1978 and 1983 was 3.7 days, or nearly $1 500 in foregone incomes for each physician incurring claims. The major component of physicians' legal costs appears to be time lost from medical practice (Zuckerman, 1984). Rothschild *et al.* (2002) stated that the mean costs of defending malpractice claims were considerably greater for preventable inpatient adverse drug events. In the present study, sources of the medical malpractice news were hospital officials, court, patient and patient relatives, news agencies and journal articles. Ertem *et al.* (2009) stated in their study which they reviewed the medical malpractice news reports, the source of the news were mostly news agencies. In another study reviewed newspapers for medical errors it was found that court (30,0%), patient (30,0%) and hospital officials (20,0%) were the most common source of news reports (Li *et al.*, 2015).

Due to the lack of standardized definition and classification of medical malpractice incidents, studies vary in findings and thus it is harder to make comparison in order to generalize the conclusions. Thus, definitions and classification schemes of medical malpractice plays an important role for hospitals, public authorities and researchers in order to reduce medical malpractice incidents, to improve patient safety and quality of healthcare services. Further studies are needed on medical malpractice news reports to establish standard methodological processes and to create an incident taxonomy that can be used so that the necessary data can be collected and analyzed simpler. Hospitals should develop and enhance their system for preventing medical malpractice incidents, keep track of incidents and create reports periodically, train the healthcare staff according to the results of these reports in order to expand awareness and to identify and reduce the rates of incidents, encourage healthcare staff to report incidents.

As the study concludes, variety of medical malpractice incidents from different healthcare department is reported more frequently by the year and those incidents differ from care setting and its ownership. When the findings from news reports about medical malpractice incidents are compared to the ones from clinical trials or

systematic reviews, there are similarities on the presentation of the incidents. Only the findings related to degree of harm was different between news reports and clinical trials and systematic reviews. While majority of medical malpractice incidents that were reported in news websites were the ones caused severe harm or death of the patient, in the clinical trials or systematic reviews the incidents mostly cause low or moderate harm. This thought to be due to the high likelihood of fatal incidents being subject to news within the scope of journalism principles (Gilchrist, 2010).

Before conducting the study it was assumed that reflection of malpractice incidents on news reports will be similar to the ones on journal articles. As a result of the research, it can be said that this assumption is correct. It was concluded that, medical malpractice news reports should be placed in newspapers because people have the right to have information about medical malpractice incidents.

REFERENCES

Andrews, L.B.; Stocking, C.; Krizek, T.; Gottlieb, L.; Krizek, C.; Vargish, T.; Siegler, M. (1997). An alternative strategy for studying adverse events in medical care. The Lancet 349: (9048), 309-313.

Asbridge, M. (2004). Public place restrictions on smoking in Canada: assessing the role of the state, media, science and public health advocacy. Social Science & Medicine 58: (1), 13-24.

Bal, B.S. (2009). An Introduction to Medical Malpractice in the United States. Clinical Orthopaedics and Related Research 467: (2), 339-347.

Björkstén, K.S.; Bergqvist, M.; Andersén-Karlsson, E.; Benson, L.; Ulfvarson, J. (2016). Medication errors as malpractice-a qualitative content analysis of 585 medication errors by nurses in Sweden. BMC Health Services Research 16: (1), 431.

Blendon, R.J.; DesRoches, C.M.; Brodie, M.; Benson, J.M.; Rosen, A.B.; Schneider, E.; Altman, D.E.; Zapert, K.; Herrmann, M.J.; Steffenson, A.E. (2002). Views of Practicing Physicians and the Public on Medical Errors. New England Journal of Medicine 347: (24), 1933-1940.

Brennan, T.A.; Hebert, L.E.; Laird, N.M.; Lawthers, A.; Thorpe, K.E.; Leape, L.L.; Localio, A.R.; Lipsitz, S.R.; Newhouse, J.P.; Weiler, P.C.; Howard, H. (1991). Hospital characteristics associated with adverse events and substandard care. JAMA 265: (24), 3265-3269.

Caburnay, C.A.; Kreuter, M.W.; Luke, D.A.; Logan, R.A.; Jacobsen, H.A.; Reddy, V.C.; Vempaty, A.R.; Zayed, H.R. (2003). The News on Health Behavior: Coverage of Diet, Activity, and Tobacco in Local Newspapers. Health Edu. & Behavior 30: (6), 709-722.

Calloway, C.; Jorgensen, C.M.; Saraiya, M.; Tsui, J. (2006). A content analysis of news coverage of the HPV vaccine by U.S. newspapers, January 2002-June 2005. Journal of Women's Health 15: (7), 803-809.

Cho, S. (2006). Network news coverage of breast cancer, 1974–2003. Journalism and Mass Communication Quarterly, 83: (1), 116–130.

Ertem, G.; Öksel, E.; Akbıyık, A. (2009). Hatalı Tıbbi Uygulamalar (Malpraktis) ile İlgili Retrospektif Bir İnceleme. Dirim Tıp Gazetesi 84: (1), 1-10.

Fenn, P., Gray, A., Rivero-Arias, O., Trevethick, G., Trevethick, K., Davy, C., Vincent, C. (2004). The epidemiology of error: an analysis of databases of clinical negligence litigation. 60 pp., Manchester: Manchester Centre for Healthcare Management, University of Manchester.

Forster, A.J.; Asmis, T.R.; Clark, H.D.; Al Saied, G.; Code, C.C.; Caughey, S.C.; Baker, K.;

Watters, J.; Worthington, J.; van Walraven, C. (2004). Ottawa Hospital Patient Safety Study: incidence and timing of adverse events in patients admitted to a Canadian teaching hospital. Canadian Medical Association Journal 170: (8), 1235-1240.
Ghaleb, M.A.; Barber, N.; Franklin, B.D.; Yeung, V.W.; Khaki, Z.F.; Wong, I.C. (2006). Systematic Review of Medication Errors in Pediatric Patients. Annals of Pharmacotherapy 40: (10), 1766-1776.
Gilchrist, K. (2010). "Newsworthy" Victims? Feminist Media Studies 10: (4), 373-390.
Grober, E.D.; Bohnen, J.M.A. (2005). Defining medical error. Canadian Journal of Surgery 48: (1), 39-44.
Grutter, R. (2002). Knowledge Media in Healthcare: Opportunities & Challenges, Idea Group Publishing, 11 pp., Pennsylvania.
Gupta, A.; Snyder, A.; Kachalia, A.; Flanders, S.; Saint, S.; Chopra, V. (2018). Malpractice claims related to diagnostic errors in the hospital. BMJ Qual Saf 27: (1), 53-60.
Jena, A.B.; Seabury, S.; Lakdawalla, D.; Chandra, A. (2011). Malpractice Risk According to Physician Specialty. New England Journal of Medicine 365: (7), 629-636.
Karthikeyan, M.; Balasubramanian, T.; Khaleel, M.I.; Sahl, M.; Rashifa, P. (2015). A Systematic Review on Medication Errors. International Journal of Drug Development and Research 7: (4).
Kohn, Linda T., Corrigan, Janet M., and Donaldson, Molla S. (1999). To Err Is Human: Building a Safer Health System. Committee on Quality of Health Care in America, Institute.
Leape, L.L.; Brennan, T.A.; Laird, N.; Lawthers, A.G.; Localio, A.R.; Barnes, B.A.; Hebert, L.; Newhouse, J.P.; Weiler, P.C.; Hiatt, H. (1991). The nature of adverse events in hospitalized patients: results of the Harvard Medical Practice Study II. New England Journal of Medicine 324: (6), 377-384.
Li, J.W.; Morway, L.; Velasquez, A.; Weingart, S.N.; Stuver, S.O. (2015). Perceptions of medical errors in cancer care: an analysis of how the news media describe sentinel events. Journal of patient safety 11: (1), 42-51.
Marinescu, V.; Mitu, B. (2016). The Power of the Media in Health Communication. 1 pp., Routledge. New York.
Matamoros, D.J.C.; Axelsson, R.; Strid, J. (2007). How do newspapers deal with health in Sweden? A descriptive study. Patient Education and Counseling 67: (1), 78-83.
Morton, T.A.; Duck, J.M. (2001). Communication and health beliefs: Mass and interpersonal influences on perceptions of risk to self and others. Communication Research 28: (5), 602-626.
Peng, W.; Tang, L. (2010). Health content in Chinese newspapers. Journal of health communication 15: (7), 695-711.
Peters, G.A.; Peters, B.J. (2007). Medical error and patient safety: Human factors in medicine. 254 pp., CRC Press, Florida.
Pierce, J.P.; Gilpin, E.A. (2001). News media coverage of smoking and health is associated with changes in population rates of smoking cessation but not initiation. Tobacco Control 10: (2), 145-153.
Poon, E.G.; Cina, J.L.; Churchill, W.; Patel, N.; Featherstone, E.; Rothschild, J.M.; Keohane, C.A.; Whittemore, A.D.; Bates, D.W.; Gandhi, T.K. (2006). Medication dispensing errors and potential adverse drug events before and after implementing bar code technology in the pharmacy. Annals of internal medicine 145: (6), 426-434.
Reason JT. Understanding adverse events: the human factor. In: Vincent C, editor.Clinical risk management: enhancing patientsafety. London: BMJ Publy Group; 2001. p. 9-30.
Rothschild, J.M.; Federico, F.A.; Gandhi, T.K.; Kaushal, R.; Williams, D.H.; Bates, D.W.

(2002). Analysis of medication-related malpractice claims: causes, preventability, and costs. Archives of Internal Medicine 162: (21), 2414-2420.
Rothschild, J.M.; Landrigan, C.P.; Cronin, J.W.; Kaushal, R.; Lockley, S.W.; Burdick, E.; Stone, P.H.; Lilly, C.M.; Katz, J.T.; Czeisler, C.A. (2005). The Critical Care Safety Study: The incidence and nature of adverse events and serious medical errors in intensive care. Critical care medicine 33: (8), 1694-1700.
Schneider, W.; Raue, J. P. (2002). Gazetecinin El Kitabı, (2. Basım), Galatasaray Üniversitesi İletişim Fakültesi Yayınları, İstanbul.
Studdert, D.M.; Mello, M.M.; Gawande, A.A.; Gandhi, T.K.; Kachalia, A.; Yoon, C.; Puopolo, A.L.; Brennan, T.A. (2006). Claims, errors, and compensation payments in medical malpractice litigation. New England journal of medicine 354: (19), 2024-2033.
Tamuz, M.; Thomas, E.; Franchois, K. (2004). Defining and classifying medical error: lessons for patient safety reporting systems. BMJ Quality & Safety 13: (1), 13-20.
Thomas, E.J.; Orav, E.J.; Brennan, T.A. (2000a). Hospital ownership and preventable adverse events. Journal of general internal medicine 15: (4), 211-219.
Thomas, E.J.; Studdert, D.M.; Burstin, H.R.; Orav, E.J.; Zeena, T.; Williams, E.J.; Howard, K.M.; Weiler, P.C.; Brennan, T.A. (2000b). Incidence and types of adverse events and negligent care in Utah and Colorado. Medical care 38: (3), 261-271.
Thornlow, D.K.; Stukenborg, G.J. (2006). The association between hospital characteristics and rates of preventable complications and adverse events. Medical care 44: (3), 265-269.
Upperman, J.S.; Staley, P.; Friend, K.; Neches, W.; Kazimer, D.; Benes, J.; Wiener, E.S. (2005). The impact of hospitalwide computerized physician order entry on medical errors in a pediatric hospital. Journal of pediatric surgery 40: (1), 57-59.
URL: JCI (2018). https://www.jointcommission.org/assets/1/18/Summary_4Q_2017.pdf (Accessed: 17 May 2018).
URL: Medical Errors (2018). https://www.ncbi.nlm.nih.gov/mesh?term=Medical%20errors (Accessed: 20 May 2018).
URL: NRLS (2018). https://improvement.nhs.uk/documents/ 2543/NAPSIR_commentary _FINAL_data_to_December_2017.pdf (Accessed: 17 May 2018).
URL: WHO (2017). http://apps.who.int/iris/bitstream/handle/10665/255263/WHO-HIS-SDS-2017.6-eng.pdf;jsessionid=2BE3D816B919C0CE5565D9110E128B3E?sequence=1 (Accessed: 10 June 2018).
Vries, E.N.; Ramrattan, M.A.; Smorenburg, S.M.; Gouma, D.J.; Boermeester, M.A. (2008). The incidence and nature of in-hospital adverse events: a systematic review. BMJ Quality & Safety 17: (3), 216-223.
Wallace, E.; Lowry, J.; Smith, S.M.; Fahey, T. (2013). The epidemiology of malpractice claims in primary care: a systematic review. BMJ open 3: (7), e002929.
West, C.P.; Huschka, M.M.; Novotny, P.J.; Sloan, J.A.; Kolars, J.C.; Habermann, T.M.; Shanafelt, T.D. (2006). Association of perceived medical errors with resident distress and empathy: a prospective longitudinal study. Jama 296: (9), 1071-1078.
West, C.P.; Tan, A.D.; Habermann, T.M.; Sloan, J.A.; Shanafelt, T.D. (2009). Association of resident fatigue and distress with perceived medical errors. Jama 302: (12), 1294-1300.
Winett, L.; Wallack, L. (1996). Advancing Public Health Goals Through the Mass Media. Journal of Health Communication 1: (2), 173-196.
Zuckerman, S. (1984). Medical malpractice: claims, legal costs, and the practice of defensive medicine. Health Affairs 3: (3), 128-134.

Chapter 97

Evaluation of Medical Benefits toward Poor People in Turkey

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INTRODUCTION

Poverty is accepted as a problem and menace at global level nowadays. This is because it has not been discussed associated with only economics. Moreover, poverty appears like a social fact that interests several different areas such as social, cultural, moral and juridical. Poverty is also a social fact that necessitates being produced policies that will cover all these areas mentioned. According to the United Nations 2015 data, more than 700 millions of people in the world live in squalor; they earn less than 1.90 dollars a day and cannot meet the basic needs like health, education, water and sanitation access (United Nations, 2015). In the widest sense, poverty is the state that person cannot meet one or full of his/her needs. Consequently, poverty has become like increasing the life quality beyond increasing the income level.

It is seen when asset allocation of the world is considered that 1% section that is at the top of this allocation has 46% of the aggregate wealth in the world (UNDP, 2016: 7). Accordingly, it is not possible to handle the poverty independent of the economic level regardless of how poverty is defined in the world. However, it is also not acceptable to explain the poverty via only inequality in income distribution and injustice. Inequality and injustice are in existence in several areas such as freedom, rights, healthy life, education, service, self-realization and access to resources.

There is seen a similar picture when the fact is thought in terms of Turkey. Turkey has been in developing countries category as of the available economic structure. The uppermost reason for this situation is that Turkey has not performed a sustainable development as of yet. Therefore, unfair distribution of income could not be controlled and poverty has turned into a chronic study.

Also, the Turkish Statistical Institute (Türkiye İstatistik Kurumu-TÜİK) confirms the inequality in income distribution. With reference to Income and Living Conditions Survey of TÜİK in 2016, while the first 20% that is the poorest section of the society has 6.2% of the total revenue; 20% that is the last richest section of the society has 47.2% of total revenue. The ratio (P80/P20) between the poorest and richest was realized as 7.7. In other words, the richest segment took almost eight times more than

the poorest segment (TÜİK, 2017).

Inequality in income distribution triggers both social and individual problems. The most serious result of this inequality for people is the poverty. Because the poor person cannot use his/her fundamental human rights frequently except that reaching goods and services like high-income citizens. That's why the countries have struggled against poverty throughout history and different policies have been applied.

One of the fundamental rights that the poor cannot use or have difficulty to use is the 'healthy life right'. Thereby the powers need to avail poor citizens of this right by several policies and services. Within this context, medical benefits toward the poor in Turkey were addressed in this research. Turkey that has struggled against poverty for many years developed policies for poor to reach health care services and finance of the services. Turkey has not reached the desired level as of yet in spite of covering a lot of ground.

POVERTY

Poverty is a multidimensional and complex problem. The historical development process of the concept, different structures of societies, need a hierarchy of people and labyrinthic relationship networks complicate to define the concept. Besides that this concept is tried to be explained within a large scale frame such as level of income, minimum standard of life, fundamental rights, health, and environment. Another essential dimension of poverty is to measure it. Being comparative of the concepts that are used to explain the poverty cause to diversify of definitions; this comparativeness complicates measuring as well. It is seen that income and consumption expenditures are the commonly used measurements (Şenses, 2014: 62). Criteria that for defining and measuring the poverty have brought along classification efforts as well. Within this context, there are several kinds of poverty like absolute poverty, humanitarian poverty, subjective poverty, rural/urban poverty, sub-class poverty, new poverty, alternative poverty, new slavery (Yılmaz, 2012: 257).

Handling poverty at the global level has created the necessity to define objective standards in defining and measuring the poverty. World Bank took the first step in this direction. Organization defined poverty as 'lack of access to the minimum standards of life' in their study in 1990. Concordantly, they developed 'poverty threshold' concept to measure the poverty. Poverty threshold has been defined as the acceptable lowest standard of life that is accounted for income and consumption (World Bank, 1990: 26). The organization conducted another study in 1993 and divided poverty into two as 'absolute poverty' and 'relative poverty'. Absolute poverty is accepted as the sub of minimum expense amount for food basket that provides calorie amount that a person or household needs to take to survive. Besides this objective criterion, there was occurred a necessity to determine a poverty threshold based on specific subjective criterion when different structures of countries and living conditions are considered. This threshold that is defined as relative poverty is being the conditions of the person or household lower than average per capita income or level of welfare of other citizens (World Bank, 1993: 30).

Approach to poverty has changed within the process around the world. Besides the economic approach, the principles such as providing equality of opportunity for poor people for accessing to education, health, and other social services have accepted as the

policy targets since the 1990s (World Bank, 1993). 'Humanitarian Development' concept has been revealed by United Nations Development Program (UNDP) within the frame of struggle against poverty. In the widest sense, humanitarian development is a process toward to maximize the selections of people (UNDP, 1990: 10). UNDP added humanitarian development concept in Humanitarian Development Report in 1997. This new kind of poverty that is discussed within the frame of humanitarian development means the lack of selections and opportunities that require an acceptable life standard besides income-based poverty. This selection and opportunities cover several fields such as notably healthy and long life, education, self-realization and access to the services (UNDP, 1997).

TÜİK defines the poverty as the status that person cannot meet the basic needs. In this connection, concordantly to the absolute and relative poverty classification of the World Bank, TÜİK defines the poverty in the strict and broad terms. In the strict sense, poverty is to starvation and lack of housing. In broad terms, poverty means falling behind the general level of the society even though the opportunities like food, clothing, and housing are sufficient to survive. The poverty threshold is the minimum expense amount that requires to meet basic needs and keep the minimum life standard (TÜİK, 2008). This threshold was identified by 5510 numbered Social Security and General Health Insurance Law (Official Gazette)-O.G., 06.11.2010 dated and 27751 numbered) within the context of benefits toward poor people. The eyes of the law, the poverty threshold are being average household income per capita lower than 1/3 of the gross minimum wage.

Much as the poverty is accepted as the deprivation of the economic potential, it has an impact on many areas like justice, freedom, healthy life, education, service, self-realization and access to the sources. Poverty ends up with the lack of choices and opportunities for obtaining basic needs including food, clothing, and housing to survive. Failure to meet the basic needs causes to stay out of the society, distrust, incapacity and being ostracized. In other words, it interferes with developing a powerful society (Ng, et al., 2013: 2478). Conclusions of the poverty affect the person and create one of the biggest loads on the systems such as health, education, justice, and economy (Canada Without Poverty, 2018).

On the one hand, while the deprivation of accessing to service and sources cause to poverty, on the other hand, poverty becomes the biggest obstacle in front of accessing to the service and sources. Lack of accessing to education and healthcare services, cause people to be unemployed or broke. That's why poverty becomes long-standing and chronical (Temiz, 2008: 68). Chronic poverty brings along bad living conditions; bad living conditions bring along bad health conditions at the same time. It is not possible for people who cannot get enough health services and reach health services to get rid of poverty.

POVERTY AND HEALTH RELATIONSHIP

Health and poverty have inseparably intertwined. While disease causes poverty, also poverty is one of the leading causes of diseases. Health is one of the main elements of the human life. A person needs to keep healthy to suck in the early days of the life, go to school, eat well, work, make a life or bring up a family. On the other hand, poverty, especially extreme poverty interacts with health and sabotages a series of

ability, opportunity, and chances of people. For instance, the inadequacy of child welfare and child hunger causes them to fail during the school term. Accordingly, those hunger children have not a chance to find a good job and earn money for the family. Thereby the poverty continues for generations by turning into a vicious circle (Murray, 2006).

Poverty conduces toward diseases for a variety of reasons such as poor nutrition, insufficient housing, bigger environmental risks and less access to the healthcare services. Also, the total opposite shape of this situation is valid in poverty and healthy relationship. Disease causes of poverty by decreasing savings, general productiveness and life quality of people or households. A lot of people are unaware of the cost of health system stemming from the poverty. Poverty creates financial problems in health systems of the countries without noticing development levels. For example, predicted the cost of poverty in Canada health system is $7.6 billion (Canada Without Poverty, 2018).

Poverty is the primary reason for disease and insufficient access to the health care services when there is a need (World Bank, 2018). Poor people have worse health conditions in comparison with the people who have better income level; these poor die young. Average disease level, mother, and child death ratios are higher in poor people (OECD and WHO, 2003: 14). There are several reasons for poverty to cause to bring disease. First of all, poor people cannot afford to buy factors such as enough food, well housing conditions, and health care services. Moreover, poor people have not enough knowledge about opportunities that benefit from social services and also applications that develop the health. This factor increases the seriousness of their situation (World Bank, 2018). In other respects, poor people face the risk of any danger in terms of the health. The work environment of poor people has a more environmental risk in terms of disease and occupational accidents. They work more frequent in risky jobs because of the desire to get more wage or having no alternative. Furthermore, environmental factors such as access to clean water sources effects poor households much more than other families (Murray, 2006).

The disease causes poverty by decreasing the income. Household becomes impoverished because of revenue loss when a family member falls ill or gets hurt. That's why health is accepted as a crucial economic asset for, especially poor people. These people have generally only one wage; their living hinges upon working and being healthy (OECD and WHO, 2003: 14). Revenue loss may both stem from unemployment of the householder and dropping out or knocking off to care for relatives of the family members (World Bank, 2018).

Another big impact of disease to become impoverished actualizes at the end of health expenses. It is not possible to know when health expenses occur obligates people to sell assets, borrowing by high interest (World Bank, 2018). Expenditures that emerge by the reason of disease does not only include out-of-pocket costs (such as examinations, tests, and medicines) to get health care services but also transportation costs and informal expenses for the service provider (World Bank, 2018). According to the report that was published by the World Bank and the World Health Organization in 2017, more than half of the world population cannot get required health care services. Using 10% of the household budget for health charges of family members is accepted as a factor that impoverishes. With reference to the report, 800 millions of people

become poor because of this reason mentioned. Almost 100 millions of people try to survive by $1.90 per day or less than this amount (World Bank, 2018-2).

Health may be determinative of poverty of nations as well as person and households. World nations are in agreement that health is a human right without discriminating. Beyond this essential principle, the economic value of health is crucial and a central point in decreasing the poverty. Health investment is accepted as an important tool of economic development. Health investments are seen as a precondition for both improve the situation of poor people and break the poverty circle in developing countries. Because the good health contributes to development by different ways like increasing labor productivity, education level and easing the demographical transition (OECD & WHO, 2003: 14).

Being healthy is a fundamental human right lies behind rendering health care services toward poor people. At the same time, these poor need to have sources to reach this fundamental right. Just as worldwide, several policies have developed in Turkey for poor people to use these rights.

LEGISLATIVE REGULATIONS ON MEDICAL BENEFITS TOWARD POOR PEOPLE IN TURKEY

Including health area, it is seen that concrete policies on the struggle against poverty have been developed since Republic Period. In Ottoman Empire, this area was handled within the frame of humanitarianism based on religious ground. Operate the zakat establishment in Islam and especially caravansaries, hospitals, hospices that were built via foundations were not conscious policies toward reducing the poverty; they were generally made real by philanthropists (Buğra, 2013: 130). With Republic period, both the regulations at the national level and political papers that were also accepted by Turkey and revealed by international organizations have been effective in shaping public services on poverty and health.

First of all, fundamental international policy papers that include health area and were approved by Turkey need to be discussed. The importance of these papers is rooted in determining the principles of fundamental rights and freedoms and also the contracting countries constitute background the national regulations in this area. As in the whole world, for Turkey, the source document in this field is Universal Declaration of Human Rights that was declared by the United Nations in 1948. It is ruled in the 22nd article of the document that people have social security right because of being a member of a society. It is expressed clearly in 25th article that everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control (United Nations, 1948).

European Social Charter that was established by Council of Europe to keep and settle human rights in Europe is another important international document in this area. It is mentioned in the first part of the charter includes the basic principles which contracting countries need to reach that everybody has the right to benefit from the highest health level and precautions that will provide it. Moreover, it is confirmed that everybody who is destitute of sufficient sources has right to benefit from social and

medical assistance (Council of Europe, 1996).

Another international document that needs to be discussed in this area is European Union Charter of Fundamental Rights that was declared in 2000. Turkey that is in full membership process for European Union needs to harmonize its own communautarie with union communautarie. Within this context, the charter that is a part of articles of Union is non-binding for Turkey. It is written in the 34th article of the charter that everyone has the right to benefit from social security, social aid, and social services. Moreover, it is mentioned in the same article that these benefits need to be provided for everyone who has not sufficient source in the context of the struggle against poverty and social exclusion. With reference to the 35th article, everyone has the right to benefit from preventive health services and medical treatment. The union aims health protection at a higher level in defining and applying all the policies and actions (European Union, 2000).

It is seen obviously that these documents accept health as fundamental and universal human right. Besides, notably poor people, governments need to help segments who cannot use this right by the public policy instruments such as social security and social benefits. There are followed policies in Turkey in this regard. Notably, the basic law, there are rules in national legislation as to transmit the health care services to poor people.

Constitution has amended in 1924, 1961 and 1982 since the establishment of the republic. There was not a rule about poverty, health or social benefits in 1924 constitution act because of the conditions of that period. However, 1961 and 1982 constitution acts accepted that health is a right and everybody has a social security. It is emphasized in the 48th article of 1961constitution act that 'Everybody has social security right. Establishing social insurances and social benefit organizations is the assignment of the Government'. According to the point of this article, the government is responsible for providing social security for all the citizens. Again, it is mentioned in the 49th article that 'The government is responsible for ensuring every citizen to live in physical and mental health and take medical care' (O.G., 20.07.1961 dated and 10859 numbered).

Similar principles have been accepted by current 1982 constitution act. It is accepted in 56th article of 1982 constitution act that everybody has right to live in a healthy and balanced environment. Providing everyone to survive in physical and mental health is the duty of the State. For this purpose, general health insurance can be established to ensure health care services in a widespread manner. With reference to 60th article, social security is a valid right for everybody; the government is obligated to take required precautions to ensure this security. Elders, children and disabled are mentioned as the people who need to be privately protected; however, there is not touch upon the poor people (O.G., 09.11.1982 dated and 17863 numbered-reiterated).

A large number of law, legislation and regulation about health right and rendering the health care services have been made within the frame of the basic principles determined by constitution. The first regulation as part of medical benefits toward poor people is 1593 numbered Public Health Law in Turkey that was accepted in April 24, 1930. This law mentioned is the first legal record that accepts the health as a right. With reference to the law, coping with the health problems in country and providing next generations to grow healthfully is the assignment of the government. Moreover, it has

been by the law to improve and generalize the community health services and insulate society from diseases. Ministry of Health and Social Assistance is responsible for rendering required services. It is adjudged in 305th article of the law that there will be not asked for fee for services without discriminating (O.G., 06.05.1930 dated and 1489 numbered).

Another regulation about sickness assistances toward poor people is 224 numbered Law on Socializing Health Care Services. The purpose of the law is to provide people to benefit from health care services that are defined as a right in Universal Declaration of Human Rights in compliance with social justice. It is mentioned in law that the finance of the health care services is met by capital budgets, premiums paid and out-of-pocket expenses. According to 224 numbered law, the people who live in socialized regions directly benefit from primary health care; these same people benefit from second and third line services via referral form. They also benefit from the medicines that are published on lists free of charge. There is asked for payment for private health organizations and drug and armamentarium of treatments out of the list. However, an extra regulation was not actualized for people who have not the ability to pay (O.G., 12. 01.1961 dated and 10705 numbered).

First regulation towards providing a health guarantee for people who are indigent, powerless, orphan and over 65 years old Turkish citizens is 2022 numbered law that was published in 1976. However, the scope of the law was restricted. Firstly, being poor was not accepted as enough to take health benefit; there was required being older than 65 years or being unfit for work. On the other hand, this law mentioned basically organized the financial aids for people who are handicapped and over 65 years old. With reference to the 7th article of this law, people who can benefit from the law will be treated in public hospitals free of charge.

Within the scope of this regulation, there was given right to benefit from health right or take green card based on the valid law without doing any extra procedure without determining their indigence (Article 27). The regulation changed in 2010 (O.G., 06.11.2010 dated and 27751 numbered). With reference to new legislation, health expenses of people who are enpensioned and disabled people under 18 are reimbursed by Social Insurances and 60th article of General Health Insurance Law (O.G., 25.01.2013 dated and 28539 numbered).

Another significant step was taken by the Law on Social Assistance and Solidarity (O.G., 14.06.1986 dated and 19134 numbered) for providing health care services for poor. The goal of the law is to help poor and indigent people and take precautions to improve the social justice. Social Aid and Solidarity Promotion Fund (SASPF) that is attached to the Prime Ministry was established. Provincial organization of SASPF constituted Foundation of Social Help and Solidarity (FSHS) in each of province and districts. There was required conditions such as not to bind a social insurance organization and also not receive a salary from these organizations to benefit from these opportunities provided (including people who are on salary based on 2022 numbered law).

3816 numbered law that is about covering treatment costs of citizens who do not have the ability to pay was regulated to cover health care service expenses of poor people who do not get involved in any social security. It was mentioned in this law that Green Card application was planned for a specific time. The law prescribes to meet the

needs of citizens who do not have the ability to pay via a mechanism based on the public purse. The poverty threshold is defined as being incomes per capita lower than 1/3 of the minimum wage (O.G., 03.07.1992 dated and 21273 numbered). There was not required disablement or senility condition.

According to the regulation that was issued in 1992 and about covering health expenses of citizens who have not ability to pay and Green Card application, cost of health care services out of the scope of the law is covered by Foundations of Social Help and Solidarity. There was an issue about inpatient treatment of people who have the green card. It is valid for these people to be treated in public hospitals; however, they can be treated in university hospitals in case of necessity and also they need to turn back to public hospitals. This issue mentioned was adjudged as well. In addition to this, there was mentioned that benefiting from the green card is a singular right and family members who fulfill poverty threshold in the household need to place a notice for themselves if they want to benefit from the green card (O.G., 13.08.1992 dated and 21314 numbered). This regulation was changed in 2004as well (O.G. 22.12.2004 dated and 25678 numbered). Regulation changed gave rectoactive payment right for urgent hospitalization costs only if ambulatory treatment and not to exceed 90 days (Article 2). Owners of the green card can take drugs for ambulatory treatment or home treatment from contracted pharmacies (Article 5). However, the expression called '… a green card is given for them to benefit free of charge…,' was purged from the text. The patient share that is valid in other social security applications started to be valid for green card owners as well.

Finally, with reference to 5510 numbered Social Security and General Health Insurance Law (O.G., 16.06.2006 dated and 26200 numbered) that was declared in 2006, people who received green card based on 3816 numbered law and also people who are in the scope of 2022 numbered law have been accepted as general health insured (Article 60). After completing transfer transaction on January 01, 2012, Green Card Fund was transferred to the General Health Insurance. Medical benefits for poor people have been balanced with a guarantee of other citizens who have social insurance in the same country. However, Social Security Institution brought an exception in 2012 via a declaration and mentioned that green card owners' health expenses that are taken from private health organizations will not be covered (O.G., 29.02.2012 dated and 28219 numbered). This restriction was removed by Social Security Institution via a declaration that was published in 09.09.2017 dated and 30175 numbered official gazette.

EVALUATION OF MEDICAL BENEFITS TOWARD POOR PEOPLE IN TURKEY

Some of the characteristics of health policies toward poor people in Turkey are remarkable. 'Healthy life and social security' is accepted as a fundamental right in both 1961 and 1982 constitution acts and international documents which Turkey is a side of. On the other hand, the responsibility for alleviating poverty and benefiting from health care services is given to individual himself first and then to a household that he lives in. Government steps in when the income of person himself or household is not sufficient. Besides, it is another matter how much the assistance is worth to meet the needs.

Another remarkable feature is that social security in Turkey rests upon the

employment. For this reason, the unemployed go without both income and social security. People who have social insurance through not working are the handicapped and also people who lost the ability to work and are over 65 years old. The ones among them who have the capacity to work could not benefit from the direct help of government till temporary assistance provided referring to 3294 numbered law. Accordingly, the importance of medical benefits toward poor people is apparent in a country like Turkey where jobless rate progresses by double-digit numbers and informal economy is prevalent. The foremost medical benefit toward poor in Turkey is Green Card application. Table 2 shows the number of green card owners and the ratio of them to the population within the scope of the poverty. As is seen from Table, while the number and ratio of green card owners show parallelism with the population whose daily receipt is under 3.20 dollars, this number and ratio show parallelism with the population whose daily receipt is under 5.50 dollars. At the same time, while poverty ratios decrease as per the poverty thresholds, there is not observed the same decrease in number and ratio of green card owners.

Table 1: Poverty Ratios and Number of Green Card Owners in Turkey Based on the World Bank Poverty Thresholds

Years	Poverty Rates in Turkey by Poverty Lines (%)			Number of Green Card*	Proportion of Green Cards to Population (%)
	$1.90	$3.20	$5.50		
2002	1.7	10.7	31.8	-	-
2003	3.7	14.1	36.5	-	-
2004	2.1	9.9	27.3	6 852 000	10.3
2005	2.6	10	25.7	7 256 000	10.7
2006	1.9	8.3	23.2	8 279 000	12.1
2007	1.4	6.7	19.8	9 355 279	13.3
2008	0.6	6.0	16.9	9 337 850	13.1
2009	0.9	5.0	16.7	9 647 131	13.3
2010	0.8	4.5	15.9	9 395 185	12.7
2011	0.3	4.1	13.6	8 865 470	11.9
2012	0.3	3.4	13	7 558 821	10.0
2013	0.3	2.9	11.4	7 651 485	10.0
2014	0.3	2.4	10.5	7 341 596	9.4
2015	0.3	2.7	11.5	7 392 087	9.4
2016	0.2	1.8	9.9	7 509 732	9,4
2017	-	-	-	7 936 009	9.8

Source: (World Bank, 2018) (SSI, 2018)

* The group that is called as Green Card Owners until 2012 has been started to be called as people whose General Health Insurance premium is paid by the government as of 2012.

Social security structure needs to be considered when social insurance scope toward poor people is evaluated. It is seen when the development process of the social security system in Turkey that workers who have the regular income and public officers reach to guarantee earlier than others. A long time passed to include in the scope the self-employed and agricultural laborers. It needs to be accepted when the social security structure of the country is considered that providing the guarantee for poor people is

difficult. It is unlikely to finance the poor segment that is as large as creating almost one fifth (the first 20% of income) of households via small funds.

Financial inadequacy is the primary reason for the lack of adequate health care for the poor people. It is possible to see the clues regarding this from the developments during the process. For instance, it was mentioned when the 3816 Law came into force that there would be free of charge aids for the users. However, yet a year later, contribution margin was started to be demanded including ambulatory treatment and drugs. There was the need to restrict the use and take contribution margin for the system as a result of increasing the health expenses.

It should be evaluated that whether the health benefits for the poor have been achieved for the purpose. However, there are no data that can directly measure the contributions. Therefore, authorities can reach results by using secondary data published by public institutions. Within this context, out-of-pocket costs, share reserved for health in the household budget and also the effect of health expenses on impoverishment need to be analyzed.

Healthcare Access

Equalizing in health care services has been the priority of health service and finance systems in many of the countries (OECD and IBRD/the World Bank, 2008). Healthcare access means benefiting from health care services for people for the amount needed. There are three factors of health care access; bearing the cost of healthcare access, physically reaching to the place where the service is rendered and finally being present of the service needed. While the last one of these factors coequally covers the whole of the society; disadvantaged groups in society cannot get the service needed because of the first two of the of the factors. On the other hand, since these segments have worse health status, their disadvantage may deepen. That's why the governments make effort to develop protection mechanisms for disadvantaged groups or individuals.

Leading motive of medical benefits toward poor people consists of being healthcare cost at a level that will not militate against people to get the service. But the only medical benefit was inpatient treatments till 2004 during the period that started with 2022 numbered Law that aims at a limited poor segment in 1976 and continued with 3816 numbered Law in 1992. In another saying, reaching ambulatory treatment and drugs and medical stuff is ignored.

With reference to 2002-2003 National Health Calculations, 15.5% of the society does nothing to solve their health problems. These ratios are 26.80% in people who have not a health insurance and 25.50% for green card owners. The people who have not a social guarantee are prominently different from other groups; because these data decrease to 6% for privately insured and 5.20% for public officers. Again, it is emphasized in the same research that being out of cash is the reason for doing nothing for the health problems for 9.30% of the society (Sağlık Bakanlığı, 2006). It can be said when all these data are analyzed that there are significant problems in access to service as part of specific social groups. Moreover, the close numbers for 'doing nothing' ratio between green card owners and people who have not a health insurance confirms the inadequacy of green card to provide the access to health care services.

According to TÜİK survey in 2012, 12.5% of the society cannot benefit from health care services because of different reasons although there is a necessity. Financial difficulty has the largest share in this issue by 31.8% (TÜİK, 2012). With regard to

these data, during the process after being given ambulatory treatment, medical stuff and dental treatment right to green card owners, there has been 3% decrease in a segment of the society who cannot access to health care services. Much as the ratio related to financial difficulty has decreased by half, this is still the biggest and foremost reason for the situation mentioned above. It is revealed when the data of this study is considered that almost 4% of the society cannot access to health care services because of financial problems. 4% is a low ratio; it will not be wrong to associate this situation with Green Card and General Health Insurance applications

Out-of-Pocket Health Expenses

Out-of-pocket health expenses are defined as the payments that are directly made to service rendered during getting the service. There occur out-of-pocket health expenses for households because of the reasons such as lack of health insurance, goods, and services out of insurance coverage, patient share or informal payments. Policies oblige individuals or households toward out-of-pocket expenses are commonly used by health systems for creating extra source and control the demand. However, the time when the healthcare need has occurred cannot be known and also these expenses can reach a large sum of money. These circumstances may change health care buying behaviors of people. As this out-of-pocket expenses increase, there can occur problems such as reducing access to the service, use of nonlogical medicines and impoverishment (Whitehead et al., 2001: 833).

A high amount of out-of-pocket expenses are frequently observed in poor communities that have limited financial sources. Moreover, since poor people have worse health status, they may need to use more health care service and make out-of-pocket expenses (Özgen, 2007). National Health expenses revealed in out-of-pocket comparisons based on brackets that minimum expenses are made by the third 20% segment. The poorest section of the society makes more than 10% out-of-pocket health expenses in comparison with the richest section Sağlık Bakanlığı, 2006). Data from the 2011 year shows us the poor people are the group who make the highest amount of out-of-pocket health expenses. 20% section with the lowest income reserves 2.1% of their total income for the health. Furthermore, the expense of 10% section that is called the poorest segment of the society increases to 2.6%. The richest section spends 2.0% of their income for the health (TÜİK, 2012).

In legislation provisions, there is no exception out of exemption relating to out-of-pocket health expenses. They can also receive back the part that exceeds their ability to pay from Foundations of Social Help and Solidarity. Table 2 shows the out-of-pocket health expenses that were made in Turkey between 1999 and 2016 years. In the early years, the out-of-pocket health expenses that close 30% are on the decline later on. However, it still has significant ratios (TÜİK, 2018).

Sülkü and Bernard (2008: 55) conducted a study based on National Household Health and Expenditure Survey in 2002-2003. According to the results of this research, even though green card owners have less income in comparison with other kind of social security members, these owners make more out-of-pocket health expense. 25,9% of households with green card spend more than 10% of their income for health as out-of-pocket expense; 22.2% of them spend more than 20% of their income for health as out-of-pocket expense. It is pointed out with reference to these data that 3294 numbered law has not achieved its objective that is called as ‘supporting for the finance of

needers' out-of-pocket health expenses'.

Table 2: Out-of-Pocket Health Expenses in Turkey by Years

Years	Total Health Expenditure (Million TL*)	Share of Households (Million TL*)	Households %	Per Capita Health Expenditure (TL*)
1999	4 985	1 449	29.07	79
2000	8 248	2 280	27.64	128
2001	12 396	2 832	22.85	190
2002	18 774	3 725	19.84	284
2003	24 279	4 482	18.46	363
2004	30 021	5 775	19.24	443
2005	35 359	8 049	22.76	516
2006	44 069	9 684	21.97	635
2007	50 904	11 105	21.82	725
2008	57 740	10 036	17.38	812
2009	57 911	8 142	14.06	804
2010	61 678	10 062	16.31	845
2011	68 607	10 590	15.44	928
2012	74 189	11 750	15.8	1 020
2013	84 390	14 156	16.8	1 110
2014	94 750	16 819	17.8	1 232
2015	104 568	17 315	16.6	1 345
2016	119 756	19 562	16.3	1 524

*Turkish Liras
Source: Health Expense Statistics of TÜİK (2013)

Out-of-pocket health expense per capita was 1524 TL in Turkey (TÜİK, 2017). Namely, people make 127 TL out-of-pocket health expenses in a month. General health insurance premium that people whose income is between minimum wage and 1/3 of the minimum wage is 60.88 TL.

Effects of Health Expenses to Impoverishment (Catastrophic Health Expenses)

Besides the health systems are in the position of keeping adequately health care services, these same systems need to provide hedging for people at the same time. One of the significant components of access to health care services is to be able to pay the cost of healthcare services. If the people have not the ability to pay the health care service that they need, they have two choices; they will either give up to get the service or accept less welfare. In case of being selected the first option, the health status may go from bad to worse. Bad health status is discussed in a health-poverty relationship as well as this status turns into a vicious circle by causing to more health care need and impoverishment. When the people get health care service that exceeds their ability to pay, they may be obliged to use their savings, borrow or sell their assets. Becoming impoverished by people because of expenses made for health is called as a catastrophic effect. There are different applications that explain measurement methodology and also the income levels that are accepted as catastrophic. The criterion that can be used as a

base is household total income, consumption expenditures or paying capacity. The share of these expenditures may vary between 5% and 40% (Özgen, 2007).

Table 3: Catastrophic Health Expenses in Turkey by Years

Years	Poor Household Ratio (%)	Household Ratio Making Catastrophic Health Expenditure (%)	Impoverished Household Ratio Due to Health Expenditures (%)
2002	4.07	0.81	0.43
2003	4.51	0.75	0.25
2004	4.16	0.84	0.28
2005	3.60	0.64	0.23
2006	3.26	0.59	0.34
2007	2.72	0.68	0.19
2008	2.77	0.36	0.17
2009	2.62	0.48	0.22
2010	1.78	0.37	0.15
2011	1.01	0.17	0.15
2012	1.29	0.14	0.07
2013	1.20	0.22	0.15
2014	1.18	0.31	0.12

Source: (TÜİK, Catastrophic Health Expenses in Turkey, 2015)

Table 3 shows the ratios of households which are called as poor households, households make catastrophic health expenses and households impoverished because of the health expenses based on the date of TÜİK. In that research, TÜİK accepted the poverty threshold as the average of food expense per capita of households within 45% - 55% groups that were aligned based on food expense share. The expenses whose ratio of health expense to ability to pay exceeds 40% are accepted as catastrophic expenses. As is seen in Table 3, there is a steady decline in both three parameters by years (TÜİK, 2015: 7).

CONCLUSION

Poverty in Turkey was discussed as an individual problem instead of a social trouble for along time. This is because in the period between 2022 numbered Law and 3294 numbered Law, medical benefits were given only for disabled and people who are over 65 years old. This approach was discarded via Green Card application that started in 1992; there was not stipulated without being under a certain income level. However, the context of the benefits was confined to inpatient treatments of public hospitals. Therefore, the government remained incapable to provide hedging and also accessing to health care services. The mentality in medical benefits has changed in 2004; accessing to health care services was improved by taking ambulatory care services, odontotheraphy, medicine and medical stuff into the scope of the guarantee. Again, in the same year, green card owners were exempted from patient share differently from other social security system members. However, extreme increase that was seen in health expenses of green card owners caused abuse suspicion; then, patient share application started to be valid for green card owners in 2005. It has been provided that people who take medical benefits because of poverty can receive back their payment

from Foundation of Social Help and Solidarity under favour of additional provisions of 3294 numbered Social Aid and Solidarity Law in 2008. All the medical benefits have turned into premium status by transferring green card fund into the general health insurance. Insurance premiums of poor people are still paid by the government.

It is not possible to directly measure the benefit of these aids for the poor people and society. We can only make a prediction via the data on hand. The data refer that the percentage of people who can access to health care services and also the percentage of insured citizens have increased in Turkey by years. We can say with reference to other observation that the ratios of out-of-pocket health expenses and catastrophic health expenses have decreased.

After transferring Green Card fund to general health insurance system in 2012, the medical benefits of government for poor people have performed as paying general health insurance premiums. The premium paid by the state for poor individuals is TL 60.88 per month in 2018. In addition to this, it is seen that the premium paid is less than out-of-pocket health expense per month. That's why the major gain for poor is benefiting from general health insurance opportunities more than paying the premiums by the government. Paying the premiums by the government means more than a financial aid. Because it is not possible for people who cannot solve today's problems to secure their future. If the payment for health care services is inflicted upon them, they may prefer not to pay the premiums. Accordingly, their health status may go from to worse because of the small unpaid premiums.

By the year of 2018, the margin of income that is determined in a regulation to benefit from the medical benefits is 676.50 TL (1/3 of the gross minimum wage). Much as the people who have more income than this quite a little margin need to pay the premiums by themselves even though they have less welfare. As is mentioned before, there is not a possibility to take out a policy in such a poor welfare. Therefore, it is thought that premiums for people who have not a responsibility to look after another insured can be paid by the government to contribute to the social welfare.

Out-of-pocket health expenses that reach 20% per capita may intervene to the access to health care services by the poor people. Much as there is a right to receive the money back from Social Aid and Solidarity Foundations, very few people are informed about this right. There are advantages to increase informing related to this issue.

REFERENCES

Buğra, A. (2013). Kapitalizm Yoksulluk ve Türkiye'de Sosyal Politika. İstanbul: İletişim Yayınları.

Canada Withouth Poverty. (2018). How Expensive is Poverty in Canada?. http://www.cwp-csp.ca/poverty/the-cost-of-poverty/ (Accessed: 08 May 2018).

Council of Europe. (1996). European Social Charter (Revised). https://rm.coe.int/168007cf93 (Accessed: 05 May 2018).

Devlet Planlama Teşkilatı. (2001). Gelir Dağılımının İyileştirilmesi ve Yoksullukla Mücadele Özel İhtisas Komisyonu Raporu. Ankara: Devlet Planlama Teşkilatı.

European Union. (2000). Charter of Fundamental Rights of The European Union. http://www.europarl.europa.eu/charter/pdf/text_en.pdf? (Accessed:11 May 2018).

Gürses, D. (2007). Türkiye'de Yoksulluk ve Yoksullukla Mücadele Politikaları. Balıkesir Üniversitesi Sosyal Bilimler Dergisi, 17(1), 59-74.

Murray, S. (2006). Poverty and Health. CMAJ, 174(7), 923.
Ng, A. H., Farinda, A. G., Kan, F. K., Lim, A. L., & Ting, T. M. (2013). Poverty: Its Causes and Solutions. International Journal of Humanities and Social Sciences, 7(8), 2471-2479.
OECD & WB. (2008). OECD Sağlık Sistemi İncelemeleri: Türkiye. OECD Yayınları.
OECD & WHO. (2003). Poverty and Health. Paris: OECD.
Özgen, H. (2007). Sağlık Hizmetleri Finansmanında Cepten Harcama Nedir? Neden Önemlidir? Hacettepe Sağlık İdaresi Dergisi, 10(2), 201-228.
Sağlık Bakanlığı. (2006). Türkiye Ulusal Hanehalkı Sağlık Harcamaları Araştırması 2002-2003. Ankara: Sağlık Bakanlığı Yayınları.
Sosyal Güvenlik Kurumu. (2018). Aylık İstatistik Bilgileri, Sigortalı İstatistikleri, Ocak 2018. http://www.sgk.gov.tr/wps/portal/sgk/tr/kurumsal/istatistik/aylik_istatistik_bilgileri (Accessed: 11 April 2018).
Sülkü, S. N. & Bernard, D. M. (2012). Financial Burden of Health Care Expenditures: Turkey. Iranian Journal of Public Health, 41(3), 48-64.
Şenses, F. (2014). Küreselleşmenin Öteki Yüzü Yoksulluk. İstanbul: İletişim Yayınları.
Temiz, H. E. (2008). Dünyada Kronik Yoksulluk ve Önleme Stratejileri. Çalışma ve Toplum (2), 61-100.
TÜİK. (2008). Tüketim Harcamaları Yoksulluk ve Gelir Dağılımı. www.tuik.gov.tr/IcerikGetir.do?istab_id=156 (Accessed: 10 May 2018).
TÜİK. (2013). Sağlık Araştırması 2012. Ankara: Türkiye İstatistik Kurumu Yayınları.
TÜİK. (2015). Türkiye'de Katastrofik Sağlık Harcamaları. http://www.tuik.gov.tr/jsp/duyuru/upload/yayinrapor/Katastrofik_Saglik_Harcamalari_2014_TR.pdf (Accessed: 14 May 2018).
TÜİK. (2016). Harcamaya Dayalı Yoksulluk İstatistikleri. http://www.tuik.gov.tr/PreTablo.do?alt_id=1013 (Accessed: 11 April 2018).
TÜİK. (2017). Adrese Dayalı Nüfus Kayıt Sistemi Sonuçları, 2016. http://www.tuik.gov.tr/PreHaberBultenleri.do?id=24638 (Accessed: 07 May 2018).
TÜİK. (2017). Gelir ve Yaşam Koşulları Araştırması 2016. 04 11, 2018 tarihinde http://www.tuik.gov.tr/PreHaberBultenleri.do?id=24579 adresinden alındı
TÜİK. (2018). Sağlık Harcama İstatistikleri 1999-2016. http://www.tuik.gov.tr/PreTablo.do?alt_id=1084 (Accessed: 10 May 2018).
UNDP. (1990). Human Development Report 1990. New York: Oxford University Press.
UNDP. (1997). Human Development Report 1997. New York: Oxford University Press.
UNDP. (2016). Human Development Report 2016 Overview. New York: United Nations Development Programme.
United Nations. (1948). Universal Declaration of Human Rights. http://www.ohchr.org/EN/UDHR/Documents/UDHR_Translations/eng.pdf (Accessed: 11 April 2018).
United Nations. (2015). Sustainable Development Goals. https://www.un.org/sustainabledevelopment/wp-content/uploads/2016/08/1_Why-it-Matters_Poverty_2p.pdf (Accessed: 09 May 2018
United Nations Development Programme. (2013). Achieving Millennium Development

Goals: Partnership and Participation. New York.http://www.undp.org/content/dam/aplaws/publication/en/publications/poverty-reduction/poverty-website/achieving-millennium-development-goals-partnership-and participation/Achieving%20the%20MDGs_Partnership%20and%20Participation _Jahan_June2003.pdf (Accessed:09 May 2018).
Whitehead, M., Dahlgren, G. & Evans, T. (2001). Equity and Health Sector Reforms: Can Low-income Countries Escape The Medical Poverty Trap? The Lancet, 358(9284), 833-836.
WHO & WB. (2017). Tracking Universal Health Coverage: 2017 Global Monitoring Report. Genova: World Health Organisation.
World Bank. (1990). World Development Report 1990: Poverty. New York: Oxford University Press.
World Bank. (1993). Poverty Reduction Handbook. Washington, D.C.: World Bank Publications
World Bank. (2018). Poverty and Health. http://www.worldbank.org/en/topic/health/brief/poverty-health (Accessed: 15 May 2018).
World Bank. (2018). Poverty Headcount Ratio. https://data.worldbank.org/indicator/SI.POV.DDAY?end=2016&locations=TR&name_desc=false&start=1987&view=chart (Accessed: 07 May 2018).
World Health Organization. (1948). Constution of World Health Organization. http://www.who.int/governance/eb/who_constitution_en.pdf (Accessed:11 April 2018).
Yardım, M. S., Çilingiroğlu, N. & Yardım, N. (2014). Financial Protection in Health in Turkey: The Effects of the Health Transformation Programme. Health Policy Plan, 29(2), 177-92.
Yılmaz, M. (2012). Küreselleşme ve Kentsel Yoksulluk: Sosyolojik Bir Perspektif. İnsan ve Toplum Bilimleri Araştırması Dergisi, 1(4), 257-287.

Chapter 98

Internal Environment Analysis in Health Institutions

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1. INTRODUCTION

Internal environment analysis is one of the most important activities that businesses must undertake in order to sustain, develop and exist for a long time in a sustainable perspective. Internal environment analysis is important because it can show us the existing threats as well as demonstrate the strengths of the business or the characteristics of the business which can have potential strengths.

Health institutions include self-awareness, self-evaluation, ability to develop an estimation of the institution's product and service capacity, and analysis processes. For this reason, strategic management of internal environments of health institutions should be emphasized in order to be able to adapt to external environment and to have competitive power. In this study, the definition and scope of the internal environmental analysis and the internal environment analysis in the health care institutions are mentioned.

2. THE CONCEPT OF INTERNAL ENVIRONMENT ANALYSIS

Any business represents a component of the marketing environment in which it is active. In this context, it is necessary to develop long-term action plans aimed at effectively managing the opportunities and threats in the marketing environment, taking into account the application of the market strategy and the organization's own strengths and weaknesses in order to ensure the continuity of an institution. The structure and environment in which the operator is located consists of two levels: the internal environment made up of certain variables within the organization, and the external environment made up of variables outside the organization. External environment can be categorized into macro environment and micro environment. The potential of the external environment analysis is to define the present and future opportunities and threats. On the other hand, the potential consequence of internal environment analysis is to identify the strengths and weaknesses that exist in the organization structure and culture.

Most of the time we can not completely manage the external circle, but we think we can proactively and proactively cope with it .Regarding internal environment, a firm can manage its strategic assets based on its competencies (Bombong et al., 2012).It

deals with internal analysis, structures, systems, personnel, skills, senior values and management within the organization (Hukins, 1997). Conditions such as the aims of the institution, the policies it conducts, the climate it is in, the communication system of the institution, and the leadership styles displayed in the institution constitute the internal environment of the institution (Mathis et al., 2004, Pynes, 2004).

The internal environment contains all the elements that constitute the factors originating within the operator and which are largely influenced and fully controlled by these factors. The internal review should answer all questions about the resource, resolve all resource management issues and represent the first step in the formulation of the marketing strategy. All these components constitute a "value chain". Value-chain analysis is based on the link between company resources and competitive position and explores how these components contribute to profitability (Porter 1985).

Table 1: Factors Used in the Internal Cycle Analysis

Subsystems	**Description**
Management	It is discussed whether the existing management system is successful, what qualities are possessed by managers, and whether the current management needs improvement in the analyzed health institution.
Human Resources	The analysis focuses on the number and quality of personnel working in the health care institution analyzed, whether there is a problem in finding new staff, what level of productivity is available and how the level of staff attendance is.
Finance	The analysis focuses on whether the economic resources of the health care institution are adequate, how financial performance is based on financial performance criteria, and whether there are budget deviations.
Marketing	The subjects such as insurance status and demographic characteristics of the patients in the health institution and where they come from are analyzed.
Clinical systems	In the analyzed health institution what services are offered and the level of service quality, what type of technological equipment is used in the service delivery process, and how doctors' knowledge and skill levels are discussed.
Institutional Structure	It is emphasized whether there are problems in different departments and interdisciplinary relations in the analyzed health institution.
Corporate Culture	It is emphasized whether the value systems and the behavioral characteristics of the personnel are compatible in the analyzed health institution.
Physical Opportunities	In the analyzed health institution, it is emphasized how the physical possibilities are and whether the existing building can be enlarged.
Information systems	It is emphasized whether the staff has knowledge about the clinical, managerial and financial information systems In the analyzed health institution.
Leadership	It is emphasized whether the leadership styles of upper, middle and lower level managers are appropriate in the analyzed health institution,

Source: Whyte and Blair; (1995: p.289-301)

Whyte and Blair (1995: pp. 289-301) recommend that the healthcare facility be divided into ten functional systems in the context of internal environment analysis, and that each subsystem alone and later analyzed with other subsystems.

Kavuncubaşı and Yıldırım (2010) indicate that the internal environment of an operator is constituted by factors such as technology, finance, human resources, products and services put on the market, nature, structure and culture of the business. IWith internal environment analysist, it is possible for an enterprise to come to an advanced level, to make improvements by finding weaknesses, to develop stronger aspects, to identify strengths, and to achieve a better point of management. .Internal environment analysis is carried out by analyzing the resources the institution has and all kinds of skills and by compare them to the resources and abilities of current competitors. In this process, strengths and weaknesses are determined.

According to Stahl (2004), there are three important factors that strategy specialists may face in the internal environment analysis process.

- It is very important to be open-minded for strategic planners as it is in every profession group. Approaching events and situations with the question "How could it be better?" is what strategic planners must capitalize in the analysis process. Strategic planners who approach the plan objectively strengthen the ties with the employees of the institution, and at the same time, it leads to the emergence of the strengths and weaknesses in their institution more easily.
- In the process of internal environment analysis, it is important to note that strategic planners should collect information that they will use while creating a strategy. This process is only through effective data collection and analysis of these data. In this data collection process, Swayne (2006) stated that the institution can benefit from factors such as financial and technical conditions, employees' relations, the institution's relationship with the external world and its interactions, internal and external sources.
- One of the most important features that a good planner should have is intuition. Effective use of the strategic planner's intuition can be beneficial to the institution in every process, and it is also important in the process of internal environment analysis (Stahl, 2004).

The internal environment includes factors that affect an institution's resources. Hitt et al. (2007) have expressed the resources as sources of competences, some of which have led to the development of the company's core competencies or the development of competitive advantage. The internal and external environment must meet each other in the form of a competitive advantage of the business and a strategy that can generate profits above the average. The external environment can create opportunities and threats for an enterprise, but it can turn these opportunities and threats into competitive advantage by using internal environmental conditions, the capabilities of the business, unique resources and core competencies.

In order to better understand and conceptualize internal environment and internal environment analysis, we also need to be familiar with concepts related to internal environment analysis. Therefore, the concept of competitive advantage, value chain and core competencies related to internal environmental analysis will be explained from the point of view of health institutions.

2.1. Competitive Advantage

It is to create and implement a strategy that will provide an institution with the most important competitive advantage. An enterprise has a competitive advantage when it can create a more economical value compared to a competitor. Economic value is simply the difference between the perceived benefits earned by a customer who buys an entity's products or services and the full economic cost of those products and services. For this reason, the size of a business' competitive advantage is the difference between the economic value that a firm can generate and the economic value that its competitors can create (Barney 2007). Therefore, the emphasis of economic value should be kept in the foreground with a customer-oriented approach in the process of internal environment analysis in health institutions and the concept of competitive advantage should not be forgotten.

Businesses always aim to provide a sustainable competitive advantage that enables their businesses to succeed in the long run. Porter (2006) argues that a company can provide competitive advantage in two different ways through differentiation or cost advantage. Differentiation is the ability to offer a superior and specific value to customers in the form of specific qualities and quality of the product or after-sales form. As a result of the differentiation, the company can demand higher prices for its products or services. If a company remains comparable to the competitors in terms of its costs, it can make higher profits because of differentiation.

A business can gain competitive advantage with cost advantage. If the business can provide an advantage to their competitors at a lower cost to produce products or services, it means that they have done something different than their competitors. When a company has lower costs, it has the ability to design, produce and market products more efficiently even if the products are interchangeable (Zimmerer and Scarborough, 2002).

2.1.1. Identifying Existing and Potential Competitive Advantage

Identifying and assessing existing strengths and weaknesses for an organization to be potentially competitive is the goal of internal environment analysis (Crook et al., 2003). Competitive advantage is expressed in terms of strengths related to important aspects of the external environment within the organization. Strategic thinking maps point to the process of determining the sources of competitive advantage for a company. The first step is to carefully evaluate the activities that the institution does well and the activities that the institution does not perform for each component of the value chain. Once the strengths and weaknesses of the organization are identified, they are evaluated to determine whether each is a competitive advantage or a disadvantage. Competitive strengths can affect the ability of a company to establish and maintain a competitive advantage (Swayne et al., 2006). In an internal environment analysis, it is important for health managers and personnel to show full participation in the analysis process in order to both obtain the competitive advantage and set the goals and expectations regarding the current situation and the future of the institution (Kandemir et al., 2013).

Strategic Thinking Map to Discover Competitive Advantages and Disadvantages

I. Step - Identifying Strengths and Weaknesses

Pre-Service	During Service	Post Service	Presentation of service Strengths & Weaknesses
	CULTURE		Culture Strengths & Weaknesses
	STRUCTURE		Structure Strengths & Weaknesses
	STRATEGIC RESOURCES		Strategic Resources Strengths & Weaknesses

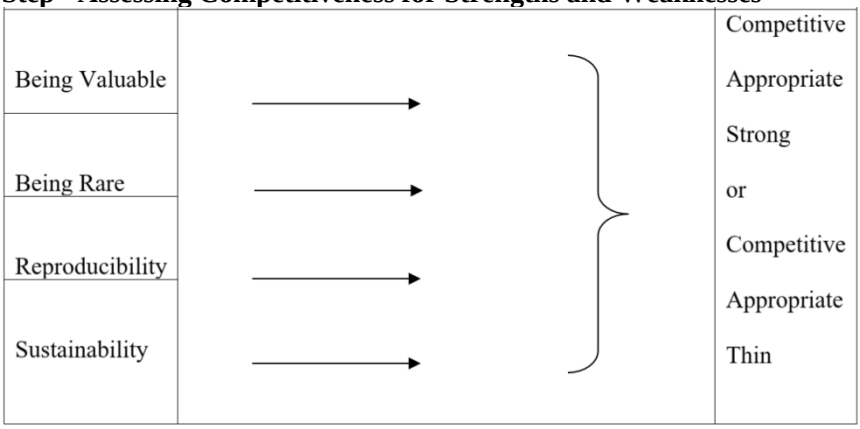
Determining the internal strengths and internal weaknesses of an organization is one of the challenging tasks of assessing the health environment of the health strategist .However, the organizational characteristics that represent the key strengths of strategists may not be important for patients and other stakeholders, or they may be powerful aspects of the competition. In today's changing environment, strengths may weaken as successful strategies challenge the opponents. A critical component of strategic vision is the ongoing evaluation of the strengths and weaknesses of the institution in relation to the changing environment (Swayne et al., 2006).In the analysis process it is necessary to be open to new views and suggestions. In an impartial manner, it is a challenge for managers and staff who trust their institutions to determine "what we can do better and not do better" In order for internal environment analysis to be effective, institutional members need to look at the strengths and weaknesses of the institution in an impartial manner. This point is important to reduce the negative impact of the institution's weaknesses introduced and to benefit from its strengths (Kandemir et al., 2013).

Sources: The basic assumption is that the "resource packages" used by healthcare organizations to create and distribute services are unevenly developed and distributed, and at least to a degree, each organization can demonstrate its ability to compete effectively .Even organizations with marginal resources can distort; Those with lower resources may be lost; and those with superior resources generally produce profits (Swayne et al., 2006).

Competencies: Competence is based on knowledge and skill. In many cases, it is }socially complex and a large number of people are {0 needed to be engaged in coordinated activities (Amit and Paul, 1993; Florin et al., 2013).

Abilities: An ability of a health facility is to distribute resources and authorities often in combination to produce the desired services. The intentional coordination of resources and competencies is another potential source of potential for sustained competitive advantage (Stuart, 1995).

Step - Assessing Competitiveness for Strengths and Weaknesses



Determining the strengths and weaknesses of the various components of the value chain inevitably leads to a long list of things like "we do a pretty good job" and "things we cannot do well". For example, managers often say, "Our greatest asset is our reputation . "However, reputation is not a significant source of competitive advantage for any of the organizations if all competitors in the industry have a perfect reputation. Similarly, a defined weakness may not be a competitive disadvantage if it is not competitive, or if all the institutions in the competition have the same weakness (Swayne et al., 2006).

Institutional Forces: Strengths must be value-added, rare, difficult to imitate, and sustainable to create competitive advantage (Miller, 2003, Margaret and Mark, 2003).Only the strengths do not represent their competitive advantage. To be important in terms of competitiveness, specialized resources and competencies must be ranked in such a way that they become real alternative strategic assets, which leads to more economic returns from any alternative use (Amit and Schoemaker, 2003).

Weaknesses of the Institution: The strategic importance of each weakness can be determined by asking similar questions that are used to assess strengths. The criteria that they represent must be high value for patients and other stakeholders, not be in competitors, sustainable against endangered opponents that can not be easily destroyed or remedied (Swayne et al., 2006).

II. Step - Focus on Strengths and Weaknesses in Competition

Advantages of Competition and Disadvantages of Competition

The final step in taking advantage of competitive advantage is to determine how each competitive strength and weakness will affect the competitiveness of an organization in the market.What is strong in terms of competition is the strengths that are valued in the market, rarely found, difficult to imitate and able to continue. The weaknesses in terms of competition are not the common weaknesses attributed to competitors and valued in the market, but the areas that are difficult for an organization to improve but easy to provide advantages for others. This careful analysis of the interior environment helps a better understanding of where strategic leaders need to concentrate their efforts on and where to look to avoid injustice according to competitors. It is impossible to be everything to everyone; an organizational effort

should focus on what is best (Swayne et al., 2006).

2. 2. Value Chain

The functions of all enterprises in terms of establishment and service can vary. These separate functions are used when designing, producing, advertising, and delivering the functions of the customer and the product in various forms. It is based on these different functions that help organizations move through the chain of values, starting from the raw material stage of a product to the stage of submitting to the customer. Each part of the value chain increases the value of the product or service (Porter 1985).

Value chain analysis is the perfect tool for companies to understand value creation and functions of it. It is critical that businesses have information about key parts of an organization, key components that enable the business to be successful and profitable. Value chain analysis can help businesses understand and identify key functions and cost positions (Hitt et al., 2007).

Functions such as marketing, service delivery, information systems, material management and human resources play a crucial role in reducing the cost structure and perceived benefit (value) of products. A value chain is a chain of activities that translates the output of an entity's presence. This process involves many key activities and support activities that add value to the service provided (Hill and Jones, 2008: 83).

Value chain analysis is a strategic tool that enables value activities to be achieved at lower costs and enables businesses to be a brand in the sector by explaining each value activity and the relationship between these activities in order to obtain a competitive advantage in health institutions (Ülgen and Mirze, 2006).

Figure 1. Value Chain

<table>
<tr><td rowspan="4">Service Distribution</td><td>Pe-Service
Market/Market Research
Target Market
Provided services
Branding
Pricing
Promotion
Distribution/Logistics</td><td>Service Point
Clinical operations
-Quality
-Process innovation
Marketing
-Patient satisfaction</td><td>Post Service
Monitoring
-Clinic
-Marketing
Invoicing
Following
-Clinic
-Marketing</td><td rowspan="4">Adding Value</td></tr>
<tr><td colspan="3">Organizational Culture
Shared Assumptions Shared Values Behavioral Norms</td></tr>
<tr><td colspan="3">Organizational Structure
Functional Dividing into Parts Matrix</td></tr>
<tr><td colspan="3">Strategical Sources
Financial Human Information Technology</td></tr>
</table>

Value chain analysis is the evaluation of the activities and business processes performed by the operator and ensuring the harmony and coordination between them (Şahin, 2008).

The value chain shown in Figure 1 is adapted from the value chain used in industry

to better reflect the value-creating components of healthcare organizations (Swayne et al., 2006).

In the course of service delivery activities, healthcare institutions can gain significant advantages by setting values against their competitors in the pre-service period, during the service period, and after the service period (Swayne et al., 2006). Nonetheless, other activities are one of the important tools that healthcare institutions need to use to create value in service delivery .If a health institution has adopted a service-oriented approach as part of its culture, patients will immediately understand this. Therefore, the service-oriented organizational culture will also automatically increase customer satisfaction. Strategical resources will have a positive effect on the value perception in the health institutions.At this point, the use of chain value analysis will improve efficiency by increasing accessibility and quality in health sector and improving the quality and decreasing the costs (Özgülbaş, 2013).However, obtaining the competitive advantage requires a careful analysis of the internal organizational environment. In this section, the value chain is used as a guide to this internal assessment. The value chain is a handy tool to focus on those areas in a healthcare facility where value can be added. The value chain is divided into two main components. The first one is concerned with the provision of health services and includes pre-service activities, service point activities and post-service activities. The second major component consists of support activities, including organizational culture, organizational structure and strategic resources (Swayne et al., 2006).

2.3. Basic Skills and Capabilities of Healthcare Institutions

In order for a health care facility to deliver its services properly and systematically, it is also crucial that its capabilities and basic capabilities are as important as their resources. These basic skills need to be identified and developed .It is defined as a set of resources that fulfill the tasks, services and activities that exist in an enterprise. The same healthcare facility in a region can have the same basic skills and resources. In such a case, the basic capabilities and efficient and effective use of resources will separate one business from the other. In such a case, competitive advantage is only possible with different capabilities such as culture, strategical leadership or business processes perceived as strategical coming together (Swayne et al., 2006).

A healthcare facility may have similar sources. In this context, tangible and intangible resources are found almost equally in most healthcare businesses. If each hospital has the same technological equipments and devices, the quality of the service personnel and the quality of the service that these professionals will use will constitute the quality of the service using the equipments (Ülgen and Mirze, 2010).

Capabilities, like resources, are important to the extent where they decrease the costs or they increase the demands for the products offered by the service of the organization. The competitive advantage of a healthcare organization is influenced by the ability to choose, manage and motivate the workforce that provides less cost; and to enable employees to be productive. Sustainable competitive advantage can be achieved only if the institution has valuable capabilities that can be protected from copying (Hill and Jones, 2008). Businesses can achieve competencies in other businesses and create competitive advantage by using variables such as training, experience, and qualified staff to provide the capabilities that exist in other businesses. Therefore, businesses need to transform their talents into basic skills in order to achieve a long-term

competitive advantage. Basic abilities are the specific and powerful aspects of a business' ability to do some things better than their competitors or to have different features in line of these reasons.

Unlike equipment wearing down in time, basic skills can be improved as they are applied and shared (Prahalad and Hamel, 1990). Basic skills reflect the personality of the business and distinguish it from other businesses. However, how to distribute the different resources and abilities through organizational learning becomes clear over time (Hitt, 2007).

3. THE IMPORTANCE OF THE INTERNAL ENVIRONMENT ANALYSIS IN HEALTHCARE INSTITUTIONS

Internal environment analysis, an important step in situational analysis, is also the first step in strategic planning. With the help of internal environment analysis, the businesses can see what they are, can make an internal assessment, and can analyze the results and compare their situation with other competing companies and enterprises at the same time. Therefore; businesses can determine their weaknesses, insufficiencies and strengths as a result of this analysis. In addition, internal environment analysis analyzes the function, system and physical and social structure of the business and how much of the previously targeted strategies have been achieved. It can also make comparisons with the outputs of other sectors. It is very important to understand where the business has reached, to compare which services have been implemented and to determine which ones have not been effective. Each business has a priority goal to survive, to determine the quality of service in such a way as not to lose customer potential, and to carry out long-term activities. As is the case in every business, healthcare businesses take these processes and conditions into account. In this context, as stated above, it is extremely important for the business to ensure compliance with internal and external environmental conditions. If an institution is inadequate to grow, change, meet the needs of the community, and prepare to meet future needs, it faces the danger of being convicted of retrenchment (Higgins and Vincze, 1993). In the planning of health institutions, differentiation and merging possibilities should be presented for grouping of activities by using different plan and function tables. Different needs and problems, specific priorities or preferences should be done with the specified order in mind. It should not be overlooked that the primary target in healthcare businesses is the patient and that all other activities therefore have to support this main target/0} .An internal environment and the conditions that make up this environment are necessary in the planning of services for the patient (Öcel, 1998).

Internal environment analysis in health institutions is carried out by evaluating functional areas such as clinical operations, information systems, marketing, clinical support, human resources, financial management and so on. Starting from this point, the evaluation process should be carried out by making a list of weaknesses and strengths that must be carefully analyzed for each function or each organizational sub-system (Swayne et al., 2006).

4. CONCLUSION

Because of the age we live in, most of the things can change and transform in a very short time. The businesses can be considerably affected in a positive or negative way with the spread and development of technology, the accessibility of information, the relations between countries and its reflection on attitudes and behaviors. Therefore, it is often difficult for businesses to comply with existing environmental and sector conditions. Since the businesses that are in the process of development may not be able to set their full strengths and weaknesses, they may not fully anticipate potential threats or opportunities. In this context, it is necessary to give priority to the analysis of the internal environment so that these types of businesses, but generally every type of business, will not fall into difficult conditions.

Most emphasized cases and arguments generally mean the same for healthcare businesses. Therefore, the healthcare institution should be well-defined and well-evaluated by the managers and the internal environment analysis should be done objectively using the precepts.

It is unlikely that every business will be strong in all areas it serves. However, the goals and strategies of businesses should be to improve their strengths and reduce their weaknesses. Since functional areas such as management, marketing, finance/ accounting, R&D, production/operations constitute the core areas of most businesses, managing these areas for strategic purposes requires optimum utilization of available resources, skills and core competencies. For this reason, the ability of an institution to gain competitive advantage and to make a difference in its sustainability level depends on the strength and qualities of its resources and capabilities.

REFERENCES

Amit and Schoemaker, (2003). "Identification of Key Predictors of Organizational Competitiveness in a Service Organization," *Organizational Development Journal*, 21, no. 2 (2003), pp. 28–36.

Amit, R., Paul, J.H.S. (1993). "Strategic Assets and Organizational Rent," *Strategic Management Journal,* 14(1) pp. 33–46.

Barney, J. (2007). *Gaining sustaining competitive advantage.* 3rd Edition. Prentice Hall.

Bombong, A.V., Toha, M., Wicaksono, A. (2012). Business Strategy to Serve Secondary Market for Premium Medical Devices Business in Indonesia (Project East Java- XYZ Company, "A" Division). *The Indonesian Journal of Business Administration,* 1(4): 214-219.

Crook, T.R., Ketchen, Jr. D.J., Charles, C.S. (2003). "Competitive Edge: A Strategic Management Model," *Cornell Hotel and Restaurant Administration Quarterly*, 44(3) 44– 56.

Florin, J., Lubatkin, M., and Schulze, W. (2003). "A Social Capital Model of High-Growth Firms," *Academy of Management Journa,l* 46(3) pp. 374 –386.

Hall, R. (2000). "A Framework for Linking Intangible Resources and Capabilities to Sustainable Competitive Advantage," Strategic Management Journal 14, no. 6 (1993), pp. 607–618. See also T. K. Das and Bing- Sheng Teng, "A Resource-Based Theory of Strategic Alliances," *Journal of Management*, 26(1) pp. 31–62.

Higgins, James, M. & Julian W. Vincze. (1993). *Strategic Management: Text and Cases*,

Hill, Charles, W.L., Gareth R. (2008). *Strategic Management: An Integrated Approach,* 8th edition, USA: Cengage Learning.

Hitt, Michael A., R. Duane Ireland, & Robert E. Hoskisson. (2007). *Strategic Management:*

Competitiveness and Globalization, USA: Cengage Learning.
Hukins, G.B.A. (1997). *Strategic Management for Cost Efficent Health Care in the Steelmed Medical Aid, Faculty of Economics and Management Sciences.* Raad Afrikans University.
Kavuncubaşı, Ş., Yıldırım, S. (2010). *Hastane ve Sağlık Kurumları Yönetimi,* Ankara: Siyasal Kitabevi.
Margaret, A.P., Mark, E.B. (2003). "Scanning Dynamic Competitive Landscapes: A Market-Based and Resource-Based Framework," *Strategic Management Journal*, 24(10) pp. 1027–1035.
Mathis Robert, L., Jackso John, H. (2004). *Human Resource (HR) Management.* South-Western College Publishing.
Miller, D. (2003). "An Asymmetry-Based View of Advantage: Towards an Attainable Sustainability," *Strategic Management Journal*, 24(10), pp. 961–972.
Öcel, N. (1998). Hasta Odalarında Enerji Tasarrufu Öngörülerek Aydınlatma Sisteminin Belirlenme, Yayınlanmamış Yüksek Lisans Tezi, İ.T. Ü. Fen Bilimleri Enstitüsü.
Özgülbaş, N. (2013). *Maliyet Bilgilerinin Sağlık Hizmeti Yönetim Kararlarında Kullanımı,* in: Mehmet Top, (Ed), Sağlık Kurumlarında Maliyet Yönetimi, Eskişehir: Anadolu Üniversitesi Açıköğretim Fakültesi Yayını. s: 205-226.
Porter, M. (2006). *The Competitive Advantage of Nations*. 2nd Edition. Sane Töregård Agency.
Porter, Michael (1985). Competitive advantage creating and sustaining superior performance, New York: Simon & Schuster Adult Publishing Group.
Prahalad, C.K. & Hamel, G. (1990). "*The Core Competencies of the Corporation*", Harvard Business Review.
Pynes Joan E. (2004). *Human Resources Management for Public and Nonprofit Organizations*, Second Edition. San Francisco: Jossey-Bass, Publishing Company.
Stahl, Michael. (2004). *Encyclopedia of Health Care Management,* USA: Sage Publications.
Stuart, L.H. (1995). "A Natural-Resource-Based View of the Firm," *Academy of Management Review*, 20(4) pp. 986–1014.
Swayne, Linda E., W. Jack Duncan & Peter M. (2006). *Strategic Management of Health Care Organization,* UK: Blackwell Publishing.
Şahin, M., (2007). Yönetim Bilgi Sistemi, A.Ü. İktisadi ve İdari Bilimler Fakültesi. Eskişehir.
Ülgen, H. ve Mirze, K. (2006). *İşletmelerde Stratejik Yönetim.* Literatür Yayınları. İstanbul.
Whyte, E.G., Blair D.J. (1995). Strategic Planning for Health Care Provider Organizations. içinde Wolper K. Lawrence. *Health Care Administration: Principles, Practices, Structure, and Delivery*. Maryland: Aspen Publisherb Inc. ss. 289-301.
Zimmerer, T., Scarborough, N. (2002). *Essentials of Entrepreneurship and Small Business Management.* 3rd Edition. Pearson Education. New Jersey. United States.

Chapter 99

The Role of Municipalities in Healthcare Services and Current Developments in Turkey

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INTRODUCTION

After Health Transformation Program (HTP), there have occurred big changes in the delivering of healthcare services. The government has predominately played a planner and controller role in healthcare services. Local healthcare services delivery is under the responsibility of provincial-district health directorates, public hospital unions, and public health directorates. All the hospitals have been attached to the Ministry of Health within the scope of the HTP. Municipalities that take an active role in curative healthcare services started to concentrate on the protection of health and health promotion as well.

Health is a whole with the individual himself, lifestyle and his environment. Leading a healthy life rides on effectively rendering healthcare services in every aspect. Even though the share of health organizations is big in improving the health level of the society, these organizations are not enough as alone. Primary liability belongs to the individual himself. Moreover, municipalities have big roles in healthcare services. Delivering of preventive healthcare services is one of the fundamental duties of municipalities. During the recent years, there have developed international and national projects in health promotion besides preventive healthcare services. Also, municipalities in Turkey should give support to these projects. This chapter explains the position of municipalities in healthcare services and also healthy countries project that is developed relating to the role of municipalities.

THE PLACE OF MUNICIPALITIES IN HEALTHCARE SERVICES IN TURKEY

The municipality is a public legal entity that has administrative and financial autonomy and established by the electorate to meet local common requirements of city's residents (Belediye Kanunu, 2005). Municipalities have administrative and financial autonomy. Municipality managements are responsible for organizing and fulfilling local and common necessities (Toker, 1994).

14th article of Municipal Law has a title called 'duties and responsibilities of municipalities' (Belediye Kanunu, 2005). Main duties of municipalities on health can be seen below;

'Municipalities perform following actions; urban infrastructure works such as zoning, water and sewerage and transportation; geographical and urban information systems; environment and environmental health; solid waste and cleaning; fire service; immediate aid; recovery and ambulance; local traffic; funeral and cemeteries;

afforestation; park and green zones; housing; culture and art; tourism and representation; youth and sport; social service and benefits; marriage; providing occupation and ability; economy and improving trade. Metropolitan municipalities and municipalities whose population exceeds fifty-thousand establish keeping houses for women and children'.

With reference to 'b clause' of the same article 'municipalities can open and operate preschool education institutions health related facilities' (Belediye Kanunu, 2005). As is above, law emphasized the authority of local administrations to establish health facilities. Based upon this article, many of the municipalities in Turkey render medical examination service for citizens by establishing health facilities. Municipalities have a wide spectrum of service delivering for healthcare services. Most of the services that these municipalities deliver are the services toward directly or indirectly increasing health status of citizens. After the HTP, municipalities continue to deliver ambulatory and inpatient treatment for citizens by being attached hospitals of municipalities to the Ministry of Health. On the other hand, municipalities play an active role in preventive healthcare services as well. Preventive healthcare services include following items; vaccination, controlling drinking water and foods, mother-child health, disease screening programs, sanitation precautions, controlling of wastes and animal diseases, controlling of environmental factors that have disease risks such as air and water pollution.

Municipalities are also responsible for conducting education activities required for healthy society. Campaigns that are conducted against substance-use, educations in schools and other precautions taken are some of the services that municipalities deliver to provide health and welfare of the society. Another title that is included in the scope of preventive healthcare services is to create sport and exercise opportunities.

Moreover, municipalities deliver services toward health promotion as well. Building sports areas that enable people to play more sports by the citizens is one of the finest examples of this situation. Emergency and ambulance services, rehabilitation centers, elderly care centers and home care services that are delivered especially by metropolitan municipalities are evaluated within the scope of the healthcare services. On the other hand, some of the municipalities conduct home care services and medical scanning besides healthcare services for people who have not social security. It is seen when all these services are discussed as a whole that municipalities play a key role both in curative and preventive healthcare services at the local level (Şahin, 2009).

Responsibilities about individual and community healthcare are wide-reaching that it cannot be limited to the field of duty of the Ministry of Health. Accordingly, the need to define the duty and responsibilities of all sectors has come to the fore to promote health and improve community healthcare (Sağlık Bakanlığı, 2014). Importance of multi-stakeholder health responsibility in protecting the health and also in health protection was emphasized among Health 2020 Targets that were determined in the World Health Organization (WHO) European Regional Meeting in Baku. Importance of multi-stakeholder health responsibility in protecting the health and also in health protection was also emphasized among 21 Targets that are predicted to be realized till 2020 by WHO 48th European Regional Committee Meeting. There are articles in reports mention that the responsibility is not only in Ministry of Health but also notably individual himself and non-governmental organizations and also all other institution and

organizations (WHO, 1998; WHO, 2011). With reference to these developments, it was decided to prepare 'Multi-Sector Health Responsibility Development Program' as of 2011 via a protocol between the Ministry of Health and Düzce University; also Ministry of Development supported this protocol. Healthcare service rendering needs to be evaluated as preventive health, health promotion, treatment and rehabilitation services integrated approach. It is thought that the program towards improving preventive health and health promotion will be proper in the first step. The program toward treatment and rehabilitation services should be conducted in the second stage.

Multi-sectorial approach to protect and improve health that generates the first part of Multi-Sector Health Responsibility Development Program is composed of 12 fundamental components. Some of these components such as 'Developing of Social Determinants of Health' 'Developing Physical Environment' and 'Developing Living Quarters' express clearly the responsibilities of municipalities (Sağlık Bakanlığı, 2014).

As is partly mentioned above, municipalities deliver different healthcare services to increase the health status of citizens. Healthcare services that are delivered by some of the municipalities in Turkey below;

Metropolitan Municipality in İstanbul which is the most crowded city of Turkey with population that exceeds 15 millions deliver far-reaching services. These services and service units can be seen below;

- Home healthcare services
- Laboratory services
- Emergency services (integrated with 112 Emergency Health Services of Ministry of Health)
- Services delivered by Istanbul Family Counseling and Training Center (İSADEM) and Istanbul Center of Disabled People (İSEM),
- Medical centers,
- Elderly Care Services,
- Protective/Preventive training,
- Occupational health and safety services,
- Psychotherapy Centers,
- Vector Control and disinfestation services (URL 1).

Beşiktaş Public Pharmacy that was established by collecting unused medicines from health institutions provides transmitting those medicines to the needers free of charge within the scope of Beşiktaş District Municipality in Istanbul (URL 2).

Public Health Center (child psychological counseling services, voluntary testing and counseling services, home care services, family counseling, parent and child health services, funeral services), Health Houses, Oral and Dental Health Centers established in Çankaya District Municipality in Ankara. Also, health training and controlling services and 'Health Card' application that ensures discount for citizens in private health institutions delivered by the municipality (URL 3).

Regular exercises programs and educations toward housewives to tackle obesity within the scope of 'Moving and Healthy Life Project for Tackling Obesity' that was started by Kocaeli Metropolitan Municipality. This municipality also delivers school and public health services, medical screening services, occupational health and safety services, worker and public health services and oral and dental health services (URL 4).

In addition to these, commonly services delivered by municipalities in other places in Turkey can be seen below;

- Home healthcare services,
- Medical services provided through medical centers and outpatient clinics,
- Oral and dental health services,
- Medical scanning services,
- Patient transport ambulance services,
- Training/consultancy services,
- Funeral services.

SUSTAINABLE DEVELOPMENT AND HEALTHY CITIES RELATIONSHIP

More than half (54,3 % in 2016) of the total population at global level lives in cities (URL 5). It is predicted that almost 2/3 of the world population will live in cities in 2050. Even though people who live in cities are accepted as lucky in terms of job opportunities and chances to access to services required for health and human development, it is expected that different health risks will occur in parallel with increasing the city population (United Nations, 2014). In these circumstances, establishing healthy and livable cities has become an indispensable priority.

The importance of the connection between health promotion and 2030 Sustainable Development Goals (SDGs) was emphasized in 9th Global Conference on Health Promotion (Shanghai-China, 2016). The health has been placed on the center of Sustainable Development, and it was mentioned that health promotion is the key factor to reach the SDGs. This conference which highlighted that the health and sustainable development are inseparably interdependent planned to determine a road map for inspiring national governments, local administrations and other stakeholders to comprehend the potential of health promotion in every segment of the society for next 15 years (Aba, 2017). In this conference, four themes were determined in the direction of Sustainable Development Targets in health promotion. These are (URL 6);

- Good governance
- Health literacy
- Social Mobilization
- Healthy Cities

Mayors Forum was organized in same conference with the participation of mayors came from more than 100 countries. Thus, there was came a mutual agreement for healthy cities. 10 priority action areas were specified for healthy cities. These areas can be seen below (WHO, 2017);

- Working for citizens to reach their basic needs,
- Taking precautions to remove pollution and struggle with climate change at local level,
- Investing in children-Do not leave any children behind,
- Safeguarding women and girls against abuse and gender-based violence,
- Improving life quality and health of poor people live in cities,
- Discussing on all the dimensions of discrimination,

- Establishing safe cities against communicable diseases,
- Designing our cities to promote sustainable urban mobility (walking and physical activity areas, road safety, active transport infrastructure, etc.),
- Implementing sustainable and safe food policies,
- Establishing cities smoke free.

HEALTHY CITIES PROJECT

A healthy city is a place where enlarges the community sources that create and improve physical and social environments that provide people to improve their potential capacities and fulfill all the functions of the life. Healthy cities concept develops so as to cover other types of settlement including healthy villages and municipalities (Nutbeam, 1998).

'Healthy Cities Movement' was started by WHO Regional Office for Europe as a tool that provides 'Health for Everybody' principles to be applied in everywhere. This movement that shows new mentalities to public health via application method by predicating 'health for everybody' upon started 11 cities selected in Europe in 1986. Then, in a little while, this same movement reaches 1400 cities and towns via national networks created 30 countries of the continent. There are more than 100 members in 31 countries in Europe. The movement mentioned enlarged in the course of time and acquired a global movement qualification by reaching some of the cities in Australia, Canada, and America by adapting strategies applied in Europe to different environments (URL 7).

This movement aims issues on health and society to be on the front burner of sectors outside the health sector by supporting health development plans city-wide. WHO Regional Office for Europe planned 'Healthy Cities Project' in accordance with this purpose. (Başaran, 2007). WHO Healthy Cities Project is a long-term development project that targets to make health a current issue for the countries and create support for public health at the local level (Nutbeam, 1998). Healthy Cities Project has been planned to solve the problems of cities in both developed and developing countries toward being healthy and livable places. The long-term goal of Healthy Cities Project is to promote the health of people lives in European cities. Besides the purposes such as increasing health level in the medical sense, establishing more wellness centers and hospitals; this project is a development plan includes all the sectors like education, transportation, infrastructure, industry, security, etc. It is especially emphasized in this project that municipalities are also responsible for the health of the cities (Başaran, 2007).

WHO European Healthy Cities Network specifies some special themes every five years. These phases are shown below;

- Phase I and II: 1987–1992 and 1993–1997
- Phase III: 1998–2002
- Phase IV: 2003–2008
- Phase V: 2009–2013
- Phase VI: 2014-2018

The current stage (6^{th} phase) has two strategic goals. The policies that will be developed within the scope of the goal in line with these two targets;

- Promoting the health of everyone and decreasing health inequalities,
- Leadership in health and improving participatory governance (WHO, 2013).

Main Themes of WHO European Healthy Cities Network

- Strengthening people and invest in health throughout the life course (maternal and child health, children and adolescents, healthy adults and healthy elderly citizens)
  Priorities: Early years, elderly people, vulnerability, health literacy.
- Tackling with great health problems arising out of communicable and noncommunicable diseases in the European Region.
  Priorities; Physical activity, nutrition and obesity, alcohol, tobacco, mental health.
- Strengthening people-oriented health systems, public health capacity, and emergency preparedness and monitoring studies.
  Priorities; transforming the delivery of municipal services, strengthening and improving public health capacity.
- Establishing a durable society and supportive environments.
  Priorities; social endurance, healthy environments, health city planning, healthy transportation, housing and urban transformation

These four themes are not much more different from each other. They are interdependent and mutually supportive. Working on the life course and improving people will support to remove the problems stemming from diseases and increase the public health capacity. Cities will enlarge the results obtained when they establish a connection with health policies, investments, services and efforts to reduce inequalities (WHO, 2013).

Healthy Cities Association in Turkey

There has been a big change in rural-urban population in Turkey like at the global level. According to Turkish Statistical Institute data, urban population that was 51,3 % in 1990 reached 92,5 % in 2017 (URL 8). This change lays a burden on city municipalities in the health field like other fields. Overcoming this responsibility has created the need for healthy cities to establish healthy city consciousness and increase the health statute of citizens.

A formal regulation is required for developing, adopting and implementing global 'Healthy Cities' movement in Turkey. With reference to this necessity, the cities established 'Healthy Cities Association' by gathering.

Main themes of 1996 Habitat II, 2002 Johannesburg, Local Administrations Summit and WHO 2000 Millennium Declaration are to create 'Sustainable Cities', provide effective local administrations, establish national-regional-local partnerships and produce health-based strategies. With reference to the declaration that was signed by political representatives of cities and approved by the World Health Organization in Belfast in 2003; information, sources, and experiences need to be shared between cities and regions. According to the other emphasize of the declaration, being awake to the responsibility by supporting 'healthy cities movements' in other regions and leading the drive for being each of the regions globally accessible. Bursa Metropolitan Municipality has signed all of this declaration. Bursa that is the first member of WHO European

Healthy Cities Project in Turkey has guided to be established and developed by Healthy Cities Association in Turkey. The works on establishing Healthy Cities Association was started in 2003. This establishment was published 22.12.2004 dated official gazette and the Union Charter was approved by the Ministry of Interior. Then, Healthy Cities Association has come into force. The association mentioned has 70 municipality members (16 metropolitan cities, 9 provinces, 45 districts) by year 2018 (URL 9).

CONCLUSION

There has placed importance on promotive healthcare services besides preventive, curative and rehabilitative healthcare services in Turkey during the recent years. In line with the Ministry of Health's motto called 'sustain the human for the state to alive,' the services toward promoting public health have increased for citizens to lead a healthier, happier and longer life. Much as the primary liability to achieve this goal belongs to the Ministry of Health, support and collaboration of other institution and organizations become unavoidable within the frame of multi-sectoral approach. Municipalities are undoubtedly the most important ones of these institutions and organizations. Municipalities have started to deliver more services toward promoting the health besides the existing services. Healthy Cities Project is the best example of these efforts. It is crucial to being developed policies toward promoting health and encouraging citizens with local management and health directors' collaboration to establish healthier and more livable cities.

REFERENCES

Aba, G. (2017). Health Promotion Services and the Role of the Hospitals. In: Recep Efe (Ed.) Developments in Health Sciences. Chapter 60, p. 619-630, St. Kliment Ohridski University Press, Sofia.

Başaran, İ. (2007). Sağlıklı Kentler Kavramının Gelişiminde Sağlıklı Kentler Projesi. Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 9 (3), 207-229.

Belediye Kanunu. (2005). 5393 Sayılı Kanun. 25874 Sayı ve 13/7/2005 Tarihli Resmi Gazete.

Nutbeam, D. (1998). Health Promotion Glossary. Health Promotion International, 13 (4), 349-364.

Sağlık Bakanlığı. (2014). Çok Sektörlü Sağlık Sorumluluğunu Geliştirme Programı. Bölüm 1: Sağlığın Korunması ve Geliştirilmesine Çok Sektörlü Yaklaşım. Bakanlık Yayın No 942, 15 s., Ankara.

Şahin, S.K. (2009). Sağlıkta Yerel Yönetimlerin Rolü. Sağlık Düşüncesi ve Tıp Kültürü Dergisi 11, 36-39.

Toker, S.O. (1994). Belediyelerin Sağlıkla İlgili Olan Hizmetlerine Genel Bir Bakış. Toplum ve Hekim 9 (62), 4-5.

United Nations, Department of Economic and Social Affairs, Population Division. (2014). World Urbanization Prospects: The 2014 Revision, Highlights, (ST/ESA/SER.A/352), 1 pp., New York. Available at: https://esa.un.org/unpd/wup/publications/files/wup2014-highlights.pdf, (accessed: 04 April 2018).

URL 1: http://www.ibb.gov.tr/sites/SaglikVeSosyalHizmetler/Pages/AnaSayfa.aspx, (accessed: 02 March 2018).

URL 2: http://besiktas.bel.tr/Sayfa/13104/besiktas-halk-eczanesi, (accessed: 02 March 2018).

URL 3: http://www.cankaya.bel.tr/pages/82/SAGLIK-HIZMETLERI/, (accessed: 02 March

2018).
URL 4: https://www.kocaeli.bel.tr/tr/main/pages/saglik-hizmetleri/249, (accessed: 02 March 2018).
URL 5: https://data.worldbank.org/indicator/SP.RUR.TOTL.ZS, (accessed: 23 February 2018).
URL 6: http://www.who.int/healthpromotion/conferences/9gchp/en/, (accessed: 04 April 2018).
URL 7: http://skpo.izmir.bel.tr/content.aspx?MID=11, (accessed: 10 April 2018).
URL 8: http://www.tuik.gov.tr/UstMenu.do?metod=temelist, (accessed: 10 April 2018).
URL 9: www.skb.gov.tr, (accessed: 10 April 2018).
World Health Organization. (1998). Health 21: An Introduction to the Health for All Policy Framework for the WHO European Regions. European Health for All Series; No. 5. 24 pp., World Health Organization Regional Office for Europe, Copenhagen.
World Health Organization. (2011). The new European Policy for Health-Health 2020: Vision, Values, Main Directions and Approaches. Regional Committee for Europe, Sixty-first session 2 pp., Baku, Azerbaijan.
World Health Organization. (2013). WHO European Healthy Cities Network: goals and requirements, Phase VI (2014–2018). WHO Publications, Geneva.
World Health Organization. (2017). Shanghai Consensus on Healthy Cities 2016. Health Promotion International 32 (4), 603-605.

Chapter 100

A Conceptual View on Perceived Organizational Support of Health Workers from the Perspective of Social Exchange Theory

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1. INTRODUCTION

Human capital, defined as the ability to manage and improve the knowledge, experience, skills and expertise of employees in today's organizations where flexibility, innovation and speed are important, is a key success factor for sustainability of organizational performance (Luthans et al., 2004: 45). As a reflection of this, the behaviors of individuals working in organizations are also very important in terms of organizational development. In constantly changing and developing world, the competitive power of organizations, the capacity to reach their goals, the ability to carry on their activities and survivability is based on the human power that works effectively.

Nowadays, the expectations of employees are different because of their personality traits, social, sectoral and cultural characteristics. Within this scope, the issues such as appreciation and to be respected by the organization, organization, not to live a feeling of loneliness, feeling the organizational support have an importance in terms of employees.

Organizations are trying to create a sense of support, such as providing job security, taking into account employees' suggestions and criticisms, and making employees feel important about them in order to feel themselves belonging to the organization and to the work with high commintment (Aykan, 2007: 124). One of the concepts that have played an important role in ensuring the relationship and harmony between the employee and the organization and which have been particularly emphasized in recent years is "perceived organizational support".

2. THE CONCEPT OF PERCEIVED ORGANIZATIONAL SUPPORT

Organizational support is to take into account the prosperity of employees when organizational values are determined, and to have organizational values that enhance the happiness of employees (Soysal et al. 2017:177). Organizational support is a support provided to employees by the organization. But what is important here is that, this support is perceived by employees. For this reason, the concept is used as perceived organizational support.

Perceived organizational support (POS) is the general view and belief that organizations are concerned with the well-being of their employees and value their

contributions to the organization's success (Neves & Eisenberger, 2014: 189; Kurtessis et al. 2015: 2). It is to create a sense of being valuable for employees in terms of organizational and managerial way (Tutar, 2014: 6). According to Güney et al. (2007: 195), POS is the way of being perceived of commitment to the organizations by employees. With POS, employees will be rewarded with the expectation of making more efforts to meet organizational goals (Eisenberger et al. 1986: 500).

As in social life, individuals also need to be supported, approved and esteemed by the organizations they are working with. This is also indicated in Maslow's Hierarchy of Needs (Soysal et al. 2017: 177). According to Maslow (1943), individuals in all societies have a need for self-respect or self-esteem and for the esteem of others. In the Maslow's Hierarchy of Needs, the reflection of esteem needs at the organizational level emerges as the need for organizational support (Soysal et al. 2017: 177).

Perceived organizational support is influenced by various aspects of employees' behaviors, while it affects employees' perception of organizational motivational factors underlying these behaviors (Eisenberger et al. 1986: 501). It meets employees' socio-emotional needs (Chen et al. 2009: 120). According to Caesens et al. (2017), perceived organizational support can lead to important organizational outcomes such as improving the well-being of employees.

Employees take into consideration the favorable or unfavourable behavior of the supervisors against themselves as a reflection of the organisation's support (Rhoades & Eisenberger, 2002). Some of the factors that are effective in the development of employee's perception for organizational support are as follows.

- Meeting the physical, mental and psychological needs of employees,
- Finding job security,
- The creation of a sense of doing something meaningful about employee's work,
- Social respect and acceptance of the employee,
- Providing employee-oriented working conditions that will increase the happiness of employees in his/her working life

While employers value employees' commitment and loyalty, employees are more concerned with commitment of organization to them (Rhoades & Eisenberger, 2002: 698). It is thought that the perceived organizational support increases the affective attachment of the employees to the organization (Eisenberger et al. 1986: 500). Reconciliation of different views of employees and employers is provided by the Reciprocity Norm. When both the employee and the employer apply the reciprocity norm to their relationship, beneficial outcomes are created within both parties (Rhoades & Eisenberger, 2002: 698).

Organizational support is very effective when employees are able to self-fulfillment and develop their professional status (Wojtkowska et al. 2016: 54). In health institutions, employers may apply the following support strategies (Mallette, 2011: 529):

- to treat nurses with their dignity and respect by supervisors;
- clearness of their career path;
- The belief that the nurses in the organization have promised to advance in their career.
- to promote a culture in which nurses feel they are part of the team
- to acknowledge and to care about nurses' contribution to the organization

- to work together for common goals

The root of the concept of organizational support is based on Social Exchange Theory (Soysal et al. 2017: 177; Taştan et al. 2014:122; Wojtkowska et al. 2016: 48).

3. THE RELATIONSHIP BETWEEN SOCIAL EXCHANGE THEORY AND PERCEIVED ORGANIZATIONAL SUPPORT

Social exchange theory is one of the most effective conceptual paradigms in the sense of understanding workplace behaviors (Cropanzano & Mitchell, 2005: 874). Social exchange is defined as the exchange of tangible or intangible, more or less rewarding or costly activities between at least two people by Homans (Cook et al. 2013: 62). It is directly related to give and take process between two or more people (Blau, 1964: ix). In other words, social exchange requires a connection with another human. It is also somewhat different from economic exchange. Economic exchange typically involves legal obligations, whereas social exchange relies on trust and goodwill. Therefore, social exchange is voluntary. In social exchange, time is likely to be undetermine and flexible. Also, it is more likely to be individualized (Stafford, 2008: 378-379).

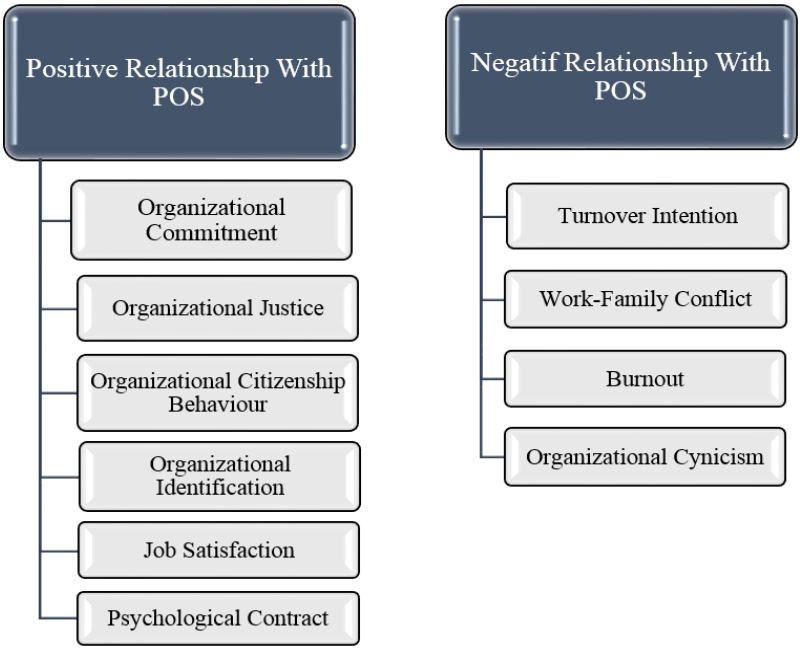
The aim of the exchange theory based on the analysis of human relations is not to explain why individuals participate in certain exchange relations in terms of motives or psychological status, but rather to explain social life by analyzing reciprocal processes that create exchange. What is important here is the structure of relationships among people in different social positions, rather than motivated behaviors in social relations. With a shorter expression, it is aimed to explain social relations structures rather than the individual behaviors (Blau, 1964: ix). At the heart of social exchange theory, there is an idea of interpersonal interaction in terms of costs and rewards (Stafford, 2008: 377).

In social exchange theory, two concepts (self-interests and interdependence) are considered. It is provided by self-interests that individuals act in accordance with perceptions and predictions about costs and awards related to an exchange of resources. Interdependence refers to the extent to which the outcome of one person depends on the outcome of others (Stafford, 2008: 378).

In social exchange theory, the cohesion of group members is very important for empowerment of social support. The pressures within groups are rooted in social exchange process. There are two different forms of ingroup: more interested in the members of one's own group, or rejecting others who are in close contact with the outsiders. Thus, ingroup relations depend on the disapproval of intergroup relations. Social approval is required to comply with group standards, but in this case ingroup pressures are formed. As a result, in order to explain ingroup pressures seen as exogenous conditions, the exchange process must be analyzed (Blau, 1964: xiv-xv). Through the process of social change, the development of strong employment relations can be achieved (Mallette, 2011: 520) and the organizational support perceptions of employees can be explained by the social exchange theory.

4. THE FACTORS ASSOCIATED WITH PERCEIVED ORGANIZATIONAL SUPPORT

There are many concepts that are related to POS. In this section, the most commonly used concepts together with POS in the literature will be mentioned.



Turnover Intention

In the literature, turnover intentions of employees are depend on perceived organizational support. There is a negative relationship between them. On the other hand, low perceived organizational support is associated with high intent to leave to the organization (Hussain & Asif, 2012; Riggle et al. 2009).

Organizational Justice

Organizational justice (distributive justice, procedural justice, and interactive justice) have a positive effect on perceived organizational support (Fu & Lihua, 2012).

Organizational Citizenship Behavior

There is a significant positive relationship between the perceived organizational support and organizational citizenship behavior (Jebeli & Etebarian, 2015; Miao, 2010).

Organizational Commitment

Perceived organizational support relate to organizational commitment and it is positively associated with commitment (Zheng & Wu, 2018).

Organizational Cynicism

There is a negative relationship between perceived organizational support and organizational cynicism (Chiaburu et al. 2013; Peplinski, 2014; Kasalak & Aksu, 2014; Byrne & Hochwarter, 2008).

Organizational Identification

In the literature, perceived organizational support has positively related to organizational identification (Sluss et al. 2008; He et al. 2014).

Job Satisfaction

Job satisfaction and POS are found to be strongly related in the literature. There is a positive relationship between them (Thevanes & Saranraj, 2018; Wojtkowska et al. 2016; Eisenberger et al. 1997). Zumrah & Boyle (2015) suggests that POS can improve employees' job satisfaction.

Work Conditions

The issues developed by organizations for their employee's physical and mental health, such as appropriate work conditions, ergonomic work design can be perceived by employees as being supported by their organizations.

Eisenberg et al. (1997) can be said that organizational support is related to the favorableness of high-discretion job conditions. Organizations that offer flexible working hours and work schedules to their employees are perceived as more supportive than non-offering organizations. Thus, providing training and development opportunities that are suited to flexible working options will enable the organization to be perceived as supportive (Armstrong-Strassen & Ursel, 2009: 203). On the other hand, according to Foley, Huang-Yue ve Lui (2005), POS can offset the negative effect of overload.

Work-Family Conflict

Work-family conflict has become an increasingly important topic for organizations (Zheng & Wu, 2018: 2). There is a negative relationship between perceived organizational support and work-family conflict. In other words, work-family conflict is low when POS of employees is high (Foley, Huang-Yue ve Lui, 2005). According to Zheng & Wu (2018), work-family conflict is mediated through the social exchanges construct of perceived organizational support (Zheng & Wu, 2018: 2).

Psychological Contracts

Based on the social exchange theory, POS and the psychological contract are related to positive sense (Ahmad & Zafar, 2018; Mallette, 2011; Aselage & Eisenberger, 2003). In other words, perceived organizational support increase the relational psychological contracts (Guchait et al., 2015).

Burnout

In the literature, another concept associated with perceived organizational support is burnout. Perceived organizational support have a negatively related to burnout (Özyer et al., 2016; Cao et al., 2016).

5. PERCEIVED ORGANIZATIONAL SUPPORT OF HEALTH WORKERS

Unlike other service areas, health services have their own unique characteristics such as intense, stressful and long working hours, intense contact and communication between individuals, provision of urgent and irrecusable service. Considering these features, it is very important that employees in health care institutions with high level of education and qualified labor force employment exhibit a performance above their expectations and also important that they are supported by the organization to reduce medical error rates. Voluntary and willing work by employees who feel they are supported by the organization may be possible.

It is crucial to feel the support given to the employees so that the human resource

can be used effectively and efficiently in health sector where one of the most important expense items is labor (Taştan et al. 2014). Nurses become the most studied sample group in the literature of organizational behavior because of the many variables such as low number of nurses per population in many countries, unbalanced distribution of employment between regions and high nursing turnover rates. (Bayın & Terekli Yeşilaydın, 2014: 83). Nurses have a critical role in delivering healthcare system. In order to increase the service delivery performance of nurses, appropriate working environments should be provided and they need to feel that they are supporting from their organizations (Gupta et al. 2016: 2806). In recent years, the roles of middle managers have been restructured in this way to provide positive working environments for nurses (Patrick & Laschinger, 2006: 14). Nurses' perceptions of their work environments play a very important role in determining their work attitudes and behaviors (Gupta et al. 2016: 2807). Therefore, organizations strive to develop a more relational contract with their nurses and need to improve perceived organizational support (Mallette, 2011: 530).

There are many studies on perceived organizational support of health workers. Some of these studies conducted on health workers related to perceived organizational support are mentioned below.

In the study conducted by Bitmiş (2015), the effect of perceived organizational support on some positive psychological capacities (optimism, hope and self-efficacy) of individuals was examined. The data was collected from nurses who work at hospitals of foundation universities in Ankara. As a result, perceived organizational support positively and significantly affects positive psychological capacities (optimism, hope and self-efficacy) of nurses.

Armstrong-Strassen & Ursel (2009) was done a study on registered nurses aged 50 and over. In the study, Armstrong-Strassen & Ursel (2009) suggested that perceived organizational support mediate the relationship between the human resources applications and the intention of older workers to remain in the organization. The study also stated that perceived organizational support may be related to career satisfaction for both young and older employees. As a result of the study it can be said that by participants, organizations offering opportunities to upgrade employee's skills and acquiring new skills to them are perceived as more supportive than organizations that do not offer this training and development practices.

In the study conducted by Durmuş & Şahin (2015), it was examined whether the level of organizational learning of health workers were different according to employees' personal characteristics and organizational support perceptions. The study was conducted on health workers working in four public hospitals in Ankara. According to the results of the study, it is thought that the perceptions of organizational support will increase when opportunities are provided for increasing the level of organizational learning of the employees.

In Gupta et al. (2016)'s study, the factors of that mediate and moderate the relationship between perceived organizational support with work engagement and organizational citizenship behavior were examined. In the study, the data were collected from nurses in nine large hospitals in India. As a result of the study, affective commintment was found to mediate positive relationships between perceived organizational support and work outcomes such as work engagement, organizational

citizenship behavior.

According to Yang (2010), favorable employee perceptions of internal marketing activities reward systems and training and development programs of organizations can enhance employee's perceptions of organizational support. With this thought in mind in the study of literature review, it was aimed to investigate the relationship between internal marketing activities, as perceived be employees, organizational support, job satisfaction and role behaviors in healthcare organizations.

In the study of Taştan et al. (2014), the effects of perceived organizational support on perceived job alienation and organizational commitment of hospital's employees were examined. The sample of the study was the employees in working two hospitals defined as class A from private hospitals operating in Istanbul. According to results, it was revealed that organizational support had significant and negative moderate relationship with job alienation. Moreover, it was revealed that the organizational support had significant and positive strong relationship with organizational commitment.

In the study of Soysal et al. (2017), it was aimed to analyzed the organizational support and organizational cynicism of health consultants; to find out the relationship between organizational cynicism and organizational support. For this purpose, the study was carried out on health consultants working in a private hospital in Istanbul. In the study, organizational support was examined under three dimensions such as colleagues, managers and organization support. When the perceptions of organizational support were examined, it was determined that the most support was provided respectively by the managers, colleagues and organizations in order. It was also found that organizational cynicism decrease as manager support and colleague support increase.

Mallette (2011) carried out the study on randomly selected nurses employed in full-time, part-time, and casual positions across healthcare settings in Ontario, Canada. The findings indicated that voluntarily employed nurses perceived more organisational support and developed more of a relational psychological contract than involuntarily employed nurses.

The purpose of the Patrick & Laschinger (2006)'s study, it was aimed to examine the relationship between structural empowerment and perceived organizational support, also the effect of these factors on the role satisfaction of middle level nurse managers. The study was conducted on middle level nurse managers working in Canadian acute care hospitals in Ontario provincial registry. According the results of the study, structural empowerment was positively associated with perceived organizational support. The combination of empowerment and perceptions of organizational support were significant predictors of managers' role satisfaction.

In the study of Islam et al. (2017), it was aimed to examine the role of perceived organizational support in enhancing nurses work engagement and extra-role behavior (i.e. organizational citizenship behaviour). The results of the study showed that the relationships among perceived organizational support, work engagement and citizenship behavior may further be explained through affective commitment; whereas the association between perceived organizational support and affective commitment is moderated by the psychological contract breach.

In the study conducted by Mahmoud et al (2018), it was aimed to investigate the influence of leadership behavior, organizational commitment, organizational support

and subjective career success on organizational readiness for change in the healthcare organizations. The data was collected from registered nurses. According to the results, statistically significant low negative relationship was found between participants' age and perceived organizational support. Moreover, moderate and positive significant relationships were found among organizational commitment and perceived organizational support; perceived organizational support and leadership behavior; perceived organizational support and subjective career success.

Mahmoud (2008) carried out the study on four nursing homes from Medicare/Medicaid certified nursing homes located in Miami-Dade County. The aim of the study was to examine the relationship of nurses' job satisfaction to organizational commitment, perceived organizational support, transactional leadership, transformational leadership, and level of education. As a result, analysis revealed that organizational support was most strongly related to job satisfaction.

In the study conducted by Hao et al. (2016), it was aimed to examine the relationships between work-family conflict and family-work conflict with depressive symptoms. Also, perceived organizational support played a mediating role on the correlation of family-work conflict with depressive symptoms among male Chinese doctors, and perceived organizational support played a mediating role on the correlation of work-family conflict with depressive symptoms among female Chinese doctors. The results showed that family-work conflict had a negative effect on perceived organizational support, which could increase male doctors' depressive symptoms, and work-family conflict had a negative effect on perceived organizational support, which could increase female doctors' depressive symptoms.

In the study of İplik (2014), it was aimed to determine the relationship between perceived organizational support and organizational citizenship behavior and the mediating effect of the organizational identification in this relationship. The data was collected from the employees of a private hospital operating in Adana province. In the study, it was concluded that there was a positive relationship between perceived organizational support and organizational citizenship behavior and organizational identification has a mediating effect on this relationship.

As a result of this heading, perceived organizational support based on social exchange theory was frequently studied in health sector, especially in recent years. According to the results of these studies, it is seemed that there are many different variables related to perceived organizational support. In future work, it is suggested to examine the relationship between perceived organizational support and other concepts such as leadership, personality traits, mental health, organizational health, motivation or stress.

REFERENCES

Ahmad, I. & Zafar, M. A. (2018). Impact of Psychological Contract Fulfillment on Organizational Citizenship Behavior: Mediating Role of Perceived Organizational Support. International Journal of Contemporary Hospitality Management, 30 (2), 1001-1015.

Armstrong-Stassen, M. & Ursel, N. D. (2009). Perceived Organizational Support, Career Satisfaction, and the Retention of Older Workers. Journal of Occupational and Organizational Psychology 82 (1), 201-220.

Aselage, J. & Eisenberger, R. (2003). Perceived Organizational Support and Psychological Contracts: A Theoretical İntegration. Journal of organizational behavior 24 (5), 491-509.
Aykan, E. (2007). Örgütlerde İnsan Kaynakları Uygulamaları ile Algılanan Örgütsel Destek Arasındaki İlişkilerin Belirlenmesine Yönelik Bir Araştırma. Dokuz Eylül Üniversitesi İktisadi ve İdari Bilimler Fakültesi 22 (1), 123-137.
Blau, P.M. (1964). Exchange and Power in Social Life. Routledge: New York.
Bayın, G. & Terekli Yeşilaydın, G. (2014). Hemşirelerde Örgütsel Sapma Davranışının Analizi: Bir Üniversite Hastanesi Örneği. İşletme Araştırmaları Dergisi 6 (3), 81-107.
Bitmiş, M. G. (2015). Algılanan Örgütsel Desteğin Pozitif Psikolojik Kapasiteler Üzerindeki Etkisi: Hemşireler Üzerine Bir Uygulama. İşletme Araştırmaları Dergisi 7 (1), 236-247.
Byrne, Z. S. & Hochwarter, W. A. (2008). Perceived Organizational Support and Performance: Relationships Across Levels of Organizational Cynicism. Journal of Managerial Psychology 23 (1), 54-72.
Caesens, G.; Stinglhamber, F.; Demoulin, S.; De Wilde, M. (2017). Perceived Organizational Support and Employees' Well-Being: The Mediating Role of Organizational Dehumanization. European Journal of Work and Organizational Psychology 26 (4), 527-540.
Cao, X.; Chen, L.; Tian, L.; Diao, Y (2016). The Effect of Perceived Organisational Support on Burnout among Community Health Nurses in China: The Mediating Role of Professional Self-Concept. Journal of Nursing Management 24 (1), E77-E86.
Chen, Z.; Eisenberger, R.; Johnson, K.M.; Sucharski, I.L.; Aselage, J. (2009). Perceived Organizational Support and Extra- Role Performance: Which Leads to Which? The Journal of Social Psychology, 148 (2), xxx–xxx.
Chiaburu, D. S.; Peng, A. C.; Oh, I. S.; Banks, G. C.; Lomeli, L. C. (2013). Antecedents and Consequences of Employee Organizational Cynicism: A Meta-Analysis. Journal of Vocational Behavior 83 (2), 181-197.
Cook, K.S., Cheshire, C., Rice, E.R.W. and Nakagawa, S. (2013). Social Exchange Theory. In: Handbook of Social Psychology. (Eds: John DeLamater and Amanda Ward), London: Springer, Second Edition, pp.61-89.
Cropanzano, R. & Mitchell, M.S. (2005).Social Exchange Theory: An Interdisciplinary Review. Journal of Management 31 (6), 874-900.
Durmuş, V. & Şahin, B. (2015). Hastanelerde Algılanan Örgütsel Destek İle Örgütsel Öğrenme Arasındaki İlişkinin Belirlenmesine Yönelik Bir Araştırma. TAF Preventive Medicine Bulletin 14 (6), 438-447.
Eisenberger, R.; Huntington, R; Hutchison, S.; Sowa, D. (1986). Perceived Organizational Support. Journal of Applied Psychology 71 (3), 500-507.
Eisenberger, R.; Cummings, J.; Armeli, S.; Lynch, P. (1997). Perceived Organizational Support, Discretionary Treatment, and Job Satisfaction. Journal of Applied Psychology, 82 (5), 812.
Foley, S.; Hang-Yue, N.; Lui, S. (2005). The Effects of Work Stressors, Perceived Organizational Support, and Gender on Work-Family Conflict in Hong Kong. Asia Pacific Journal of Management 22 (3), 237-256.
Fu, Y. & Lihua, Z. (2012). Organizational Justice and Perceived Organizational Support: The Moderating Role of Conscientiousness in China. Nankai Business Review International, 3 (2), 145-166.
Guchait, P.; Cho, S.; Meurs, J. A. (2015). Psychological Contracts, Perceived Organizational and Supervisor Support: Investigating the Impact on Intent to Leave Among Hospitality Employees in India. Journal of Human Resources in Hospitality & Tourism 14 (3), 290-315.

Gupta, V.; Agarwal, U. A.; Khatri, N. (2016). The Relationships between Perceived Organizational Support, Affective Commitment, Psychological Contract Breach, Organizational Citizenship Behaviour and Work Engagement. Journal of Advanced Nursing 72 (11), 2806-2817

Güney, S.; Akalın, Ç.; İlsev, A. (2007). Duygusal Örgütsel Bağlılık Gelişiminde Algılanan Örgütsel Destek ve Örgüt Temelli Öz-Saygı. Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi 25 (2), 189-211.

Hao, J.; Wang, J.; Liu, L.; Wu, W.; Wu, H. (2016). Perceived Organizational Support Impacts on the Associations of Work-Family Conflict or Family-Work Conflict with Depressive Symptoms among Chinese Doctors. International Journal of Environmental Research and Public Health 13, 1-13.

He, H.; Pham, H. Q.; Baruch, Y.; Zhu, W. (2014). Perceived Organizational Support and Organizational Identification: Joint Moderating Effects of Employee Exchange Ideology and Employee Investment. The International Journal of Human Resource Management 25 (20), 2772-2795.

Hussain, T. & Asif, S. (2012). Is Employees' Turnover Intention Driven by Organizational Commitment and Perceived Organizational Support? Journal of Quality and Technology Management VIII (II), 01–10.

Islam, T.; Khan, M. M.; Khawaja, F. N.; Ahmad, Z. (2017). Nurses' Reciprocation of Perceived Organizational Support: The Moderating Role of Psychological Contract Breach. International Journal of Human Rights in Healthcare 10 (2), 123-131.

İplik, E.; iplik, F N.; Efeoğlu, i. E. (2014). Çalışanların Örgütsel Destek Algılarının Örgütsel Vatandaşlık Davranışı Üzerindeki Etkisinde Örgütsel Özdeşleşmenin Rolü. International Journal of Economic and Administrative Studies 12, 109-122.

Jebeli, M. J. & Etebarian, A. (2015). Perceived Organizational Support and Organizational Citizenship Behavior. MAGNT Research Report 3 (4), 152-158.

Kasalak, G. & Bilgin Aksu, M. (2014). The Relationship between Perceived Organizational Support and Organizational Cynicism of Research Assistants. Educational Sciences: Theory and Practice 14 (1), 125-133.

Kurtessis, J.N.; Eisenberger, R.; Ford, M.T.; Buffardi, L.C.; Stewart, K.A; Adis, C.S. (2015) Perceived Organizational Support: A Meta-Analytic Evaluation of Organizational Support Theory. Journal of Management XX (X), 1-31.

Luthans, F.; Luthans, K.W.; Luthans, B.C. (2004). Positive Psychological Capital: Beyond Human and Social Capital. Business Horizons 47 (1), 45-50.

Mahmoud, A. H. (2008). A Study of Nurses' Job Satisfaction: The Relationship to Organizational Commitment, Perceived Organizational Support, Transactional Leadership, Transformational Leadership, and Level of Education. European Journal Of Scientific Research 22 (2), 286-295.

Mahmoud, A. H.; Hammad, S.; Alsoleihat, F. (2018). The influence of leadership behavior, organizational commitment, organizational support, subjective career success on organizational readiness for change in healthcare organizations. Leadership in Health Services

Mallette, C. (2011). Nurses' Work Patterns: Perceived Organizational Support and Psychological Contracts. Journal of Research in Nursing 16 (6), 518–532.

Maslow, A.H. (1943). A Theory of Human Motivation. Psycholohical Review, 50: 370-396 (Erişim Yeri: http://psychclassics.yorku.ca/Maslow/motivation.htm) (Erişim Tarihi: 12.06.2018).

Miao, R. T. (2010). Perceived Organizational Support and Job Satisfaction on Employee Performance in Chinese SOE Settings. In E-Business and E-Government (ICEE), 2010

International Conference on (pp. 987-990). IEEE.
Neves, P. & Eisenberger, R. (2014). Perceived Organizational Support and Risk Taking. Journal of Managerial Psychology 29 (2), 187 – 205.
Özyer, K.; Berk, A.; Polatcı, S. (2016). Does the Perceived Organizational Support Reduce Burnout? A Survey on Turkish Health Sector. International Journal of Business Administration and Management Research 2 (1), 22-27.
Patrick, A. & Laschinger, H. K. S. (2006). The Effect of Structural Empowerment and Perceived Organizational Support on Middle Level Nurse Managers' Role Satisfaction. Journal of Nursing Management 14 (1), 13-22.
Peplinski, M. S. (2014). "Perceived organizational support, organizational cynicism and employee well-being (Thesis, Master of Applied Psychology (MAppPsy)). University of Waikato, Hamilton, New Zealand.
Rhoades, L. & Eisenberger, R. (2002). Perceived Organizational Support: A Review of the Literature. Journal of Applied Psychology 87 (4), 698–714.
Riggle, R. J.; Edmondson, D. R.; Hansen, J. D. (2009). A Meta-Analysis of the Relationship between Perceived Organizational Support and Job Outcomes: 20 Years of Research. Journal of Business Research 62 (10), 1027-1030.
Sluss, D. M.; Klimchak, M.; Holmes, J. J. (2008). Perceived Organizational Support as a Mediator between Relational Exchange and Organizational Identification. Journal of Vocational Behavior 73 (3), 457-464.
Soysal, A.; Yağar, F.., Öke, P. (2017). Hasta Danışmanlarının Örgütsel Destek Ve Örgütsel Sinizm Düzeylerinin İncelenmesi. Busıness & Management Studies: An International Journal 5 (1), 174-190.
Stafford, L. (2008). Social Exchange Theories. In: Engaging Theories in Interpersonal Communication – Multiple Perspectives. (Eds: Leslie A. Baxter and Dawn O. Braithwaite). USA: Sage Publications. pp: 377-389.
Taştan, S.; İşçi, E.; Arslan, B. (2014).Örgütsel Destek Algısının İşe Yabancılaşma ve Örgütsel Bağlılığa Etkisinin İncelenmesi: İstanbul Özel Hastanelerinde Bir Çalışma. Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi 19, 121-138.
Thevanes, N. & Saranraj, Y. (2018). The Impact of Perceived Organizational Support on Job Satisfaction of Academic Staff. Asian Journal of Economics, Business and Accounting 6 (2): 1-8.
Tutar, H. (2014). Örgütsel Psikoloji (Endüstri ve Örgüt Psikolojisine Yeni Yaklaşımlar). Detay Yayıncılık, 406 s., Ankara.
Wojtkowska, K.; Andersz, N.; Czarnota-Bojarska, J. (2016).Adapting the Survey of Perceived Organizational Support. Polish Journal of Applied Psychology 14 (4), 47–58.
Yang, W. H. (2010). Relationships among İnternal Marketing Perceptions, Organizational Support, Job Satisfaction and Role Behavior İn Healthcare Organizations. International Journal of Management 27 (2), 235-242.
Zheng, J. & Wu, G. (2018). Work-Family Conflict, Perceived Organizational Support and Professional Commitment: A Mediation Mechanism For Chinese Project Professionals. International Journal of Environmental Research and Public Health 15 (2), 344.
Zumrah, A. R. & Boyle, S. (2015). The Effects of Perceived Organizational Support and Job Satisfaction on Transfer of Training. Personnel Review 44 (2), 236-254.

Chapter 101

Outsourcing in Hospitals

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INTRODUCTION

Enterprises make investigations about how they would develop and sustain a more competitive performance against rival companies in the competitive environment, which is dominated by free market economy. These investigations compel enterprises to develop new strategies from a different perspective. The enterprises in this process of development need to determine basic capabilities and properties, strengthening them against rival companies, identify their limits, and accordingly conduct business plans.

Until the 2000s, enterprises had intended to show their corporate power against rival companies by endeavoring to do everything on their own in the production process. This led them to gradually become clumsy and fall behind market conditions within the process. Thus, enterprises have entered a professional cooperation with other enterprises by supplying several required services in different stages of production process from the outside in order to sustain their assets more actively. In this way, they have begun to use many advantages for themselves by focusing on their fundamental duties and core competences and getting all other works done by other companies.

Outsourcing that has become widespread in all sectors has begun to be used also in the health sector. Hospitals have to provide quality and efficient healthcare services on one hand and balance their budgets, namely incomes and expenses on the other hand. Hospitals focus on delivering healthcare services, which is their principal task, while balancing their budgets. They try to provide some external ancillary services via outside resource using (outsourcing) while focusing on conducting their principal work on their own. These services primarily include cleaning, food, caregiving, security, medical imaging, technical maintenance and repair, medical laboratory, hospital information processing systems, medical secretaryship, medical device leasing, personnel transportation, consultancy, and accounting – financing services.

1. OUTSIDE RESOURCE USING

Today, outside resource using has rapidly become widespread in both private enterprises and the public sector. Outsourcing is evaluated as today's management strategy because it contributes to not only meeting of all relevant expectations and needs of enterprises, but also decreasing of the costs. In this context, many enterprises have begun to supply a number of functions like software, finance, and accounting from the outside. Even though outsourcing has been popular worldwide since very old times, it has started to be used by both public and private enterprises in Turkey from the 1980s and 1990s.

1.1. Definition of the Concept of Outside Resource Using

The concept of outside resource using is abbreviated as Outsourcing. Its meaning in Turkish is "Dış Kaynak Kullanımı". It signifies the support received by enterprises from other specialist enterprises in case of having insufficient core competences apart from their core/fundamental competences and capacities. Core competences of enterprises are defined as shaping and using of abstract and concrete competences, knowledge levels, experiences, human resources and intellectual capital level. The concept of "outside resource using" or "outsourcing" might also be defined as; inactivating subtasks, which do not have a direct effect on the core businesses of the enterprise, to increase its performance and meet the demands and expectations of the market, and purchasing a relevant service from another enterprise.

There are many definitions on outsourcing in the literature. Some of these definitions are as follows: Özbay (2004: 27) defines outsourcing as a process that allows enterprises to focus on a number of production activities, which provide a competitive advantage against their rival companies, and to increase their quality standards with the support of enterprises that have specialized in areas outside of their fields of activity. Çoban and Tutkun define outsourcing as purchasing of businesses outside of core competences of enterprises from another enterprise that has specialized in this area. As it is understood from the definitions; enterprises conduct activities regarding their principal activities and core competences within their own body on one hand, but sustain their production process by purchasing some other auxiliary activities concerning the production process from other enterprises that conduct this activity professionally and sell services on the other hand.

1.2. General Information about Hospital

It is known that a number of treatment methods have been used throughout the history of humanity. Thus, it is seen that first examples for the sense of hospital have been involved in life of humanity as from these periods. Medical services were provided in the houses of priests during the period of Sumerians that had established their state in the 4000s BC. There are records also indicating that medical services were provided by priests during the periods of Hittites, Assyrians, and Babels (Akar and Özalp, 2009: 142). It is known that the most radical development concerning health had begun with Hippocrates, who was a physician from ancient Greece. Also, in these periods, treatment centers like hospitals were established for the purpose of providing better healthcare services (Akar and Özalp, 2009: 142). These treatment centers that might be referred as the first hospital in the history of medicine were primarily established as religious institutions and non-profit hospitals. Hospitals began to be conducted by governments and provided service as a public institution in many countries, particularly in England and France (Dalbay and Biçer, 2012). Owing to scientific techniques as from the mid-20th century; medical services have made progress and scientific methods have been used in establishing and managing hospitals and providing healthcare services.

1.3. Definition of Hospital

There is no common definition for hospital in the literature. Hospitals are evaluated from different perspectives in terms of various duties, roles, properties, and functions and different definitions have been made for hospital.

Playing an important role in delivering healthcare services; hospitals are institutions that provide an uninterrupted medical service seven days a week and 24 hours a day, have a medical organization and professional medical staff, provide both outpatient and inpatient healthcare services, allow women to give birth, conduct training and research activities, and have many other different roles. Hospitals provide various healthcare services in acute, recovery, and terminal care by using diagnostic and treatment services against not only diseases but also acute and chronic disorders associated with injuries and genetic anomalies. They produce also basic information required for research, training and management.

In the Operating Regulations of Inpatient Treatment Institutions of the Turkish Republic Ministry of Health, "hospital" is defined as "institutions where patients, casualties, those being suspicious of disease, and those wanting to have an examination for their health condition are observed, examined, diagnosed, treated and rehabilitated as outpatient or inpatient and also women give birth".

According to definition by Akar and Özalp, hospital: "is a service institution that provides the necessary healthcare service to patients economically and constantly, carries out training, research and community health services, processes various production inputs affected by the environment and affecting the environment within the health sector, makes them useful services for needers, has a complex structure, is expensive, and has several distinctive properties".

Besides these definitions, hospitals also operate as service enterprises that allow resident physicians to specialize and auxiliary medical personnel to train, pave the way for medical research and development activities and fulfill many duties including services for community health development.

In the general sense, hospitals are defined as a service enterprise where patients, casualties, and those wanting to have an examination for their health condition on suspicion of disease are observed, examined, diagnosed, treated and rehabilitated in the outpatient or inpatient services in the polyclinics, preventive medicine and health promotion services are provided and also women give birth.

These definitions reveal that hospitals focus on delivering healthcare services with core competences in the treatment of patients and casualties and also must provide many services like lodging services, maintenance and repair, information security systems, quality studies, technical supports and security. Taking an important determining role on community health, hospitals focus on their principal activities by supplying several services from the outside except for their core competences.

1.4. Outsourcing in Hospitals

In line with reform studies that have started within the scope of Health Transformation Program, patients having social security obtain the opportunity of receiving healthcare service from public hospitals or contracted private hospitals upon their request. This has led to competition among hospitals. In other words, the competition that used to be experienced mainly among private hospitals has begun to be intensively experienced among all private and public hospitals. The increasing competition has caused hospitals to enhance the quality of their healthcare service and reach more patients.

2. Reasons for Outsourcing in Hospitals

In general sense, outsourcing is preferred by professional managers in all enterprises for the purpose of protecting the benefits of enterprises and also due to various reasons in the health sector. Both public and private hospitals usually use outsourcing in accordance with the organizational purpose due to a number of reasons like decreasing costs, providing a quality healthcare service, employing professional personnel in medical institutions, using technological innovations to protect and strengthen the financial structure, obtaining the opportunity of a more efficient marketing, and the presence of legal obligations. Especially public hospitals prefer outsourcing due to the difficulty in employing qualified personnel. Public hospitals have to obey the specified legal rules in preferring and using outsourcing.

Hospitals prefer outsourcing due to sometimes one or several of the aforementioned reasons or sometimes all these reasons and benefits. They determine in which area they would use outsourcing as a result of various researches and evaluations conducted by hospital administration. Reasons for hospitals to apply outsourcing are briefly evaluated and revealed in the following subtitles.

2.1. Organizational reasons and procurement of flexibility in management

Outsourcing allows public hospitals to compete, focus on their core competences for increasing the service quality, and acquire a flexible structure in the process of delivering service. Thus, public hospitals within the clumsy structure of government become a public institution that can make more flexible and rapid decisions, keep pace with developments in the health sector, and meet the expectations and needs of both patients and healthcare personnel more and rapidly (Akkılıç, 2002). Hospitals can use outsourcing to receive several other healthcare services within the scope of healthcare services such as medical imaging and medical laboratory services as well as services of cleaning, catering, security and cafeteria while focusing on delivery of healthcare service. Primary objective for this is to allow hospitals to use their resources more efficiently and effectively.

2.2. Cost-based reasons

A more quality and cost-effective service delivery allows hospitals to get the edge over their rivals. In this context, the advantage of cost enables hospitals to strengthen their current position, increase their profitability, and have a considerable power component in the competition environment. Hospitals that might be effective in terms of cost can obtain an important power in the sector, as well (Mollahaliloglu et al., 2010: 19). Enterprises should act for making benefit – cost analysis and avoid outsourcing in cases where benefits do not exceed cost (Young, 2005).

As a consequence, outsourcing in hospitals gains an advantage to hospitals in terms of both decreasing investment costs and using financial resources more efficiently and accordingly, owing to the extra revenue earned, hospitals might increase their efficiency by allocating a further budget for their core competences.

2.3. Financial reasons

Hospitals that intend having a sustainable competitive advantage and increasing their efficiency should use their financial resources in the best way just like other enterprises. In this context, outsourcing is considered among efficient precautions in order to prevent financial resource problems and minimize relevant risks in the

hospitals.

Hospitals might also save on operating costs with regard to investments to be made with their own equities, operation of these investments, personnel to be employed and maintenance – repair costs by purchasing service from the enterprise that provides outsourcing. Accordingly, hospitals might not only obtain the advantage of cost, but also distribute the risk by decreasing their investment costs and using outsourcing.

In Turkey, the obligation of supplying finance especially in public hospitals from resources like general budget or annexed budget, circulating capital, fund, hospital association and hospital foundation requires providing a broad service with a limited capital. Thus, the aforementioned hospitals might occasionally fail to follow the advancing technology due to insufficient financial possibilities and consequently remain incapable of increasing quality and efficiency in delivering healthcare services. Therefore, it is of a greater importance to efficiently use financial resources in hospitals and the health sector than many other enterprises and sectors. On this basis, hospitals might become financially more effective by transforming their fixed costs into variable costs according to outsourcing (Yıldırım, 1994: 67; Sağnak, 2010: 52).

As a consequence, outsourcing may allow hospitals to have additional financial resources and increase their efficiency and effectiveness by canalizing their resources obtained on this basis into principal healthcare services.

3. Reasons based on human resources

Hospitals can evade high personnel costs, legal obligations and necessity of involving labor force variety and increase their efficiency in delivering healthcare services by using outsourcing to realize their activities within the scope of Human Resource Management (HRM) out of their core competences. Thus, outsourcing allows hospitals to supply necessary number of qualified personnel from the supplier enterprise, prevent waste of time and labor force, and save on costs that require an additional resource such as wage, bonus, seniority indemnity, and promotions of the employed personnel as well as procedures that increase the work load.

Employment of qualified personnel in the hospitals enables to increase the service quality and levels of patients and patient relatives' satisfaction with healthcare services.

Outsourcing helps to eliminate the personnel problem particularly in public hospitals. In this regard, as a result of activities assigned to the outsourcing enterprises, the organization load of enterprises might decrease, the personnel need can be met and so relief may be obtained in delivering healthcare services (Yıldırım, 1994: 69). Labor force is supplied to public hospitals generally for assisted support services. Within the scope of "Basis and Procedures on Providing Services to Be Fulfilled by Medical and Auxiliary Medical Personnel via Purchasing" that was published in the Official Gazette No. 25453 Dated 05.05.2004 and entered in force concerning the employment of relevant personnel within the context of primary healthcare services; it is stipulated to employ personnel for a number of staffs like pharmacy, nursing, audiometry and technician, but it was decided on suspension of this execution according to the Decision of the State Council 5th Civil Chamber Dated 22.11.2004 and Numbered 2004/4439 Basis. Accordingly, the Ministry of Health ceased their purchasing in this direction with a Notice Dated 13.01.2005.

As a consequence; public hospitals receive human resources, which are needed in the process of fulfilling other activities that complete activities within the scope of their

core competences, from enterprises that provide service in this field so that they obtain the advantage of cost and meet the expectations of patients and their relatives.

4. Quality-related reasons

Quality in general sense and service quality in particular sense are a means of competition and have a strategic importance for hospitals just like other enterprises. Outsourcing by hospitals aimed at increasing the enterprise quality and the quality of service provided by enterprises enables to not only save on costs, but also regard patient health, which is the basic existence purpose of enterprises.

Lorence & Spink (2004) suggest that if hospitals provide their quality activities from supplier enterprises, this may lead to improve the health sector and hospitals, which intend to adapt worldwide changes and developments, need to supply their quality activities from the outside in order to enhance their quality standards and obtain the competitive advantage.

As a consequence, hospitals are enterprises that always must increase their quality and efficiency, therefore they need to attach importance to quality management and address applications in the context of quality management in terms of management techniques. The procurement of qualified personnel, who have the knowledge and skills of applying quality standards, from supplier enterprises in this process will allow enterprises to provide a quality service.

5. Technological reasons

Integrating technological changes and developments into enterprise activities in general sense and properly using information-communication technologies in the process of fulfilling enterprise functions in particular sense will provide a dynamic structure to hospitals and increase the efficiency and effectiveness of hospitals. In this regard, hospitals also need to follow closely and apply technological developments in order to gain a competitive advantage and survive in the face of the developing and changing technology. Hospitals have begun to use technology more intensely especially due to rapid development of ICT-based systems and their application in the health sector. However, it is not always possible for hospitals to incorporate medical technologies and ICT -based systems via investments due to high costs. Thus, hospitals utilize outsourcing to provide technological devices and the qualified personnel for purpose of using or maintaining – repairing these devices.

The Circular on the Application of Obtaining Devices in Return for Kit Dated 03.12.2003 and Numbered 2003/139, which was issued by the Ministry of Health for public hospitals in Turkey states the necessity of not using devices older than five years. The Circular on the Application of Obtaining Devices in Return for Kit reveals the obligation for hospitals to keep pace with technology and renew their technologies every five years within the context of legal responsibilities.

As a consequence; developments in medical device technology have accelerated each passing day and in this regard, hospitals need to keep pace with it. However, the supply of these devices requires high costs and hospitals might not always be strong enough to meet these high costs. Thus, hospitals may provide their technological device needs via outsourcing and increase their efficiency and effectiveness by means of supplier enterprises.

6. Marketing-related reasons

Marketing strategies allow hospitals to obtain a competitive advantage. Accordingly, healthcare services should be marketed for the sake of meeting the demands and needs of the target group. As meeting the demands and expectations of patients is the most important way for providing patient satisfaction, marketing activities in the health sector should focus on patient satisfaction.

In the "Law on the Mode of Execution of Medicine and Medical Sciences" Dated 14.4.1928 and Numbered 863 and 1219, which was published in the Official Gazette; a ban of advertisement was imposed directly on hospitals and they were allowed to advertise only the specialties of hospital physicians, as well as the patient admission places and the examination hours. Relevant practices have continued today. According to this law, healthcare services in public hospitals are marketed only by public relations and the marketing area is very limited.

As a consequence, the decrease in the number of patients generally in all hospitals, especially in public hospitals has brought in increased competition among hospitals. In this context, because hospitals are not allowed to directly advertise their activities, they use alternative methods in introducing themselves to the public.

7. Reasons based on legal obligations

Hospitals are enterprises that have to pursue the legal legislation within the context of the nature, quality, and standard of their healthcare services. In this context, hospitals are liable to the Ministry of Finance due to administrative, fiscal, and financial obligations with regard to organize physical conditions and meet the needs for polyclinic services, healthcare professionals, and consumables and medical devices used in delivering service; Social Security Institution (SSI) regarding the financing of HRM and healthcare services provided to patients; Ministry of Health due to involvement of the service within the health sector; Public Procurement Authority in the context of public hospitals; Higher Education Institution (HEI) in the context of university hospitals; and the bylaw of relevant association or foundation in the context of association or foundation hospitals.

Hospitals are enterprises that must act according to certain rights and limitations in terms of being subjected to the aforementioned institutions and relevant legal regulations of these institutions. However, fulfillment of healthcare services might require more labor force and medical support apart from freedom of action that is recognized within the scope of laws, which makes it necessary to use outsourcing in hospitals as this would cause problems and require a high investment in meeting the needs from the annexed budget or the circulating capital budget.

8. Reasons based on increasing patient satisfaction

One of the most important factors for hospitals concerning outsourcing is the endeavor of increasing the patient satisfaction level. Patient satisfaction is defined as the satisfaction of patients with healthcare service of hospitals, the way in which the healthcare service is provided, physical environment of hospitals, shortly hospital performance, and meeting of their expectations. Increased awareness of patients and their increased expectations about the healthcare service have begun to considerably affect the patient satisfaction levels and led hospitals to make activities in this direction. Due to these and similar reasons, hospitals have started to attach a greater importance to

quality systems and information security management systems for patient satisfaction and conduct professional studies for making them the corporate culture of hospitals.

As a consequence, hospitals have utilizing outsourcing from enterprises providing professional service to receive some necessary services for the purpose of enhancing the quality of healthcare service and providing patient satisfaction.

9. Reasons based on increasing the efficiency

Hospitals have to distribute fairly their extremely limited resources to patients that demand healthcare service. Factors like sometimes non-substitutability of healthcare services for a patient, uncertainty of the demand for healthcare services and increasing expectations of patients impel hospital administrations to use their resources more efficiently. The best way for hospitals to increase their efficiency is to have a professional administration in the field of health institutions. It is of great importance for both hospitals and patients to determine how efficiently the hospitals use their resources (like medical personnel, number of beds, MR devices, operating room) in delivery of healthcare services, prevent waste of resources, and increase the effectiveness of the healthcare service.

Advantages and Disadvantages of Outsourcing in Hospitals

Even though outsourcing was started to be used for the purpose of avoiding the failure of services due to insufficient number of personnel, providing a quality service and decreasing the costs, it has become a common method in the course of time owing to many advantages it provides. Outsourcing allows hospitals to share risk with each other for the same goals, but might cause some undesired or uncontrollable conditions. Although outsourcing provides a number of advantages to all hospitals, it is also required not to ignore several disadvantages. Thus, hospitals should consider both several advantages and disadvantages while using outsourcing in the fields they need. Advantages and disadvantages of outsourcing for hospitals are below mentioned;

Advantages of Outsourcing for Hospitals

Having been used by many sectors in recent years; outsourcing provides a number of advantages for hospitals in the health sector. Hospitals might prefer outsourcing due to some or all of the following advantages. Advantages of outsourcing for hospitals are as follows:

- Allowing ot make new investments for hospital activities supplied from the outside, procure additional resources needed for these investments, and decrease or completely eliminate the risks in this context.
- Allowing the hospital capital to completely focus on core competences, provide more qualified hospital products and/or services, and increase the efficiency and effectiveness of the enterprise.
- Enabling hospitals to gain the competitive advantage.
- Contributing to having a flexible sense of administration.
- Contributing to increasing hospital efficiency.
- Contributing to increasing the satisfaction levels of external and internal stakeholders in terms of patients and employees.
- Decreasing hospital costs and ensuring the estimation of costs.
- Contributing to removing the complexity in administration.

- Contributing to hospitals' focusing on their core competences.
- Allowing to use advancing medical and information-communication technologies.
- Enhancing not only the quality and standards of healthcare services, but also the customer satisfaction.
- Contributing to the decrease of risks in the hospitals.
- Allowing hospitals to use time more efficiently and economically.
- Bringing a modern sense of administration in the hospitals.
- Allowing hospitals to downsize organizationally and act flexibly in terms of basic activities.
- Contributing to the increase of successes of hospital administration.
- Allowing the efficient distribution and sustainability of hospital resources.
- Allowing hospitals to have an extensive and a flexible resource pool.
- Contributing to the decrease of investment expenditures.
- Contributing to the acceleration of decision-making processes for enterprise activities.
- Allowing hospitals to focus on patient needs.

Disadvantages of Outsourcing for Hospitals

Outsourcing may not always provide the desired benefit to hospitals. Hospitals may occasionally get damaged because of the outsourcing process preferred due to reasons like false planning or false outsourcing choice. Due to these and similar reasons, outsourcing has both disadvantages and advantages for hospitals. These disadvantages are as follows:

- Outsourcing may cause additional control costs.
- Outsourcing may cause negative effects on primary employees of hospitals.
- Outsourcing may cause the loss of control over hospital activities that are supplied from the outside.
- Outsourcing may cause the loss of flexibility in hospitals.
- Outsourcing may decrease the hospital success due to unqualified supplier enterprises.
- Outsourcing may cause the failure of hospital activities unless the provisions of agreement are fulfilled.
- Outsourcing may cause the loss of core competences in the hospital.
- Hospitals may become dependent on outside resources.
- Hospitals may lose the adaptation regarding their internal operation.
- Outsourcing may cause of disclosure of confidential information about hospitals and patients.
- Outsourcing may cause confidential costs.
- Outsourcing may cause the dismission of personnel in relevant department as a result of providing some services to the outside.
- Employees of the company from whom service is received may not adopt the corporate policy of the hospital and may not develop any sense of belonging toward the hospital.
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Outsourcing Process and Scope in Hospitals

Outsourcing process in hospitals includes a comprehensive process including the determination of the need for outsourcing, order of purchasing, start-up of the process by the purchasing management in this direction, and signing the contract within the scope of the relevant legal legislation. The process ends with the acceptance and realization of the purchasing service within the context of outsourcing. There is no detailed information about this section here.

1. Determining the need
2. Making decision on outsourcing
3. Determining the outsourcing strategy in hospitals
4. Preparing the purchasing documents
5. Process of tender bid
6. Selecting the outsourcing
7. Completing the purchasing process

Outsourcing Areas in Hospitals

Hospitals try to generate a more qualified and low-cost healthcare service by supplying the resources they need from the outside while providing healthcare service, which is their primary activity. Contrary to public hospitals; private hospitals are not subjected to a special arrangement in supplying these needs from the outside and they act according to the benefits of the institution. However, public hospitals have to obey relevant laws and regulations in order to supply these needs from the outside.

Public Procurement Authority (PPA) was established by the government after enacting the Public Procurement Law Numbered 4734, which was accepted on 04.01.2002, published in the official gazette dated 22.01.2002 and numbered 24648 and put into effect on 01.01.2003 for public institutions across Turkey to purchase their needs. The objective of PPA is to determine the procedures and principles to be based on in the purchasing of all kinds of goods or services needed by the public. Additionally, according to the regulations issued based on PPA; Public Procurement Authority is responsible for providing competition, transparency, egalitarianism, reliability, confidentiality, control of public opinion, fulfilment of needs in time and efficient use of public fundings. Besides, these laws and regulations issued in this period for the purpose of minimizing government expenditures are arranged for efficiently using the government resources, providing competition and transparency between bidding companies, removing possible corruptions in the public, and securing a uniformity between all public institutions and organizations.

On the other hand, the PPA No. 4734 aims to determine the procedures and principles to be applied in tender bids of public institutions and organizations that are subjected to public law or are under the public inspection or use public fundings.

Within the frame of these procedures; outsourcing, which is addressed as a method based on reasons like making a department, which fails to meet needs in public hospitals, more efficient by increasing its capacity, enabling the renewal of old technological equipment / devices without any cost, saving up labor force and decreasing hospital costs, is used in the following areas:

- Cleaning / laundry services
- Cooking / food presentation services

- Security services
- Nursing services
- Medical imaging services
- Medical laboratory services
- Hospital automation / software services
- Hospital information processing / medical secretaryship services
- Medical device leasing
- Personnel transportation services
- Consultancy services
- Accounting and financing services
- Maintenance and repair services
- Canteen / cafeteria services
- Parking lot
- Insect / pest control

Outsourcing plays a key role within the context of operational strategies of enterprises. Because outsourcing allows hospitals to not only supply their routine operations regarding enterprise activities from the outside, but also focus on their core competences. In this process, the aforementioned strategic relationship between the enterprise that purchases function or service and the enterprise that provides service might allow the enterprise providing function or service to reach a higher performance and pave the way for reaching solutions at lower costs. (Türker and Örerler, 2004: 60).

As a consequence, hospitals are required to have a flexible structure of administration so that they will respond to changes in the environment and make decisions more rapidly, and take faster and more reliable steps in meeting the needs of patients and the medical personnel. Outsourcing supplies competences of public hospitals from the outside except for core competences and allows hospitals to focus on their primary activity, in other words delivering of healthcare services and benefit from many advantages. Thus, public hospitals are able to act more strongly in terms of both delivering healthcare services in the best way and meeting the expectations of patients.

REFERENCES

Akar, Ç., Özalp, H. (2009). Sağlık Hizmetlerinde ve İşletmelerinde Yönetim, Songür Yayınevi, Ankara.

Akbulut, Y., Terekli, G. ve Yıldırım, T. (2012). Outsourcing in Turkish Hospitals: A Systematic Review, Ankara Sağlık Hizmetleri Dergisi, 11(2), 25 – 33.

Akkılıç, M. E. (2002). Sağlık Hizmetlerinin Pazarlanması ve Elazığ'daki Bazı Yataklı Tedavi Kuruluşlarında Uygulama, Fırat Üniversitesi Sosyal Bilimler Dergisi, 1, 203–218.

Alpugan, O. (1995). Hastanelerde Verimlilik Sorunu ve Kimi Öneriler, Hastane İşletmeciliği (Seçme Yazılar). Derleyen: Seçim, H., Eskişehir: Eskişehir Anadolu Üniversitesi Açıköğretim Fakültesi Yayınları, 143, 145.

Çoban, O. ve Tutkun, O. (2004). Firmaların Piyasa Performansının Artırılmasında Bir Strateji Olarak Outsourcing'in Rolü, Outsourcing Dergisi, 36–40.

Danıştay 5. Hukuk Dairesi'nin 22.11.2004 Tarih ve Esas 2004/4439 Sayılı Hizmet Satın Alımı İle İlgili Danıştay Kararı, 2015.

Guimarães, C. M. and de Carvalho, J. C. (2011). Outsourcing in the Healthcare Sector – A

State – of – the – Art Review, Supply Chain Forum an International Journal, 12(1), 140 – 148.
Gümüşay–Şahin, A. ve Berberoğlu, N. (2011). Lojistik Outsourcing Karar Süreci ve 3PL Firma Seçim Kriterleri, AJIT – e: Online Academic Journal of Information Technology, Güz Dönemi, 2(5), 33 – 50.
http://www.who.int/topics/hospitals/en/ 21.03.2015.
Kavas, A. ve Güdüm, G. (1994). Modern Pazarlama Anlayısının Hastane Yönetimine Uygulanması, Dokuz Eylül Üniversitesi 1.Ulusal Saglık Kurulusları ve Hastane Yönetimi Sempozyumu Bildiriler Kitabı: 4–7 Mayıs 1994, İzmir: Dokuz Eylül Üniversitesi Yayınları, 224.
Klaus, M. (2006). Outsourcing Vital Operations: What if U.S. Health Care Costs Drive Patients Overseas for Surgery?, Quinnipiac Health Law, 13(9), 219–247.
Lorence, D. P. and Spink, A. (2004). Healthcare Information Systems Outsourcing, Science Direct, April, 24(2), 13 –145.
Mollahaliloglu, S., Gürsöz, H., Ari, H. O. ve Öncül, H. G. (2010). Türk Sağlık Sistemi'nde Kurum Dışından Hizmet Alımı Uygulamaları, Ankara: T.C. Sağlık Bakanlığı Yayınları, 19.
Özbay, T. (2004). Sorularla Dış Kaynak Kullanımı (Outsourcing). İstanbul: İTO Yayınları, 6, 27.
Özcan, C. ve Genç, M. (2008). Türk Sağlık Mevzuatı: Sağlıkla İlgili Tüm Kanun, Kanun Hükmünde Kararname, Tüzük ve Yönetmeliklerin İncelenmesi ve Özetleri, Ankara: Ankara Tabip Odası Yayınları, 14.
Özutku, H. (2002). İnsan Kaynakları Yönetiminde Yeni Eğilimler: Dış Kaynaklardan Yararlanma, Verimlilik Dergisi, 2, 117–130.
Rigoli, F. and Dussault, G. (2003). The Interface between Health Sector Reform and Human Resources in Health, Human Resources for Health. November, 1(9), 1–12.
Roberts, J. G., Henderson, J. G., Olive, L. A. and Obaka, D. (2013). A Review of Outsourcing of Services in Health Care Organizations. Journal of Outsourcing & Organizational Information Management, 1–10.
Sağnak, P. (2010). Hastane İşletmelerinde Dış Kaynak Kullanımının Hizmet Kalitesi ve Müşteri Tatmini Yaratılmasındaki Rolü ve Bir Pazarlama Aracı Olarak Kullanılması: GATA Hastanesi'nde Bir Araştırma. Ankara: Atılım Üniversitesi Sosyal Bilimler Enstitüsü Sağlık Kurumları İşletmeciliği Anabilim Dalı Yayımlanmamış Yüksek Lisans Tezi, 52.
Sahay, S. (2001). Special Issue on IT and Health Care in Developing Countries, The Electronic Journal on Information Systems in Developing Countries, 5(10), 1–6.
Tababet Ve Şuabatı San'atlarının Tarzı İcrasına Dair Kanun, 14.4.1928 tarihinde, 863 sayı ve 1219 no.
Tanyaş, M. (2003). Lojistik ve Tedarik Zinciri Yönetimi, Ege Denizcilik Lojistik Kongresi Bildiriler Kitabı: 31 Mayıs 2003.İzmir: Denizcilik Derneği İzmir Şubesi Yayınları, 46.
Türker, M. ve Örerler, E. O. (2004). Türk Şirketlerinin Küresel Şirket Haline Getirilmesi Yolları. İstanbul: İTO Yayınları, 60.
Vuorenkoski, L. and Mikkola, H. (2007). Outsourcing in Primary Health Care, Health Policy Monitor (HPM), 9, 1–6.
Yataklı Tedavi Kurumlar İşletme Yönetmeliği, 13.1.1983, No: 17927.
Yıldırım, S. (1994). Sağlık Hizmetlerinde Harcama ve Maliyet Analizi. Ankara: Devlet Planlama Teşkilatı Yayımlanmamış Uzmanlık Tezi, 67, 69.
Young, S. (2005). Why Outsource and What Makes it Work? Alternative Arrangements for Work in the Health Sector. Reworking Work AIRAAN: Proceedings of 19th Conferance

The Association of Industrial Relations Academics of Australia and New Zealand, 1, 573–581.
03.12.2003 Tarih ve 2003/139 Sayılı Kit Karşılığı Cihaz Edinme Uygulaması Hakkında Genelge.
05.05.2004 Tarih ve 25453 Sayılı Resmi Gazete'de yayımlanarak yürürlüğe giren "Sağlık ve Yardımcı Sağlı Personeli Tarafından Yerine Getirilmesi Gereken Hizmetlerin Satın Alma Yoluyla Gördürülmesine İlişkin Esas ve Usuller.
4734 sayılı Kamu İhale Kanunu, 04.01.2002 tarihinde kabul edilen, 22.01.2002 tarihli 24648 sayılı resmi gazetede yayımlanan ve 01.01.2003 tarihinde yürürlüğe girdi.

Chapter 102

Organizational Climate: Turkey and Norway Comparison*

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INTRODUCTION

As in almost every sector, competition in the health sector is steadily increasing, and the survival of healthcare institutions is becoming more and more difficult every day. Standing up in this intense comp†etitive environment cannot be achieved by investing only in technology and other resources, but it is also necessary to pay attention to human resources.

The concept of organizational climate, above all, helps to understand the influence of organizations, people and people. The examination of the organizational climate allows the multidimensional dimensions of human behavior in organizations to be considered under a general heading, describing the behavior of individuals within the organization, and pioneering in determining how effective organizations are and what needs to be changed.

The organizational climate is most widely accepted and is expressed as a set of environmental features, expectations, and motives that are directly or indirectly perceived by the surrounding individuals. In other words, organizational climate; it can be expressed as a sequence of all the features that have an influence on the behavior of the employees, perceived by them.

Organizational Climate

The initial interest in the organizational climate is attributed to Kurt Lewin's 1951 work and his field motivation theory. Thanks to the work of Litwin and his friends in 1968, the managers looked a bit more interested in the concept of organizational climate, and this awareness has begun to increase. With the work of Forehand and Von Gilmer in 1964, James and Jones's work in 1974, the subject has become remarkably important both theoretically and practically (Ali & Patnaik, 2014).

Behavioral science researchers perceive employees' perceptions of the work environment; they have been working for many years to understand how these perceptions affect employee attitudes and behaviors. Early researchers emphasized that the social climate and atmosphere in the working environment have important implications on the perceptions of employees, how necessary it is for employees to reflect their potential and, consequently, organizational production will be affected

* This study was presented at the "International Conference of Strategic Research in Social Science and Education" held on 12-14 Mayıs 2017 in Czech Republic.

(Likert 1997; McGregor 2000; Katz & Kahn, 2004).

Litwin and Stringer are the owners of one of the most important studies to determine which components are influential in the formation of organizational climate and which variables they have come into play. Litwin and Stringer gave the following names to the organization climate in 1974, by separating the nine variables mentioned below (Mok & Aueyeung, 2002; Waters et al., 1974).

- Organizational structure and constraints: Is there a formal organizational scheme and network of communication chains in the organization? This dimension questions whether the employees have constraints within the organization, how many rules, regulations and procedures are in place, the level of bureaucracy within the organization, and whether there is a free informal structure.
- Individual Responsibility: Do employees of the organization only fulfill the orders and instructions given to them or are they allowed to take initiatives? This dimension; whether the employees are their own patrons, whether decisions are made twice, and if you do a job, it is your own, and whether you are doing your own job.
- Warmth: How deep are the employees in the organization important to each other? It has been developed as a dimension that examines how accepted the employees are in the organization and how they are formed in the group, informal, social groups and friendship.
- Support: Is support and acceptance in the organization expressed? It refers to the mutual assistance that the employees receive from their subordinates and their superiors.
- Reward and punishment: Are crimes committed against a knife highly emphasized or are employees motivated by various awards?
- Conflict: Will conflicts within the organization be avoided, or will conflicts be tried to bring employees together and resolve them openly? The emotions of managers and employees as having different perspectives and the problems that are occurring in the organization are clearly resolved and the extent to which they are dutifully tackled or tried to explain their disapproval.
- Achievement Standards: Are the achievement standards clearly and clearly defined? Are these standards too high? It expresses the emphasis of good work and is expressed as the dimension measuring the perception of achieving clear standards of achievement, either explicitly or implicitly.
- Organizational Identity / Commitment: Are the necessary activities carried out to ensure that the employees in the organization perceive themselves as part of the organization? It is the dimension that carries to be a worthy member and to carry the spirit of belonging belonging.
- Taking Risk: Are employees avoiding risk to protect themselves or are they encouraged to take risks?

Factors affecting the organizational climate include managerial values, organizational goals, organizational structure, organizational communication, personal characteristics, geographical location, physical settlement, etc. factors are influential (Özdemir, 2006).

Personality traits of organizational individuals, in particular, contribute to organizational climate. It will have quite a different complexion from an organization with largely older or less highly educated and willing employees. Members are much

more friendly in organizations that participate in the social activities of the business (Karcıoğlu, 2001).

Organizational climate provides positive contributions to organizations in achieving success, and the organization strengthens its hand in every sense. The geographical location, physical settlement and organizational size of the organization have an influence on the organization climate. Organizations that grow and become inflexible around one or more products today can no longer compete with small, flexible organizations (Özdemir, 2006).

The value of organizational goals for the society in which they are engaged plays an important role in the formation of the organizational climate. If a society values an organization's goals very much, this high value among those organizational influences will positively affect the organizational environment. On the contrary, if the social organization gives little value to its goals, this value will have a negative effect (Bilgen, 1990).

Organizational structures of enterprises are influenced by internal and external environmental factors. These internal and external structures are also other factors that affect the climate of the organization. (Koçel, 2010).

Results of Organizational Climate

Hospitals are considered among large enterprises because of the size and prominence of the place they cover in the health sector. Therefore they should be managed by professional management principles like general businesses (Can & İbicioğlu, 2008).

Bergson states that organizational climate, organizational structure, governance and policies are determined by the characteristics of the leader. As a result of evaluating the organizational climate by comparing it with what should be done by the employees, the job satisfaction can be positive or negative as a result of evaluation of the organization climate (Arslan, 2004).

The relationship between organizational climate and commitment is positive, and it is observed in research that organizational commitment is high in a good organizational climate. Straus argued that participatory organizational climate is often a means of bringing loyalty (Gürkan, 2006).

Another factor that has come to the fore as an outcome of the organizational climate is the concept of leaving work and not absenteeism related to job satisfaction and commitment to work. It is believed that organizational commitment affects organizational performance positively, suggesting that organizational commitment has contributed positively to the quality of product or service, reducing unwanted consequences such as late coming to work, absenteeism and intention to leave (Bayram, 2005).

One of the most important elements of organizational climate is that it is ambitious. The assertiveness of the job is related to the level of creativity, performance and productivity of the person. Being ambitious, difficult and complicated means that it requires autonomy and freedom to do it. These types of jobs are jobs that need to use responsibility and initiative differently from routine work. For this reason, ambitious work has been found to increase creativity and internal motivation (Çekmecelioğlu, 2006).

MATERIALS AND METHODS

The aim of this study is to search is there any significant difference between organizational climate and socio economic variables in public health professionals working in public hospitals in internal medicine units. The study also aims to investigate whether there is a significant difference between the organizational climate scores of the two countries.

The organizational climate scale developed by Litwin and Stringer (1968) was used in the research. Research is a cross-sectional study. The study's universe constitutes health professionals working in a public hospitals in Istanbul and in Norway.

Survey form that has been used in the survey includes demographic questions in the first section and organizational climate scale in the second section. The sample selection method has not been used and we have been tried to reach the whole universe during the research. Participants who completed the questionnaire correctly and accurately were included in the analysis. The collected data were evaluated at 95% confidence interval.

Frequency, standard deviation, parametric and nonparametric difference tests were used in the study.

RESULTS

Table 1: Demographic Variables

TURKEY			**NORWAY**		
Age	**Frequency**	**%**	**Age**	**Frequency**	**%**
Under 25	46	36,8	Under 25	9	12,3
26-30 years	40	32,0	26-30 years	20	27,4
31-35 years	13	10,4	31-35 years	9	12,3
36-40 years	14	11,2	36-40 years	14	19,2
Over 41	12	9,6	Over 41	21	28,8
Sex	**Frequency**	**%**	**Sex**	**Frequency**	**%**
Women	103	82,4	Women	65	89,0
Man	22	17,6	Man	7	9,6
Marital Status	**Frequency**	**%**	**Marital Status**	**Frequency**	**%**
Married	49	39,2	Married	47	64,4
Single	76	60,8	Single	26	35,6
Education	**Frequency**	**%**	**Education**	**Frequency**	**%**
High School	19	15,2	High School	12	16,4
Associate / Undergraduate	74	59,2	Associate / Undergraduate	60	82,2
Graduate	32	25,6	Graduate	1	1,4
Profession	**Frequency**	**%**	**Profession**	**Frequency**	**%**
Doctor	24	19,2	Doctor	2	2,7
Nurse / Midwife	90	72,0	Nurse / Midwife	65	89,0
Others	11	8,8	Others	6	8,2
Study period at the institution	**Frequency**	**%**	**Study period at the institution**	**Frequency**	**%**
Less than 1 year	25	20,0	Less than 1 year	10	13,7
1-5 Years	64	51,2	1-5 Years	28	38,4
6-10 Years	27	21,6	6-10 Years	20	27,4
11 yeas	9	7,2	11-15 yeas	11	15,1
			16-20 Years	4	5,5

Total working time	Frequency	%	Total working time	Frequency	%
Less than 1 year	14	11,2	Less than 1 year	3	4,1
1-5 Years	51	40,8	1-5 Years	21	28,8
6-10 Years	29	23,2	6-10 Years	25	34,2
11 years and more	31	24,8	11-15 Years	11	15,1
			16 Years and more	13	17,8
Income level thought	**Frequency**	**%**	**Income level thought**	**Frequency**	**%**
Very Adequate	3	2,4	Very Adequate	2	2,7
Enough	27	21,6	Enough	6	8,2
Undecided	24	19,2	undecided	10	13,7
Insufficient	66	52,8	Insufficient	54	74,0
Very Insufficient	5	4,0	Very Insufficient	1	1,4

There are 125 participants from Turkey, 73 participants from Norway have been joined to the research. Table 1 contains all demographic variables.

When Turkey's demographic data are examined; most of the participant's age under 30 years old (%48,8). 103 woman has participated to the research. 59,2% of participant has associate/undergraduate level of degree. Most of the attenders' professions are nurse/midwife (72%). Most of the participants in the survey have been in the institution for 1-5 years (51,2%). Similarly, the group with a total duration of 1-5 years is the largest group (40,8%). Most participants indicated that their thinking about income levels is inadequate (%52,8).

According to the Norway demographic data, It has seen that the vast majority of the participants are over the age of 41 (28,8%) and in the age range of 26-30 (27,4) years. The vast majority of participants are women (89%).64,4% of participants are married.

Results of Turkey

Turkey data set according to the normal distribution does not fit the normal distribution, but the Norway data set has been found to conform to a normal distribution. The reason why Mann Whitney U and Kruskall Wallis H tests have been used for Turkey data set. On the other hand, for the Norway data set t test and Anova have been used to test is there any significant difference between organizational climate scores and demographic variables.

According to the results of Mann whitney u test there no significant different between organizational climate score and sex, marital status, choosing job willingly ($p>0,05$). Statistically, there is a significant difference Intention to leave and organizational climate ($p<0,05$). People who don't not want to leave from organization has higher mean rank score (Table 2).

Table 2: Mann Whitney U Test Results for Turkey

	Groups	N	Mean Rank	U	Z	p
Sex	Women	103	61,75	1004,50	-0,83	0,40
	Man	22	68,84			
	Total	125				
Marital Status	Married	49	60,41	1735,00	-0,64	0,52
	Single	76	64,67			
	Total	125				
Choosing job willingly	Yes	69	66,28	1706,00	-1,12	0,26
	No	56	58,96			
	Total	125				
Intention to leave	Yes	81	57,71	1353,50	-2,22	**0,02**
	No	44	72,74			
	Total	125				

When Table 3 is examined, a statistically significant difference was found between the organizational climate and educational status according to the Kruskal Wallis H difference test result ($p<0,05$). The high school graduates have the highest mean score, while the lowest mean rank belongs to the graduated.

On the other hand, there is no statistically significant difference between the socio-demographic variables, age, Profession, duration of study in the institution, total working time, professional experience and income level thought and organizational climate mean scores ($p>0,05$).

Table 3: Kruskall Wallis H Test Results for Turkey

	Groups	N	Mean Rank	Chi Square	sd	p
Age	Under 25	46	70,75	7,332	4	,12
	26-30 yeras	40	56,71			
	31-35 years	13	44,62			
	36-40 years	14	65,64			
	Over 41	12	71,08			
	Total	125				
Education	High School	19	83,47	10,796	2	**,00**
	Associate / Undergraduate	74	63,74			
	Graduate	32	49,13			
	Total	125				
Profession	Doctor	24	52,63	2,688	2	,26
	Nurse / Midwife	90	64,83			
	Others	11	70,64			
	Total	125				
Study perion at the institution	Less then 1 year	25	66,64	4,447	3	,22
	1-5 Years	64	65,91			
	6-10 Years	27	50,19			

	11 yeas	9	70,67			
	Total	125				
Total working time	Less then 1 year	14	74,68	3,053	3	,38
	1-5 Years	51	65,88			
	6-10 Years	29	56,74			
	11 years and more	31	58,84			
	Total	125				
Income level thought	Very Adequate	3	64,00	1,631	4	,80
	Enough	27	63,52			
	Undecided	24	70,06			
	Insufficient	66	61,06			
	Very Insufficient	5	51,30			
	Total	125				

Results of Norway

Since the Norwegian dataset is normally distributed, the difference tests were performed with T Test and One Way Anova from parametric tests. T test was used to examine whether there is a statistical difference between the groups in terms of sex, marital status, choosing job willingly, Intention to leave and organizational climate mean scores (Table 4). As a result of the test, there was no difference between the socio demographic variables and the mean of organizational climate score (p>0,05).

Table 4: Independent sample T Test Results for Norway

	Groups	N	Mean	SD	t	Df	p
Sex	Women	65	3,20	0,30	0,78	70	0,43
	Man	7	3,11	0,32			
Marital Status	Maried	47	3,20	0,30	0,27	71	0,78
	Single	26	3,18	0,29			
Choosing job willingly	Yes	67	3,18	0,30	-,993	70	0,32
	No	5	3,32	0,30			
Intention to leave	Yes	32	3,18	0,29	-,148	70	0,88
	No	40	3,20	0,31			

In Table 5; we have examined whether there is a statistically significant difference between the socio-demographic variables of the age, education, profession, study period at the institution, total working time, and income level thought and organizational climate. There was no statistically significant difference between the groups according to the One Way Anova test results (p>0,05).

Table 5: One way anova Test Results for Turkey

		N	Mean	SD	F	Df	p
Age	Under 25	9	3,24	0,41	0,55	4	0,7
	26-30 yeras	20	3,23	0,28			
	31-35 years	9	3,08	0,33			
	36-40 years	14	3,16	0,3			
	Over 41	21	3,21	0,26			
	Total	73	3,19	0,3			
Education	High School	12	3,17	0,24	0,55	4	0,7
	Associate / Undergraduate	60	3,19	0,31			
	Graduate	1	3,67				
	Total	73	3,19	0,3			
Profession	Doctor	2	3,43	0,04	1,26	4	0,29
	Nurse / Midwife	65	3,2	0,3			
	Others	6	3,06	0,26			
	Total	73	3,19	0,3			
Study period at the institution	Less then 1 year	10	3,21	0,27	1,99	4	0,11
	1-5 Years	28	3,27	0,29			
	6-10 Years	20	3,07	0,34			
	11-15 yeas	11	3,27	0,24			
	16-20 Years	4	3,01	0,17			
	Total	73	3,19	0,3			
Total working time	Less then 1 year	3	3,12	0,37	0,37	4	0,83
	1-5 Years	21	3,22	0,29			
	6-10 Years	25	3,2	0,36			
	11-15 Years	11	3,25	0,24			
	16 Years and more	13	3,12	0,23			
	Total	73	3,19	0,3			
Income level thought	Very Adequate	2	3,62	0,03	2,13	4	0,09
	Enough	6	3,29	0,35			
	Undecided	10	3,32	0,2			
	Insufficient	54	3,15	0,3			
	Very Insufficient	1	3,1				
	Total	73	3,19	0,3			

The data that derived from the Turkey and Norway has been examined by Mann-Whitney U Test (Table 6). When the results are examined whether it is statistically different in terms of organizational climate, it is concluded that there is a significant

difference between the two countries (p>0,05).

According to test results, as Norway's mean rank score (140.82), is higher then Turkey's mean score (75.37). The findings were obtained that the mean score of the organizational climate of health professions working in a public hospital in Norway is higher. Turkey's mean score of the organizational climate is 2.79±0,41, while; Norway's organizational climate mean score is (3.19±0,29).

Table 6: Turkey and Norway Comparison

Organizational Climate	N	Mean Rank	U	Z	p
Norway	73	140,82	1546,5	-7,754	**0,00***
Turkey	125	75,37			

5. DISCUSSION AND CONCLUSIONS

There are many studies in the literature that highlight the importance of organizational climate (Appelbaum, 1984, Clarke et al., 2002, Gershon et al 2004, Jackson-Malik 2005, Mok et al., 2002, Sleutel 2000, Stone et al 2006, Wienand et al., 2007).

Rojas et al. (2014) conducted a research that covers 17424 public and 1276 private hospital employees. As a result, there was no difference between these hospitals in terms of organizational climate.

In the study conducted on 140 health workers, it was concluded that the organizational climate plays an important role in increasing the performance of the employees (Carluchi et al., 2007).

Clarke et al. (2002) found that the organizational climate plays an important role in needle-related injuries on nurses and that the exposure of nurses to these occupational accidents is reduced in a positive organizational climate. Stone et al. (2006) investigated the relationship between organizational climate and intention to leave work in nursing intensive care units, and found that organizational climate at a sufficient level received permanent and qualified workforce guarantees.

On the relationship between organizational climate and burnout, Zeybek (2010) found a strong relationship in the research conducted in a hospital in Buca and reached the conclusion that the organizational factors that lead to the burnout life of the employees should be reevaluated and improved in terms of the hospitals.

125 people participated in our study from Turkey. From Norway; 73 health professionals participated. All of these participants are employees who are directly involved in health care.

In our study we have carried out in Turkey, there is significant difference in terms of intention to leave and educational status between groups. Those who are not intending to leave the workplace and those with lower levels of education have higher organizational climate mean rank scores.

When we examined the study conducted in Norway, it could be say that there is no significant difference between groups.

The difference in test results between Norway and Turkey; Norway is higher than the average of the sequence Turkey and have reached the conclusion that the difference was statistically significant.

In the sense of organizational climate mean rank scores between countries, there is

significant difference has been found. Additionally, Norway's score is higher then Turkey's.

REFERENCES

Ali, A., & Patnaik, B. (2014). Influence of organizational climate and organizational culture on managerial effectiveness: An inquisitive study. The Carrington Rand Journal of Social Sciences, 1(2), 1-20.

Appelbaum, S. H. (1984). The organizational climate audit... or how healthy is your hospital. Hospital & health services administration, 29(1), 51.

Arslan, N. T. (2004). "Örgütsel Performansı Belirleyici Bir Etmen Olarak" Örgüt Kültürü ve İklimi Hakkında Bir Değerlendirme. Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 9(1).

Bayram, L. (2005). Yönetimde Yeni Bir Paradigma: Örgütsel Bağlilik. Sayiştay Dergisi, Sayi, 59.

Bilgen, H.N. (1990). Örgüt İklimi, Ankara: Todaie Yayınları No:235.

Can, A. & İbicioğlu, H. (2008). Yönetim ve Yöneticilik Yönünden Üniversite Hastanelerinin Değerlendirilmesi. Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 13(3).

Carlucci, D., Schiuma, G., Sole, F., & Linzalone, R. (2009). Assessing and managing climate into healthcare organizations. In Proceedings of the International Scientific Conference Insights into the sustainable growth of business (pp. 19-21).

Clarke, S. P., Sloane, D. M., & Aiken, L. H. (2002). Effects of hospital staffing and organizational climate on needlestick injuries to nurses. American journal of public health, 92(7), 1115-1119.

Clarke, S. P., Sloane, D. M., & Aiken, L. H. (2002). Effects of hospital staffing and organizational climate on needlestick injuries to nurses. American journal of public health, 92(7), 1115-1119.

Çekmecelioğlu, H. G. (2006). Örgüt İklimi, Duygusal Bağlılık ve Yaratıcılık Arasındaki İlişkilerin Değerlendirilmesi: Bir Araştırma. Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, 20(2).

Gershon, R. R., Stone, P. W., Bakken, S., & Larson, E. (2004). Measurement of organizational culture and climate in healthcare. Journal of Nursing Administration, 34(1), 33-40.

Gürkan, G.Ç. (2006). Örgütsel Bağlılık: Örgütsel İklimin Örgütsel Bağlılık Üzerindeki Etkisi ve Trakya Üniversitesi'nde Örgüt İklimi İle Örgütsel Bağlılık Arasındaki İlişkinin Araştırılması Trakya Üniversitesi/Sosyal Bilimler Enstitüsü, Yayımlanmış Yüksek Lisans Tezi. Edirne.

Jackson-Malik, P. (2005). Organizational climate and hospital nurses' job satisfaction, burnout, and intent to leave (Order No. 3165703). Available from ProQuest Dissertations & Theses Global. (305445661). Retrieved from https://search.proquest.com/docview/305445661?accountid=11637

Karcıoğlu, F. (2001). Örgüt Kültürü Ve Örgüt İklimi İlişkisi. Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, 15(1-2).

Katz, A. U., & Kahn, J. K. (2004). Organisational Climate and Job Satisfaction: A Conceptual Synthesis. Journal of Organisational Behaviour and Human Performance, 16(2), 45-62.

Koçel, T. (2010). İşletme Yöneticiliği. (12. Baskı). İstanbul: Beta Yayınları.
Likert, R. (1997). Organisational Climate: Relationship to Organisational Structure, Process and Performance. Organisational Behaviour and Human Performance, 11(4), 139-155.
Litwin, G. H., & Stringer, R. A. (1968). Motivation and Organizational Climate [By] George H. Litwin [And] Robert A. Stringer, Jr. Division of Research, Graduate School of Business Administration, Harvard University.
McGregor, D. M. (2000). A Note on Organisational Climate. Organisational Behaviour and Human Performance, 16(2), 250-279.
Mok, E., & Au-Yeung, B. (2002). Relationship between Organizational Climate and Empowerment Of Nurses in Hong Kong. Journal of nursing management, 10(3), 129-137.
Özdemir, F. (2006) Örgütsel İklimin İş Tatmin Düzeyine Etkisi: Tekstil Sektöründe Bir Araştırma. Çukurova Üniversitesi/Sosyal Bilimler Enstitüsü. Yayımlanmış Doktora Tezi. Adana.
Rojas, D., Seghieri, C., & Nuti, S. (2014). Organizational Climate: Comparing Private and Public Hospitals within Professional Roles. Suma De Negocios, 5(11), 10-14.
Sleutel, M. R. (2000). Climate, Culture, Context, or Work Environment? Organizational Factors That İnfluence Nursing Practice. Journal of Nursing Administration, 30(2), 53-58.
Stone, P. W., Larson, E. L., Mooney-Kane, C., Smolowitz, J., Lin, S. X., & Dick, A. W. (2006). Organizational Climate and İntensive Care Unit Nurses' Intention to Leave. Critical care medicine, 34(7), 1907-1912.
Waters, L. K., Roach, D., & Batlis, N. (1974). Organizational Climate Dimensions and Job-Related Attitudes. Personnel Psychology, 27(3), 465-476.
Wienand, U., Cinotti, R., Nicoli, A., & Bisagni, M. (2007). Evaluating the Organisational Climate İn Italian Public Healthcare Institutions by Means Of A Questionnaire. BMC health services research, 7(1), 73.
Zeybek, K. (2010). Hastane İşletmelerinde Örgüt İklimi ve Tükenmişlik Etkileşimi). Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, Yüksek Lisans Tezi. İzmir.

Chapter 103

Procurement and Purchasing Management in Health Institutions

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INTRODUCTION

Today, with the development of information and communication technologies and the impact of globalization, trade relations have increased even more than in the past years. Organizations that lower costs, meet demands on time, perform better than their competitors have a competitive advantage and have a significant share in the market. In this context, the performance of the supply chain is of great importance. It operates in any field in everyday life; every institution that produces goods or services is part of the supply chain. Therefore, organizations that provide services, such as healthcare institutions, also have a supply chain. The performance of these institutions depends on the right management of the supply chain just like in all other institutions. The most important issue that affects the performance of the supply chain is the understanding of the nature of demand. Each product has a different supply chain (Waters, 2003, 10). Healthcare institutions also have to supply a variety of materials with very different characteristics such as medicines, medical supplies such as cotton, syringes, bandages, non-medical supplies such as sheets, laundry, stationery, refrigerators, medical equipment and vehicles. The procurement activity of these materials should also be carried out without disruption. Execution of procurement activities on an undisrupted basis requires first to make accurate estimates. Serious problems can also arise if procurement activities cannot be carried out in time, even if the demand is estimated correctly. This situation is absolutely unacceptable when it comes to institutions where human health, or even life, is the subject. Therefore, when compared to other institutions, logistics activities of health institutions differ in the procurement process. Purchasing, which is defined as the right supply of the right goods at the right time, at the right cost (Monczka Handfield et al., 2009,39), also requires the right management of outsourcers, in other words the suppliers (Aptel and Pourjalali, 2001,68). In this context, procurement management can be defined as the process of planning, organizing, conducting, directing, controlling and evaluating procurement activities to achieve organizational goals (Erdal, 2014,8). Procurement refers to a broader concept than purchasing. Besides the purchasing process, the procurement is related to the need to identify and interpret requirements, to investigate potential suppliers, to select the appropriate source, to agree on the details of the order or contract with the suppliers, to deliver the product or service and to make payments to the suppliers (Erdal, 2014,9). Following the completion of the procurement activity, the material must be kept in compliance with the nature of the material, distributed on time, properly used and maintained, and in another narrative, must be used efficiently. In this context, material

management, which is defined as the storage and movement of materials within the institution, is the continuation of the procurement activity and should be evaluated together with the procurement activity. In this study, procurement and purchasing management was emphasized, and the town / village hospital, day hospitals, general hospitals, private field hospitals and education and research hospitals were expressed as health institutions or hospitals.

Characteristics of Health Institutions

Health institutions are complex organizations that operate in a very dynamic environment. This complexity is due to the presence of a large variety of diseases that may occur in different forms in each patient, and the use of different treatment methods, and the existence of a large number of co-workers with much emphasis on division of labor, specialization and professionalization. Each activity significantly affects each unit, even each individual; the success of the task of experts and professionals depends on the fact that the staff of the support staff and the assistant service personnel perform their duty correctly and accurately (Ak, 1990, 26-27). In other words, doctors and nurses' performance depends on the performance of other staff in the institution. The person who treats is also human, so the cost of the mistake is very big. Besides these, education and research activities are carried out in health institutions. Treatment, education and research activities are human-centered and costly. Healthcare institutions can not make concessions from quality despite the price. Therefore, the quality of output in terms of purchasing drugs, medical supplies and medical devices is important. This is because the outcome of the institution is the improvement in patient's health as a result of examination, diagnosis and treatment (Ağırbaş, 2016, 18). Therefore, it is necessary to supply the inputs that provide high-quality output at the most reasonable prices without compromising the quality, and to use the supplied resources efficiently and effectively. This situation becomes even more important if we consider that approximately 30-40% of the hospital budgets are material expenditures (Tengilimoğlu and Yiğit, 2017). Institutional inputs are drugs, medical devices, non-medical supplies, equipment and installations and investment activities. If the cost of the inputs is high, the cost of the service will also increase. Efficiency, which can be defined as the ability to benefit from inputs, implies that health care is provided at the lowest cost without sacrificing quality (Ağırbaş, 2016, 19). Efficiency includes discharging more patients in a shorter time, lowering the cost of examinations and operations, and using the full capacity of medical devices. Inefficiency means less service, therefore less revenue, more costs. These concepts are especially important in procurement activities. Because every production activity requires inputs, whether in terms of goods or services. Also in the health institutions that provide services, the inputs are very expensive, depending on the technology, they are constantly developing, the types and functions are increasing day by day. In addition, health care should be carried out without interruption and cost effectively. In other words, the right product must be provided with the right time, the right quantity, the right quality, the right place and the right cost (ten Hompel, Schimidt, 2007, 14; Melo, 2012,3). There are also a large number of institutions and organizations such as the Ministry of Finance, the Ministry of Science and Technology, the Public Procurement Authority, the Social Security Institution and the producer companies, which affect the procurement activities directly or indirectly, which should be monitored especially within the scope of procurement activities of the hospitals

(Ağırbaş, 2016,72). In particular, the rules governing the functioning of the institutions of the state have been established by law and they are binding, and it is a must to comply with them. The number of manufacturers in the industry is very high, each claiming that the drugs or devices they produce for the same disease are the best drug or device in the market. Some drugs and devices are monopolized by certain companies. Therefore, the procurement activities of health institutions are strictly followed by the relevant sector and the government. This increases the importance of quality and financial performance due to reasons such as legality and corporate reputation. For these reasons, the procurement activity has to be done carefully by specialists in this field. A procurement plan must first be made. Successful implementation of the procurement plan depends on a sound determination of needs. The procurement procedure and supply time should be determined following the identification of needs. The planning and execution of procurement activities require business cooperation between departments. In this context, a coordination committee can be established (Ağırbaş, 2016,74). A different procurement plan should be made for each material and different methods should be applied. That is, medicines and medical consumables, fixtures and stationery, the spare parts required for the maintenance and repair of devices and vehicles should not be considered within the same scope. The amount of the general budget or the revolving funds to be used for each need needs, the procurement method, the economic amount and the duration should be determined. Technical personnel should be used for long-term investments such as capacity increase, renewal, medical device purchasing.

Supply Chain Management in Health Institutions

The success of the strategies that institutions put into practice to ensure a sustainable competitive advantage depends on the efficiency and the performance of the supply chain. Supply chain is the integration of the main business processes between the end user and the first supplier that provide information, products, services and value to customers and other chain stakeholders (Stock,Lambert, 2001,54). A supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer request (Chopra and Meindl, 2017, 1). This integration is a strategic choice for every enterprise involved in the chain (Bowersox, Closs and Cooper, 2002,5). Supply chain management is the process of managing suppliers and customers in order to provide higher added value at a lower cost (Christopher, 2005,5). The overall aim of logistics is to achieve high customer satisfaction (Waters, 2003,18). In this context, the supply chain must be effectively managed for a successful and sustainable health service. Since the costs and competition have increased in the health sector (Tengilimoğlu and Yiğit, 2017,61). The supply chain management of the healthcare sector refers to the purchase, storage, movement within the hospital, consumption and removal of all movable goods used in health care (Melo, 2012,3).

In the health sector, a combination of very different services, irregularities in the arrival of patients complaining of numerous and different diseases, the urgent and irrefutable nature of the patients' requires that hospitals are always ready for use in terms of personnel, equipment and materials (Ak, 1990,90). It is not possible to compensate for defects caused by material shortage. In addition, research has shown that the most important factors that prevent doctors and nurses from working efficiently are lack of tools, materials and equipment (Tengilimoğlu and Yiğit, 2017,75).

Therefore, supply chain management is of great importance in health institutions. In other words, it is necessary for health care institutions to effectively manage the supply of goods from the supplier to the patient. Supply chain management is aimed at reducing procurement, storage and transportation costs, simplifying processes, improving performance, increasing productivity, providing quality and reliable products and delivering the products in a timely manner. The success of the supply chain is possible through the harmonization of the activities, performance and capacity of the supply chain members (Görçün, 2013,7). Within this context, supply chain management in health includes the following processes: Supply of medical devices and spare parts, pharmaceutical and medical supplies and other materials, cold-chain, within hospitals, medical waste, ambulance, blood and blood products, humanitarian aid, return, withdrawal, destruction and transplantation. This study will focus on procurement and its management within the scope of supply chain management. Procurement activities in public hospitals are carried out according to legislation. As it is stated in the legislation in detail, it is not possible for managers to go beyond legislation. In private hospitals, managers are free in procurement activities as long as they are in line with the rules drawn by the law. However, for both, the aim should be the efficient execution of the supply chain (Ağırbaş, 2016,74), both need to look at procurement from a supply chain perspective in terms of reducing costs and increasing competitive advantage (Erdal, 2014, 17).

Purchasing Management in Health Institutions

Purchasing is, in the simplest terms, the provision of a product or service for a certain price in everyday life (Erdal, 2014,7). In terms of business, purchasing is the management of an enterprise's external resources, the execution and maintenance of the enterprise's main and supporting activities, the provision of all goods and services required for the maintenance and administration, and the provision of information under optimal conditions (van Weele, 2014,8). The purchasing activity varies according to the activity area, the scale, the product and the service characteristics of the operator. However, in terms of all sectors of the procurement activity, there are common features such as appropriate use of business resources, prevention of waste, control of expenditures and cost reduction (Erdal, 2014, 2; van Weele, 2014,14). In this context, purchasing professionals should strive to standardize the procurement process, establish an effective information network with suppliers, and improve supplier performance according to the selected supplier strategy (van Weele, 2014,5), must procure the right product at the right time, at the right cost, with the right supplier. It is therefore clear that the purchasing professionals have a responsibility to manage their suppliers properly (Lysons, Farrington, 2006,9). In health institutions, products mobility is continuous, product diversity is also very high. The basic purchasing groups formed according to product diversity can be classified as follows (Erdal, 2014,17): 1-Medical products, laboratory equipment and hospital equipment, 2-Diagnostic equipment, 3-Laboratory technology and equipment, 4-Operation equipment and instruments and operating room equipment, 5-Emergency care and intensive care equipment, 6-Orthopedic devices and prosthetics, 7-Physical therapy, rehabilitation tools and equipment systems, 8-Imaging systems and monitors, 9-Disposable materials, 10-Hospital furnishing and equipments, 11-Hospital furniture, 12-Hospital heating, cooling and cleaning systems, 13-Hospital laundry, ironing and kitchen equipment and so on.

The lack of the materials needed by the healthcare institutions can create problems that can not be compensated. However, there are mistakes in the estimation of demand, purchasing, distribution and usage, maintenance which hinder health services (Eren, 2016). As a matter of fact, Kumru and Kumru (2010) found 28 errors in the procurement process of medical consumables in a public hospital's purchasing unit in Istanbul and suggested improvement of 20 of these errors. Some of the recommendations were implemented in the hospital where the research was conducted and successful results were obtained. Among the detected faults, late detection of the need, incomplete detection, misidentification, long time to obtain, late decision are in the first place. One of the suggestions that was proposed and reported in the end of the research is the creation of a "medical consumables information bank" consisting of two parts. The first part is composed of the list of products used in the hospital and the second part is made up of the technical specifications of the materials in the first part. If implemented, it would be possible to save 20% of the supply time and 15% of the labor cost. It is also stated that competition will increase and purchases will be more transparent. It has been suggested that staff be trained on the lack of information about the procurement process, statements that are in conflict with the tender document, incomplete notification about the material needed, late notification, and pressures on obtaining material as soon as possible.

Institutional purchasing activities are framed within defined procurement policies and procedures (Erdal, 2014, 29). The main stages of these policies and procedures not only should be known to the staff in the purchasing department as to how the procurement process works to reduce errors in procurement activities but also should be known by everyone in the institution. Everyone should be aware of the average supply time of the materials needed by all staff in the organization. Thus, it is possible to avoid such defects such as late detection of needs, incorrect or incomplete purchase request form, late delivery of technical specifications, misidentification of needs, the provision of incomplete or inaccurate administrative provisions and prohibition of competition, missing or late notification of need, late gathering of medical commission. This can be achieved by providing an informative lecture at the beginning of the financial year to the staff by the purchasing department and an explanatory note to be added to the website of the institution.

The procurement activity begins with the request of a department or person in need. The staff in the procurement department should have an idea whether the request is correct or not and should also advise on this issue. In this context, purchases made in the past years provide guidance on whether the request is made correctly or not. Once the inventory is checked, the demand forecasting method can be selected to determine whether the request is realistic. This check should be done by the purchasing department. If there is an abnormal situation, the necessary consultation with the authorized personnel of the demanding unit should be made and following the coordination, the purchasing activities should be started. In addition, the same type of materials can be requested by different units at different times. All purchases related to the institution should be made from a single center through the purchasing department. Duplicate purchases should be avoided, materials should be bought as bulk as possible; for this purpose the needs must be combined. In situations where a department stated its need for a certain product and when there might be other departments that may be in

need of the same product before the procurement process is initiated, it should be coordinated with the departments that do not report the material as need but may need it. Qualitative and quantitative methods can be used for demand forecasting. In addition, staff in the procurement department should have sufficient knowledge and experience in conducting market research and evaluating suppliers. They should be able to determine the correct price by evaluating the purchases and the current situation in the past years and should be able to offer proposals for alternatives and substitute materials if necessary.

Suppliers need to be carefully selected too (Aptel and Pourjalali, 2001,68). Two important issues that should be taken into consideration in the selection of suppliers are, evaluation of supplier performance and supplier life cycle (Koçoğlu and Avcı, 2007,5). The evaluation of supplier performance is related to the selection of the right supplier. The performance of the supplier can be evaluated by considering the criteria such as cost, quality and delivery, order execution time, flexibility, innovation. The life cycle of the supplier relates to the replacement of the existing supplier. Suppliers who lose their ability to meet the requirements of the institution must be excluded from the evaluation. Thus, possible delays can be avoided.

Following the receipt of the request and evaluation and the final coordination with the requesting party after evaluation, the purchasing method must be determined in order to use resources more efficiently and effectively, to ensure competition and to meet the needs on time. The procurement method is concerned with identifying who gets the material and how it affects the average supply period. For example with the mass purchase through centralized procurement institutions such as Group Purchasing Organization in the United States and State Supply Office in Turkey, the hospital costs are reduced and the delivery of health services are made more competitive (Tengilmoğlu and Yiğit, 2017,38). Although the procurement period is longer than the local procurement of bulk purchases, this can be overcome with good planning. With centralized procurement method, cost advantage and necessary materials are standardized on the basis of hospitals, materials are taken in desired quality. In terms of purchasing departments, transparency, competition and accountability principles are fulfilled. This method can also be used in the procurement of medical consumables, while centralized procurement of highly critical or very expensive durable goods such as machines, appliances, tools and fixtures might be preferred. Local procurement can be accomplished in a shorter time than central procurement. In this case, however, more resource use is involved. In case of material urgency, excessive use of resources will lose importance. In this stage, it is particularly important to evaluate the selection and performance of suppliers when the urgency and prosperity of the material is concerned. That is; either it is the direct supply that is maintained by a single supplier from the price it sets within the context of local procurement, or through interviewed procurement where purchase occurs through the bargaining with a select number of potential clients or through the limited offer methods where suppliers that are registered to the government by completing the necessary procedure previously participate, the quality of the suppliers gain value. The open bidding procedure, which all interested suppliers can bid, should be preferred for procurement of materials with less precautionary measures for which the delay does not affect the main activity of the institution.

The periods that the demanded equipment will be purchased are another important issue. In addition to a plan to be made at the beginning of the financial year, it is also necessary to specify in what quantities and at which periods and what materials will be purchased. In this context, for example, taking vaccines at six months or annually periods will not be the right approach. On the other hand, the purchase of the materials needed once in six months or a year would have disadvantages such as storage of materials and maintenance while in storage, even if cost advantage is provided. Therefore, it may be more appropriate to take certain materials with certain reserves and periodically. Defects that may arise from delays can be overcome by introducing one of the local purchasing methods, for example, direct supply.

The issues to be considered in the planning of procurement activities in terms of the institution are explained above. However, the issue of when to pay after the procurement activities are realized is also important for suppliers. Shortening the payment period also means that the cost of the institution is reduced. The financing of the hospitals consists of the budget allocated to the hospital by the state, revolving funds, money collected by the hospital associations, income from the hospital foundations and profits obtained from economic enterprises of associations or foundations (Ağırbaş, 2016,76). How to use the income from these sources is determined by the relevant legislation. The necessary planning can be done by looking at the relevant sections of the legislation in terms of the payment period.

The last stage of the purchasing activity includes following orders, control of the quantity and quality of the goods delivered by the supplier. The precautions necessary for the timely delivery of orders are specified in the contract items. When the orders are not delivered in time, in the required quantity and quality, the sanctions that the supplier must bear must be discouraging. What should be noted here is that the contract terms should not be too heavy to prevent the supplier from entering the tender, presumably because they will lose much if they can not fulfill the order. An optimal path must be found. At the end of each purchase made, the performance of the supplier should be assessed and it should be decided whether or not the supplier is in the pool of potential suppliers, within the context of the supplier life cycle concept. During the delivery, the quantity of the material must be checked first, then the quality control and inspection must be done according to the technical specifications. The inspection should preferably be carried out by a different committee in which one person is also in need of the unit.

Another issue that needs to be considered in the scope of procurement other than material procurement is the purchase of services. A purchase of service can be planned instead of recruiting staff for the periodical maintenance, repair or provisioning of medical devices, ambulances, lifts and generators or the cleansing of equipment used by the personnel within the building or during an operation. In this context, the service should be done with authorized services and long term contracts. The replacement of unrepairable parts and the periodical replacement of certain parts even in the absence of any malfunction as per the advice in the device manuals would ensure the smooth functioning of the service. Devices that perform similar tasks in the organization should be the same brand. This would ensure standardization and the efficiency of service procurement will increase. The company of a staff member to the supplier of the service who would be able to technically understand and interpret what to do when explained would be appropriate. Another issue that needs to be considered in this context is that of

the materials covered by the guarantee. Follow-up should also be monitored by the personnel responsible for the operation of the material and by the purchasing personnel. The related department should be advised that in case of a malfunction of a device that is under guarantee, the repair demands should be made under the scope of the subject guarantee. The items to be repaired should be provided within the term of the contractual instruments, and if necessary, the provision of a new device must be provided until the defective device is repaired for critical devices.

Procurement is a process that requires very careful planning, coordination between units, selecting suppliers and evaluating their performance, so that all personnel are informed about the issue. It is stated that more than 30% of hospital expenditures are related to logistic processes (Feibert, Jacobsen and Wallin, 2017), which is 40% in North America (Tengilimoğlu andYiğit, 2017, 20). It is claimed that the improvement of logistics activities or the costs of the best practices available in this regard could be reduced by half (Feibert, Jacobsen and Wallin, 2017,1). A study by the American Management Association found that annual purchasing and material management resulted in an annual savings of 2%, a 10% increase in operating profit, and a 10% reduction in material costs, with a 52% increase in profitability (Tengilimoğlu and Yiğit, 2017,71). In this context, the purchasing activity of health institutions is of great importance not only for human health but also for reducing costs. No matter how carefully the above mentioned procurement process is held, due to the presence of a large number of professionals involved, the wide variety of equipment and the suppliers' and states' bearing an active role in the process the possibility of facing with malfunctions is quite high. Within the context of decreasing the logistical costs of hospitals, Aptel and Pourjalali (2001), who compares the US and French hospitals, suggest that the hospitals should use activity based management and the philosophy of just in time (JIT) to avoid malfunctioning and decrease stock costs. Activity-based management is about increasing the efficiency of the organization's activities and reducing or, if possible, removing non-value-added activities. JIT is an equipment management philosphy that enables the equipments to be present just when they are needed and just on time and it targets zero stock. In this research, Aptel and Pourjalali (2001) define purchase, storage and stocking management as non-value adding logistical activities and state that the best method for such activities is to do on time supply by founding long-term cooperations with a limited number of trustworthy suppliers.

Conclusion

Health institutions have a complex structure. As in other sectors, competition in the health sector is intense and costs are increasing day by day. Today, competition is taking place among the supply chains, which have a great influence in cost and timing. The difference of health institutions from other institutions is that they are a sector where human health and even life is a subject. Therefore, logistics activities of health institutions are more important when compared to other institutions, because there is no compensation for errors caused by logistics activities. Problems caused by lack of any material or malfunction of any device affect the performance of doctors and nurses. Such defects can cost human life. On the other hand, logistics activities of health institutions are very difficult, because the type of materials used in health institutions is

very large and these materials are very expensive. Parallel to the development of technology, new material is added to these materials and devices every day. The state is an important actor involved in all health-related activities, and procurement activities are carried out within the framework of rules established by law. Purchasing, which is one of the basic functions of logistics activities, deals only with the price of the material needed in the classical sense. However, only consideration of the price can cause the quality to be ignored. The quality of the materials used in health institutions can not be compromised. The nature of each product and the supply chain are different. The materials used in health institutions can also be classified as medical consumables, medical devices, other consumables and other durable materials. In addition, service activities such as cleaning, repair and maintenance of devices and vehicles are carried out in health institutions. All these materials and devices and services should be carried out at the discretion of the supply, and both demand and purchase activities should be carried out on time. Purchasing is a time-consuming process that requires control and research. As a result of this research, JIT method is recommended in health institutions. However, this does not seem to be feasible at least in a sector that is constantly renewing itself, where the materials are very expensive and the state acts as an actor in order to become a social state. In this context, procurement departments should include in their job descriptions activities such as providing staff information about the process, keeping statistics, checking the accuracy of claims, and estimating demand using a number of statistical methods. Determining that a material may be needed, even if it is not demanded, will prevent it from being delayed beforehand. The purchasing department must also evaluate the suppliers in terms of performance and make careful observation and analysis of the supplier life cycle. Making the purchasing process, one of the basic functions of the logistics, using the specified methods will increase the success of the purchasing process. The more successful the management of the procurement process, the more it will be possible to reduce costs, increase patient satisfaction and gain competitive advantage.

REFERENCES

Ağırbaş, İ. (2016). Hastane Yönetimi ve Organizasyon, Siyasal Kitabevi, Ankara, ISBN: 6059221306.

Ak, B. (1990). Hastane Yöneticiliği, Özkan Matbaacılık, Ankara.

Aptel, O., Pourjalali, H. (2001). Improving Activities and Decreasing Costs of Logistics in Hospitals-A Comparison of U.S. and French Hospitals. The International Journal of Accounting, 36, 65-90.

Bowersox, D., Closs, D. J., Cooper, M. B. (2002). Supply Chain Logistics Management, (2nd edition). McGraw Hill, USA.

Christopher, M. (2005). Logistics and Supply Chain Management: Creating Value-adding Networks, Prentice Hall Press, London.

Chopra, S., Meindl, P. (2007). Supply Chain Management, (3rd edition). Pearson Prentice Hall, New Jersey.

Erdal, M. (2014). Satınalma ve Tedarik Zinciri Yönetimi, (3.Basım). Beta, İstanbul, ISBN: 978-605-333-194-0.

Eren, B. (2016). Hastane Hizmetlerinde Malzeme Yönetimi. Available at: https://www.academia.edu/5394565/Hastane_Hizmetlerinde_Malzeme_Yönetimi (Accessed: 12 March 2018).

Feibert, D. C., Jacobsen, P., Wallin, M. (2017). Improving Healthcare Logistics Processes, DTU Management Engineering, Denmark.
Görçün, Ö. F. (2013). Tedarik Zinciri Yönetimi, (2.Basım). Beta, İstanbul, ISBN: 978-605-377-898-1.
Güleş, H. K., Paksoy, T., Bülbül, H., Özceylan, E. (2012). Tedarik Zinciri Yönetimi, (2.Basım). Gazi, Ankara, ISBN: 978-605-5804-36-7.
Koçoğlu, C., Avcı, M. (2014). Satın Alma Yönetimi: Teorik Bir Çalışma. Kastamonu University Journal of Economics & Administrative Sciences Faculty, 13(2), 33-47.
Kumru, M., Kumru, P. Y. (2010). Hastanelerde Satın Alma Sürecinin İyileştirilmesi: Bir Örnek Uygulama. II. Uluslararası Sağlıkta Performans ve Kalite Kongresi, 28 April-01 May 2010, Ankara, Bildiriler Kitabı 2. cilt, s.171-183.
Lysons, K., Farrington, B. (2006). Purchasing and Supply Chain Management, (7th edition). Prentice Hall, London.
Melo, T. (2012). A Note on Challenges and Opportunities for Operations Research in Hospital Logistics, Schriftenreihe Logistik der Fakultät für Wirtschaftswissenschaften der HTW des Saarlandes, No. 2.
Monczka, R. M., Handfield, R. B., Giunipero, L. C., Patterson, J. L. (2009). Purchasing and Supply Chain Management, (4th edition). South-Western, USA.
Stock, J. R., Lambert, D. M., (2001). Strategic Logistics Management, (4th edition). McGraw Hill, USA.
Ten Hompel, M., Schmidt, T. (2007). Warehouse Management, Springer, Heidelberg.
Tengilimoğlu, D., Yiğit, V. (2017). Sağlık İşletmelerinde Tedarik Zinciri ve Malzeme Yönetimi, (3.Basım). Nobel, Ankara, ISBN: 978-605-133-641-1.
Van Weele, A. J., (2014). Satın Alma ve Tedarik Zinciri Yönetimi, (Translator: Metin Çancı). Literatür, İstanbul, ISBN: 978-975-04-0668-3.
Waters, D. (2003). Logistics: An Introduction to Supply Chain Management, Palgrave Macmillan, New York.

Chapter 104

New Management Concepts

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INTRODUCTION

Global changes in business life have bring new management approaches and practices. This chapter will focus on management concepts that have started to discussed in management science and where studies have started to discussed in the health sector in recent years. Employee behaviors and the leadership styles of the manager have special importance in the health sector due to the fact that jobs are urgent, can not to be postponed and all kinds of consequences are reflected to the patients. For this reason, the concepts of organizational incivility, presenteeism, quantum and sustainable leadership and cyberloafing will have been discussed in this section.

1. WORKPLACE INCIVILITY

In terms of social and organizational behavior, it is expected that the individuals working in institutions should comply with minimum respect rules in their communication and mutual behaviors with each other. These are the rules that people have to obey in their professional work life, regardless of their individual choices and whether they like or dislike each other. Employees' acts which are out of respect is called workplace incivility.

1.1. Definition of Organizational Incivility

With increasing competition, unmet needs and demands, the tolerance of employees and managers in interpersonal relations has decreased considerably; on the other hand tendency of furiousness, anger and negative emotions has increased dramatically (Taştan, 2014).

Workplace incivility, defined as deviation from institutional norms, is a type of harmful behavior that has significant negative impacts both organizationally and individually (Kumral & Çetin, 2016).

The concept of incivility has been estimated as a moral standard and a virtue in the literature. Workplace incivility, a social work stressor, is defined as a low-intensity abnormal (deviated from normal rules) behavior that disrupts workplace rules and mutual respect, with the intent of harming or not harming the targeted person (Andersson & Pearson, 1999).

Workers are careless about violating the rule of mutual respect deliberately or in deliberately in the workplace. This type of workplace incivility is not contrary to official rules. Many institutions can’t understand this, and the vast majority of managers don’t have enough instruments to deal with this situation. The situation is called

incivility and it is defined as a minor deviant behavior that violates mutual respect rules and the aim of the behavior is not to harm the targeted person in the workplace. Minor deviant means not physical but verbal, not active but passive, not direct but indirect (Pearson & Porath, 2005).

According to Martin (2008) workplace incivility can be seen as a form of violence, maltreatment, or even an open conflict, which can be said to have laid the groundwork for negative employee behavior at work.

When defining the concept of workplace incivility, another important point is which behaviors are to be evaluated in this context. Because of the different personal values and perceptions, behaviors described as incivility can vary from person to person. But what we need to consider here are discourses and behaviors contrary to existing social norms.

Some of those which are unprofessional in business life, in the frame of basic respect rules such as not saying good morning, have a good day or thank you, cutting of others' speaking, rebuke, making insulting comments, ignoring, rumor spread, talking loudly, intervene in private life and unprofessional appeals such as sister, brother, master in business life. On the other hand leaving the working environment untidy, using unauthorized goods belonging to others, not responding to emotions, not paying attention to ideas, running away from people, hiding resources that others need, etc. are also assessed in this context (Pearson *et al.*, 2000, Anderson & Pearson, 1999). Surely, these behaviors can be varied depending on the cultural structure and institutional characteristics.

There are three important features of workplace incivility. These are; frequency, intensity and uncertainty. Two of these features completely separate workplace civility from other forms of harmful behavior. From the point of view of frequency; in the civility of workplace, many events come to fruition over time. From the point of view of density, workplace civility is a low density behavior (Leiter, 2013). A low intensity behavior does not mean that it is harmless or insignificant. Due to its low density, it is hardly noticeable and can be ignored. But; ignoring these tendencies at work and allowing incivility exacerbates other forms of harmful behavior (Shim, 2010).

Workplace incivility is steadily increasing throughout the world, and studies have shown this result (Torkelsan *et al.*, 2016). It is estimated that 98% of the workers are exposed to workplace incivility and 50% of them meet at least once a week with such behavior (Porath & Pearsan, 2013).

In the literature, the concept of "workplace incivility" has been associated with various expressions. These are as follows: psychological terror, emotional abuse, harassment, bullying, mistreatment, victimization, incivility, health endangering leadership, work abuse, workplace trauma, employee abuse and mobbing. The distinguishing feature of incivility from aggression is that the criminal is intentional when harming (Anderson & Pearson, 1999). This concept can be confused with the concept of psychological harassment. Psychological harassment; one or more persons are targeted in a deliberate, systematic manner, non-moral and hostile behavior, and these actions result in a person being defeated and helpless. Workplace incivility differs from this concept at many points.

The basic distinction of this concept with psychological abuse is that it is a more general form of behavior (Salin, 2003). While there is a constant and intentional

maltreatment of a specific person selected in psychological abuse, the target in workplace incivility can be someone else the next day.

Behaviors exhibited in workplace incivility are a form of weaker maltreatment, as they are contrary to the general rules of respect, for example cutting off the words of others and not saying thank you (Martin, 2003)

However, in psychological harassment, more various and heavier forms of behavior such as reprimand, humiliation, exclusion, and the taking of authority are observed. Diversity can also be seen in the way actors are defined in both concepts.

In psychological harassment, when a person abused, they called as a victim. It is defined as a target in workplace incivility. Abused person is defined as an instigator in the workplace ritual, while it is described as a perpetrator in psychological abuse (Pearson & Porath, 2005).

1.2. Reasons and Consequences of Workplace Incivility

Workplace incivility affects employee prosperity negatively. Serious workplace incivility can lead to more psychological consequences such as stress, depression, and suicide (Cortina *et al.*, 2013). These behaviors cause employees to feel bad, depressed, unhappy, frustrated and offended. Workplace incivility, in the future, also undermines the professional identities of employees, their confidence in themselves and their professional competencies is diminishing, becoming increasingly passive (Paulin & Griffi, 2016). Workplace incivility reduces organizational performance changing occupational attitudes and behaviors against their colleagues and their mates. (Laschinger *et al.*, 2012). In spite of workers feel workplace incivility and fell out of depth, they may experience emotional exhaustion by continuing their work and then they could want to move away from work. The reason is when they leave their job there is little chance of finding a new job, and therefore they cannot leave the job immediately and have to experience emotional exhaustion. In addition, workplace incivility causes social loafing (Kanten, 2014).

When the researches are examined, it is seen that the workplace incivility decreases job satisfaction, organizational commitment, organizational trust, organizational justice perception, organizational identification. On the contrary it can be said increases the intention to leave work, cynicism and professional burnout. The tense and restless atmosphere created by the workplace incivility, poisons the organizational climate and disrupts the harmony of work of others (Miner *et al.*, 2012, Kaya, 2015, Miner & Cortina, 2016). Because of the rough behaviors they are exposed to, they often direct their reactions to the organization by reducing their quality and performance, rather than by the person who is often rude to them (Pearson & Porath, 2005).

Workplace incivility usually starts with the behavior of a person, but over time coarse and disrespectful behaviors become widespread throughout the organization, insecurity increases, employees' job satisfaction decreases, and a culture of intolerance that is not sincere, rude behavior dominates at the end. The good ones leave the institution and remain a structure made up of unhappy people. All of this creates devastating effects for institutions and employees (Johnson & Indvik, 2001).

As a result of the literature analysis of workplace incivility, Kumral and Cetin (1986) found that people with high levels of fear and anger and those in the health sector are more likely to perform workplace incivility. As a result of the same analysis, it is concluded that there is a negative relationship between incivility and productivity,

negatively affecting organizational loyalty and negative organizational climate and workplace incivility (Kumral & Çetin, 2016). Managers who do not sufficiently consider and ignore the workplace incivility are not aware of how much time they have spent solving conflicts in the organization because of such behavior. If they ignore these conflicts, workplace incivility will cause the institution to deform and damage the institution (Pearson & Porath, 2005).

Most of the literature studies conducted in this area were carried out in the field of health and it is seen that the incivility increases day by day. As a result of the literature analysis, a significant and positive relationship has been found between incivility behaviors and medical errors in nurses. In another study, it was determined that nurses' perception of incivility behaviors in the workplace resulted in inadequacy of patient safety and quality of care (Armstrong, 2017, Ward-Smith, *et al.*, 2018).

Reasons for the emergence of workplace incivility include change in working life, institutional policies, and managers. Employees are so preoccupied with the realization of their goals that they do not have time to take care of the people around them and to be more respectful (Johnson & Indvik, 2001). This intense mobility is increasingly alienating the individual and facilitating the emergence of rude behaviors more often and indifferently. Each institution has its own organizational climate (Gün & Söyük, 2017). Whether or not the establishment has a fair organizational climate is closely related to the forms of maltreating at the workplace. Employees should know that if they deal with any maltreatment, the situation will be solved fairly, or the person who is involved in rough behavior will be punished. In this way, workplace incivility can often occur in institutions that cannot rule justice in the working environment (Dietz *et al.*, 2003).

Workplace incivility is a phenomenon that needs to be addressed and studied further because of its significant negative effects. In this context, organizational change, policy development and appropriate behavior development practices should be defined and disseminated. One of the highest achievements of an organization is to increase personal and organizational productivity, with mutual respect, by creating an atmosphere in which workers feel self-conscious and feel happy.

2. PRESENTEEISM

Presenteeism is a topic gaining importance in the field of organizational behavior in recent years. Presenteeism is mentioned in the literature as "a new discourse on an old problem" (Lowe, 2002). This term is a conceptual name given to the fact that the employee is in the workplace physically but spiritually totally in different place, not in full performance (Sanderson, *et al.*, 2007). Presenteeism, which started as trivial, is a concept that needs to be emphasized because it will cause many organizational negative consequences over time.

2.1. Presenteeism Definition and Its Importance

Presenteeism has introduced by Cary Cooper, a psychologist specializing in organizational management (Brown, 2011). Cooper has defined to presenteeism as "The worker seems to be working long, or at least working at an irresistible level". Presenteeism is also defined in literature as "it is a situation which workers exists physically in the workplace and has an illness, reluctance, management problems in the workplace, or other reasons that cannot do its job literally (Demirbulat & Bozok, 2015).

Presenteeism is also a concept used to describe that working during illness is an unusual event (Dew & Small, 2005).

In the case of presenteeism, employee does not have such a severe illness as to stay at home and he can feel good to go to work. But usually the presence in the workplace is only physical. When he does not feel well, s/he does not perform poorly or perform well when he is at work. Illnesses can be classified as chronic and non-chronic diseases that cause presenteeism. It can include heart diseases, headache, migraine, sore throat, back and neck pain, infections and mental illnesses as well as infectious diseases such as influenza and flu (Willingham, 2008, Caverley *et al.*, 2007). Presenteeism, which is generally seen as a health problem, is also a problem for occupants who are physically healthy but cannot exist at the work mentally (Anık Baysal *et al.*, 2014). Occupants sometimes experience presenteeism problems because of physical disabilities and also psychological or organizational reasons. For example; occupations with low organizational commitment do not feel emotionally loyal, so their minds can be filled with other things in the working environment. Hence, they cannot focus on the work (Dew & Small, 2005). Among the behaviors that will be exhibited in presenteeism are; spend time outside the work on the internet (surf), online transactions, to make an appointment, to listen to music and etc (Demirbulak & Bozok 2015, Çoban, 2015).

Chronic diseases have increased in the last 20 years in business life (Shaw *et al.*, 2013 Kubo *et al.*, 2014). Employees with chronic illnesses may face discrimination and prejudice in the workplace, and do not see understanding and support from their colleagues and supervisors. They can encounter not only discrimination but also mobbing and violence. This situation further deteriorates the health, causing more absenteeism, presenteeism (Eurofund, 2014).

Presenteeism is sometimes confused with absenteeism. Absenteeism is considered a multi-causal and complex phenomenon. Absenteeism and presenteeism both affect the entire working life and all employees. Disease outcome presenteeism is more common than disease absenteeism. Pressure and regulation to reduce absenteeism is reflected as an increase in presensteeism. Continue to work while the patient is sick can lead to increased health problems (Burton *et al.*, 2004, Gosselin *et al.*, 2013).

Since presenteeism has been first detected, scientists observed it as a negative organizational behavior. Presenteeism is regarded as risk behavior for the employees themselves because small delays can be effectively transformed into more serious diseases by delaying the sick day (Erbaş & Yeşiltaş, 2017). It has begun to turn “I am sick and I cannot come to work today”, which is called absenteeism, into “I am sick but I am at work”, which is known as “presenteeism" (Çiftçi, 2010).

However, absenteeism is directly perceived as a lack of occupation, and the presenteeism is confronted as an unpredictable problem (Demirgil & Mücevher, 2017).

Being at work when employees are not healthy, resulting in low efficiency problems, and due to this trend, businesses have had to endure high secret costs. If employee is sick, s/he will affect both his colleagues and health care recipients, who come to work but are unable to fully work.

2.2. Causes of Presenteeism

Factors that cause employees to continue to work despite their physical or psychological discomfort and cause low productivity are grouped under three headings. Organizationally derived factors, individual factors and attitudes (Atilla, 2017).

Work-related factors that cause increase in presenteeism; increased risk of overwork, increased risk of losing work, not missing career opportunities, confidence in business-savvy colleagues, and support from top managers (Rantanen & Tuominen, 2011, Cavarley *et al.*, 2007). Teamwork reduces the burden of illness even for a short period of time. However, some employees also feel pressure to think about who will do the job when they become sick in the event of teamwork, which can lead to presenteeism (Grinyer & Singleton, 2000). In addition, many organizational practices and policies may promote presenteeism. Praising and encouraging the worker when it is ill, may cause the employee to come to the work. Economic stagnation, continuous full-time work, shift system and length of working hours, inconsistency of working hours, contract work can be considered as other reasons (Johns 2010). Role conflict, job dissatisfaction, organizational culture, inequality and discrimination, poor management and leadership style are among other organizational causes (Atilla, 2017). The organizational manager is a model for the employee. If the manager comes in to the work when ill, s/he sends a message to employees.

When personal reasons examined, these are personality, depression, stress, age, financial situation, and personal reasons, etc. It can be counted as a personal reason for the person to think only of the job and only focus on the job (ie, a worker) (Lowe, 2004). In those who have more workload and responsibilities, presenteeism can be seen more due to work-related mental illnesses. Workers who are highly educated and older tend to be less likely to be at work when they are sick (Aronsson & Gustafsson, 2005). The presenteeism rate is also high when working in stressful environments. In a study conducted in a public hospital in Turkey, rates of presenteeism in emergency personnel and intensive care unit has been found at the highest value (Atilla, 2017).

Although presenteeism is linked to disease, it needs to be associated with work attitudes and experiences that affect other forms of organizational behavior (Johns, 2010). The attitudes of the person and the manager within the organization may cause presenteeism. In addition, employees who have a high level of stress and health problems may result in an increase in presenteeism. The organizational manager is a model for the employee. When the manager comes to the hospital and exhibits such an attitude, he sends a message to the employee.

2.3. Results of Presenteeism

Individuals who are too uncomfortable to go to work do not stay away from work (presenteeism), which is very harmful to the organization. The most known result of presenteeism is low productivity. The presence of a person at work, even if the person has physical or mental disturbances, will prevent them from reaching the targeted output (D'abate & Eddy, 2007). Presenteeism may cause decreased performance, reduced motivation, dissatisfaction, absenteeism, and increased labor turnover (Johns, 2010). The mental and physical discomfort and the risk of an increase in work accidents emerge as one of the important problems in terms of cost and health consequences (Atilla, 2017).

As a source of physical and mental fatigue, the workplace can cause long-term negative effects on health, such as burnout, in addition to stress (Knani, 2013). Presenteesim can lead to high burnout levels in the long run due to the potential for reduction in healing (Demeroutiet *et al.*, 2009).

As you can see, presenteeism is confronted as a phenomenon that harms both the

institution, the worker, the economy and the society. Organizations should avoid behavior that could lead to increased presenteeism.

3. CYBERLOAFING

Nowadays, the effective use of human resources and technology is crucial in achieving organizational goals. With the use of information technology in labor-intensive businesses, more goods and services can be produced in a shorter period of time. The widespread use of computer and internet technologies in enterprises has the possibility of using the technologies, surfing the internet and using social media tools for their own purposes (Kaplan & Çetinkaya, 2014). The widespread use of the internet has undoubtedly been a source of one of the most important problems sought in recent years, along with the numerous advantages offered by organizations (Köse *et al.*, 2012).

Intra-institutional and non-institutional communication, reducing unnecessary transactions in terms of workload, eliminating redundant transactions, productivity and performance, and the creativity of employees have increased through use of computers and internet (Örücü & Aksoy, 2018). In addition to the benefits created by the widespread use of computers and internet at work, the use of computers and the internet for personal purposes during working hours has begun to be debated in thesee days (Blanchard & Henle, 2008).

The number, variety and accessibility of technological devices such as personal computers, tablets, and smart phones are increasing with the development of technology day by day. With the development of technological devices, internet has become easily accessible and has become the center of our lives. The use of the internet is compulsory and the easy accessibility brings with it abuses. These abuses can go from actions that can be considered innocent, such as control of personal emails that are not related to work, to behaviors such as entering sexually active sites and downloading things with sexual content (Tan, 2017).

Although cyberloafing behaviour increases the ability to gather information for problem solving and increases the creativity of the workers, it has potential to create other problems if the activities are not monitored. There are many material, moral and legal consequences of the abuses that occur in the workplace. This has led to the emergence of a new concept in the literature. This concept is cyberloafing. Cyberloafing is a relatively new topic in scientific literature. Cyberloafing is defined as employee's voluntary non-work related use of company provided email and Internet while working (Doorn, 2011). In this part of the study, firstly the concept of cyberloafing will be explained, then cyberloafing types and finally cyberloafing results will be mentioned.

3.1. The Concept of Cyberloafing

Cyberloafing is a term refers to the activities of exploiting the facility in accessing internet provided by the organization for personal interest or any activities that are not related to the job and organization (Lim & Teo, 2005). Loafing is a concept that was first put forward by the rope pull test conducted by Ringelmann. In the experiment conducted by Ringelmann, the average contribution of each team member decreases as the number of members increases. The power unit that an team will emerge must be the total power unit each team member can provide, but the end result is contrary to this. This phenomenon is called Ringelmann effect.

The use of special-purpose internet at the workplace is expressed in various forms (with minor differences among them) in English such as internet abuse, cyberloafing, problematic internet use, internet addiction, nonwork-related computing, non-work related computer usage, cybersblacking, cyberbludging, on-line loafing, personal web usage at work, internet dependency, internet addiction disorder. Despite the minor differences among them, cyberloafing is the most used one in the related literature.

Blanchard and Henle (2008) define cyberloafing as "employees' voluntary non-work related use of company provided email and internet while working". The activities included sending personal email, chatting, downloading songs or movies, online shopping and other online activities for personal and recreation. There are various definitions of the concept of cyberloafing from the above definitions. Bock and Ho (2009) use the internet for specific purposes at work; computer usage that is not related to work. Non-business computing is a general term that includes cyberloafing and unwanted computer use. Unwanted computer use "is the use of the information system of the organizer for the personal purposes of the organizer, not of interest to the organizer's direct aims" (Bock and Ho, 2009).

Doorn (2011) suggests that four major purposes of cyberloafing can be; (Ünal *et al.*, 2015).

Personal Development Behaviors; Employees' research in the cyber world helps to reduce their stress as well as to help with the learning process. Such behaviors therefore, can contribute to the efficiency of employees along with the organization. For example, the application of a computer program that will be learned on the internet in business life will improve the processes.

Recovery Behaviors; the employee's cyberloafing is for renewal, self-awareness and collecting the idea

Deviant Behaviors; Deviant is the cyberloafing to do palter the job in workplace such as entering the internets in order to make a financial gain.

Addiction Behaviors; Employee is cyberloafing due to habit such as chatting, playing online games. An internet addiction is considered problematic behavior, so there are many studies on this subject.

3.2. Types of cyberloafing

Different types of studies exist in the literature for the types and classification of virtual resources. In the work of Blanchard and Henle (2008) have revealed that the cyberloafing have two different type. The first is junk cyberloafing (such as sending and receiving personal e-mails at work) and the second is an important cyberloafing (such as entering gambling sites and browsing adult sites) (Özdemir, 2017)

In the work of Lim (2002), cyberloafing behaviors are classified as web site navigation activities and e-mail buy-receive actions. Similarly, Blau-Yand *et al.* (2006), have classified cyberloafing in the form of navigation activities on the Internet, non-business e-mail activities and interactive cyber-dwelling actions (Candan & İnce, 2016).

Another classification of internet activities is the study made by Mahatanankoon and *et al* (2004). According to this study; five personal use different types of activities have been distinguished. These are; (Özdemir, 2017)

- Purchasing and personal affairs,
- Research and look at information,
- Interpersonal communication,

- Interactive entertainment time span,
- Download personal data.

Anandarajan *et al*., (2004) is divided cyberloafing into four groups related to productivity and organizational (Anandarajan *et al.*, 2004, Ünal *et al.*, 2015). These are;

***Disruptive*:** Actions that are considered harmful to the organization and that generally involve negative aspects of the use of the internet. These actions are referred to as abuse of the internet. Entering obscene sites, playing online games and downloading music are among these types of actions.

Recreational: These group activities are about leisure and fun. It is this group of activities that are related to recreation / entertainment or social activities, to make inquiries about the products that are related to their interests or are considered to be bought.

Personal Learning: This group of activities includes following the news about the organization, searching for educational opportunities, visiting the pages of professional organizations and reading about current events.

Ambiguous: It is the most ambiguous group. There are three actions in the chat rooms, including participating in discussions about the organization, entering official sites, and getting information about other institutions in the chat rooms.

The above-mentioned cyberloafing actions have many positive and negative consequences for the working and the organization. This section will focus on the results of the cyberloafing.

3.3. Cyberloafing Results

Cyberloafing is defined as the use of an organization's internet connection for personal purposes by an employee during work hours. The opposite ideas of Cyberloafing for organization and individual effects are being put forward. Some studies show that the Cyberloafing can be useful while others claim that they could be harmful for the individual and so organization.

Cyberloafing is happening in many workplaces today and every passing day enterprises are trying to take new measures against this situation. Employers can impose a number of legal sanctions against employees who disrupt work in their workplace when they are engaged in cyberloafing.

Mills and his colleagues found three main probing reasons for cyberloafing in the study area. The first of them is the comprehensive use of company resources, the second is production and financial losses, and the third is legal responsibilities (Serttaş, 2016). According to Lim and Teo, cyberloafing activities prevent the employee from fulfilling and completing his / her work related tasks, or in other words, inefficient use of time (Lim & Teo, 2005).

In general the results of the cyberloafing; organizational and individual effects can be categorized in two main groups: loss of productivity and job performance.

Cyberloafing activities are significant determinant of inefficiency within the company. Ramayah has distinguished cyberloafing to four groups such as individual data downloading, individual e-commerce and individual information search activities and found positively relationship between them and inefficiency within the company. Besides the impact of the cyberloafing on business performance is handled in two ways. According to the first hypothesis, cyberloafing has a negative impact on business performance because it reduces productivity. In another view, cyberloafing contributes

to the emergence of suppressed or inhibited creative aspects of individuals. It also has a positive effect on the organization and the individual, as it facilitates the inclusion of new information or the way in which information can be learned more accurately

With the development of technology, cyberloafing activities within the organization have increased in recent years. As discussed above, it has both varieties and tangible results. It is necessary for organizational managers to be careful about cyberloafing because it affects business performance and productivity.

4. NEW LEADERSHIP MODELS

There are many studies in the literature on both classical leadership and modern leadership approaches. Recently, studies on "quantum leadership" and "sustainable leadership" have gained considerable interest in modern leadership approaches. For this reason, these types of leadership will be tried to be evaluated in the framework of the study.

4.1. Quantum Leadership

Over the past 30 years, changes have brought a new structure to the social constructions and relationship between all humanity. In these turbulent world, the quantum paradigm developed and applied in the middle of the century helped to create new technologies that affect life from the molecular to the global level (Porter-O'Grady & Malloch, 2002). In the quantum paradigm, nature is often seen as complex, chaotic and unpredictable, and beyond direct control by human intervention. Furthermore, the work of scientists is to expose the ways of living with nature and take advantage of its potential (Fris & Lazaridou, 20066).

On the other hand, leadership mentality cannot be the same. While even the basis of society can change radically, it is inevitable that the leaders who guide people throughout life will change. Previous leadership models are no longer sufficient to meet demands of time. The nature and role of the leadership was different when the world was slower and the concepts such as system theory, complexity theory and quantum theory were not well established or effective. Even the operational realities of the working environment have changed, as the work itself requires different skills and ethos (Porter-O'Grady & Malloch, 2002).

The social changes that have taken place in recent years have required research on leadership and the need to change the focus of applications. Most of this researches include increased demands for leaders in health and social services as well as gender and cultural diversity in the workplace, the globalization of organizations, the of the information and the revolution of quantum theory and its impact on leadership behaviour. The leadership literature also has changed in parallel with these changes (Vance & Larson, 2002).

Quantum leadership is overshadowed by well-known types of leadership today, but it emerges as a concept that has turned upside down all traditional views and doesn't have a concentrated form of control. It seems to be more appropriate in situations with high complexity, high flux and great uncertainty, rather than situations such as order, predictability and high stability (Lazaridou & Fris, 2008).

According to Guillory (2007), quantum leadership is the driving force that drives an organization into an exceptional performance, by leading from the future. The main basic point of this leadership style is to reflect one's mind to the future and to behave as

if the principles and practices of extraordinary performance existed today. Instead of moving towards to the future in search of a vision, a quantum will jump into the future, so that the present and future state become one.

Effective "quantum" leaders move from critical "intersections" of the structure that make up the decision-making authority in connection with the system's stakeholders. Concepts such as power, authority, accountability, and influence on the desired output are often emerge from the point of care. Instead of requiring leadership competencies that are absent traditional and positional authority approaches, they prefer to be effective and use system applications. They use expert leadership information to create a successful change (Montgomery & Porter-O'Grady, 2010).

Quantum leadership, by its very own nature, is not a simple postmodern theory. It is a new paradigm and a proof of reaching the peak point, which can be called and the "edge of the chaos". Disorder and complexity may be appropriate words to describe the environment where quantum leadership dominates, besides discontinuity and uncertainty. The basic assumptions of quantum leadership as follow (Erçetin&Kamacı, 2008):

- Leadership is an area of interaction between leaders and followers
- Leadership cannot be configured and predictable
- The discontinuity of leadership is a reality
- The influence of leadership depends on the interaction.

Table 1: Quantum Leadership and Related Strategies

Dimensions of Quantum Leadership	**Leadership Strategies**
Going to go with the flow-the tendency to self-organize	• Facilitate the free flow of information • Facilitate the development of feedback loops • Focus on nourishing and sustaining relationships • Encourage trust • Support fractal organization: individual members act independently, with their behavior bounded by shared vision and values
Working to work with uncertainty and ambiguity	• Strive to see day-to-day events in terms of the big picture, the "tides" in events • Support creativity, permitting consequent destruction • Support the view that change is centered in people, not "the Organization"
Recognizing to recognize that fundamental imperatives flow from the quantum vacuum, celebrating visions and values	• Emphasize the importance of values, help to clarify • Support belief in the plurality of values • Listen and watch for indicators of values • Articulate visions • Model values

Source: Curtin, 2011.

Furthermore, change may encounter resistance; rapid changes encounter more. But the leaders should adopt the change as soon as possible and prepare their followers for

this change. It is clear that classical organizational values should be transformed into neo-classical, chaotic and uncertain organizational values. It is a changing paradigm from the Newtonian world to the Quantum world in a rapidly changing environment (Erçetin & Kayman, 2014).

Healthcare institutions need new and effective systems to improve their outcomes. These healthcare organizations require new skills in order to focus on change management, conflict resolution and highly developed communication skills. Quantum leadership is an important resource for achieving organizational excellence. This leadership model is believed to improve the outcomes of health care systems in hospitals (Dargahi, 2013).

4.2. Sustainable Leadership

There is an important connection between leadership and sustainability. According to Fullan (2002) under the right conditions, advancing emotional intelligence of the leader him/herself and the group can be done and must be done to achieve sustainable reform. This is reculturing of the highest order.

Sustainable leadership and development are about the future and the past. They see people as valuable, renewable, and reusable resources, instead of treating people's knowledge, experience, and careers as disposable wastes. Whilst they should never blindly endorse the past, sustainable leaders should always respect and learn from it (Hargreavs, 2007).

Furthermore sustainable leadership is a concept that encourages shared responsibility for promoting the improvement of human and financial resources. In order to ensure sustainability, leaders are self-mediating as they accept the need for change and community involvement (Wakahiu & Salvaterra, 2012). According to Hargreaves& Fink (2004) sustainable leadership is important, spreading and lasting. It is a common responsibility that consumes the human or financial resources unnecessarily to avoid and prevent negative harm to educational and the community environment.

When leaders are unable to work on short-term profit results and make successful resource investments, they take into account the company's long-term interest groups as well as their future interests. In long-term with not using financial and human resources in a disproportionate manner, sustainable leadership is important for an enterprise (Kalkavan, 2015).

Briefly, not only short-term outcomes, but deep and sustained outcomes are fundamental principles of sustainable leadership. So it can be stated that balancing of the short term and the long term is a key factor in a sustainable leadership approach (Davies, 2007). Such leadership will promote development and change for the better (Wakahiu & Salvaterra, 2012). In line with these information, a sustainable leader can be defined as a visionary who considers the transfer of resources to future generations as a primary goal (Mısırdalı Yangil, 2016). Visser & Courtis (2011) also define sustainable leader as "someone who inspires and supports action towards a better world".

Sustainable leader; are those who see, understand, and organize social, cultural, economic and environmental problems of the time they lived, draw and visualize their vision for the individuals who are involved with them in relation to them. Sustainable leaders are individuals who are equipped with strong values and have exceptional talent.

These individuals are individuals who are able to read complex problems correctly, solve these problems, and predict the future effects. They therefore have an interdisciplinary understanding and a long-term innovative perspective (Mısırdalı Yangil, 2016). In addition to these, sustainable leaders look beyond instantaneously, short-term gains to see the role of their organization in a larger framework. They arrange strategies and guarantee the delivery of results that meet the triple bottom line of social, environmental and financial performance (Russell Reynolds Associates, 2015).

HargreavesFink (2004) stated that sustainable leadership has seven principles. They are summarised as below:

- Sustainable leadership creates and preserves sustaining learning
- Sustainable leadership secures success over time
- Sustainable leadership sustains the leadership of others
- Sustainable leadership addresses issues of social justice
- Sustainable leadership develops rather than depletes human and material resources
- Sustainable leadership develops environmental diversity and capacity
- Sustainable leadership undertakes activist engagement with the environment

Sustainable leadership is important for all communities, nor can one strengthen the roles of children, workers, farmers, business and industry, or the scientific and technological communities without leadership that recognizes the need for an ongoing investment in the community. From these initiatives, one thing is clear: a key element to the success of this agenda and the productive advancement of society in this century is leadership, thus making sustainable leadership development imperative (Grooms & Reid-Martinez, 2011).

On the other hand, the aim of sustainable leadership is to direct an organization and its members to sustainable development, to conduct a social responsibility activity and to use the methods of a socially responsible business activities. Sustainable leadership is not easy to implement: it does not just depend on the leader's ability and solution; it is important to maintain continuous efforts to seek attention and progress; most of the leaders and their supporters are often burned and the leaders who take their place have always started to work and cannot continue the results obtained (Šimanskienė & Župerkienė, 2014).

REFERENCES

Anandarajan, M., Devine, P. ve Simmers, C. A. (2004). "A Multidimensional Scaling Approach to Personal Web Usage in the Workplace", 61-79, in M. Anandarajan ve C. Simmers (Ed.). Personal Web Usage in the Workplace: A Guide to Effective Human Resources Management, Information Science Publishing.

Andersson, L. M. and Pearson, C.M. (1999). Tit for Tat? The Spiraling Effect of Incivility in the Workplace. Academy of Management Review, 24(3), 452-471.

Anık Baysal, İ., Baysal, G., Aksu, G. and Aksu, N. (2014). Presenteeism (İşte Var Olamama Sorunu) İle Örgütsel Bağlılık Arasındaki İlişki: Adnan Menderes Üniversitesi Akademik Personeli Üzerinde Bir Uygulama", Electronic Journal of Vocational Colleges - Ağustos 2014 Bürokon Özel Sayısı, 134-152.

Armstrong, N.E. (2017). A Quality Improvement Project Measuring the Effect of an

Evidence-Based Civility Training Program on Nursing Workplace Incivility in a Rural Hospital Using Quantitative Methods. Online Journal of Rural Nursing and Health Care, 17(1), http://dx.doi.org/10.14574/ojrnhc.v17i1.438(accessed 05 May 2018).

Aronsson, G. and Gustafsson, K. (2005). Vacation—Still an Issue of Workers' Protection? An Empirical Study of Vacation and Recuperation. International Journal of Health Services,35(1), http://journals.sagepub.com/home/jo(accessed:08 May 2018)

Blanchard, A. L., & Henle, C. (2008). Correlates of Different Forms of Cyberloafing: The Role of Norms and External Locus of Control. Computers in Human Behavior, 1067-1084.

Brown, H.E., Gilson, N.D., Burton, N.W. and Brown, W.J. (2011). Does Physical Activity Impacton Presenteeism and Other Indicators of Workplace Well-Being?. Sports Medicine, 41(3), 249-262, https://link.springer.com/article/10.2165/11539180-000000000-00000(accessed:10 May 2018).

Burton, W. N., Pransky, G., Conti, D. J., Chen, C. Y. and Edington, D. W., (2004). The Association of Medical Conditions and Presenteeism. Journal of Occupational and Environmental Medicine, 46 (6), 38-45.

Candan, H., & İnce, M. (2016). A Study for the Safety Workers to Investigate the Relationship Between Cigarette Loss and Organizational Commitment. Nigde University Journal of Faculty of Economics and Administrative Sciences, 9(1), 229-235.

Caverley, N., Cunningham, J. B. And MacGregor, J. N. (2007). Sickness Presenteeism Sickness Absenteeism and Health Following Restructuring in A Public Service Organization. Journal of Management Studies, 44(2), 304-319.

Cortina, L.M., Dana Kabat, F., Leskinen, E.A., Huerta, M. and Magley, W.J. (2013).Selective In-civility as Modern Discrimination in Organizations: Evidence and Impact. Journal of Management, 39(6), 1579-1605.

Curtin, L. (2011). Quantum Leadership: Succeeding in Interesting Times. Nurse Leader, 9(1), 35-38.

Çiftçi, B. (2010). İşte Varol(ama)ma Sorunu ve İşletmelerin Uygulayabileceği Çözüm Önerileri. Çalışma ve Toplum Ekonomi ve Hukuk Dergisi, Sayı. 1, 153-174.

Çoban, Ö. and Harman, S. (2012). Presenteeism: Nedenleri, Yarattığı Örgütsel Sorunlar ve Çözüm Önerileri Üzerine Bir Alan Yazın Taraması. Selçuk Üniversitesi İİBF Sosyal ve Ekonomik Araştırmalar Dergisi, Sayı.23, 157-178.

D'abate, C.P. and Eddy, E.R. (2007). Engaging in Personal Business on-the-job: Extending the Presenteeism Construct. Human Resource Development Quarterly, 18(3),361-383.

Dargahi, H. (2013). Quantum Leadership: The Implication For Iranian Nursing Leaders. Acta Medica Iranica, 51(6), 411-417.

Davies, B. (2007). Developing Sustainable Leadership. Management in Education, 21(3), 4-9.

Demerouti, E., Le Blanc, P. M., Bakker, A. B., Schaufeli, W. B. And Hox, J. (2009). Present But Sick: A Three-Wave Study on Job Demands, Presenteeism and Burnout. Career Development International, 14(1), 50-68.

Demirbulat, Ö.G. and Bozok, D. (2015). Presenteeism (İşte Varolamama) ile Yaşam Doyumu, Fiziksel ve Ruhsal İyilik Halinin Etkileşimine Yönelik Seyahat Acentası İşgörenleri Üzerinde Bir Araştırma. KMÜ Sosyal ve Ekonomik Araştırmalar Dergisi, 16 (27): 7-13.

Demirgil, Z. and Mücevher H. (2017). Presenteeism in Vocational Schools Of Higher Education: A Comparative Analysis on Academıc and Administrative Staff. Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 9(21), 237-253.

Dew, K., Keefe, V. and Small, K. (2005). Choosing'to Work When Sick: Workplace

Presenteeism. Social Science & Medicine, 60(10), 2273-2282.
Dietz, J., Robinson, S., Folger, R., Baron, R.A. and Schulz, M. (2003). The Impact of Community Violence and an Organization's Procedural Justice Climate on Workplace Aggression. Academy of Management Journal, 48(3), 317-326
Doorn, O. V. (2011). Cyberloafing: A multi-dimensional construct placed in a theoretical framework. Eindhoven: BSc Industrial Engineering and Management Science.
Erbaş K. and Yeşiltaş, M 2017). The Relationship Between Presenteeism and Affective Commitment: an Application on Travel Agents, Çukurova Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 21(1), 121-135.
Erçetin, Ş.Ş., & Kamacı, M.C. (2008). Quantum Leadership Paradigm. World Applied Sciences Journal, 3(6), 865-868.
Erçetin, Ş.Ş., & Kayman, E.A. (2014). How to Be a Quantum Leader in an Intelligent Organization? (Ed: S. Banerjee & S. S. Erçetin) in Chaos, Complexity and Leadership 2012 (pp. 247-252). Springer, Dordrecht.
Eurofund, (2014), Employment Opportunities for People With Chronic Diseases, http://www.eurofound.europa.eu/tr/observatories/eurwork/comparative-information/employment-opportunities-for-people-with-chronic-diseases (Accessed:08 May 2018).
Fris, J., & Lazaridou, A. (2006). An Additional Way Of Thinking About Organizational Life and Leadership: The Quantum Perspective. Canadian Journal of Educational Administration and Policy, 48.
Fullan, M. (2002). Leadership and Sustainability. Principal Leadership, 3(4).
Gee-Woo Bock, H. H. (2009). Non-work related computing (NWRC). Communications of the ACM, 52(4), 124-128.
Gosselin, E., Lemyre, L. and Corneil, W. (2013). Presenteeism and Absenteeism: Differentiated Understanding of Related Phenomena. Journal of Occupational Health Psychology, 18 (1), 75.
Grinyer, A. And Singleton, V. (2000). Sickness Absence as Risk-Taking Behaviour: A Study of Organisational and Cultural Factors in The Public Sector. Health, Risk & Society, 2(1), 7-21.
Grooms, L.D., & Reid-Martinez, K. (2011). Sustainable Leadership Development: A Conceptual Model of a Cross-Cultural Blended Learning Program. International Journal of Leadership Studies, 6(3), 412-429.
Guillory, W. A. (2007). The Future Perfect organization: Leadership for The Twenty-First Century–Part I. Industrial and Commercial Training, 39(1), 52-58.
Gün İ., Söyük S. (2017). Sağlık Kuruluşlarında Örgüt İklimi ve Örgütsel Güven Arasındaki İlişki, Acıbadem Üniversitesi Sağlık Bilimleri Dergisi, 8, 40-48.
Hargreaves, A. (2007). Sustainable Leadership and Development in Education: Creating the Future, Conserving the Past. European Journal of Education, 42(2), 223-233.
Hargreaves, A., & Fink, D. (2004). The Seven Principles of Sustainable Leadership. Educational Leadership, 61(7), 8-13.
Johns, G. (2010). Presenteeism in the Workplace: A Review and Research Agenda. Journal of Organizational Behavior, 31(4), 519-542.
Johnson, P.R. and Indvik, J. (2001), "Slings and Arrows of Rudeness: Incivility in the Workplace", Journal of Management Development, 20(8), 705-713.
Kalkavan, S. (2015). Examining the Level of Sustainable Leadership Practices among the Managers in Turkish Insurance Industry. Procedia-Social and Behavioral Sciences, 207, 20-28.
Kanten, M. (2014). İşyeri Nezaketsizliğinin Sosyal Kaytarma Davranışı ve İşten Ayrılma

Niyeti Üzerindeki Etkisinde Duygusal Tükenmenin Aracılık Rolü. Aksaray Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 6(1), 11-26.
Kaplan, M., & Çetinkaya, A. Ş. (2014). Sanal Kaytarma ve Demografik Özellikler Açısından Farklılıklar: Otel İşletmelerinde Bir Araştırma. Anatolia: Turizm Araştırmaları Dergisi, 25(1), 26-34.
Kaya, E.Ü. (2015). The Relationshıps among Workplace Incivility, Organizational Commitment, Organizational Identification And Job Satisfaction Variables and Their Effects On Each Other: A Study At Higher Education. International Journal of Social Science, 41, 55-78.
Knani, M. (2013). Exploratory Study of the Impacts of New Technology Implementation on Burnout and Presenteeism. International Journal of Business and Management, 8(22), 92.
Köse, S., Oral, L., & Türesin, H. (2012). İş Yaşaminda Sosyal Kolaylaştirma Kavrami Ve Sanal Kaytarma İle İlişkisi: Araştirma Görevlileri Üzerinde Bir Araştirma. Sosyal ve Beşeri Bilimler Dergisi, 4(1), 287-295.
Kubo, J., Goldsteın, B. A., Cantley, L. F., Tessıer-Sherman, B., Galusha, D., Slade, M. D. and Cullen, M. R. (2014). Contribution of Health Status and Prevalent Chronic Disease to Individual Risk for Workplace Injury in the Manufacturing Environment. Occupational Aand Environmental Medicine, 71 (3), 159-166.
Kumral, T., Çetin, C. (2016). A Literature Review on Workplace Incivility, Kafkas University Journal of the Institute of Social Sciences, 1, 153-171.
Lazaridou, A., & Fris, J. (2008). Slipping the Yoke of the Heroic Paradigm: Looking for Quantum Leadership. International Electronic Journal for Leadership in Learning, 12(21).
Leiter, M. (2013). Analyzing and Theorizing the Dynamics of the Workplace Incivility Crisis. New York: Springer Science, ISBN 978-94-007-5571-0.
Lim, V. K., & Teo, T. S. (2005). Prevalence, perceived seriousness, justification and regulation of cyberloafing in Singapore An exploratory study. Information & Management, 42(1), 1081-1093.
Lowe, G. (2002). Here in Body, Absent in Productivity: Presenteeism Hurts Output, Quality of Work-Life and Employee Health. Canadian HR Reporter: The National Journal of Human Resource Management, 2(1), 1-2.
Martin, W. F. (2008). Is Your Hospital Safe? Disruptive Behavior and Workplace Bullying. Hospital Topics: Research and Perspectives on Healthcare, 86(3), 21-28, https://www.drmartymartin.com/wp-content/uploads/2014/11/IsYourHospitalSafe.pdf / (accessed 03 May 2018).
Miner, K.N. and Cortina L.M. (2016). Observed Workplace Incivility toward Women, Perceptions of Interpersonal Injustice, and Observer Occupational Well-Being: Differential Effects for Gender of the Observer, Frontiers in Psychology, 7(1): 1-12.
Miner, K.N., Settles, I.H., Pratt-Hyatt, J.S., and Brady, C.C. (2012). Experiencing Incivility in Organizations: The Buffering Effects of Emotional and Organizational Support. Journal of Applie Social Psychology, 42(12), 340-372, https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1559-1816.2011.00891.x (accessed 02 May 2018).
Montgomery, K.L., & Porter-O'Grady, T. (2010). Innovation and Learning: Creating the DNP Nurse Leader. Nurse Leader, 8(4), 44-47.
Örücü, E., & Aksoy, M. (2018). Sanal Kaytarma ve Beş Büyük Kişilik Özellikleri Arasındaki İlişkisel Bir Araştırma. Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 30(1), 265-282.

Özdemir, H. Ö. (2017). Yöneticilerin Özgün Liderlik Stillerinin Çalışanların Sanal Kaytarma ve Sinizm Davranışlarına Etkisi. Nevşehir Hacı Bektaş Veli Üniversitesi Sosyal Bilimler Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi.

Paulin, D. & Griffi, B. (2016). The Relationships between Incivility, Team Climate for Incivility and Job-Related Employee Well-Being: A Multilevel Analysis. Work & Stress, 30(2), 132–151. http://dx.doi.org/10.1080/02678373.2016.1173124(accessed 03 May 2018).

Pearson, C. and Porath, C.L. (2005). On the Nature, Consequences and Remedies of Workplace Incivility: No Time for "Nice"? Think Again. Academy of Management Executive, 19(1), 7-18.

Pearson, C., Andersson, L.M. and Porath, C.L. (2000). Assesing and Attacking Wokplace Incivility. Organizational Dynamics, 29(2), 123-137.

Porath, C.L and Pearson, C.M. (2013). The Price of Incivility. Harvard Business Review, 91(1–2): 115–121.

Porter-O'Grady, Tim & Malloch, Kathy (2002). Quantum Leadership: A Textbook of New Leadership, Aspen Publishers, Inc., Gaithersburg, Maryland.

Rantanen, I. and Tuominen, R. (2011). "Relative Magnitude of Presenteeism and Absenteeism and Work-Related Factors Affecting Them among Health Care Professionals. Int Arch Occup Environ Health, 84, 225–230.

Russell Reynolds Associates (2015). Sustainable Leadership: Talent Requirements for Sustainable Enterprises. Sustainable Leadership 2015, http://www.russellreynolds.com/insights/thought-leadership/sustainable-leadership-talent-requirements-for-sustainable-enterprises (accessed 15 May 2018).

Salin, D. (2003). Ways of Explaining Workplace Bullying: A Review of Enabling, Motivating and Precipitating structures and Processes in the Work Environment. Human Relations, 56(10), 1213-1232.

Sanderson, K. E., Tilse, J., Nicholson, B., Oldenburg and Graves, N. (2007). "Which Presenteeism Measures are More Sensitive To Depression And Anxiety?" Journal of Affective Disorders, 101(1): 65-74.

Serttaş, O. (2016). Turizm İşletmelerinde Sanal Kurtarma. Adnan Menderes Üniversitesi Sosyal Bilimler Enstitüsü, Yayımlanmamış Yüksek Lisans Tezi..

Shaw, W. S., Tveito, T. H. and Boot, C. R. (2013). Introduction to The Special Section: Sustainability of Work with Chronic Health Conditions. Journal of Occupational Rehabilitation, 23(2),157-161.

Shim, J. (2010). The Relationship Between Workplace Incivility And The Intention To Share Knowledge: The Moderating Effects Of Collaborative Climate And Personality Traits. Dissertation. Minnesota University, USA.

Šimanskienė, L., & Župerkienė, E. (2014). Sustainable Leadership: The New Challenge for Organizations. In Forum Scientiae Oeconomia, Vol. 2, No. 1, pp. 81-93).

Spence Laschinger, Heather K., Leiter, Michael P., Gün Arla, Gilin-Oore, Debra, Mackinnon, Sean P."Building Empowering Work Environments That Foster Civility and Organizational Trust: Testing an Intervention. Nursing Research, 61(5), 316-325.

Tan, M. (2017). Otel Çalışanlarının Kişilik Özellikleri ve Sanalkaytarma Davranışları Arasındaki İlişkinin Analizi. Süleyman Demirel Üniversitesi Sosyal Bilimler Enstitüsü Turizm İşletmeciliği, yayımlanmamış Yüksek Lisans Tezi.

Torkelsan, E., Holm, K. and Backstrom, M. (2016): Workplace Incivility in a Swedish Context. Nordic Journal of Working Life Studies, 6(2), 3-22.

Ünal, Ö. F., Tekdemir, S., & Yaldızbaş, S. (2015). Kamu Çalışanlarının Sanal Kaytarma Davranışı Üzerine Ampirik Bir Araştırma. Çankırı Karatekin Üniversitesi Sosyal

Bilimler Enstitüsü Dergisi, 6(2), 515-534
Vance, C., & Larson, E. (2002). Leadership Research in Business and Health Care. Journal of Nursing Scholarship, 34(2), 165-171.
Visser, W. & Courtice, P. (2011). Sustainability Leadership: Linking Theory and Practice. SSRN Working Paper Series, SSRN: https://ssrn.com/abstract=1947221 or http://dx.doi.org/10.2139/ssrn.1947221 (accessed 16 May 2018).
Wakahiu, J., & Salvaterra, M. (2012). Sustainable leadership: Lessons and implications of a leadership development program for women religious in Africa. Journal of Pan African Studies, 5(2), 150-167.
Ward-Smith, P., Hawks, J.H., Quallich, S.A. and Provance, J. (2018). Workplace Incivility: Perceptions of Urologic Nurses. Urologic Nursing, 38(1), 20-26.
Willingham, J.G. (2008). Managing Presenteeism and Disability to Improve Productivity. Benefits&Compensation Diges, 45(12), 10-14.
Yangil, F. M. (2016). Bilgi toplumunda liderlik: sürdürülebilir liderlik. Dumlupinar University Journal of Social Science/Dumlupınar Üniversitesi Soysyal Bilimler Dergisi, (48), 128-143.

Chapter 105

Health Services and Policies for Elderly Health in Turkey

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INTRODUCTION

The World Health Organization (WHO) defines elderliness as gradually decreasing the life functions and efficiency of the whole organism and also decreasing the ability to adapt to the environmental factors. Besides, elderliness is accepted by WHO as to be 65 and over 65 years old. With reference to another source, elderliness is defined as a change of a person in terms of physical and psychological. Increasing age and growing are the physiologic process. Population aging is relatively increasing the percentage of elderly people who are over 65 years old while the share of children and the young decrease in the same population at the same time (Aile ve Sosyal Politikalar Bakanlığı, 2013). It is predicted that the number of people who are 60 and over 60 years old will double in 2050 (2,1 billion) by comparison with the number of them in 2017 (962 million). (United Nations, 2017.) The table 1 shows the distribution of population aged 65 and over 65 years old years around the world.

Table 1. Population Aged 65 and by Region: 2015 and 2050

Region	Population (In millions)		Persentage of regional total population (%)	
	2015	**2050**	**2015**	**2050**
Afrika	40.6	150.5	3.5	6.7
Asia	341.4	975	7.9	18.8
Europe	129.6	196.8	17.4	27.8
Latin America and Caribbean	47.0	139.2	7.6	18.6
North Amerika	53.9	94.6	15.1	21.4
Oceania	4.6	9.5	12.5	19.5

Source: He, W., Goodkind, D., & Kowal, P. (2016).

Washington's Institute for Health Metrics and Evaluation (IHME) conducted Global Burden of Disease Survey in 2016 to evaluate health profile and changes in health profile of 195 countries, 21 regions, and 7 super-regions. Healthy life expectancy (HALE) of the countries was computed in the survey. HALE is being expressed at the time in a person's life that healthfully lived as year-denominated. According to Socio-demographic index (SDI), Turkey is in 'Mid-Senior SDI' group. SDI was calculated for people over 65 years old as 12,9 in the world countries; 15,2 for senior SDI countries and 14 for Turkey (Ministry of Health, 2017).

With reference to population data and projections of Turkish Statistical Institute (TSI) in Turkey, the number of people over 65 years old is 7 million 163 thousand 354;

the ratio of the old age population in the total population is 8,7%. It is estimated that elders will engender 10,2% of total population in 2023; this ratio mentioned will be 22,6% in 2060 (TSI, 2018). The size of our old age population is bigger than the total population of some of the European countries. These European countries are Denmark (5,569,077 people), Slovakia (5,492,677 people), Finland (5,268,799 people), Norway (5,147,792 people) and Ireland (4,832,765 people) (TSI, 2016). In short, there is a considerable amount of elderly population in Turkey as well as this is an issue that needs to be sensitively dwelled on. Table 2 shows the estimated population by age group in Turkey.

Table 2: Population by age group in 2018, 2023, 2040, 2060

Year	**2018**	**2023**	**2040**	**2060**
Age group	**%**	**%**	**%**	**%**
0-19	31.27	29.89	25.98	22.76
20-44	38.48	37.13	32.67	30.62
45-64	21.5	22.78	25.03	23.98
>65	8.75	10.2	16.32	22.64
Total Population	**83 867 223**	**88 907 367**	**102 331 233**	**109 095 998**

Source: TurkStat, Population Projections, 2018-2080

It is revealed in studies that analyze the relationship between health expenditures and elderliness that elderliness increases health expenses; especially the last few years before death (Iliman & Tekeli, 2017). A lot of countries in the world struggle with high costs of chronic disease burden, disability and healthcare services (Ahmadi et al., 2015). Age-associated chronic diseases seriously increase the healthcare costs. Long-term care need of increasing old age population creates an element of oppression on the rendering of health and social care services. With reference to predictions, aging population and social care expenses will impose a serious burden on the social security system and the structure of country economies in the near future (Oğlak, 2011). The burden can be alleviated by social security reforms and employment of elderly population. Reorganizing health care services to meet the needs, preventive medicine approaches, benefiting from new technologies in this domain can reduce public expenditures (Tunçkanat, 2011). At the same time population in Turkey inclines to age; however, the level of aging is not as much as the level in developed countries. Turkey has significant demographic power for economic growth in terms of working age population. Furthermore, it is foreseen an increase in life expectancy, education, and a decrease in fertility rate will positively contribute to economic growth in the long-term (Günsoy & Tekeli, 2015).

HEALTHCARE SERVICES PROVISION FOR ELDERLY IN TURKEY

Aging expedients decreasing abilities and growing worse (Yaman and Akdeniz, 2008). As the people grow older, their health care need becomes complex. While the life expectancy in Turkey for 2017 was 75,3 years for men and 80,7 for women, the general average reached 78 years (TSI, 2018). Almost 79% of the deaths have been rooted in chronic diseases. It is seen when the causes of death are analyzed by the main disease groups that approximately 48% of deaths stem from cardiovascular diseases;

13% of the deaths stem from cancers and finally, 8% of them is rooted in respiratory system diseases. Ischemic heart disease, cerebrovascular diseases, and COPD are the first three reason that trigger death in people over 65 years old (Yardım, 2012).

Primary Health Services

Preventive healthcare and early diagnosis of diseases emerge in primary health care. People can apply to primary health care centers by themselves and a great majority of their treatment can be followed in those centers in Turkey. Primary healthcare institutions generate the backbone of the health system and 80% of public health care services. The general run of people apply to primary care is the elders and this ratio will probably increase as the chronic disease increases (WHO, 2004).

Whole society and elderly people can benefit from primary healthcare free of charge. Organizing, planning and conducting elderly health care services are performed by the Ministry of Health, Chronic Illness, Elderly Health and Disability Department of General Directorate of Public Health. The awareness about the importance of elderly healthcare services has increased during the recent years. 'Elderly Health Modules—Training Guide for Educators'' was prepared to use in public education by 'Elderly Health Early Diagnosis and Therapy Guide 2010' by doctor's work in primary healthcare. Elderly Health Policy Development Workshop was performed by the participation of all the sectors in 2011 as well as 'Elderly and Elderly Health Services Improvement Program Action Plan' was created at the end of this workshop. 'Geriatrics and Gerontology Course' was organized in 2011. Performance criterion and details on conducting elderly and disabled care within family practice were established (Sağlık Bakanlığı, 2012).

Family Practice Pilot Scheme started in Turkey in 2005. At the end of 2010, all the provinces in Turkey have started to apply Family Practice. Elderly healthcare services are within the scope of the responsibilities of the family doctors as part of the primary healthcare. The essentials of job definition related to the elderly care of family practice are summarized as follows;

- Following elderly and disabled people: elderly and disabled people live in the region are monitored and recorded in the electronic system. These records are followed by the public health center. Provincial Public Health Directorate is informed through the system. This directorate regularly checks elderly and disabled people healthcare works of the doctors. It is expected to follow elderly and disabled people by family doctors at least twice a year. Workflow diagram related to the rendering of elderly health care services in primary health services is shown in Figure 1.
- Improving access to health services: Primary care clinics provide physical place arrangements (ramp for handicapped, disabled toilet or establishing disabled polyclinics, disabled lift or disabled signs, etc.) that suited for accessing of the handicapped and elderly people.
- Realizing home visits: It is expected to visit elderly people and handicapped with chronic illness on the weekly or monthly basis.
- Monitoring adequate and balanced nutrition: Referral and close follow-up of elderly people and handicapped with malnutrition need to be ensured by family health units.
- Monitoring physical activity status: There is a need for collaboration with

relevant institution and organizations for elderly people and handicapped whose physical activity is poor to take social support required.

- Assist other organizations in their work: Other institution and organizations play a significant role to reach the intended population and share information for works toward elderly and handicapped (Sağlık Bakanlığı, 2012).

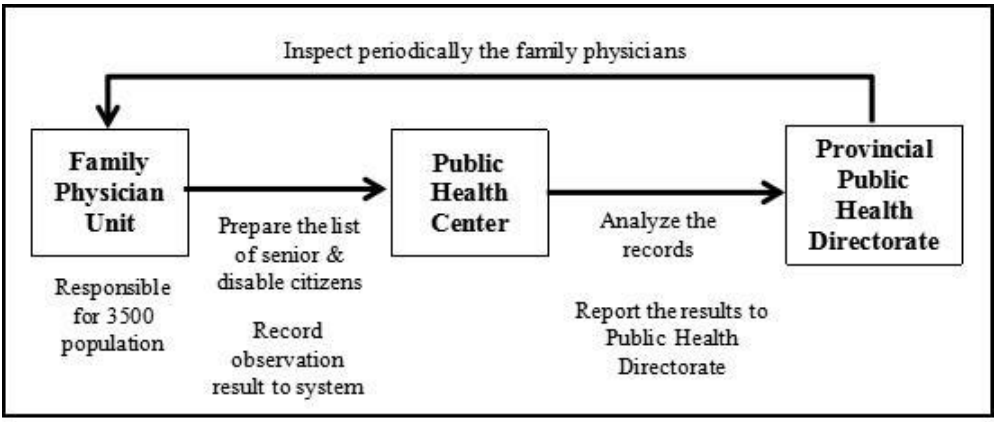

Figure 1: Work Flow Chart Primary Health Services

Source: Sağlık Bakanlığı (2012). Birinci Basamak Sağlık Hizmetleri Veri Rehberi

Primary healthcare centers need to make alterations in the structure of service delivery to give efficient health care for elderly people. Thus, health care services can be supportive in maintaining the independence of elderly people and successfully conducted in primary healthcare centers (Yaman & Akdeniz, 2008).

Early diagnosis is one of the most important components required in protecting and promoting health. Early diagnosis is also a cause that lightens and reduces the cost of health care services. Early diagnosis is to diagnose the disease via examination and/or laboratory methods before disease or health problem clinically occurred. Purpose of early diagnosis is to reduce the death risk and increase life quality. Health problems that can be made early diagnosis are cardiovascular diseases, hypertension, diabetes, hypercholesterolemia, varix (aneurysm), obesity, nutrition problems, cancers, depression, dotage, cerebrovascular disorders, respiratory system diseases, eye and hearing problems, musculoskeletal problems (osteolysis), violence towards elderly people and infectious diseases (Hepatitis B and tuberculosis) (Aras et al. 2011). Colorectal cancer, breast cancer, cervical cancer screening is provided primary healthcare services free of charge (Sürmeli, 2017).

Home care services are one of the principal constituents of the rendering of primary health care elderly services. Legal liability belongs to the Ministry of Health. A regulation on the rendering of home care services was declared by the Ministry of Health in 2005 (Official Gazette date: 10,03,2005 Issue: 25751). Home care services were tried to be provided by private health institutions at first. Then 'Instruction of Implementing Procedures About Home Care Services Rendered by the Ministry of Health' relating to rendering all these services by all the health institution and organizations of the Ministry of Health was declared in 2010. Home care services units and public health service that is established within the mouth and dental health centers

are rendered via the collaboration of primary care clinics and family doctors. Management, communication between the units and coordination of the service is provided by the coordination center. It is aimed to provide regular and qualified healthcare service in the home environment for the patients such as bedridden, disabled, the ones who need post-operative care and also the ones with the chronic illness like joint diseases (Işık et al., 2016).

There are 771 home care units in 81 provinces attached to the Ministry of Health (Sağlık Bakanlığı, 2018a). This service differs in terms of regions and it is commonly rendered as standard model country-wide. Finance of the service is ensured by the government budget; it is not asked for a fee from people. However, there are also suggestions relating to maintaining continuity for the educational needs of home care medical personnel; create care standards and provide supportive services (Karadağ & Kılıç, 2018).

It is found in a study which reviews the common causes of admission to home care services in 2016 that 66,3% of the patients need at the request of the doctor, 23,9% of them have not able to care themselves, 20,5% of them need to support their treatment because of that no implementation need to be required in hospital. With reference to Daily Life Activities (DLA) index who gets home care services, 40,2% of them are dependent; 21% of them are semi-addicted and finally 38,8% of them non-addict. It is determined when the expressions on daily life activities that highest addiction ratio is in feeding activity by 48,6%; the second highest ratio belongs to going to toilet activity by 38,1% and dressing ratio is at the latest place by 36,2% (Işık et al., 2016).

In Turkey, local administrations can provide health care services. The municipalities that are developed as economic and cultural provide such as home care services, ambulatory health care units, health centers and polyclinics, distributing food from the food bank to houses, financial aid, transmitting to health facility by taking from home. Some municipalities provide home care services and medical treatment at home. Medical treatment at home is provided for patients who have not social insurance and sufficient financial situation (Ministry of Develeopment, 2014)

Secondary and Tertiary Health Services

Although all the efforts for promoting health and preventing chronic diseases, a risk of disease development and applications for therapeutic services increase as the grew older. It is observed that people who are over 65 years old stay in the hospital three times more than people who are between 45 and 65 years old. Patients who are 85 and elder are the ones who mostly appeal to hospital services. Repetitive appeals to the hospital and the average length of hospital stay of old people is more in comparison with others. While the average of hospitalization period of patients who are 65 and over 65 years old is 11 days, this time decreases to 5 days for patients who are under 65 years old. The hospitalization period for patients who are 85 years and over 85 years old is two weeks. 1/3 of the patients who are 65 and over 65 years old come back to the hospital twice or more than twice. The risk of adverse events in many chronic diseases, functional losses and age-related physiological changes can be shown as the reasons of circumstance above (Parke, 2017). Staying in the hospital is a big risk in itself for old people. Besides being delayed coming out of the hospital by adverse events and functional losses, there is a high risk to meet several problems based on staying in the hospital after being discharged (Wong et al., 2011).

According to another determination, elders appeal to an emergency more often and with more complicated complaints in comparison with the young people. Moreover, they need to stay in intensive care and emergency for a long time that the number of patients day increases (Ergin et al., 2015). The ratio of being obliged to be treated in emergency gradually increases. 35% of discharged and 45% of inpatients are composed of people who are 65 and over 65 years old. 1/3 of elders lose their independent functions belong to daily life because of the hospital conditions. In addition to this, the lack of expertness and experience of healthcare staff (Huang et al., 2011). It is pointed out that multidimensional health systems that consider all requirements of elders is much more effective than health care services only focusing on diseases (Blom et al., 2016). Elderly people still take medical services in health care institutions designed for young people. Moreover, the absence of holistic view in health systems cause delay in delivery of health care services (WHO, 2015).

There are carried on works to open geriatric units and develop age-friendly hospitals for elders to get quality service in secondary and tertiary health facilities in Turkey. However, this application needs to be generalized throughout the country. Also, healthcare providers should improve expertness and experiences on elderly care (Kalkınma Bakanlığı, 2014).

One of the remarkable applications about elderly care in Turkey during the recent years is popularizing the palliative care centers. Palliative care means 'supportive care' and 'final period care'; it is also put on par with pain control. In Turkey, the Ministry of Health conducted studies to develop a palliative care organization model in 2010. Also, the palliative care program was defined in "2009-2015, National Cancer Control Program" declared by the Directorate of Cancer-Fighting within the scope of the Pallia-Turk project (Kıvanç, 2017). The Ministry of Health prepared 'Instruction on Implementation Procedures and Principles of Palliative Care Systems' in 2014. Palliative care centers have been established for patients who are faced with life-threatening problems arising from diseases to increase their life quality and alleviate their distress by giving them medical, psychological, social and moral support. Only a family doctor or the doctor who is responsible for the patient can decide to provide palliative care for a patient (Regulation date: 09.10.2014, number 2014. 5407. 1970/ 640) With reference to data in 2018, entirely 306 health facilities with 3,967 beds in 80 provinces provide Ministry of Health General Directorate of Public Hospitals palliative care (Sağlık Bakanlığı, 2018b).

It is aimed via instructions of the Ministry of Health to define and institutionalize palliative care, raise the consciousness on palliative care, popularize palliative care services till 2023, organize professional teams in palliative care field and increase the accessibility of palliative care services (Kıvanç, 2017). Palliative care centers are the places where a holistic approach is shown to patients; the biopsychosocial approach is also applied in these places at the same time. With respect to authorities on this issue, using palliative care services and home care services together will increase the efficiency. This is because there are suggestions on the necessity to show a multidisciplinary approach and evaluate family doctors to use these centers effectively (Benli & Erbesler, 2016).

The perspective in aging healthy covers all the functions about regulations, information, rendering of service, finance, labor, and infrastructure. WHO suggests

ensuring the legal relations between different steps in rendering healthcare services. Namely, the vertical integration needs to be provided between primary, secondary and tertiary healthcare. In addition to this, the horizontal integration should be ensured by establishing communication between health promotion, chronic diseases, and other social services. There should also be coordination between the health system and social care services in just the same way as being provided between similar levels of health care services. Leadership and different techniques are essential to actualize the change in each of the dimensions. The connection between health and home care systems should be provided well in both vertical and horizontal integrations (WHO, 2015). It is observed that better health outputs can be obtained by rendering applications relating to health promotion in hospitals as well (Chio & Chen, 2009).

6. ELDERLY HEALTH POLICIES

Policies and programs on elderly have focused on increasing life quality and general health (Ministry of Family and Social, 2013). State Planning Organization (SPO) prepared 'Aging and the Situation of Elders National Action Plan' in 2007. Current situation and problems were addressed in that action plan mentioned. There was suggested to conduct studies on Promoting life-long health and increasing welfare, providing access to health and care services, education of healthcare staff and the ones give care service, elders, and HIV/AIDS, mental health needs of elders, elders and ability shortage (Devlet Planlama Teşkilatı, 2007).

The Ministry of Development prepared 'Tenth Development Plan Aging Specialization Commission Report' in 2014. This report includes works that have been done between 2014 and 2018 years. This study was submitted under seven titles as social policy proposals relating to aging in Turkey; active aging, targets and actions; elder rights and law/legal regulations; elderly workforce and work environment in Turkey; elderly poverty and services toward old people; psycho-social life in old age and intergenerational solidarity; aging and old age research and development activities. It is aimed to increase accessibility to health care services and also positive discrimination in health care services. Actions planned below;

- Developing age-friendly health services and easing the access to healthcare services
- Adding also geriatrics subject to before graduation and after graduation programs of the doctors
- Generalizing rational drug use in the old age
- Applying private health scanning programs for notably old people in the rural area and squatter settlements
- Encouraging primary healthcare units to provide a special service plan for old people
- Giving priority to the geriatric in preventive, secondary and rehabilitative health services
- Minimizing bureaucracy in health board report that is taken by disabled elders
- Providing certified medicines taken without a prescription by elders who are 65 years or over 65 years old during the report
- Generalizing home care services in line with demand and need throughout the

country

- Raising awareness of health personnel to sympathetically communicate with elders; organizing education programs relating to the subject (Kalkınma Bakanlığı, 2014)

'Healthy Aging Action Plan and Implementation Program 2015-2020 in Turkey' was prepared by the Ministry of Health. It is aimed to provide suitable and efficient health care services and also increase the accessibility of health care services people who have special needs with social and economic conditions. Four main strategies have been determined within the scope of the healthy aging action plan (Sağlık Bakanlığı, 2015)

Strategy 1: Improving life-long health and healthy aging

Strategy 2: Insulating society from risks toward health

Strategy 3: Promoting health care services for old people and providing full access to healthcare delivery

Strategy 4: Strengthening monitoring and evaluating

The Ministry of Health specified its preferential intervention approaches by five stages. The first stage is to develop exercises, physical activity, and rehabilitation services for all the old people. The second stage is to improve home care services toward elders. The third stage is making plans and activities for neuropsychiatric diseases in old age, ability loss, elderly abuse, and violence. To ensure effective working of diagnosis, treatment and monitoring services in the old age can be mentioned as the fourth stage. The fifth stage is to organize training for health care providers and people who provide health care services (Sağlık Bakanlığı, 2015).

It was pointed out in a study in Ankara province that information sources on active aging are television, internet, and printed press. With reference to the findings of the research, almost half of the people (51,4%) do not exercise at home; a bit more than half of them (59,9%) have not gone through medical examinations and finally, the general run of them have not gone through cancer screening. Besides, many people (82,3%) are not informed of active aging. It is suggested in the light of this finding that studies need to be started for people to be informed about active aging before starting the active aging process (Aksoy, 2015).

Sufficiency of health managers in terms of quantity and quality is another significant issue that needs to be studied on. Colwill et al. carried out a study and predicted that the workload of family doctors and internal specialist physicians have increased by 29 percent as the result of population growth and aging between 2005 and 2025 years. Doctors should be motived to meet the needs of the aging population via education need and financial incentives (Colwill et al., 2008). It has been determined that the geriatric and geriatric psychiatrist workforce needs to be increased to meet the growing health needs of the elderly (Sumaya et al., 2013). It is found that primary care physicians get insufficient training on gerontology and geriatrics subjects in the US. The works about coping with chronic diseases and developing healthy aging, behavior change strategies need to be conducted by constituting multidisciplinary teams that are composed of public health specialists, sociologists, geriatrics specialists and nurses (Frank et al., 2014).

Due to the global aging, healthcare professionals are obliged to develop service models that are suitable for requirements, opportunities, and expectancies of the society.

Accordingly, health personnel who can provide such services should be trained. The geriatric nursing lesson is taught within adult day care in Turkey; this same lesson is taken as an optional course in some of the universities. Moreover, there are graduate and doctoral programs in elderly health and care. Elderly care certificate programs are also conducted in Turkey. Moreover, universities have started to geriatric medicine and gerontology works to increase quality and quantity. In addition to this, Elderly Care Associate Degree Programs are applied in almost 40 universities in Turkey. However, there are uncertainties, differences, and conflicts with different occupational groups toward the content of programs and employment of alumni (Kalkınma Bakanlığı, 2014).

'26960 numbered Instruction on Day Care and Home Care Services for Elders' was prepared by the General Directorate of Social Services and Child Protection Agency in August 2008. Legal necessities on opening and managing day care centers were settled via this instruction. With reference to the law mentioned, people who graduated from medicine, social services, psychology and four-year nursing departments of universities can be directors; also the ones who get the postgraduate education after graduating from license programs of universities can be directors.

A protocol was signed to conduct all social sources and services under a single roof to protect and develop the capacity of the health of old people within home health care and support. Contracting parties are the Ministry of Health, the Ministry of Family and Social Policies, Ministry of the Interior and Turkish Association of Municipalities Moreover, Elderly Support Program was started in 2016 by Ministry of Family and Social Policies for protecting and supporting elders who are above 65 years old. This program also aims to ease the life of people who need bio-psycho-social care by rendering services required in the places they live in (Vural & Ozgobek, 2017).

Turkey Gerontology Atlas Research was started by the Gerontology Department of Akdeniz University in 2000; this research is planned to be completed in 2023. 'Refreshing University' that was started in 2016 as a product of this research still continues on university campuses in five different provinces. Refresh University is a program that is based on lifelong learning. People who are over 65 years volunteer for this program. Development continues for life. Healthy, active and successful aging possibility increases by courtesy of information. While lifelong learning is provided by theoretical lessons in campuses of the refreshing university, there is also given chances for students to discover their own talents. Meeting young generations with the students of refresh university in the same environment is one of the targets of the education. Benefiting from experiences of students of refresh university is the other goal (Aegean Geriatrics Foundation, 2018)

REFERENCES

Aegean Geriatrics Foundation (2018) Refreshing University Aegean Campus Curriculum Accessed: 10.05.2018 (http://www.egegeriatri.org.tr/duyurular/2453-tazelenme-universitesi-60-izmir-kampusu)

Ahmadi, A,; Seyedin H.; Vatan R.F. (2015). Towards Age-Friendly Hospitals in Developing Countries: A Case Study in Iran, Health Promotion Perspectives 5(1), 42-51

Aile ve Sosyal Politikalar Bakanlığı, Turkiye (2013). Engelli ve Yaşlı Hizmetleri Genel Müdürlüğü, "Türkiye'de Yaşlıların Durumu Ve Yaşlanma Ulusal Eylem Planı Uygulama Programı", Ankara

Aksoy, A. D. (2015). Bireylerin Aktif Yaşlanmaya İlişkin Görüşleri. Yaşlı Sorunları

Araştırma Dergisi, 8(2)
Aras, S.; Atlı, T.; Bozoğlu, E.; Şahin S.; Ülger, Z.; Varlı M. (2011). Yaşlılıkta Erken Tanı Yöntemleri ve Taramaların Yapılması Önerilen Durumlar Yöntemler" Sağlık Bakanlığı Temel Sağlık Hizmetleri Genel Müdürlüğü, Yaşlı Sağlığı Modülleri Eğitimciler İçin Eğitim Rehberi, Anıl Matbaacılık, Ankara.
Benli, A. R. & Erbesler, Z. A. (2016). Türkiye'de Palyatif Bakımda Uygulama ve Anlayış Farklılıkları. Türkiye Aile Hekimliği Dergisi 20(1), 5-6.
Blom, J.; Elzen W.D; Houwelıngen AH.V; Heıjmans M.; Stıjnen T.; Hout W.V.D.; Gussekloo J. (2016) Effectiveness and cost-effectiveness of a proactive, goal-oriented, integrated care model in general practice for older people. A cluster randomised controlled trial: Integrated Systematic Care for older People—the ISCOPE study. Age and Ageing 45: 30–41.
Chiou, ST. Chen LK, (2009) Towards age-friendly hospitals and health services. Archives of Gerontology and Geriatrics V.49(2). p.3-6.
Colwill J.M.; Cultice J.M; Kruse R.L; (2008) Will generalist physician supply meet demands of an increasing and aging population? Health Affairs (Millwood) 27(3): 232-241.
Ergin, M.; Karamercan, M. A.; Ayrancı, M.; Yavuz, Y.; Yavafi, Ö.; Serinken, M.; Acar, T.; Avcıl, M.; Al, B.; Bayramoğlu, A.; Durgun H.M.; Gölcük Y.; Arzıman, İ.; Dündar Z. D. (2015) Epidemiological Characteristics Of Gerıatric Patients In Emergency Departments: Results Of A Multıcenter Study. Turkish Journal of Geriatrics 18(4):259-265
Frank, J. C.; Altpeter, M.; Damron-Rodriguez, J.; Driggers, J.; Lachenmayr, S.; Manning, C.; Robinson, P. (2014). Preparing the Workforce for Healthy Aging Programs The Skills for Healthy Aging Resources and Programs (SHARP) Model. Health Education & Behavior 41(1 suppl), 19S-26S.
Günsoy, G., & Tekeli, S. (2015). Nüfusun Yaşlanması ve Ekonomik Büyüme İlişkisi: Türkiye Üzerine Bir Analiz. Amme İdaresi Dergisi, 48(1) 35-87.
He, W.; Goodkind, D.; Kowal, P. (2016) US Census Bureau, International Population Reports. P95/16-1, An Aging World: 2015.
Huang, A. R.; Larente, N.; Morais, J.A. (2011) Moving Towards the Age-friendly Hospital:A Paradigm Shift for the Hospital-based Care of the Elderly. Canadian Geriatrics Journal, Volume 14, Issue 4, 100-103.
Ilıman, T. & Tekeli, R. (2017) Yaşlılık ve Sağlık Harcamaları Arasındaki İlişki: Literatür Taraması. Adnan Menderes University, Journal of Institute of Social Sciences 4(4) 277-291.
Işık,O.; Kandemir, A.; Erişen, M. A.; Fidan, C. (2016). Evde Sağlık Hizmeti Alan Hastaların Profili ve Sunulan Hizmetin Değerlendirilmesi. Hacettepe Sağlık İdaresi Dergisi, 19(2).
Kalkınma Bakanlığı (2014). Onuncu Kalkınma Planı (2014-2018) Yaşlanma Özel İhtisas Komisyonu Raporu.
Karadağ, G. & Kılıç, S. P. (2018). Yaşlılarda Evde Bakım. Turkiye Klinikleri Journal of Internal Medicine Nursing-Special Topics, 4(1), 89-96
Kıvanç, M. M. (2017). Türkiye'de Palyatif Bakım Hizmetleri. Journal of Health Science and Profession 4(2),132-135
Oğlak, S. (2011) Türkiye'de Yaşlı Bireylerin Bakım Gereksinimlerine Yönelik Yaşadığı Ortamda Sunulacak Bakım Modelleri. İş, Güç Endüstri İlişkileri ve İnsan Kaynakları Dergisi 13, (4) 115-130.
Parke, B. (2007) Physical Design Dimension of an Elder Friendly Hospital: An evidence-

based practice review undertaken for the Vancouver Island Health Authority. University of Victoria.
Sağlık Bakanlığı (2012). Birinci Basamak Sağlık Hizmetleri Veri Rehberi. Temel Sağlık Hizmetleri, p. 805-815. Türkiye Halk Sağlığı Kurumu. Ankara.
Sağlık Bakanlığı (2015). Türkiye Sağlıklı Yaşlanma Eylem Planı ve Uygulama Programı 2015-2020, Türkiye Halk Sağlığı Kurumu Kronik Hastalıklar, Yaşlı Sağlığı ve Özürlüler Daire Başkanlığı, Yayın No: 960. 22-30.
Ministry of Health (2017). Health Statistics Yearbook 2016. Turkey Ministry of Health. Ankara.
Sağlık Bakanlığı (2018a). Kamu Hastaneleri Genel Müdürlüğü Evde Sağlık Accessed:12.05.2018 https://khgmozellikli.saglik.gov.tr/svg/evde.php
Sağlık Bakanlığı (2018b) Kamu Hastaneleri Genel Mudurlugu, Palyatif Bakim Hizmetleri Accessed: 15.05.2018 https://khgmozellikli.saglik.gov.tr/svg/palyatif.php
Devlet Planlama Teşkilatı (2007), Türkiye'de Yaşlıların Durumu ve Yaşlanma Ulusal Eylem Planı. Yayın No: 2741, p.66-69, Ankara.
Sumaya, C. V.; Opara, C. M.; Espino, D. V. (2013). The Geriatrician and Geriatric Psychiatrist Workforce in Texas Characteristics, Challenges, and Policy Implications. Journal of aging and Health, 0898264313497511.
Sürmeli, D. M. (2017). Kanser Taramaları ve Yaşam Boyu Sağlık. In: Türkiye Aktif ve Sağlıklı Yaşlanma Zirvesi -2017 Ed: Akçakaya, İ. B.; Özmete E. Sağlık Bakanlığı Sağlığın Geliştirilmesi Genel Müdürlüğü ve Ankara Üniversitesi Yaşlılık Çalışmaları Uygulama ve Araştırma Merkezi (YAŞAM), Ankara).149-156
Tunçkanat F. (2011) Avrupa Birliği'nin Yaşli Refahi ve Yaşliliğa İlişkin Politikalari, Yaşlilar İçin Sosyal Politika Gündemi Konferans Kitabi, 22 Mart 2011, Ankara.
Türkiye İstatistik Kurumu (2016) Engellilik ve Yaşlılıkla İlgili Göstergeler, Erişim tarihi:10.05.2018 http://www.tuik.gov.tr/UstMenu.do?metod=temelist
Türkiye İstatistik Kurumu (2018) Nüfus İstatistikleri, Nüfus Projeksiyonları 2018-2080. Accessed: 10.05.2018 http://www.tuik.gov.tr/UstMenu.do?metod=temelist
United Nations, Department of Economic and Social Affairs, Population Division (2017). World Population Prospects: The 2017 Revision, Key Findings and Advance Tables. Working Paper No. ESA/P/WP/248
Vural, G. C. & Ozgobek, H. R. (2017) Sectoral Development of ICT For Care. PressAcademia Procedia, 4(1), 369-374.
Wong, K.; Ryan, D.; Liu B.; (2011) The Regional Geriatric Program of Toronto. A Summary of Senior Friendly Care in Toronto Central LHIN Hospitals, Toronto: Toronto Central Local Health Integration Network.
World Health Organization (2004), Active Ageing: Towards Age-Friendly Primary Health Care, p.1-15
World Health Organization, (2015). Global Strategy And Action Plan On Ageing and Health, Draft 1,2015; p.23.
Yaman H.; Akdeniz M., (2008) Yaşlı Dostu Birinci Basamak Sağlık Hizmetleri Uygulamaları: DSÖ Yaşlı Dostu Birincil Bakım Merkezi Enstrümanı. Sürekli Tıp Eğitimi Dergisi, STED, 17, 11-13.
Yardım N. (2012) Yaşlanma Ve Kronik Hastalıklar. In: Yaşlı Sağlığı: Sorunlar ve Çözümler Ed: Aslan D., Ertem, M., Halk Sağlığı Uzmanları Derneği, HASUDER Yayın No: 2012-1, p.60-65.

Chapter 106

A Theoretical Study on Psychological Capital in Health Organizations

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1. INTRODUCTION

One of the most important elements for organizations to survive, to maintain continuity, to achieve organizational success and to compete in the market is human resources. In recent years, the concept of social capital has been mentioned within the context of achieving sustainable competitive advantage. Similar to the concept of human capital, which is associated with the effective development and management of knowledge, experience, skills and expertise in organizational employees; social capital also plays an important role in the success of organizations (Luthans *et al.,* 2004: 46).

Human capital comprises of intangible features such as motivation, entrepreneurship, leadership and satisfaction, as well as concrete features such as education and training of employees, and employee turnover rate (Aydın Tükeltürk & Karalar, 2015: 256). On the other hand, social capital is concerned with the sense of trust, interpersonal relations and communication networks. In its simplest form, human capital seeks answers for the question of "what do you know", whereas social capital seeks answers for the questions of "who knows/who do you know?" The changes and development in working life lead to some changes in the types of capital. Therefore, it is necessary to adopt the concept of *"positive psychological capital"* in today's global economy, which goes beyond human capital and social capital (Luthans *et al.,* 2004: 46).

The comparative information on the concepts of traditional economic capital, human capital, social capital and positive psychological capital are presented in Figure 1. Traditional economic capital focuses on tangible and financial assets, whereas human capital prioritizes experience, education, skills, knowledge and ideas. Furthermore, social capital deals with relations, networks and friends, whereas positive psychological capital concentrates on "confidence", "hope", "optimism" and "resilience" (Figure 1).

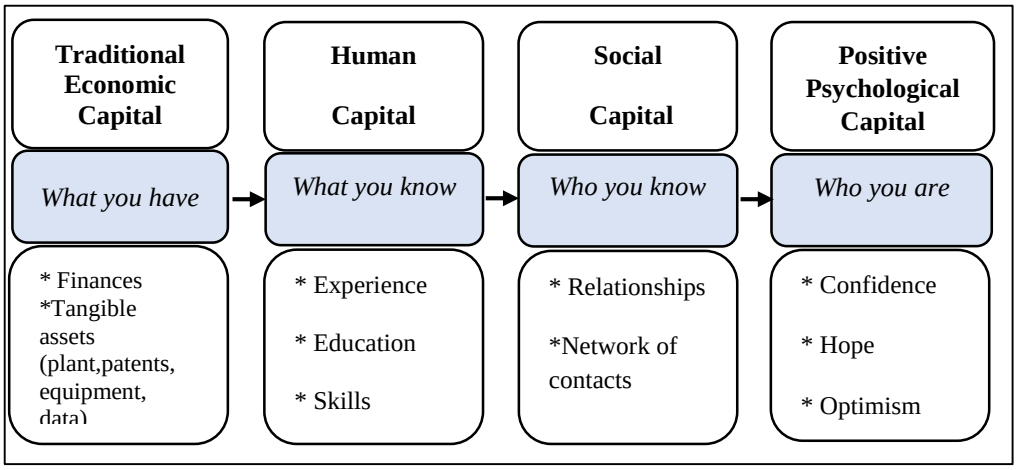


Figure 1: Types of Capital for Competitive Advantage
(Source: Luthans et al., 2004: 46).

Psychological capital goes beyond human and social capital, and primarily consists of "who you are" instead of dealing with "what you know" and "who you know" (Luthans *et al.,* 2004: 46). Therefore, psychological capital directly addresses individuals and examines their personality characteristics and psychological development (Aydın Tükeltürk & Karalar, 2015: 257). It deals with "who the employee is" and "what psychological qualifications s/he has". Psychological development in employees under situations or events they face over the years ensures them to be stronger, hopeful, competent, optimistic and resilient (Yıldız & Örücü, 2016: 135).

Similar to human capital and social capital, positive psychological capital must also be managed. However, financial capital or tangible assets are less important in this process (Luthans *et al.,* 2004: 48).

2. THE CONCEPT OF POSITIVE PSYCHOLOGICAL CAPITAL

The concept of positive psychological capital is an important structure in the literature of positive organizational behavior (Yıldız & Örücü, 2016, 270; Luthans *et al.,* 2007a: 9; Luthans & Youssef-Morgan, 2017: 339). Positive organizational behavior refers to the examination of psychological competencies of employees and the measurable, developable, efficiently manageable and positively oriented human resources used for organizational performance improvements in today's world (Luthans, 2002a: 59, Youssef-Morgan and Luthans, 2013: 200). Positivity should not only be addressed conceptually, but also should be adaptable to the development of management and human resources, and most importantly should be capable of contributing to performance enhancement in organizations (Luthans, 2002a: 57). Positivity is affected by hereditary characteristics and begins to appear at early ages of human life. However, studies show that rather than being just a tendency, positivity is based on conscious activities open for improvement (Youssef-Morgan & Luthans, 2013: 200). In addition, high positive effect increases performance both in decision-making and interpersonal tasks (Youssef-Morgan & Luthans, 2013: 199).

Positive psychological capital is defined as positive psychological development of individuals (Luthans *et al.,* 2007a: 3). It is a core structure developing through positive output produced at individual and organizational levels (Luthans *et al.,* 2010: 1). Luthans *et al.* (2007b: 542) define psychological capital as a concept used to represent employees' motivational situations that result from positive psychological structures such as self-efficacy, optimism, hope and resilience. Psychological capital (PsyCap), which forms emotional dimension of the labor in organizations, consists of the knowledge, experience and skills that employees gain over time (Aydın Tükeltürk & Karalar, 2015: 251).

Psychological capital is associated with personality traits of individuals. In some societies, individuals may be more optimistic, resilient, hopeful and efficient due to cultural structure. Psychological capital, therefore, can be observed differently in different cultures (Brandt *et al.,* 2011: 265).

Psychological capital is considered to increase positive outcomes such as performance, satisfaction, loyalty, wellbeing, organizational citizenship behavior, and to decrease negative outputs such as cynicism, stress, anxiety, counterproductive behaviors (Youssef-Morgan & Luthans, 2013: 199). Psychological capital ensures organizational members to be creative, to promote innovation, and to encourage learning (Mahar *et al.,* 2017: 306).

There are many concepts related to psychological capital. Some of these concepts are listed below.

Luthans (2002a: 57) reports a clear relationship between employees' job performance and their positive emotions toward their organization. Positive psychological capital also refers to a concept associated with performance, so there are studies addressing positive psychological capital together with work performance (Gooty *et al.,* 2009, Nguyen & Nguyen, 2011, Chhajer *et al.,* 2016). On the other hand, In addition, according to Youssef-Morgan & Luthans (2013: 199) there are studies

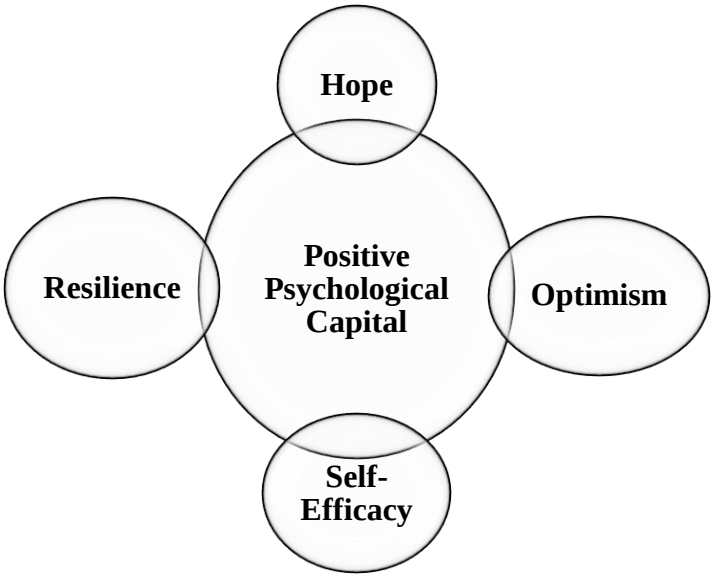
showing that positivity is an important factor for leadership. Positive psychological capital is also associated with leadership behaviors. There are studies on the relationship of psychological capital with transformational leadership (Gooty *et al.*, 2009; McMurray *et al.*, 2010) and authentic leadership (Walumbwa *et al.*, 2011).

3. THE COMPONENTS OF POSITIVE PSYCHOLOGICAL CAPITAL

Positive psychological capital consists of four components: "hope", "optimism", "self-efficacy" and "resilience". However, psychological capital as a whole means more than the sum of these four components (Luthans *et al.*, 2007a: 19).

The components of psychological capital are associated with each other, which generates synergistic effect on each other. For example, hopeful individuals are more motivated to overcome challenges in reaching their goals, therefore they are more resilient. In addition, individuals with high self-efficacy are able to reflect and apply their hopes, resilience and optimism more easily in their lives (Luthans *et al.*, 2007a: 19).

Detailed information about the components are given below.



3.1. Self-Efficacy

Perceived self-efficacy refers to individuals' perception of their own ability to generate certain levels of performance which is influential on the events affecting their lives. Self-efficacy perceptions determine how people feel, think, motivate themselves, and behave (Bandura, 1994).

Self-efficacy reflects views/opinions about (trust on) one's own abilities to mobilize the motivation, cognitive resources, and action plan that s/he needs to successfully perform a task in a specific field. This psychological process proceeds as follows: Employees weigh, evaluate, and bring together information about their perceived abilities before making choices and exerting efforts. Although expectations

about personal competence indicate whether an employee starts to cope with the task, how much effort s/he exerts for the task and whether s/he does wrong in this process; they determine how long this effort will continue (Stajkovic & Luthans, 1998: 66).

Individuals with self-efficacy differ from others especially in five important personal qualities (Luthans *et al.,* 2007a: 38):

a. They set high goals and choose challenging tasks.
b. They welcome and overcome challenges.
c. They keep their motivation high.
d. They exert effort required to accomplish their goals.
e. They resist until the last time when they encounter an obstacle.

3.2. Optimism

Optimism is one of the most emphasized but least understood psychological characteristics. The "optimistic person", in its daily use, refers to the person who has expectations for positive and desired events in the future, whereas the "pessimistic person" refers to the person who always has negative thoughts about the future and feels certain for unwanted events to happen in the future (Luthans *et al.,* 2007a: 87). In addition, optimism can be defined as a tendency to believe that one will generally achieve very good results instead of worse results in his/her life. This thinking is generally considered to be a permanent individual feature (Scheier & Carver, 1985). Optimism has been shown to play an important role in having positive mood, tolerance, good problem solving skill, and academic and professional success (Peterson, 2000).

Optimism as an important criterion for psychological capital has much more meaning than the one mentioned above superficially. Optimism in psychological capital is not just to expect for good things in the future. More importantly, optimism in psychological capital depends on the reasons and grounds that one uses to explain why positive or negative specific events occurred in the past, or occurs in the present, or will occur in the future (Luthans *et al.,* 2007a: 87).

3.3. Hope

Hope is defined as a positive motivational state based on the sense of success derived interactively through (a) agency (goal-directed energy) and (b) pathways (planning to achieve goals) (Synder *et al.,* 1991: 287). According to Harvey et al. (2009), the hope theory includes three main mechanisms: goals, pathways and willpower. In other words, hope consists of both the willpower (individuals' agency or determination to achieve their goals) and the "waypower" thinking (being able to devise alternative pathways and contingency plans to achieve a goal in the face of obstacles) (Avey *et al.,* 2009: 681).

Similar to self-efficacy, hope benefits from one's self-initiated, goal-directed motivations and behaviors. Hope also focuses on a different set of mechanisms used to achieve goals. This hope mechanism, or one of its components, is a feeling of strength or an inner feeling of control that creates determination and motivation (willpower) to achieve goals (Luthans & Youssef, 2007: 330).

Recent studies have revealed a positive relationship between hope and workplace performance and satisfaction. For example, Peterson & Luthans (2003) report that high-hoped leaders have significantly higher working unit financial performance, retention

rate and job satisfaction. Youssef & Luthans (2007) report that hope has a positive association with job satisfaction and organizational commitment.

3.4. Resilience

Despite of being one of the mainstays of positive psychology, resilience has received scant attention in organizational behavior and human resource management research. Yet this capacity to "bounce back" from adversity or even dramatic positive changes is particularly relevant in today's turbulent business world (Luthans *et al.,* 2004: 47).

Masten & Reed (2002: 75) have described the resilience as "a phenomenon class characterized by positive adaptation patterns in the event of major adversity or risk". Resilience has similarities to the "pathways" component in hope theory, but does not include the "willpower" component of hope. Resilience is a positive "bounce back" reaction to an adversity or stressful event. Resilience in working life refers to positive psychological capital for "bounce back" in case of adversity, uncertainty, disagreement, failure and even positive change, progress, and increased responsibility (Luthans, 2002b: 702). Therefore, resilience can be characterized not only by coping reactions to adverse events, but also by coping responses to extreme positive events (Luthans *et al.,* 2008: 222). To summarize, resilience has two components: a threat/risk and a positive response given to this threat/risk (Norman *et al.,* 2005: 59).

As part of the psychological capital, resilience is suggested to have positive relationship with performance. Because, highly resilient individuals tend to be creative, can keep pace with changes, are stubborn to cope with adversities, and thus improve their performance in the rapidly changing business environments (Luthans *et al.,* 2005: 254). Youssef & Luthans (2007) report that resilience also has a positive association with job satisfaction and organizational commitment.

4. PSYCHOLOGICAL CAPITAL FOR HEALTHCARE PROFESSIONALS

Achievement of organizational goals is based on employees' commitment to organizational goals and objectives, and their positive behaviors. As mentioned above, psychological capital has four dimensions (optimism, hope, self-efficacy, and resilience).

Studies have examined the contributions of positive psychological capital, which is a necessity for organizations to ensure and maintain sustainable competitive advantage, to various outcomes, attitudes and behaviors, using different variables and sectors. These studies have determined that positive psychological capital leads to positive business outcomes, attitudes and behavior (Avey *et al.,* 2008). However, there are a limited number of studies of positive psychological capital for healthcare professionals. Providing quality services and meeting patient expectations in the healthcare sector, one of the labor-intensive sectors, are possible through high quality and performance employees. Increasing psychological capital of healthcare professionals has an undeniable important role in increasing their performance and thus achieving institutional and systematic productivity. As a matter of fact, Luthans & Jensen (2005) found a highly significant positive relationship between nurses' psychological capital and their "intentions to stay" and commitment to the mission, values, and goals of the

hospital, which indicates a quality healthcare service provided by happy nurses with high performance.

Korkmazer *et al.* (2016) conducted a study to determine how healthcare professionals' psychological capital affect their performance, and found that employees with high psychological capital performed well, indicating psychological capital as an effective factor in improving employee performance. Moreover, they also found that healthcare professionals with working experience of 11 years and over had lower psychological capital mean score than that of those with working experience less than 11 years. Employees with longer working experience are more likely to get exhausted over time. In this regard, it is important to take measures to raise the level of psychological capital of employees with more working experience. Allowing employees with more working experience for involvement of decisions taken at the management level to take advantage of their experiences can make them feel valued, contribute to their psychological capital levels, and ensure the decisions taken by management to be more accurate.

Khera (2017) conducted a study to examine the relationship between psychological capital and organizational commitment on 110 healthcare professionals in the north of India, and found a significant positive relationship between psychological capital and organizational commitment, therefore, concluded that organizational commitment of healthcare professionals with a high level of psychological capital improved positively.

Studies revealed an important relation between psychological capital and occupational burnout. Ali and Ali (2014) conducted a study using 219 nurses in Pakistan, and determined that job satisfaction played an important role in the relationship between psychological capital and burnout in nurses. They also emphasized the importance of taking measures which would contribute to the four components of the psychological capital in order to reduce nurses' occupational burnout. Accordingly, the level of job satisfaction in nurses who have strong psychological capital will increase, their feelings of burnout will decrease; which will gradually contribute to the achievement of organizational goals and objectives.

Studies report that high level of psychological capital in employees affects individual and organizational performance positively. Studies also reveal that one of the most important factors in the analysis of what can be done to increase psychological capital which is very important for individuals and organizations is to increase organizational support for employees.

The organizational support theory developed by Eisenberger *et al.* (1986) is the first theory hypothesized that organizational support perceived by employees can increase their positive psychological capital. According to organizational support theory, which explains how perceived organizational support occurs and what the psychological processes underlie its outcomes; employees will be encouraged to take greater responsibility for achieving the organizational goals when they perceive the support from their organization. At the same time, their socio-emotional needs will be met through the organizational support that emerges as employees see themselves as a worthy member of their organization and feel that they are respected and rewarded. This organizational support perceived by employees will strengthen their belief that their performance will be appreciated and rewarded by their organization. Thus, employees' emotional attachment to their organization will increase, which finally leads

to increase in their performance or affects positively the process of achieving organizational goals through a decrease in employee turnover rate (Rhoades & Eisenberger, 2002). The organizational support theory suggests that the feelings of being respected, approved and respected in individuals are the underlying reasons why perceived organizational support gives rise to these desired outcomes, which in turn provides important contributions to the development of the components of psychological capital (Cömert & Yürür, 2017).

Optimism and hope in individuals, two components of psychological capital, will develop if they believe that their performance will be rewarded (Rhoades & Eisenberger, 2002), and employees who know that they can receive organizational support in any circumstances will trust on their organization even in challenging tasks, and have stronger sense of optimism and self-efficacy.

There are many studies which report that organizational support increases psychological capital of individuals. For example, George *et al.* (1993) conducted a study using 256 nurses who provided care for AIDS patients, and found that perceived organizational support provided nurses with financial and moral support in stressful situations, thus reduced the tension they experienced psychologically and their negative mood at work.

Özer *et al.* (2013) conducted a study using 319 employees of a private hospital, and found that perceived organizational support affected psychological capital of employees positively and raised their job satisfaction. Bitmiş (2015) conducted a study of 161 nurses working in hospitals of the foundation universities located in Ankara, Turkey and found that nurses' self-efficacy, optimism and hopes, three components of positive psychological capital, were affected positively when they received organizational support.

Cömert & Yürür (2017) conducted a study using 131 emergency service workers in Kocaeli, Turkey, and found a significant positive correlation between their perceived organizational support and three positive psychological capital components; optimism, hope and self-efficacy. Accordingly, organizational support to be provided for employees will increase their feelings of optimism, hope and self-efficacy.

REFERENCES

Ali, N. & Ali, A. (2014). The Mediating Effect of Job Satisfaction between Psychological Capital and Job Burnout of Pakistani Nurses. Pakistan Journal of Commerce and Social Sciences 8 (2), 399- 412.

Avey, J.; Patera, J. L.; West, B. J. (2006). The Implications of Positive Psychological Capital on Employee Absenteeism. Journal of Leadership and Organizational Studies 13 (2), 42-60.

Avey, J. B.; Luthans, F.; Youssef, C. M. (2008). The Additive Value of Positive Psychological Capital in Predicting Work Attitudes and Behaviors Leadership Institute Faculty Publications. 6. http://digitalcommons.unl.edu/leadershipfacpub/6 (Accessed: 14.06.2018).

Avey, J.; Luthans F.; Jensen, S. (2009). Psychological Capital: A Positive Resource for Combating Employee Stress and Turnover. Human Resource Management 48 (5), 677-693.

Aydın Tükeltürk, Ş. & Karalar, S. (2015). Psikolojik Sermaye. Derman Küçükaltan, Şule

Aydın Tükeltürk, Güney Çetin Gürkan (Eds.) Örgütsel Davranışta Güncel Konular kitabı içinde (bölüm 15 , sayfa 251-264). Detay Yayıncılık: Ankara.
Bandura, A. (1994). Self-Efficacy. In: V. S. Ramachaudran (Ed.) Encyclopedia of Human Behavior. Vol. 4, pp. 71-81, Academic Press: New York.
Bitmiş, M. G. (2015). Algılanan Örgütsel Desteğin Pozitif Psikolojik Kapasiteler Üzerindeki Etkisi: Hemşireler Üzerine Bir Uygulama. İşletme Araştırmaları Dergisi 7 (1), 236-247.
Brandt, T.; Gomes, J. F.; Boyanova, D. (2011). Personality and Psychological Capital as Indicators of Future Job Success?. Liiketaloudellinen Aikakauskirja.
Chhajer, R.; Joseph, T.; Rose, E. L. (2016). Linking Psychological Capital and Performance: Mediating Role of Positive Affect and Work Intensity. Academy of Management Proceedings 2016 (1), 13375. Briarcliff Manor, NY 10510: Academy of Management.
Cömert Y. & Yürür Ş. (2017). Pozitif Psikolojik Sermayenin Bir Belirleyicisi Olarak Algılanan Örgütsel Desteğin Rolü. İşletme ve İktisat Çalışmaları Dergisi 5 (3), 17-34.
Eisenberger, R.; Huntington, R.; Hutchison, S.; Sowa, D. (1986). Perceived Organizational Support. Journal of Applied Pychology 71 (3), 500-507.
George, J.M.; Reed, T.F.; Ballard, K.A.; Colin, J.; Fielding, J. (1993). Contact With AIDS Patients as a Source of Work-Related Distress: Effects of Organizational and Social Support. Academy of Management Journal 36, 157–171.
Gooty, J.; Gavin, M.; Johnson, P.; Lance Frazier, M.; Snow, D. (2009). In the Eyes of the Beholder: Transformational Leadership, Positive Psychological Capital, and Performance. Journal of Leadership and Organizational Studies 15 (4), 353-367.
Harvey, M.; Novicevic, M.; Breland, J. W. (2009). Global Dual-Career Exploration and the Role of Hope and Curiosity during the Process. Journal of Managerial Psychology 24 (2), 178-197.
Khera A. (2017). Relationship between Psychological Capital and Organisational Commitment: A Study among the Medical Professionals of Selected Hospitals in North India. International Journal of Management and Social Sciences Research 6 (9), 76-86.
Korkmazer F.; Ekingen E.; Yıldız A. (2016). Psikolojik Sermayenin Çalışan Performansına Etkisi: Sağlık Çalışanları Üzerinde Bir Araştırma. Hacettepe Sağlık İdaresi Dergisi 19 (3), 271-281.
Larson, M. & Luthans, F. (2006). Potential Added Value of Psychological Capital in Predicting Work Attitudes. Journal of Leadership and Organizational Studies 13 (1), 45-62.
Luthans, F. (2002a). Positive Organizational Behavior: Developing and Managing Psychological Strengths. The Academy of Management Executive 16 (1), 57-72.
Luthans, F. (2002b). The Need for and Meaning of Positive Organizational Behavior. Journal of Organizational Behavior 23 (6), 695-706.
Luthans, F.; Luthans, K. W.; Luthans, B. C. (2004). Positive Psychological Capital: Beyond Human and Social Capital. Business Horizons. 47 (1): 45-50.
Luthans, F.; Avolio, B. J.; Walumbwa, F. O.; Li, W. (2005). The Psychological Capital of Chinese Workers: Exploring the Relationship with Performance. Management and Organization Review 1 (2), 249-271.
Luthans, K. W. & Jensen, S. M. (2005). The Linkage between Psychological Capital and Commitment to Organizational Mission: A Study of Nurses. Journal of Nursing Administration 35 (6), 304-310.
Luthans, F.; Youssef, C. M.; Avolio, B. J. (2007a). Psychological Capital: Developing The Human Competitive Edge. Oxford University Press, Oxford.
Luthans, F.; Avolio, B. J.; Avey, J. B.; Norman, S. M. (2007b). Positive Psychological Capital: Measurement and Relationship with Performance and Satisfaction. Personnel

Psychology 60 (3), 541-572.
Luthans, F. & Youssef, C. M. (2007). Emerging Positive Organizational Behavior. Journal of Management 33 (3), 321-349.
Luthans, F.; Norman, S. M.; Avolio, B. J.; Avey, J. B. (2008). The Mediating Role of Psychological Capital in the Supportive Organizational Climate-Employee Performance Relationship. Journal of Organizational Behavior 29 (2), 219-238.
Luthans, F.; Avey, J. B.; Avolio, B. J.; Peterson, S. J. (2010). The Development and Resulting Performance Impact of Positive Psychological Capital. Human Resource Development Quarterly 21 (1), 41-67.
Luthans, F. & Youssef-Morgan, C. M. (2017). Psychological Capital: an Evidence-Based Positive Approach. Annual Review of Organizational Psychology and Organizational Behavior 4, 339-366.
Mahar, S. W.; Basheer, S.; Maitlo, A. A. (2017). The Influence of Psychological Capital on Organization Learning in Banking Sector of Pakistan. Review of Integrative Business and Economics Research 6 (4), 306-316.
Masten, A. S. & Reed, M. J. (2002). Resilience in Development. In: C.R. Snyder & S. Lopez (Eds.), Handbook of Positive Psychology. pp.74-88, Oxford University Press: New York.
McMurray, A. J.; Pirola-Merlo, A.; Sarros, J. C.; Islam, M. M. (2010). Leadership, Climate, Psychological Capital, Commitment, and Wellbeing in a Nonprofit Organization. Leadership and Organizational Development Journal 31 (5), 436- 457.
Nguyen, T. D. & Nguyen, T. (2011). Psychological Capital, Quality of Work Life, and Quality of Life of Marketers: Evidence from Vietnam. Journal of Macro Marketing, 32 (1): 87-95.
Norman, S.; Luthans, B.; Luthans, K. (2005). The Proposed Contagion Effect of Hopeful Leaders on the Resiliency of Employees and Organizations. Journal of Leadership & Organizational Studies 12 (2), 55-64.
Norman, S. M.; Avey, J.; Nimnicht, J. L.; Pigeon, N. (2010). The Interactive Effects of Psychological Capital and Organizational Identity on Employee Organizational Citizenship and Deviance Behaviors. Journal of Leadership and Organizational Studies 17 (4), 380-391.
Özer, P. S.; Topaloğlu, T.; Özmen, Ö. (2013). Destekleyici Örgüt İkliminin, Psikolojik Sermaye İle İş Doyumu İlişkisinde Düzenleyici Etkisi. Ege Akademık Bakış 13 (4), 437-447.
Peterson, C. (2000). The Future of Optimism. American Psychologist 55 (1), 44-55.
Peterson, S. J. & Luthans, F. (2003). The Positive Impact and Development of Hopeful Leaders. Leadership & Organization Development Journal 24 (1), 26-31.
Pu, J.; Hou, H.; Ma, R.; Sang, J. (2017). The Effect of Psychological Capital between Work–Family Conflict and Job Burnout in Chinese University Teachers: Testing For Mediation and Moderation. Journal of Health Psychology 22 (14), 1799-1807.
Rhoades, L. & Eisenberger, R. (2002). Perceived Organizational Support: A Review of the Literature. Journal of Applied Psychology 87 (4), 698–714.
Roberts, S.; Scherer, L. L.; Bowyer, C. J. (2011). Job Stress and Incivility: What Role Does Psychological Capital Play?. Journal of Leadership and Organizational Studies, XX (X), 1-10.
Stajkovic, A. D. & Luthans, F. (1998). Social Cognitive Theory and Self-Efficacy: Goin Beyond Traditional Motivational and Behavioral Approaches. Organizational Dynamics 26 (4), 62-74.
Scheier, M. F. & Carver, C. S. (1985). Optimism, Coping, and Health: Assessment and

Implications of Generalized Outcome Expectancies. Health Psychology 4 (3), 219-247.
Snyder, C. R.; Irving, L.; Anderson, J. R. (1991). Hope and Health. In: C. R. Snyder & D. R. Forsyth (Eds.), Handbook of Social and Clinical Psychology: The Health Perspective. Chapter 15, pp. 285–305, Pergamon Press: Elmsford, NY.
Walumbwa, F.; Luthans, F.; Avey, J.; Oke, A. (2011). Authentically Leading Groups: The Mediating Role of Collective Psychological Capital and Trust. Journal of Organizational Behavior 32, 4-24.
Yıldız, H., & Örücü, E. (2016). Sağlık Sektörü Çalışanlarının Pozitif Psikolojik Sermaye Düzeylerinin Belirlenmesine Yönelik Bir Araştırma. Yönetim ve Ekonomi Araştırmaları Dergisi 14 (1), 269-285.
Youssef, C. M. & Luthans, F. (2007). Positive Organizational Behavior in the Workplace: The Impact of Hope, Optimism, and Resilience. Journal of Management 33 (5), 774-800.
Youssef-Morgan, C. M. & Luthans, F. (2013). Positive Leadership: Meaning and Application across Cultures. Organizational Dynamics 42 (3), 198–208.
Zhou, J.; Yang, Y.; Qiu, X.; Yang, X.; Pan, H.; Ban, B.; ... & Wang, W. (2018). Serial Multiple Mediation of Organizational Commitment and Job Burnout in the Relationship between Psychological Capital and Anxiety in Chinese Female Nurses: A Cross-Sectional Questionnaire Survey. International Journal of Nursing Studies 83, 75-82.

Chapter 107

Patient Safety

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1. INTRODUCTION

Since Ancient Greece, the primary principle to be taken into consideration in the provision of healthcare services has been "first, do no harm". Due to the existence of the human factor in the input and outputs of healthcare services, the use of advanced technologies and techniques in the current century, and the intense professionalization and presence of complex medical devices, healthcare services are included in the group of high risk services (Uçar et al., 2016:98).

One of the most significant features of risks jeopardizing patient safety in healthcare services is the fact that such risks are preventable. Therefore, in order to prevent patients being harmed and ensure patient safety, it is vital that the necessary precautions are taken and regulations related to such risks are made.

The concept of safety is an important subset of quality. Ensuring patient safety, which is one of the most important elements that improve the quality of the care given in healthcare institutions and patient satisfaction, has a critical role in achieving better healthcare results (Uslusoy et al., 2016).

In the modern sense, the features of healthcare services are listed as safe, effective, patient-centered, timely, efficient and equitable. Providing safer healthcare services has become the primary priority. The need for improved patient safety and a change in the healthcare system that will enable this has been emphasized by policymakers, researchers and managers throughout the years. Now, patient safety is accepted as the essence in all stages of the provision of healthcare services (Onganer et al., 2014, Savage and Ford, 2008: 1).

2. THE CONCEPT OF PATIENT SAFETY AND ITS DEVELOPMENT

Patient safety can be defined as the prevention of errors stemming from healthcare services and the amelioration and elimination of damages caused by errors stemming from healthcare services (National Patient Safety Foundation, 2018). In other saying, patient safety is the actions undertaken by the institution or professionals providing healthcare services in order to protect the patients from the damaging effects of healthcare services (Connelly and Power, 2011).

The concept of patient safety found its place in the world agenda in a conspicuous manner with a report titled "To Err is Human", published by the Institute of Medicine (IOM) in 1999. It was stated in the report that in the United States of America, 44,000-

98,000 people die each year in hospitals due to avoidable medical errors. According to the report, ranking the eighth among the causes of death, medical errors lead to more deaths than causes such as road accidents, breast cancer and AIDS. Moreover, the addition healthcare services provided due to medical errors cost 17-29 billion United States dollars annually (Institute of Medicine, 2000:26). The figures stated in the report had great repercussions throughout the world and the importance given to patient safety began to improve rapidly (Ardahan and Alp, 2015). Projections based on current studies display that 1 out of 10 patients are harmed while receiving care services in hospitals in high income countries and that about 50% of such harm is preventable. In a study carried out by WHO on the frequency and preventability of adverse events in 26 low and middle income countries, it was found out that the rate of adverse events is at around 8%, that 83% of such incidents are preventable and 30% result in death (WHO, 2018).

In a report published in 2001, IOM listed the issues in healthcare systems that require improvement as follows, with safety as the leading concern (Institute of Medicine, 2001:39,40):

- **Safe:** Avoiding harm while providing healthcare services,
- **Effective:** Providing services built upon scientific and evidence-based medical practices, preventing the unnecessary or inadequate use of healthcare services,
- **Patient-centered:** Providing healthcare services in line with the needs, preferences and value judgments of the patient and ensuring the participation of the patient in the clinical decision-making process,
- **Timely:** Reducing delays and waiting times damaging health,
- **Efficient:** Providing cost efficient healthcare services wherein wastefulness is prevented,
- **Equitable:** Ensuring an equal quality of service regardless of race, sex and socio-economic differences.

In the report "National Agenda for Research" published by the National Patient Safety Foundation (NPSF) in 2000, the following three characteristics of patient safety were underlined (National Patient Safety Foundation, 2000:2,3):

- First and foremost, patient safety is about avoiding, preventing and ameliorating adverse events and damages caused by the healthcare process itself. It should also address ranging from errors and deviations to accidents.
- Safety emerges from interactions between the components of the healthcare system. This concept entails more than the lack of negative results and avoiding preventable mistakes. Safety does not belong only to a person, instrument or department. Providing safety depends on learning how safety is born from the interactions between components of healthcare.
- Safety concerns the quality of care; however, these two concepts are not synonymous. Safety is an important subset of quality. To date, different quality management activities like quality assurance, continuous quality improvement and total quality management have not focused sufficiently on patient safety. The focus of quality management activities should be drawn more towards patient safety.

3. MEDICAL ERROR

Medical error is defined by the IOM as the failure to complete a planned procedure in the intended manner or making and implementing an erroneous plan in achieving an objective (Institute of Medicine, 2000:28). According to this definition, there are two main elements at hand. The first is error of planning, and the second is error of execution.

Error of planning: This can be defines as the incorrectness of methods intended to be implemented, i.e. using an erroneous plan to achieve a goal. At this stage, the error does not become evident until it is understood that the result desired for the patient is not achieved. Error of planning may or may not harm the patient; however, they cause an inability to achieve the desired healthcare result for the patient (Sheikh and Hurwitz, 2001:58).

Error of execution: This is defined as the failure experienced in finalizing a planned action in the desired manner. Error of execution occurs during the provision of healthcare services and between the healthcare professionals and the patient. An example for this type of errors can be the administration of an oral medication intravenously (Yılmaz, 2013:214).

3.1. Causes for Medical Errors

Causes for medical errors are classified under three main categories as the human factor, institutional factors and technical factors (Akalın, 2005:2):

a) The Human Factor: Factors such as tiredness, lack of training, communication issues, time restriction, wrong decisions, an argumentative personality etc. are among human-driven issues and may cause medical errors.

b) Institutional Factors: The policies upheld by the institution, the administrative structure, wrong distribution of the personnel, inadequacy in resolving problems and the structure of the working environment are among institutional causes for errors.

c) Technical Factors: Technical factors such as insufficient automation, inadequate equipment or a lack of equipment can also cause medical errors.

3.2. Classification of Medical Errors

Medical errors may occur at each stage of healthcare services (Sayek, 2011:17). Medical errors are classified as below (Institute of Medicine, 2000:36):

a) Errors Made During Diagnosis: Misdiagnosis or delayed diagnosis, failure to apply the designated tests, use of obsolete diagnosis and treatment methods and not acting in line with the results of examinations are among errors made during the diagnosis stage.

b) Errors Made During Treatment: Errors made in the implementation of a surgical intervention, procedure or examination or the administration of a treatment, inappropriate treatment, incorrect dose or administration or delayed treatment are among errors made during the treatment stage.

c) Errors Made Preventive Services: Errors made in the provision of preventive services are inappropriate treatment or the lack thereof, inadequate follow-up after treatment etc.

d) Other Errors: Other errors can be listed as miscommunication, inadequacy of the tools at hand and other system inadequacies.

4. PATIENT SAFETY ISSUES

In healthcare systems, there are numerous risk factors threatening patient safety. Patient safety issues which may occur due to such risks can be classified under the main headings of medication errors, infections, falling, wrong surgical practices, issues stemming from miscommunication, transfusion application errors, issues caused by inadequate patient follow-up, unsafe injection practices, errors stemming from equipment, devices and inappropriate medication use and issues caused by working conditions (Uçar et al., 2016:96).

4.1. Medication Errors

Medication error is defined by the National Coordinating Council for Medication Error Reporting and Prevention (NCC MERP) (2018) of the USA as an preventable incident wherein the patient is harmed by the medication or the medication is used inappropriately. Medication errors encompass the insufficient, excess or erroneous use of medication (Yılmaz, 2013: 245).

In a report published by IOM (2006), it was stated that around 1.5 million drug errors occur in the USA annually and these errors cost billions of dollars. In a study conducted, it was found out that 35.4% of erroneous medication administrations cause minor issues, 57.5% do not lead to any clinical results, 1.4% cause serious damage and 0.4% result in death (Orser et al., 2001).

The reason why medication errors are so common is generally pointed out to be the complexity of the healthcare system and various components thereof (U and Cohen, 2009:138). Mistakes made during the entry of the information regarding the patient's identity, weight and height (which impact the dosage of the drug to be administered) and medication usage or allergy or the insufficient information related thereto into the hospital's system, the illegibility of administration orders or the misperception thereof and errors made during administration can cause erroneous medication administration practices (Sayek, 2011:43).

4.2. Infections

Infections related to healthcare services are among the leading factors that threaten patient safety in healthcare institutions and prolong the duration of hospital stay due to a decreased quality of healthcare, thus increasing healthcare expenditures. Infections related to healthcare services connote infections that develop after the patient's admittance to the hospital which are not at the incubation stage during such admittance, or those developing while the patient is at the healthcare institution and becoming evident after s/he is discharged. Infections related to healthcare services generally develop 48-72 hours after the patient's admittance to the hospital and within the first ten days after the discharge of the patient from the hospital (Uçar et al., 2016:108).

The risk of developing infections related to healthcare is particularly high for patients staying at the intensive care unit. Therefore, infection control is a critical issue in patient safety (Sayek, 2011:55). In the report "Transforming Health Care Quality" published by the Institute of Medicine in 2003, the prevention of infections related to healthcare services was included among the 20 priority areas for the improvement of healthcare quality (Institute of Medicine, 2003:42).

4.3. Falling

The falling of patients is a serious problem faced in all healthcare institutions.

According to a study carried out by Aranda-Gallardo et al. (2003) about 84% of adverse events occurring in hospitals stems from patients falling. 30% of such falling lead to serious injuries and death.

Causes of falling are classified according to environmental and personal factors. Examples for such causes can be unfavorable building conditions, lack of training on the personnel's side, a high average of age of the patients, the use of drugs etc. (Uçar et al., 2016:110). When a patient falls, this causes serious physical and psychological damages, functional regression, increased duration of hospital stay and costs (Watson et al., 2016).

4.4. Wrong Surgical Practices

Another factor that jeopardizes patient safety and which is quite common in healthcare institutions is wrong surgical practices. Surgical practices contain various complex activities each of which consist of numerous steps (Etchells et al., 2003). Omitting some of these steps during surgical practice causes issues for patient safety. In order to prevent wrong surgical procedures and ensure that such procedures are carried out in a safer manner, a program called "Safe Surgery Saves Lives" was commenced by the World Health Organization (WHO). Within this scope, the "Surgical Safety Checklist" was published by WHO for the first time in 2008 (WHO, 2009:10).

10 essential objectives were determined by WHO to ensure safety in surgical procedures, and surgical safety checklists were drawn up in a way to cover these objectives. Among the determined objectives are operating on the correct patient at the correct site, preventing harm from anaesthetic administration, preventing loss of airway or respiratory function, preventing the risk of high blood loss, avoiding allergic reactions known to be a significant risk to the patient, minimizing the risk of surgical site infection, preventing the retention of surgical instruments and sponges in surgical wounds, ensuring effective communication and critical information exchange between the surgical personnel and keeping records in a correct manner (WHO, 2009:10).

4.5. Transfusion Errors

Blood transfusions are a significant component of modern healthcare services. That being said, they involve some clinical risks as in all other treatments (Murphy et al., 2011)**.** Erroneous practices at clinics, blood centers and bloodletting units pose a risk for patient safety. Examples for the errors faced in blood transfusion are wrong identification of the patient, erroneous marking of the samples and tubes, mistakes made in records, sending the wrong blood to the patient and tagging errors. As a result of such errors, factors such as Hepatitis and AIDS which the patient contracts, blood type incompatibility, deterioration and hemolysis can lead to death (Koh and Alacantara, 2009; Uçar et al., 2016:113).

4.6. Errors Stemming from Miscommunication

Active and proper communication is extremely important in the provision of healthcare services. Mistakes made during the provision of healthcare services due to defects and inadequacies in communication carry risks high enough to cause injuries and deaths (Sayek, 2011:126). Communication errors can lead to unfavorable circumstances wherein the quality of healthcare decreases and in turn the duration of hospital stay increases and the satisfaction of the patients and healthcare workers declines. Factors such as the workload caused by the urgent nature of services provided

in healthcare institutions, imbalance of power, stress, lack of confidence and illegible orders lead to miscommunication (Uçar et al., 2016:109). An open and active communication between healthcare professionals plays a critical role in ensuring patient safety, especially during patient transfers. Miscommunication or a total lack of open communication may lead to a loss of success in diagnosis and treatment within complex medical systems and threaten patient safety (Rice, 2009:174).

4.7. Errors Caused by Inadequate Patient Follow-up

Inadequate patient follow-up, incomprehensibility of orders and failure to clearly specify the desired follow-up frequency can jeopardize patient safety (Uçar et al., 2016:113).

4.8. Unsafe Injection Practices

Injections are among the applications utilized quite commonly in the prevention of diseases and during the diagnosis and treatment processes. What is meant by safe injection practices are the measures taken for a safe injection administration to the benefit of patients, healthcare personnel and other people alike. A safe injection does not harm the receiver, does not subject the provider to preventable risks and does not produce waste that is hazardous for the society (CDC, 2018). Reutilization of syringes and erroneous use of ampoules can be examples for unsafe injection practices. Diseases such as Hepatitis B and C and HIV, which can be contracted as a result of unsafe injection practices, pose a risk to patient safety (Uçar et al., 2016:113).

4.9. Errors Stemming from Equipment and Devices

Medical equipment, devices and healthcare technologies are used in the provision of healthcare services in a widespread manner. Errors related to medical devices which threaten patient safety are categorized into two main groups; namely, errors related to the manufacturer and device misuse. Device misuse expresses cases where a medical device is used in a wrong manner (Mattox, 2012:61). Use of non-standardized or wrong devices and equipment in healthcare institutions during the provision of healthcare services, the complex nature of healthcare technologies, failure to perform periodic calibration of devices and insufficient knowledge about the device to be used are factors that can threaten patient safety (Uçar et al., 2016:114).

4.10. Errors Related to Working Conditions

The impacts of working conditions on patient safety are among the issues discussed frequently in this regard. Factors related to the personnel, design of the working space and environmental and social factors are studied within the scope of working conditions. Factors related to the personnel include topics such as the workload, qualification, the number of personnel, working hours etc. The most common view on workload and working hours is that long working hours and extreme workload cause more errors. It is also believed that healthcare personnel who are qualified and well-educated and trained reduce the risk of errors (AHRQ, 2003:10). The incompatibility of the design of healthcare institutions to the needs of healthcare personnel and patients and failure to take into consideration the nature of healthcare services can cause problems for patient safety (Uçar et al., 2016:115). Personal factors include elements such as stress, burnout, dissatisfaction, motivation and control over the work performed. Relationships between the staff, obscurity of roles and conflicts are

among the social factors in this regard (AHRQ, 2003:10). And factors such as lighting, heating, noise, air conditioning, temperature, surface coating and design are environmental factors. With an appropriate regulation and arrangement of environmental factors, harming outcomes can be alleviated. Organizational factors consist of the structural and process-related conditions within the organization. Teamwork, division of labor, team spirit and culture of safety are factors of an organizational nature and have potential impacts on patient safety (Etchells et al., 2003).

5. IMPROVING PATIENT SAFETY

5.1. Patients for Patient Safety

One of the most significant causes for medical errors and adverse events is miscommunication. It was found out in various scientific studies that when applying to healthcare institutions, patients can be incapable of asking questions related to their condition due to reasons such as excitement, hesitation, shyness or not knowing how to communicate with the personnel (Onganer et al., 2014). In order to reduce the number of medical errors and to prevent them altogether, improving the communication between the patient and the physician and healthcare staff is of a critical importance. To this end, the program "SPEAK UP" was commenced in 2002 by the Joint Commission. The purpose of this program is to ensure the participation of the patient in the patient safety process. In order to prevent errors and mistakes, the patients are invited to SPEAK UP. Recommendations made within the scope of the SPEAK UP program are as follows (The Joint Commission, 2016):

Speak Up: Speak up if you have questions or concerns. If you don't understand, ask again.

Pay Attention: Pay attention on the care you are receiving. Make sure you're getting the right treatments and medications by the right health care professionals.

Educate Yourself: Educate yourself about your condition. Obtain information on the medical tests you are undergoing, and your treatment plan.

Ask: Ask a trusted family member or friend to be your advocate.

Know: Know what medications you take and why you take them. Medication errors are the most common health care errors.

Use: Use a hospital, clinic, surgery center, or other type of health care organization that has undergone a rigorous evaluation against established standards.

Participate: Participate in all decisions about your treatment. You are the center of the health care.

5.2. Systems Approach to Patient Safety

In order to improve patient safety, when an error is faced the blame should not be put only on the people, but the cause for the error should be searched within the system itself as a whole. In the systems approach, errors are addressed under two categories as active (seen) and latent (unseen) (Reason, 2000). Active errors are generally those which are identified through instant feedback. On the other hand, latent (unseen) errors are those which seem the most insignificant but faced the most frequently. Latent errors can be defined as errors that lead to active errors and cause harm to the patient (Palmieri et al., 2008 :41). According to Reason, the systems approach to patient safety reveals the latent errors and reduces the active errors caused by the human nature, while identifying safety gaps through a rigorous systems evaluation (Reason et al., 2001).

While errors arise, the situational factors present within the system trigger latent errors; and in turn, latent errors trigger active errors. When healthcare professionals at different organizational levels fail to mend the gaps within the system, each of these gaps become an opportunity for errors to occur (Palmieri et al., 2008:41). There should be barriers which prevent the factors causing errors within the systems and which provide safety (Reason, 2000).

5.3. Patient Safety Culture

Safety culture is the product of values, attitudes, competencies and behavioral patterns which play a role in the determination of individuals' commitment to healthcare and safety programs set by the institution (Vincent, 2010: 273). In the general sense, safety culture is seemed to be the basis of an institution's capabilities of managing the safety of operations (Kirk et al., 2006:174). Institutions which adopt a positive safety culture have such characteristics as establishing a communication based on mutual trust, having a common sense and perception of the importance of safety and being confident in the effectiveness of preventive measures (Vincent, 2010: 273).

Patient safety culture is the adoption of the concept of patient safety as the priority issue and a common value for the institution (Sayek, 2011:79). Patient safety culture is part of the organizational culture and is made up of attitudes, beliefs, perceptions and values shared by the personnel with regard to patient safety (Weaver et al., 2013). The institutional culture present in healthcare institutions influence the provision of healthcare services and, in turn, the quality and safety of patient care. Therefore, it is highly important that the consistence between the institutional culture and goals related to patient safety is ensured (Fleming and Croskerry, 2009:17). In order for the patient safety culture to be embraced and improved, an environment wherein errors are voiced without fear and no such thing as punishment exists should be created (Sayek, 2011:80).

5.3.1. Development of Patient Safety Culture

Patient safety culture does not mature abruptly; rather, it develops through five levels followed from weak to strong as pathological, reactive, calculative, proactive and generative (Fleeming and Wentzell, 2008:12):

Pathological Level: At the pathological level, there is no system which can bring about a positive safety culture. The culture of blaming persons is quite common. Accidents and incidents are deemed to be caused by "bad luck", patient behavior or personnel's mistakes.

Reactive Level: Reactive level includes a system that cares for safety but is fractured. The system is developed only for incident response or regulations and accreditation. Responsibility is taken only after the harm becomes evident. Individuals are seemed to be the cause of the problem, and mostly, solutions are sought through re-education and punishment.

Calculative Level: The calculative level contains a patient safety approach. However, the applications are disorganized and investigations into incidents are carried out and decisions are taken within a limited scope. The personnel are encouraged to report on accidents but they do not feel that what they do is for safety purposes. Grievances are taken into consideration.

Proactive Level: In the proactive level, there is an approach to develop a comprehensive positive safety culture. It is accepted that accidents happen due to a

combination of the errors of the system and the individuals. The personnel are encouraged to report on incidents.

Generative Level: At this level, a generative and protective positive safety culture is at the heart of the organization's mission. One takes lessons from one's failures. The personnel, patients and other related parties are actively supported. Trust and clarity dominate the institution.

5.4. Incident Notification and Reporting Systems

Incident notification and reporting systems are an application that helps institutions to identify problems related to patient safety. Through incident reporting systems, institutions are able to obtain information on the incidents that occur and thus undergo a process of in-house knowledge building (Mikkelsen et al., 2006). Investigating the main causes of the incidents reported and taking the necessary precautions enable the alleviation of medical errors through a continuous learning. Reporting on errors is the first step of minimizing errors and achieving a continuous improvement of quality. Information sharing and incident notification creates an awareness of errors occurring within the systems in institutions. The incident reporting system provides opportunities to identify, analyze and evaluate errors and to reduce the frequency and severity of accidents and injuries. In order for incident reporting systems to function efficiently, an environment of trust wherein notifications are encouraged and no punishment is implemented should be created, the improvements made should be shared and incident reporting should be promoted (Sayek, 2011:84,85).

That being said, there are differences between countries as to what and how to report. Therefore, it is acknowledged that definitions should be drawn up and standardization should be made in order to benchmark data and remove the confusion on the healthcare professionals and patients' side about how to distinguish reportable incidents. The World Health Organization is currently working towards an International Classification for Patient Safety, which shall define, harmonize and group concepts related to patient safety under an internationally accepted classification (Jones and Runciman, 2009:73). Within this scope, WHO has published a report titled "Conceptual Framework for the International Classification for Patient Safety" (WHO, 2009).

5.5. Priority Issues for Research in Patient Safety

A list of global priority areas was drawn up by WHO in 2009 with the purpose of improving patient safety. In the said list, 6 areas which need to be addressed to improve patient safety in developed and developing countries and those with economies in transition were ranked according to their priorities.

Table 1: WHO Priority Table

	Developing Countries	**Countries with Economies in Transition**	**Developed Countries**
1	Counterfeit and sub-standard drug use	Lack of experience and knowledge	Lack of communication and coordination
2	Lack of experience and knowledge	Lack of appropriate knowledge and its transfer	Latent organizational failures
3	Maternal and newborn care	Lack of communication and coordination	Poor safety culture
4	Infections	Infections	Inadequate safety indicators

5	Unsafe injection practices	Maternal and newborn care	Adverse drug events
6	Unsafe blood practices	Adverse drug events	Care of the elderly

Source: WHO, 2009:3

Even though there may be differences between priority areas on the global scale, the table emphasizes the similarities between the priority areas which particularly require the focus of developing countries and countries with economies in transition. Moreover, the table is an important starting point in identifying common points in patient safety.

6. CONCLUSION

Issues faced in patient safety can harm individuals and jeopardize their lives. Moreover, the need for additional treatment and the prolonged durations of hospital stay caused by patient safety issues increase healthcare expenditures. Investments aimed at ensuring patient safety bring important financial savings in addition to better healthcare results. It is estimated that in the USA approximately USD 28 million was saved between 2010-2015 through investments aimed at ensuring and improving patient safety (WHO, 2018). In order to improve patient safety in healthcare institutions, the patient safety culture being embraced by the management and all of the personnel is of critical importance. Within this scope, it is important that an environment is created wherein errors can be voiced without fear, where there is no punishment and causes for the problems faced are sought within the system before blaming the employees. Under a well-developed patient safety culture, healthcare workers would act towards ensuring and maintaining patient safety. In order to improve the quality of healthcare services, achieve better healthcare results and, in turn, enhance the society's health status, further importance should be attached to studies on patient safety.

REFERENCES

Agency for Healthcare Research and Quality (2003). The effect of health care working conditions on patient safety .AHRQ Pub. No:03-E031.[https://archive.ahrq.gov/downloads/pub/evidence/pdf/work/work.pdf]. Date of Access: 30.04.2018

Akalın E. (2005).Yoğun Bakım Ünitelerinde Hasta Güvenliği.*Yoğun Bakım Dergisi*.5(3):141-146.

Aranda-Gallardo, M., Morales-Asencio, J. M., Canca-Sanchez, J. C., Barrero-Sojo, S., Perez-Jimenez, C., Morales-Fernandez, A., Mora-Banderas, A. M. (2013). Instruments for assessing the risk of falls in acute hospitalized patients: a systematic review and meta-analysis. *BMC health services research*, 13(1), 122.

Ardahan M., Alp F. (2015). Hasta Güvenliği Ve Hasta Güvenliğini Sağlamada Sağlık Çalışanlarının Ve Yöneticilerin Rolü. *Acıbadem Üniversitesi Sağlık Bilimleri Dergisi*,6(2):85-88.

Centers for Disease Control and Prevention (2018). Injection Safety. [https://www.cdc.gov/injectionsafety/patients/patient_faqs.html]. Date of Access: 29.04.2018

Connelly, L.M., Power, J.L. (2011). On-Line Patient Safety Climate Survey: Tool

Development And Lessons Learned. *Advances in Patient Safety*, (4):415-428.
Etchells, E., O'Neill, C., Bernstein, M. (2003). Patient safety in surgery: error detection and prevention. *World Journal of Surgery*, 27(8), 936-941.
Fleming, M.T., Croskerry, P. (2009). A Safe Culture in the Emergency Department, Pat Croskerry, Karen S. Cosby, Stephen M. Schenkel, Robert L. Wears (Ed.), in, *Patient safety in emergency medicine.U.S.A*, 17-25.
Fleeming, M., Wentzell, N. (2008). Patient safety culture improvement tool: development and guidelines for use. *Healthcare Quaterly*.11:10-15.
Institute Of Medicine (2000). To Err Is Human: Building A Safer Health System. National Academic Press. Washington DC.
Institute Of Medicine (2001). Crossing the Quality Chasm: A New Health System for The 21st Century. [https://www.ncbi.nlm.nih.gov/books/NBK222274/pdf/Bookshelf_NBK222274.pdf] Date of Access: 29.04.2018
Institute Of Medicine (2003). Priority Areas for National Action: Transforming Health Care Quality, ISBN: 0-309-57042-5.
Institute Of Medicine (2006). Preventing Medication Error. National Academic Press. Washington DC.
Jones, D., Runciman, W. (2009). Principles of Incident Reporting. Pat Croskerry, Karen S. Cosby, Stephen M. Schenkel, Robert L. Wears (Ed.) in, *Patient safety in emergency medicine*, U.S.A, 70-75
Kirk, S., Marshall, M., Claridge, T., Esmail, A., Parker, D. (2006). Evaluating Safety Culture. Kieran Walshe ve Ruth Boaden (Ed.), içinde, *Patient safety research into practice*, Open University Press, England, 173-184.
Koh, M. B. C., Alcantara, R. (2009). Transfusion errors and management. *ISBT Science Series*, 4(2):216-220.
Mattox, E. (2012). Medical devices and patient safety. *Critical Care Nurse*, 32(4), 60-68.
Mikkelsen T., Sokolowski I., Olesen F. (2006). General proctitioners' attitudes toward reporting and learning adverse events: result from a survey. *Scandinavian Journal of Primary Health Care*. 24:27-32.
Murphy, M. F., Stanworth, S. J., Yazer, M. (2011). Transfusion practice and safety: current status and possibilities for improvement. *Vox sanguinis*, 100(1), 46-59.
National Coordinating Council for Medication Error Reporting and Prevention (NCCMERP) (2018). What Is the Medication Error? [http://www.nccmerp.org/about-medication-errors]. Date of Access: 29.04.2018
National Patient Safety Foundation (2000). Agenda For Research And Development in Patient Safety. [https://c.ymcdn.com/sites/www.npsf.org/resource/collection/4B2E552F-48FA-4DCF-8BD8-574EE15EFD99/Agenda_for_RD_in_Patient_Safety.pdf] Date of Access: 29.04.2018
National Patient Safety Foundation (2018). Patient Safety Dictionary. [http://www.npsf.org/?page=dictionarynz]. Date of Access: 29.04.2018
Onganer, E., Bozkurt, B., Kılıç, M. (2014). Hastalar İçin Hasta Güvenliği. *Kartal Eğitim Ve Araştırma Hastanesi Tıp Dergisi.* 25 (2):171-174.
Orser, B., Chen, R., Yee, D. (2001). Medication errors in anesthetic practice: *Canadian*

Journal of Anesthesia. 139-145.
Reason, J. (2000). Human error: models and management. *BMJ*. 320:768-770
Reason, J. T., Carthey, J., De Leval, M. R. (2001). Diagnosing "vulnerable system syndrome": an essential prerequisite to effective risk management. *Quality in Health Care*, 10(2):21-25.
Rice, M.M. (2009). Teams and Teamwork in Emergency Medicine.Pat Croskerry, Karen S. Cosby, Stephen M. Schenkel, Robert L. Wears (Ed.) in, *Patient safety in emergency medicine*, U.S.A, 174-187.
Palmieri, P. A., DeLucia, P.R., Peterson, L.T., Ott. T.E., Green, A. (2008). The Anotomy and Physiology of Error in Adverse Health Care Events, Grant T. Savage and Eric W. Ford (Ed.), in, *Patient safety and healthcare management*. 1st Edition, United Kingdom. 33-68.
Savage, G. T., Ford, E. W. (2008). *Patient safety and healthcare management*. 1st Edition, United Kingdom.
Sayek F. (2011). *Hasta güvenliği: Türkiye ve Dünya*. Türk Tabipler Birliği Yayınları. 1st Edition. Ankara.
Sheikh, A., Hurwitz, B. (2001). Setting up a database of medical error in general practice: conceptual and methodological considerations. *Br J Gen Pract*, 51(462), 57-60.
The Joint Commission (2018). Speak UP. [https://www.jointcommission.org/assets/1/6/speakup.pdf] Date of Access: 01.05.2018
U, D., Cohen, M. R. (2009). Medication Safety in Health Care Systems. Pat Croskerry, Karen S. Cosby, Stephen M. Schenkel, Robert L. Wears (Ed.) in, *Patient safety in emergency medicine*, U.S.A, 135-143.
Uçar M., Akgün S., Bostan S., Elbeyli L., Kanyılmaz D., Koca E., Oran F., Özata M., Öztürk D., Öztürk Y., Varol Ş., Yazanel A., Yılmaz A. (2016). Hasta Güvenliği. Müezzinoğlu M (Ed.), in, *Hasta hakları ve hasta güvenliği*. Republic of Turkey Ministry of Health Pub. No: 1007. Ankara.
Uslusoy, E. Ç., Duran, E. T., Korkmaz, M. (2016). Güvenli Enjeksiyon Uygulamaları. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi*, 3(2):50–57.
Vincent, C. (2010). *Patient safety*. 2nd Edition, BMJ Books, London, UK.
Watson, B. J., Salmoni, A. W., Zecevic, A. A. (2016). The use of the Morse Fall Scale in an acute care hospital. *Clinical Nursing Studies*, 4(2), 32.
Weaver, S. J., Lubomksi, L. H., Wilson, R. F., Pfoh, E. R., Martinez, K. A., Dy, S. M. (2013). Promoting a culture of safety as a patient safety strategy: a systematic review. *Annals of internal medicine*, 158(5 0 2), 369-374.
World Health Organization (2009). Conceptual Framework for the International Classification for Patient Safety Version 1.1. [http://www.who.int/patientsafety/taxonomy/icps_full_report.pdf] Date of Access: 01.05.2018
World Health Organization (2009). WHO Patient Safety Research. France.
World Health Organization (2009). Safe Surgery Saves Lives. [http://apps.who.int/iris/bitstream/10665/44185/1/9789241598552_eng.pdf]. Date of Access: 29.04.2018
World Health Organization (2018). 10 Facts on Patient Safety.

[http://www.who.int/features/factfiles/patient_safety/en/]. Date of Access: 07.05.2018
Yılmaz, A. (2013). Hasta Güvenliği, Sıdıka Kaya. (Ed.), in, *Sağlık kurumlarında kalite*. Anadolu Üniversitesi Yayınları. 213-235

Chapter 108

Determination of Communication Skills and Conflict Resolution Styles of Student Nurses

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INTRODUCTION

According to the dictionary of Turkish Language Association (TLA), the concept "communication" is defined as "all kinds of transfer of emotions, thoughts, or information" (TLA, 2006). The interaction of a human, a social animal, with another individual, is important (Apaydın Demirci & İkiz, 2017). Effective and healthy communication is a process maintained with due regards that in order individuals in interaction to understand each other accurately and transmit this situation to the other party. Even though there are studies that emphasize the intuitional side of the communication skill, the majority opinion is that this skill is learnable and teachable (Buckman, 2001; Verdener, 1999; Korkut Owen & Bugay 2014).

The communication skill can be expressed as the usage of messages as an effective communication tool, coding the messages properly, and paying attention to the structure of the messages (Yüksel, 2009). The development of these skills is an important requirement for success in social institutions such as family, work and school life (Özerbaş et al., 2007). Effective communication skills play a facilitator role for relationships in every interpersonal relation and in career fields (Kumcağız et al., 2011; Duğan et al., 2017).

To provide the help, which is one of the professional values and a need that is needed to be fulfilled when the nursing profession first came into existence and to provide the nursing services in this matter, proper communication methods should be used (El-Sayed & Mouse, 2015). Nursing, that is a branch of science of the health services focuses on meeting the biopsychosocial and mental health needs of human beings. However, according to Lambrini and Loanna (2014), nursing practices contains not only scientific information but also the use of effective interpersonal communication, intellectual abilities, and technical skills (Bello, 2017). In order to maintain safe and effective nursing services, effective communication is an important tool. Bad communication causes anger, negligence of important information, or structural deterioration, and as a result of this it causes patients to self-harm (El-Sayed & Mouse, 2015).

The increased importance of communication in respect to contingency and context the person is in, is so essential when the person is in a situation that s/he is dependent to another person. An ill person is under the uncertainty pressure of many issues such as the situation s/he is in, his/her own life, status in community, role in family, and losing

job (Uyer, 2000). Along with this, patient relatives may turn into a complicating factor in the health service that a health personal is trying to maintain with their worries about helping. In this environment, communication that is not carrying out well always creates a source of conflict.

Conflict is an indication of disharmony of the person him/herself, between people, and between groups that people come across since the existence of human beings. Interpersonal differences, differences regarding to goals, differences of the ways to achieve goals, differences of value judgment and perceptions, the use of scarce sources, differences in defining problems, emotional situations of people, differences of cultural characteristics, and many other reasons may cause conflict (Tokat, 1999).

Even though there are many suggestions for approaches toward conflict in the literature, according to the model that Rahim (1986) presented, it is possible to refer to five methods: integrating, compromising, obliging, avoiding, and dominating. İntegrating (Rahim, 2002), a method more to solve problems, is a method that parties need to use effective methods of communication. In case of situations, in which one party is less strong than the other, and the relationships must be preserved, the proper style of conflict resolution is the strategy of obliging (Rahim, 2002). The obliging method that results both sides to give up something reciprocally in order both sides in conflict to come to a solution is the most convenient way of conflict resolution to prevent long lasting conflicts (Rahim, 2002). The dominating is the style in which the stronger party wants to have everything to achieve his/her goals and personal win-win strategy is used (Rahim, 2002). Avoiding is the style of withdrawal or standing idle (Rahim, 2002).

When these styles are considered, a strategy that seems effective for a person may not be effective for the partner of that person (Canary, & Spitzberg, 1990). Beside of that, the most effective style seems to be the integrating because this style is important in terms of putting an effective solution that is based on cooperation (Gross & Guerrero, 2000).

In the process of raising nurse candidates, between the skills that nursing students are needed to gain—except for the scientific knowledge—communication skills are in the school curriculum to manage interpersonal communication processes and conflicts. The gains of these methods are important in maintaining healthy relationships with the service takers and colleagues. In order nursing, a helping profession, to fulfill its needs, communication skills obtained and methods used in conflict resolution by nursing students are needed to be determined. The chooses of communication skills and conflict resolution styles are features affected by many variables. In this regard, to determine the levels of these two variables and affecting factors, a study to conduct is planned.

METHOD

This study is planned to be descriptive and cross-sectional. Data is collected between October and November of 2017.

Sample

The sample of the research is made up of nursing students in a vocational school of health services of a university. With the non-probability sampling method, the sample of the study is composed of 307 student volunteers participating in the study. To do the research, a permission from the institution and verbal permissions of students are

obtained.

Evaluation Tools

Socio-demographic Data Form: Age, gender, Transition to Higher Education Exam (THEE) scores, economic condition of families, parent education levels, satisfaction from the department, and similar questions about students are asked in this form.

Conflict Resolution Styles Form

It is an attitude scale about conflict resolution styles. This form is prepared by Ohio Commission on Conflict Resolution. After Sargın, took the required permissions, the use and validity of the form in Turkish is provided by taking the opinions of experts. The form made up of 29 items is used in a study conducted by Sargın et al. (2007). Measurement was made with a Likert-type assessment scale with 5 variables. With using the test-retest method, reliability of the form is worked on. It is reported that Cronbach's Alpha values of scale items varies between .73 and .96. The form can be evaluated with taking each item into consideration. According to the weighted averages, 3.40 is determined to be the cutpoint, and points higher than 3.40 shows that that behavior is at a high level. Izgar (2013) measured the validity of this scale with "Organizational Conflict Inventory II," which is designed by Rahim and Magner (1995) and translated into Turkish by Kozan and İlter (1994) and Kozan (2002) and found that there was a .79 correlation between the two forms. Bozoğlan (2010) grouped the scale items in his thesis study as integrating: 3, 16, 17, 18, 22, 27, 29; dominating: 12, 13, 14, 15, 19, 20; avoiding: 1, 2, 4, 1, 23; compromising: 5, 6, 7, 24, 25; obliging: 8, 9, 11, 21, 26, 28. In this study, Cronbach's Alpha value of the scale is found to be .84.

Communication Skills Assessment Scale (CSAS)

The scale is improved by Korkut (1996). First practices are applied to high school students. The scale with 25 items is used with Likert-type scale with 4 variables. In the study done with high school students, the scale is determined to be one-dimensional. In this sample, Cronbach's Alpha value is determined to be 0.80 (Korkut, 1996). In the study done with university students and adult groups, Likert with 5 variables is used as a measuring tool (Korkut, 1997). The alpha value obtained from this study is .86. The high point collected from the scale means that the individual perceives his/her own communications skills in a positive way. The scale is one-dimensional. In the validity and reliability study of Communication Skills Scale based on CSAS conducted by Korkut Owan and Bugay (2014), the scale is reported to be made up of 25 items and four factors. The coefficient of internal consistency is determined to be .88. The exploratory factor analysis done for this sample, for the suitability of the scale to the sample size, Kaiser-Meyer-Olkin (KMO) value is used and Bartlett's test of sphericity is done. As a result of the analysis, according to the KMO value 0.967 and Bartlett test result (X^2=8452.56, df:300, p=0.000), it is determined that data is suitable for factor analysis. As KMO value gets closer to 1, it shows that the data is perfect and adequate for an analysis (Tavşancıl, 2010). As a result of exploratory factor analysis with principal component analysis and Varimax rotation, a single factor structure with its eighenvalue higher than 1 and that explains 68.21% of total variance. The alpha value of the scale for this sample is .98.

Data Analysis and Evaluation

In the evaluation of data, data analysis was done by using a package program Statistical Package for Social Science (SPSS, 20.0). In the data analysis, descriptive statistics and factor analysis are used. Normal distribution property of data is tested with One Sample Kolmogrov-Smirnov. According to the result, in the groups with two variables Mann Whitney U and with many variables Kruskal Wallis tests were applied. In the determination of the relationship between variables, Spearman Rho correlation analysis was done.

FINDINGS

307 people participated to the study. 76.9% of the participants are female (female: 236, male:71), average age of the students is 20.21±1.51 (min:18, max:25), and 35.8% of them are first-year-students. General Weighted Point Average (GWPA) is 2.71±0.48 (min: 1.86, max: 3.65). Average THEE score is 335.55±26.30 (min: 287, max: 462). 59.9% of the students stated their income and outcome as equal. 48.9% of the students reside in the city. 71.3% of them stay in a dormitory. 73.6% of them have a nuclear family. Average sibling number of the students is determined to be 3.08±1.73 (min:1, max:10) people. 42.3% of mothers' level of education is elementary, and 71.3% are housewives. 34.5% of fathers' level of education is elementary, and 27.7% are retired. 58.6% of the students are satisfied with the department they are in.

The average of CSAS points of the students is 81.24±27.05 (min: 25.00, max:125.00). It is found that students have communication skills at medium-good level.

Table 1: Methods to Use in Conflict Resolution of Nursing Students (N:307)

STRA	STYLE	$\bar{X}$	SD
INTEGRATING	3. I try to understand the point of view of the other person	**3,77***	1,00
	16. I talk with my family about my emotions.	2,94	1,27
	17. I am rather aware of the requirements of other people in a conflict.	3,00	1,05
	18. I focus on the problem more.	**3,54***	0,98
	22. I can explain how I feel.	**3,63**	1,09
	27. I am aware of the feelings of the other person	**3,65***	1,04
	29. I develop new skills in order to help the people who experience conflicts around me.	**3,47***	1,15
OBLIGING	5. I accept my mistake even if I do not believe.	2,39	1,18
	6. I give up.	2,16	1,10
	7. I apologize.	3,09	1,11
	24. I happen to be aware of the emotions of the persons on the opposite end.	**3,64**	0,98
	25. I act respectfully toward other people.	**3,82**	1,07
COMPROMISING	8. To mitigate the conflict, I try to find the subjects that I agree on and disagree with.	**3,64***	0,97
	9. I try to reach a compromising.	**3,71***	1,00
	11. I accept help from other people in deciding who is right.	3,12	1,16
	21. I use verbal expressions to my friends.	**3,56***	1,00
	26. When there is an increase in the conflict, I become more open for compromising.	3,35	1,18
	28. In the conflict, I try peaceful and affectionate resolutions.	3,39	1,17
DOMINATING	12. I threaten the other person.	1,66	0,96
	13. I physically fight.	1,90	1,08
	14. I grunt and complain until finding a solution.	2,10	1,07
	15. I give up but also show the other person how much I suffer.	2,26	1,14
	19. I am more aware of what I feel.	**3,58***	1,03
	20. I use non-verbal communication skills.	2,91	1,22
AVOIDING	l. I avoid the person.	2,47	1,09
	2. I change the subject.	2,56	1,09
	4. I try to turn the conflict into a joke.	2,76	1,12
	10. I seem to agree.	2,60	1,14
	23. I postpone the solution when I see the conflict is worsened.	3,13	1,11

*The items, with an average above 3,40.

When Table 1 is examined, it is found some of the methods that nursing students often use such as “I try to understand the point of view of the other person, I focus on the problem more, I can explain how I feel, I am aware of the feelings of the other person, I respect other people, and I try to obliging,” so they can either focus on situations in a constructive and emphatic or enhancing conflict and causing

disagreement ways. The least preferred styles of conflict resolution are negative methods such as threatening the other person, committing physical violence, giving up, and whining and complaining until finding a solution.

When the communication skill levels of the students depending on age groups are investigated, it is found that average points of total communication skill scores of 20 year olds and below are significantly and statistically lower than 21 year olds and above (U:16028.00, z=6.506, p=0.000).

Table 2: Methods Used in Conflict Resolution by Nursing Students Depending on Age Groups

Conflict Resolution Styles	**Age**	**n**	**Mean Rank**	***Z***	***U***	***p***
3. I try to understand the point of views of other people.	20 year olds and below	190	143,68	-2,759	9155,00	**0,006**
	21 year olds and above	117	170,75			
9. I try to reach a compromising	20 year olds and below	190	145,82	-2,182	9561,50	**0,029**
	21 year olds and above	117	167,28			
11. I accept help from other people in deciding who is right	20 year olds and below	190	142,17	-3,088	8868,00	**0,002**
	21 year olds and above	117	173,21			
17. I am rather aware of the requirements of other people in a conflict	20 year olds and below	190	144,41	-2,519	9292,50	**0,012**
	21 year olds and above	117	169,58			
24. I happen to be aware of the emotions of the persons on the opposite end.	20 year olds and below	190	146,44	-2,011	9678,00	**0,044**
	21 year olds and above	117	166,28			
29. I develop new skills in order to help the people who experience conflicts around me.	20 year olds and below	190	142,79	-2,926	8984,50	**0,003**
	21 year olds and above	117	172,21			

When Table 2 is examined, in term of the positive behaviors of students such as trying to understand the other person's point of view, trying to obliging, consulting someone on making a decision about who is right, recognizing the needs and emotions of the other person and resolving conflicts that others have; 21 year olds and above have more positive results ($p<0.05$) than 20 year olds and below.

It is found that gender has no effect on communication skills total point averages ($p>0.05$).

Table 3: Methods Used in Conflict Resolution by Nursing Students Depending on Gender

Conflict Resolution Styles	Gender	n	Mean Rank	*Z*	*U*	*p*
16. I talk with my family about my emotions.	Female	236	162,34	-3,078	6410,00	**0,002**
	Male	71	126,28			
27. I am aware of what I and the opposite person feel.	Female	236	163,59	-3,612	6115,00	**0,000**
	Male	71	122,13			
5. I accept my mistake even if I do not believe.	Female	236	147,09	-2,572	6747,00	**0,010**
	Male	71	176,97			
6. I give up.	Female	236	146,94	-2,650	6713,00	**0,008**
	Male	71	177,45			
25. I act respectfully toward other people.	Female	236	162,06	-3,045	6475,50	**0,002**
	Male	71	127,20			
21.I use verbal expressions to my friends.	Female	236	162,65	-3,301	6336,00	**0,001**
	Male	71	125,24			
26. When there is an increase in the conflict, I become more open for	Female	236	159,72	-2,125	7029,00	**0,034**
	Male	71	135,00			
12. I threaten the other person	Female	236	148,73	-2,162	7134,00	**0,031**
	Male	71	171,52			
19. I am more aware of what I feel.	Female	236	162,20	-3,117	6443,50	**0,002**
	Male	71	126,75			
l. I avoid the person.	Female	236	147,38	-2,466	6816,00	**0,014**
	Male	71	176,00			
23. I postpone the solution when I see the conflict is worsened.	Female	236	147,10	-2,578	6750,00	**0,010**
	Male	71	176,93			

When Table 3 is examined, among the methods that students used in conflict resolution such as accepting a wrong behavior without believing, giving up, threating the other person, avoiding, and delaying the resolution when a pro is seen in the conflict shows a statistically meaningful difference in females than males ($p<0.05$).

It is determined that there is not a difference between grades in term of conflict resolution ($p>0.05$).

In terms of communication skills, the average of total points is in students in their 1st and 2nd years ($p=0.000$), 1st and 3rd years ($p=0.000$), 1st and 4th years ($p=0.000$), 2nd and 4th years ($p=0.000$), and 3rd and 4th years ($p=0.008$) because of the differences ($p=0.000$), a meaningful difference is found ($X^2=71.960$, df=3, $p=0.000$). 4th year students have the highest mean rank, and 1st year students have the lowest.

Among the students, who gave GWPA in the questionnaire, it was determined that there is not a difference in terms of communication skills ($p>0.05$). In the methods of conflict resolution, the point average of physical violence is meaningful on behalf of 2.70 and below GWPA ($p<0.05$). In people, who have averages of 2.71 and above, the mean rank of talking to the family about emotions, respecting others, producing more peaceful and adoring resolutions, and trying to find the situations s/he agrees or disagrees to reduce conflict are significantly higher ($p<0.05$).

Among the students, who gave their THEE scores in the questionnaire, the

communication skills total point averages of 325 points and below is found to be significantly higher than 326 points and above (U:1253.50, z:-6.411, p=0.000). The mean rank of physical violence and being more aware of self-perception styles are significantly important on behalf of people with 325 points and below (p<0.05). The mean rank of trying to obliging and trying to understand the point of view of the other person styles are meaningful on behalf of people with 326 points and above (p<0.05).

It is found that there is not a statistical difference in communication skill levels in terms of where students have lived for a long time (p>0.05).

Table 4: Places Nursing Students Live and Methods Used in Conflict Resolution

Conflict Resolution Styles	Place	n	Mean Rank	Sd	X^2	*p*
3. I try to understand the point of views of other people.	Village	50	160,86	3	12,965	**0,005**
	Town	26	188,27			
	City	150	137,75			
	Big City	81	168,86			
22. I can define what I feel.	Village	50	174,98	3	10,450	**0,015**
	Town	26	115,62			
	City	150	147,82			
	Big City	81	164,81			
27. I am aware of what I and the opposite person feel.	Village	50	172,74	3	10,145	**0,017**
	Town	26	113,58			
	City	150	149,02			
	Big City	81	164,64			
29. I develop new skills in order to help the people who experience conflicts around me.	Village	50	159,70	3	10,001	**0,019**
	Town	26	111,96			
	City	150	150,20			
	Big City	81	171,02			
5. I accept my mistake even if I do not believe.	Village	50	177,99	3	8,203	**0,042**
	Town	26	131,48			
	City	150	157,62			
	Big City	81	139,72			
6. I give up.	Village	50	190,02	3	16,997	**0,001**
	Town	26	133,23			
	City	150	158,21			
	Big City	81	130,64			
7. I apologize.	Village	50	182,79	3	8,533	**0,036**
	Town	26	128,54			
	City	150	150,71			
	Big City	81	150,50			
24. I happen to be aware of the emotions of the persons on the opposite end.	Village	50	170,92	3	10,250	**0,017**
	Town	26	112,77			
	City	150	149,35			
	Big City	81	165,40			
25. I act respectfully toward other people.	Village	50	166,06	3	15,561	**0,001**
	Town	26	99,44			
	City	150	150,08			
	Big City	81	171,33			
8. To mitigate the conflict, I try	Village	50	169,68	3	8,880	**0,031**

to find the subjects that I agree on and disagree with.	Town	26	133,52			
	City	150	143,37			
	Big City	81	170,58			
	Village	50	183,76			
9. I try to reach a compromising	Town	26	150,77	3	10,192	**0,017**
	City	150	141,38			
	Big City	81	160,03			
	Village	50	172,41			
26. When there is an increase in the conflict, I become more open for compromising.	Town	26	95,06	3	16,044	**0,001**
	City	150	151,92			
	Big City	81	165,41			
	Village	50	165,89			
28. In the conflict, I try peaceful and affectionate resolutions.	Town	26	109,33	3	8,868	**0,031**
	City	150	153,06			
	Big City	81	162,73			
	Village	50	150,70			
12. I threaten the other person.	Town	26	116,94	3	13,573	**0,004**
	City	150	168,63			
	Big City	81	140,85			
	Village	50	144,47			
13. I physically fight.	Town	26	165,48	3	10,987	**0,012**
	City	150	167,24			
	Big City	81	131,68			
	Village	50	150,00			
23. I postpone the solution when I see the conflict is worsened.	Town	26	134,10	3	11,235	**0,011**
	City	150	169,79			
	Big City	81	133,62			

When Table 4 is examined, among the methods of conflict resolution depending on where students spend most of their time, it is seen that integrating, obliging, and compromising styles of students who have lived in a village are significantly higher than the others ($p<0.05$). It is seen that dominating and avoiding styles of students, who have lived in a city are significantly higher than the others ($p<0.05$).

It is found that there is not a statistical difference between groups separated by economic conditions of family, type of family, satisfaction of the department, education level of mother, and profession of mother ($p>0.05$).

When the level of education of parents are grouped again, it is determined that there is a statistically meaningful difference ($p=0.032$) between the group, in which the level of education of father is elementary and below and the group, in which the level of education of father is university and above because of communication skill point averages ($X^2=7.008$, $p=0.030$). It is found that CSAS point averages of the group in which, the level of education of father is university and above are higher than the other groups.

Among the groups of communication skills point averages of students depending on the profession of father, there is a statistically meaningful difference ($p=0,021$) between the groups of students, whose father is a public servant and whose father is a tradesman ($X^2=13.784$, $p=0.032$). It is found that CSAS point averages of students whose fathers are public servants are significantly higher.

There is statistically meaningful difference between the group of students, who live in a dormitory and who live with family (p=0,002) in terms of CSAS (X^2=14.682, p=0.001). It is determined that the CSAS point averages of students living with family are significantly higher than the others.

In terms of CSAS point average, students, who have 2 siblings or below is more meaningful than students, who have 3 siblings or above (p<0,005).

Conflict resolution styles point averages are determined to be statistically meaningful between the groups of number of siblings, place they live now, level of education and profession of father, level of education and profession of mother, family type, and economic condition of family (p<0.05).

Table 5: Levels of Satisfaction of Nursing Students from the Department Methods Used in Conflict Resolution

Conflict Resolution Styles	**Satisfaction from department**	**n**	**Mean Rank**	**Sd**	X^2	***p***
18. I focus on the problem, more.	Yes	180	163,39			
	No	34	161,19	2	8,222	**0,016**
	Partially	93	133,19			
22. I can define what I feel.	Yes	180	157,20			
	No	34	187,91	2	10,119	**0,006**
	Partially	93	135,40			
27. I am aware of what I and the opposite person feel.	Yes	180	161,32			
	No	34	169,76	2	7,659	**0,022**
	Partially	93	134,06			
29. I develop new skills in order to help the people who experience conflicts around me.	Yes	180	163,14			
	No	34	157,97	2	6,782	**0,034**
	Partially	93	134,86			
6. I give up.	Yes	180	144,51			
	No	34	137,54	2	11,156	**0,004**
	Partially	93	178,39			
24. I happen to be aware of the emotions of the persons on the opposite end.	Yes	180	170,86			
	No	34	135,82	2	17,749	**0,000**
	Partially	93	128,02			
25. I act respectfully toward other people.	Yes	180	171,96			
	No	34	132,40	2	19,714	**0,000**
	Partially	93	127,14			
9. I try to reach a compromising.	Yes	180	163,28			
	No	34	156,54	2	6,981	**0,030**
	Partially	93	135,11			
21. I use verbal expressions to my friends.	Yes	180	157,05			
	No	34	190,71	2	11,727	**0,003**
	Partially	93	134,68			
12. I threaten the other person.	Yes	180	137,64			
	No	34	184,91	2	19,652	**0,000**
	Partially	93	174,37			

13. I physically fight.	Yes	180	140,97			
	No	34	197,62	2	15,199	**0,001**
	Partially	93	163,27			
14. I grunt and complain until finding a solution	Yes	180	142,72			
	No	34	175,57	2	7,909	**0,019**
	Partially	93	167,94			
15. I give up but also show the other person how much I suffer.	Yes	180	142,55			
	No	34	155,49	2	9,194	**0,010**
	Partially	93	175,61			
19. I am more aware of what I feel.	Yes	180	162,02			
	No	34	176,06	2	11,323	**0,003**
	Partially	93	130,41			
20. I use non-verbal communication skills.	Yes	180	145,18			
	No	34	204,62	2	13,556	**0,001**
	Partially	93	152,58			

When Table 5 is examined, it is found that there is a statistically meaningful difference between the groups of students, who are satisfied of the department or not in terms of conflict resolution styles ($p<0.05$). A meaningful difference is found in giving up style of conflict resolution originating from students, who are partially satisfied with the department ($p<0.05$). Obliging strategy is meaningfully different in comparison to other methods of conflict resolution in terms of being satisfied of the department ($p<0.05$). "I try to obliging" style of obliging strategy is meaningfully different in students, who are satisfied with the department, and in the case of "I use verbal expressions to my friends" style is meaningfully different in students, who are not satisfied with the department ($p<0.05$). The style of "I give up, but I make the others feel how much I have suffered" is meaningfully different in people, who are partially satisfied with the department ($p<0.05$). All the styles except for this style is determined to be meaningfully different in people, who are not satisfied with the department ($p<0.05$).

Table 6: The Relationship Between CSAS of Nursing Students and Styles of Conflict Resolution

Conflict Resolutaion Styles	**CSAS**	
	r_s	**p**
11. I accept help from other people in deciding who is right.	0,147	0,010
12. I threaten the other person.	-0,145	0,011
17. I am rather aware of the requirements of other people in a conflict.	0,115	0,043
22. I can define what I feel.	0,119	0,037
23. I postpone the solution when I see the conflict is worsened.	0,114	0,045
25. I act respectfully toward other people.	0,131	0,022
27. I am aware of what I and the opposite person feel.	0,116	0,042
29. I develop new skills in order to help the people who experience conflicts around me.	0,122	0,033

In conclusion of the correlation analysis, it is determined that there is a negative relationship in the style of "I threaten the other person" between CSAS levels and styles of conflict resolution, and a positive, weak relationship in other styles.

DISCUSSION AND RESULTS

This research is conducted to determine styles of conflict resolution that nursing students use and communication skills and to examine the socio-demographic characteristics that affect these.

In accordance with the results obtained from the study, among the styles of conflict resolution of students, it is found that students use obliging and compromising styles more. The method of conflict resolution with the highest average is "being respectful" and with the lowest average is "threatening the other person." In the study Sargın et al. (2007) made with teacher candidates, the highest average is "being respectful," similar to this study. Sargın et al. (2007) found that the style with the lowest average is "I seem like I am suffering, and I arouse pity." Kantek and Gezer (2009) found in the study they made with nursing students that nursing students use integrating and obliging styles more and dominating style the least. In the study conducted by Sportsman and Hamilton (2010), it is found that nursing students use compromising as conflict resolution style. These results show that nursing students tend to use similar conflict resolution styles with different samples.

In this study, the average of communication skill scores of students is found to be 81.24. In the studies, the CSAS averages are found to be 73.75 in the study of Tutuk et al. (2002), X=101.69 in the study on nursing students of Bingöl et al. (2011), X=78.60 in the study on students in management department. In the light of findings that are obtained, it can be stated that nursing students have communication skills at medium-good level.

In this study, among the conflict resolution methods, averages of "admitting wrong behavior without believing," "giving up," "threatening the other person," "delaying the resolution when a pro is seen in the conflict" found higher on behalf of males. In the study Sargın et al. (2007) conducted with teacher candidates, "seeming to agree," "threatening the other person," and "physical violence" found more meaningful on behalf of males. In the study Chan et al. (2014) conducted with nursing students, in terms of integrating, dominating, and compromising strategies, gender is an important predictor. In the study Gündoğdu (2010) conducted with adolescents, problem solving points as a conflict resolution style of female students are stated to be higher than male students'. It can be claimed that females usually tend to show positive and constructive solving styles.

In this study, it is found that the CSAS point average does not show any difference depending on gender. In the studies conducted by Apaydın Demirci and İkiz (2017) with students from department of child development, Bingöl et al. (2011) with students from department of nursing and midwifery, Gülbahçe (2010) with teacher candidates, and İrak et al. (2017) with students from vocational school of health services, it is stated that there is not any difference in terms of CSAS point averages. In the studies conducted by Korkut Owen and Bugay (2014) with university students, Duğan et al. (2017) with international and Turkish students, Özerbaş et al. (2007) with teacher candidates, and Yıldız (2016) with religious official candidates, it is stated that

communication skills of female students are higher than male students. It is possible to find studies that support or contradict with our study in the literature. Although studies claiming that communication skill levels of women are higher are more common in the literature, nursing profession is a profession that good communication skills are needed to be shown without paying attention to gender. It is thought that education given contributes to this outcome.

In this study, conflict resolution methods such as trying to understand the other person's point of view, trying to obliging, consulting someone on making a decision about who is right, recognizing the needs and emotions of the other person and resolving conflicts that others have, there is a meaningful difference on behalf of 21 year olds and above. In the study of Sargın et al. (2007), it is found that there is a positive relationship between recognizing own feelings and feelings of the other person and age. In the study Sargın (2010) conducted with teacher candidates, it is stated that conflict and violence awareness levels of people between the ages 21-25 is higher than that of people between the ages 18-20. In the study Aral et al. (2016) conducted with teachers, it is reported that the 27-31 age group uses behavior strategies of approach-avoiding and the 32-36 age group uses private-public behaviors. In the doctoral dissertation of Akgün Çıtak (2006), the conflict resolution point average of integrating and avoiding are significantly higher in the 19-25 age group than the 26 year olds and above age group.

In this study, CSAS points of students, who are 21 year olds and above are found to be significantly higher. In the study conducted by İrak et al. (2017), it is stated that communication skill points of 26 year olds and above are the highest in comparison to other groups. In the studies of Tutuk et al. (2002) on nursing students, Apaydın Demirci and İkiz (2017) on students from the department of child development, and Görmüş et al. (2015), it is found that there is not any meaningful difference of age on communication skills. In order the effect of age on communication skills to be understood better, it is thought that a study conducted with working groups will give healthier results.

Depending on where students have lived for the longest time, point averages on integrating, obliging, and compromising styles of students, who have lived in a village are significantly higher than the others, and dominating and avoiding styles of students, who have lived in a city are significantly higher than the others.

In terms of communication skills and total point averages, it is determined that there is a difference between grades, and the highest point average belongs to students in their 4^{th} year and the lowest belongs to students in their 1^{st} year. In the study of Tutuk et al. (2002), it is stated that as students skip grades, their communication skills increase; in the study of Gülbahçe (2010) with teacher candidates, it is stated that in terms of communication skills, 1^{st} grade students have the lowest point average; and in the study of Yıldız (2016) with religious official candidates, it is stated that communication skill points of 4^{th} graders are higher than 1^{st} graders. In the studies of Apaydın Demirci and İkiz (2017), Bingöl et al. (2011), and İrak et al. (2017), it is found that there is not a difference between grades. It is considered that the courses taken by students may affect these results.

Except for the factors discussed above, point averages of Conflict Resolution Styles are determined to be statistically meaningfully different among the groups

separated depending on number of siblings, family type, place they live now, level of education and profession of father, level of education and profession of mother, economic condition of family, GWPA, THEE, and satisfaction of department. A meaningful difference in point averages of communication skill levels are found in groups depending on education level and profession of father, where student lives currently, THEE, number of siblings, and economic condition of family.

In this study, according to the data obtained from students, it is found that there is a positive, weak relationship between conflict resolution styles and communication skills but a negative relationship with the style "I threaten the other person." In the study of Kaymak and Keskinkılıç Kara (2016), a positive, high level of relationship between communication skills and conflict resolution strategies that are used is determined. Şahin (2010) stated that communication levels in accordance with data obtained from both directors and teachers are a very important predictor in conflict management.

In conclusion, it is seen that there are many factors that affect communication skill levels and change the methods used in conflict resolution. Culture also has an important effect with the other problems that students usually have in communication. In societies like ours in which the power distance is high, communication skills and methods used in conflict resolution also change. Students are needed to be aware of their own needs and emotions and also to gain skills for them to transfer these to the others in the most proper and respectful way. Even though there are sociology, interpersonal communication, and psychology courses given in the nursing curriculum, it is considered that these skills are needed to be gained to people by methods such as role-playing and drama.

REFERENCES

Akgün Çıtak, E. (2006). *The effect of conflict mangement skills training on nurses conflict skills, conflict management ways and burnout.* Unpublished doctoral dissertation, Ege University Health Science Institution, İzmir, Turkey.

Apaydın Demirci, Z., & İkiz, S. (2017). Çocuk Gelişimi öğrencilerinin iletişim becerileri ve empatik eğilim düzeyleri arasındaki ilişki: Bilecik Şeyh Edebali Üniversitesi örneği. *Uluslararası Sosyal Araştırmalar Dergisi*,10(54):679-685.

Bello, O. (2017). *Effective communication in nursing practice: A literatüre review*. Unpublished Bachelor's Thesis. Yrkeshögskolan Arcada, Finland.

Bingöl, G., & Demir, A. (2011). Communication skills of students of Amasya medical vocational school. *Göztepe Tıp Dergisi* 26(4):152-159.

Bozoğlan, B. (2010). *Awereness level concerning conflict and violance and their conflict resolution styles of university students in Balkan Countries*. Unpublished doctoral dissertation, Selçuk University Social Science Institute, Konya, Turkey.

Buckman, R. (2001). Communication skills in palliative care. *Neurologic Clinics, 19*(4):989-1004.

Canary, D.J., & Spitzberg, B.H. (1990). Attribution biases and associations between conflict strategies and competence outcomes. *Communication Monographs*, 57:139-151.

Chan, J.C.Y., Sit, E.N.M., & Lau, W.M. (2014). Conflictmanagement styles, emotional intelligence and implicit theories of personality of nursing students: A cross-sectional study. *Nurse Education Today*, 34:934-939.

Duğan, Ö., Balcı, E.V., &, Tiryaki, S. (2017). Comparison of communication skills of foreign students and Turkish students: sample of Usak University. *The Journal of Social Science*, 13:227-242.

El-Sayed, A.S.Z., & Mouse, M.A.E-G.A. (2015). The ımpact of cooperative learning in teaching communication skills for psychiatric nursing students. *The Eurasia Proceedings of Educational & Social Sciences (EPESS),*3:74-77.

Görmüş, A.Ş., Aydın, S., & Ergin, G. (2013). Examining communication skills of business administration department students within the context of sex roles. *The Journal of Social Science*.15 (1):109-128.

Gross, M.A. & Guerrero, L.K. (2000). Managing concflict appropriately and effectively: An applcation of the competence model to Rahim's organizational conflict styles. *Internatioal Journal of Conflict Management*, 11(3):200-226.

Gülbahçe, Ö. (2010). Evaluation of student's communication skills at K.K. education faculty. *Atatürk Joumal of Physical Education and Sport Sciences (atabesbd)*, 12(2):12-22.

Gündoğdu, R. (2010). Assessment of conflict, resolving, anger and aggressiveness levels of 9th grade students in terms of certain variables. *Çukurova University Institute of Social Scciences*, 19(3):257-276.

Izgar, H. (2013). Research about school managers' conflict resolution styles. *Bayburt Üniversitesi Eğitim Fakültesi Dergisi*, 8(2):107-126.

İrak, H., Taşcıoğlu, R., Dal, M., & Tunç, Y. (2017). Communication skills of the health services vocational school students: sample of Iğdır University. *Journal of Atatürk Communication*, 14:187-202.

Kantek, F., & Gezer, N. (2009). Conflict in schools: Student nurses' conflict management styles. *Nurse Education Today*. 29:100-107.

Kaymak, M.S., & Keskinkılıç Kara, S.B. (2016). The relationship between school managers' communication styles and conflict management strategies. *Yalova Üniversitesi Sosyal Bilimler Dergisi*, 6(12):349-364.

Korkut Owen, F., & Bugay, A. (2014). Developing a Communication Skills Scale: Validity and reliability studies. *Mersin University Journal of the Faculty of Education*, 10(2):51-64.

Korkut, F. (1996). İletişim Becerilerini Değerlendirme Ölçeği'nin geliştirilmesi: Güvenirlik ve geçerlik çalışması. *Turkish Psychological Counseling and Guidance Journal*, 2(7):18-23.

Korkut, F. (1997). Üniversite öğrencilerinin iletişim becerilerinin değerlendirilmesi. IV. Ulusal Eğitim Bilimleri Kongresi Kitabı, 10-12 Eylül, Anadolu Üniversitesi, Eskişehir. https://www.pegem.net/Akademi/kongrebildiri_detay.aspx?id=100456

Kozan, M.K. (2002). Subcultures and conflict management style, *Management International Review*, First Quarter, 42(1):89-105.

Kozan, M.K., & Ilter, S.S. (1994). Third party roles played by Turkish managers in subordinates' conflicts, *Journal of Organizational Behavior*, 15:453-466.

Kumcağız, H., Yılmaz, M., Balcı Çelik, S., & Aydın Avcı, İ. (2011). Communication skills of nurses: Samsun sample. Dicle Medical Journal, 38(1):49-56.

Özerbaş, M.A., Bulut, M., & Usta, E. (2007). The ınvestıgatıon of pre servıce teachers' perceıved communıcatıon skılls level. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi (KEFAD),* 8(1):123-135.

Rahim, M.A. (1986). Referent role and styles of handling interpersonal confliict. *The Journal of Social Psychology*, 126(1):79-86.

Rahim, M.A. (2002). Toward a theory of managing organizational conflict. *International*

Journal Of Conflict Management, 13(3):206-235.
Rahim, M.A., & Magner, R.N. (1995). Confirmatory factor analysis of the styles of handling interpersonal conflict: First-order factor model and its invariance across groups, *Journal of Applied Psychology*, 80 (1):122-132.
Sargın, N. (2010). Examining prospective teachers' conflict and violence awareness levels by some variables. *Educational Administration: Theory and Practice*, 16(4):601-616.
Sargın, T., Tor, H., Bozoğlan, B., & Köroğlu, M. (2007). The methods that teacher candidates use in solving conflıcts have been searched from the point of different variables. *Selçuk Üniversitesi Eğitim Fakültesi Dergisi*, 23:379-389.
Sportsman, S. & Hamilton, P. (2007). Conflıct management styles ın the health professıons. *Journal of Professional Nursing*, 23(3):157-166.
Şahin, A. (2010). İlköğretim okulu yöneticilerinin kişiler arası iletişim becerileri ve çatışma yönetimi stratejileri arasındaki ilişki. *Milli Eğitim Dergisi*, 40(188):125-143. Retrieved from http://dergipark.gov.tr/milliegitim/issue/36196/407021
Tavşancıl, E. (2010). *Tutumların ölçülmesi ve SPSS ile veri analizi*. 4. Baskı. Ankara: Nobel Yayıncılık.
Tokat, B. (1999). Örgütlerde çatışma ve çatışmanın yönetimi. *Dumlupinar University Journal of Social Sciences*, 1:23-40.
Turkish Language Association (2006). http://www.tdk.gov.tr/index.php?option=com_gts&kelime=%C4%B0LET%C4%B0%C5%9E%C4%B0M
Tutuk, A., Al, D. & Doğan, S. (2002). Hemşirelik öğrencilerinin iletişim becerisi ve empati düzeylerinin belirlenmesi. C. Ü. Hemşirelik Yüksek Okulu Dergisi, 6(2):36-41.
Uyer, G. (2000). Nurse-Patient communication and its importance from patients' perspective. *Turkiye Klinikleri Journal of Medical Ethics-Law and History*.8:90-94.
Verdener, R.F. (1999). *Communicate!* (*12th Ed*). Belmont CA: Wadsworth Publishing Company.
Yıldız, Z. (2016). The ınvestigation of perceptions related to communication skills of chaplain candidates according to several variables. *Journal of Divinity Faculty of Hitit University*, 15(29):107-130.
Yüksel, H. (2009).İletişim Kavramı Tanımı, Genel İletişim (Ed: Uğur Demiray). Ankara: Pegem Akademi Yayıncılık.

Chapter 109

Occupational Risk Factors That Prehospital Care Providers Encounter

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INTRODUCTION

The risk that DSÖ (2002) defines as the factor causing unwanted outcomes is a generally unpredictable yet time varying and manageable phenomenon (Özkılıç, 2011). Today, risks have become an integral part of both social and business life. In Turkey, workplaces where health services are offered within the scope of Law No. 6331 on Occupational Health and Safety are gathered under the heading "human health and social service activities" on the workplace hazard class list. Ambulance services collected under this activity code have been identified as "patient transportation activity in the ambulance" under the code 869004 NACE and have categorised within the hazardous class (in the high risk occupation group in other countries) (28509, The official Gazette, 2012).

Pre-hospital emergency medical services, which is an important part of general health services in Turkey, regularly started to provide services to 6 cities in 1994 under the name of "112 Emergency Assistance and Rescue Services", extended to the whole of the country in 1997. In 2003, the name of the service was changed to "Emergency Health Services" (Tekingündüz, 2008).

There are at least three staff members who are a physician and / or an ambulance and emergency care technician (paramedic) and an emergency medical technician (EMTs) in the "emergency ambulances" of the Ministry of Health, the driver is added to the team if necessary. At the same time, either paramedic or ATT can carry out driving duty in an ambulance (26369, Official Gazette, 2006). Emergency Medical Technicians (EMTs), personnel who are especially work in the control command centers are graduated from the medical vocational high school and who are the first to intervene in emergency trauma and injuries (Sağlık İstatistikleri Yıllığı, 2014). Paramedic is a graduate of associate degree program who has been trained in vocational schools of medical services of universities for 2 years regarding ambulance and emergency care technician (26369, Official Gazette, 2006)

The team is obliged to provide the most effective and fastest care service possible at the scene, to maintain care during ambulance and patient transportation, and to move the patient to the appropriate center for the definitive treatment, in order to save the human life. Pre-hospital emergency health workers who take part in the hazardous class are exposed to risks in addition to employees who work in the hospitals the physical (29

types), chemical (25 types), biological (24 types), and ergonomic (6 types) psychosocial (10 types) risks to which are subjected in hospitals are facing different organizational and psychosocial hazards/risks (CDC Guidelines, 2006). Pre-hospital emergency health workers in the dangerous class are exposed to different organizational and psychosocial risks, depending on the nature of the work they are doing, in addition to the risks they are exposed to. Employees in dangerous duties are exposed to other risks in addition to the risks that other employees are exposed to in hospitals. They perform their tasks in the eyes of those unfamiliar people, under unpredictable, uncontrolled, isolated /combined stressors, in 24-hour shifts. The team has a responsibility to care for a large number of patients by making the right decision within the golden minutes/hours on the death and life line (27181, Official Gazette, 2009). Therefore, in addition to the risks arising from the service itself, in the process of decision-making, care and treatment the rate of falling into medical malpractice is rising for employees who feel themselves under constant pressure, insecure, tired and exhausted.

Prehospital providers are exposed to various stressors, which are potentially integral part of their jobs. This occupational group is exposed to severe factors besides institutional risks such as excessive workload, shifts and long working hours, pressure for rapid response times, economic efficiency, different waiting times between calls; acute and chronic stressors such as potentially traumatic injuries, infections, latex allergy; musculoskeletal and vascular disorders, role conflicts, care for addicted persons, depression, violence, physical and empathic fatigue, burnout and post traumatic stress syndrome; ambulance accidents and death. Frequently encountered stressors are studied under biological, physical, ergonomic, chemical and psychosocial risks (CDC Guidelines, 2006) were shown in Figure 1.

The purpose of this study is to identify hazards and risks associated with occupational life, making use of studies conducted on pre-hospital emergency care providers.

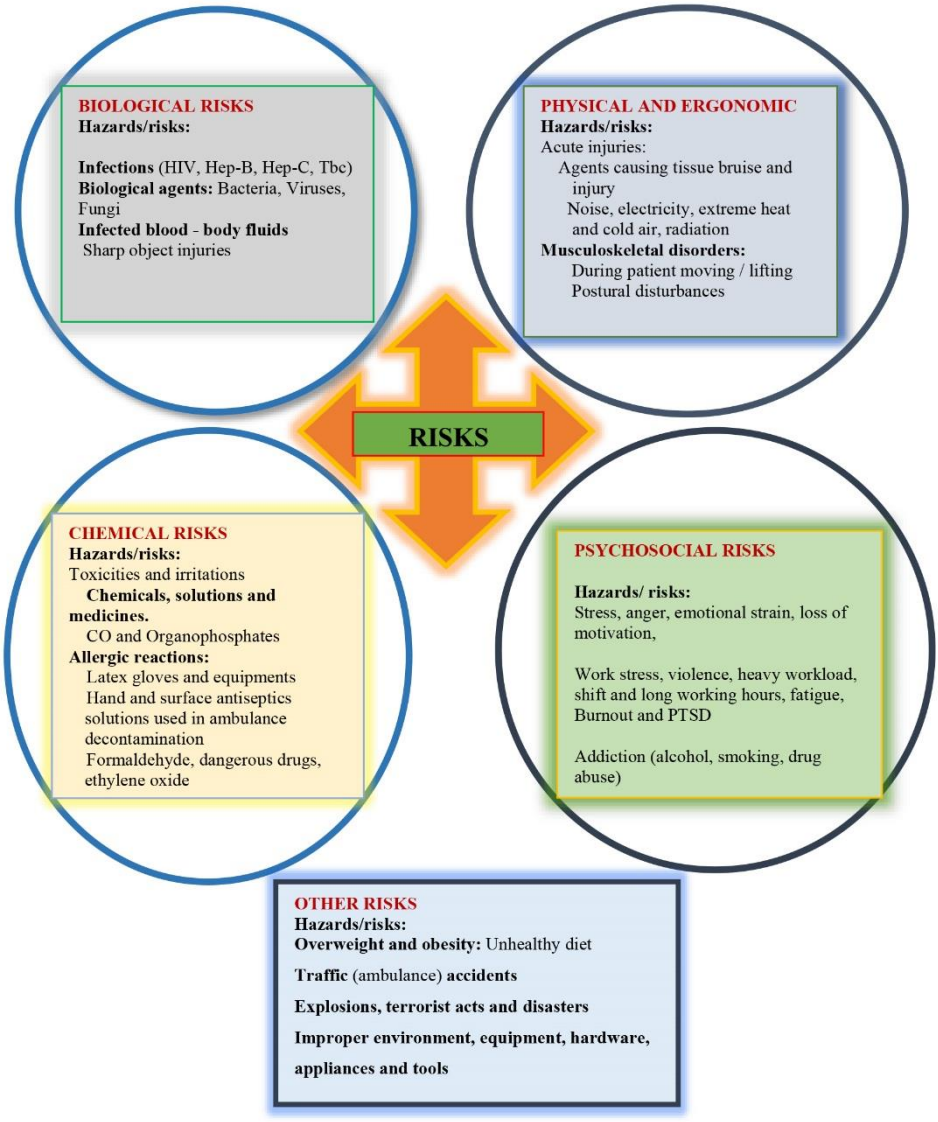

Figure 1. Risk factors that are frequently exposed by pre-hospital emergency care providers

Table 1. Studies regarding the risk factors frequently exposed by pre-hospital emergency care providers

Risk	Study	Work Theme	Method	Sample	Principal Findings
Physical	Gülen et al., 2016, Istanbul, Turkey	To analyze locations, descriptions and results of work-related injuries sustained by EMTs and paramedics in Turkey.	A Cross-sectional survey Questionnaires (online)	901 (660 EMTs and 241 paramedics) members of staff	Work-related Injuries (WRIs): 81.4% Verbal abuse: 94.9% Physical violence: 39.8% Needle stick injuries: 52.2% Ocular exposure to blood and other bodily fluids: 30.9% Sharp injuries: 22.5%
	Weaver et al., 2015, USA	Shift lenght, crew familiarity, occupational injury and illness	A retrospective cohort study (3yr)	4382 EMS employees: 14 EMS agencies with 37 base sites.	WRIs: 74.2% Illness: 25.8% Risk of occupational injury and illness was lower for shifts ≤8h compared with shifts >8 and ≤12 h, risk of injury was 60% greater for employees that worked shifts >16 and ≤24 h.
	Rahimi et al., 2015,Tehran, IR Iran	Low back pain, QoL, Depression and Anxiety	A cross-sectional survey Questionnaires	180 nurses working as EMTs	Low back pain: 71.8% There were associations between the prevalence of pain and depression (p=0.049), pain and awareness (p=0.035), stress and job satisfaction (p=0.024).
	Roberts et al., 2015, Victoria, Australia	Occupational risk of musculoskeletal and mental injury among ambulance officers and paramedics.	Victorian Compensation Research Database (CRD) 2003-2012 Review of records: 214.355 WC claims Six occupational groups	4 direct care health-related occupational groups: Ambulance officers and paramedics; nurse professionals; carers and aides; social and welfare professionals. 2 reference occupational groups: managers and other professionals; tradespersons and labourers.	Musculoskeletal: 54.2% Lower back: 15% Upper limb: 13.2% Mental: 9.4% Ambulance officers and paramedics risk of lower back MSK and mental injury was 13 times higher than the nurse (HRs 57.6 vs 4.4 and 17.77 vs 1.29).

	Khashaba et al., 2014, Mansoura City	Psychosocial stress and related hazards (Burnout, depression and Post Traumatic Stress Syndrome)	A comparative cross-sectional survey Questionnaires	280 participants: 140 EMRs 140 Non Emergency Workers	Traumatic events: 88.6 % Serious Accidents: 87.8% Burnout and PTSD were significantly higher among EMRs compared with comparative group.
	Patterson et al., 2012, Pittsburgh	To determine the association between Poor sleep, fatigue and self-reported safety outcomes among emergency medical services (EMS) workers	A cross-sectional survey Questionnaires	2,253 Managers (The National EMS Management Assoc)	Poor sleep: 6.9% Fatigued: 55% Injury: 17.8% Medical error: 41% Safety-compromising behavior: 89.6%
	Suyama et al., 2009, Pittsburgh	Types and severity of injuries encountered by public safety personnel during routine work conditions.	Review of records	1328 Public Safety Provider (850 firefighters 194 EMS providers 850 Police Officers).	Minör trauma:76% EMS 17% Fire 35% Police 48% Motor vehicle: 5% EMS 22% Police 76% BBP exposure: 12% EMS 33% Fire 35% Police 32%
Physical	Regehr and LeBlanc 2017, Toronto, Canada	This review paper discusses a program of research that has examined the effects of prior critical incident exposure, acute stress, and current posttraumatic symptoms on performance and decision making in paramedics and other workers	Questionnaires Simulation methods (video simulators and, human-patient simulators, standardized patients	84 participants (Police officers, police Communicator, Paramedics (22), and Child Protection Workers).	In paramedics: Low trauma symptom: 27.3% Moderate range:9.1% High range:13.6% Severe range:50%
Violence	Gormley et al., 2016,Washington, USA	To describe the prevalence of violence directed at EMS personnel by type and source, and to identify characteristics associated with experiencing violence	Descriptive study design Questionnaire	1,789 Emergency Medical Technicians, Paramedic, Firefighters	Experienced at least one form of violence: 69.0% Verbal violence: 67.0% Physical violence: 43.6% Paramedics had nearly triple the odds of experiencing physical (OR: 2.67, 95% CI: 2.06-3.46) and verbal (OR: 2.63, 95% CI: 1.99-3.46) violence as EMTs.

	Çıkrıklar et al., 2016, Turkey	Violence againts emergency department employees	A cross-sectional survey Questionnaires	323 Emergency Employees	Verbal or physical violence: 74%. Violence is the most common problem for EMS workers that has a strong negative effect on employee satisfaction and work performance.
	Bigham et al., 2014,Canada	Describe and explore violence experienced by paramedics in the ground ambulance setting.	A cross-sectional survey Questionnaires	1884 Paramedics invited to participate and 1676 responded	Any form of violence: 75.2% Multiple forms of violence: 74% Verbal abuse: 67.4% Physical assault: 26.2% Sexual assault: 2.8%
	Çelebi 2016, Turkey	To identify the violent encounter of employees who work in 112 Emergency Healthcare stations and examine the effect of this situation on burnout syndrome	A cross-sectional survey Questionnaires	116 Emergency Medical Services Providers	Verbal violence: 74.1% Physical violence: 11.2%
Violence	Suserud et al., 2002, Swedish	The aim of the study was to describe how ambulance personnel perceive, how they are subjected to, and are influenced by, threats and violence in their day-to-day work	Questionnaire survey	66 Ambulance Personnel	Threats and/or violence: 80.3%
PTSD	Rybojad et al., 2016, Poland	Assess the influence of sociodemographic and occupational factors on PTSD and suggest preventive strategies in paramedics.	Prospective descriptive study Author Questionnaire and Impact of Event Scale-Revised	100 Paramedics	Total prevalence:40% Women: 64.3% Men: 36.1% Paramedics have a high rate of PTSD.

	Halpern et al., 2012, Canada	The relationship between endorsing any domain item and outcomes of the critical incident.	A cross-sectional survey Questionnaires	223 EMT/Paramedics	64.6% had experienced between one and five career critical incidents. Emotional sequelae are associated most strongly with EMT/paramedic' personal experience.
	Johnson et al., 2003, Västra Götaland, Sweden	To estimate the prevalence of trauma related disorders, a representative group of 362 ambulance personal from the county of Västra Götaland in Sweden	A cross-sectional survey Questionnaires	362 Ambulance Personnel from the county of Västra Götaland	PTSD caseness: 21.5%
	Johnson et al., 2004, Västra Götaland, Sweden	To investigate the prevalence of post-traumatic stress symptoms among professional ambulance personnel in Sweden	A cross-sectional survey Questionnaires	223 of the Ambulance Personnel	PTSD situation is 15.2%
Burnout	Atan and Tekingündüz, 2014, Turkey	An investigation into the Burn-out level, perceived work stress and job satisfaction of paramedics in terms of personal characteristics	A cross-sectional survey Questionnaires	363 Ambulance Personal	Personal achievement: 3.78±0.54 Emotional Burnout: 2.69±1.79 Depersonalizasyon: 1.97±0.71
Fatigue	Pyper and Paterson, 2016, Australia	To investigate levels of fatigue, stress and emotional trauma in rural and regional ambulance personnel	A cross-sectional survey Questionnaires (Online)	134 rural and regional ambulance personnel	Fatigue: 55.9% (35% severe; 20.9% mild). Mild-extremely severe stress: 21.5% Mild-severe emotional trauma: 73.9% High levels of fatigue and emotional trauma. Negative effects of fatigue including errors in drug administration and falling asleep while driving.

	Paterson et al., 2014, Australia	To explore factors paramedics recognise as contributors to fatigue	Qualitative methodology and cross-sectional survey	49 Australian Paramedics	Six themes emerged from the 107 responses: *One of the most common reasons cited for fatigue related to "working time". *Long night shifts and an inability to rest during night shifts were specifically associated with fatigue and performance impairment.
Fatigue	Sofianopoulos et al., 2011, Australia	To investigate the impact shift work on physical fatigue, sleep and psychological factors among paramedics in Australia	A cross-sectional study design, self-reporting standardised questionnaires	60 Paramedics	Nine out of ten (92%, n=55) of paramedics reported having experienced fatigue in the last 6 months, with 88% (n=53) believing it had affected their performance at work. The PSQI found 68% (n=41) of participants suffered poor quality sleep. Depression was found to be mild among 27% (n=16) and moderate among 10% (n=6) of respondents.
Sleep Disorders	Patterson D. et al., 2010, Pennsylvania, USA	To characterize sleep quality and its association with severe fatigue in EMS providers.	A cross-sectional survey Questionnaire	119 EMTs, Paramedics, Medical Directors, EMS Administrators and other Prehospital Personnel.	Severe fatigue: 44.5% *Sleep quality and fatigue status in EMS providers are at unhealthy levels.
	Pirrallo et al., 2012, USA	To investigate the prevalence, demographic, and work associations of self-reported sleep complaints in US Emergency Medical Technicians.	Study design and Questionaire Development	1854 EMTs (EMT basic and EMT paramedics)	71% of EMTs met criteria for one or more of the seven sleep problems. Study reaffirmed that there is a relation between increased sleep problems and poorer overall health status in EMS providers.
Infection	Gülen et al., 2015	To evaluate locations, descriptions and results of work-related injuries	Descriptive study	901 members of staff (660 EMTs and 241 Paramedics)	52.2 %: Contaminated neddle stick injuries 30.9 %: Ocular exposure to blood and other bodily fluids 22.5 %: Contaminated sharp injuries

	Önal, 2015, Burdur, Turkey	In order to determine the risk of occupational hazards in Emergency Medical Care Staff	A descriptive S-study Face-to-face questionnaire	210 EMS Workers (Physicians, EMTs, Paramedics, Drivers)	Occupational accidents and illness risk: 9% Musculoskeletal discomfort: 44.3% Risk of contact with blood and body fluids: 22.9% Job stress: 58.2% Traffic accidents in the ambulance:11%

BIOLOGICAL RISKS

Health workers who are in close contact with the patient have a 10 times higher risk of infection than other occupational groups (TTB, 20008). In addition, there is an increased risk of infection transmission during the invasive procedures and first care of traumatic patients that the Emergency health team working in unpredictable hazards and unsafe conditions performed in the narrow field and on the moving vehicle (ambulance).

Infective agents usually transmitted due to contact with blood and bloody body fluids resulting in injuries to cutter / driller tool (from open wound, mucous or prick) or breathing the same air as the patient, inhalation of secretions in the air during intubation and aspiration.

Today, 20-30 blood-borne pathogens, especially Hepatitis B, Hepatitis C, Hepatitis D, Crimean Congo Hemorrhagic Fever and HIV, have become occupational diseases of healthcare workers. The World Health Organization reported that due to prick after an infected patient, the risk of developing HIV infection was 0.3%, hepatitis C risk 3%, and hepatitis B risk 6-30% (WHO, 2003). According to international literature (Suyama *et al*., 2009, Thomas *et al*., 2017) the risk of exposure to contagious diseases among emergency health workers continues despite the mandatory protective measures of the disease control and prevention committee. Research (Thomas *et al*., 2017, Reed *et al*., 2003, Sayed *et al*., 2011) has reported that the incidence of infectious diseases continues to be a major problem of the system, while the incidence of infectious diseases in emergency health workers is gradually declining.

Current studies conducted on prehospital emergency health workers in Turkey (Oğan H, 2014, Yılmaz *et al*., 2016, Gülen *et al*., 2016) show that the vast majority of influences, such as drilling-cutting injuries/suspicious contaminated neddle stick (accidental percutaneous injury) and visual contact with infected secretions, occur during the operations carried out in the ambulance while moving. In the study of Gülen and colleagues (Yılmaz *et al*., 2016), contaminated needle penetration was reported as 52.2%, blood-body fluid eye contact 30.9%, contaminated cutter injury 22.5%. In Önal's study (2015), contact with blood and body fluids was found to be 22.9%. On the other hand, Oğan's study (2014) reported that between 1998 and 2014, after a contaminated neddle stick 6 health workers lost their lives because Crimean Congo Hemorrhagic Fever, 3 of them were ambulance attendants.

PHYSICAL / ERGONOMIC RISKS

In the literature, (Sterud et al., 2006) the exposure of paramedics to traumatic events is 80-100%. Emergency health care providers frequently experience

musculoskeletal (CSI) disorders due to falling, slipping, and hitting caused by unfavorable grounds, equipment, hardware, devices and instruments during lifting, moving and transporting patients / equipment with basic duties. The inadequacy of ergonomic regulations also seriously affects this situation (Şahin, 2014, Bayhan, 2005). Likewise, prehospital emergency health workers carry on the task of lifting and transporting 104 -125 kg loads (10-15 kg emergency bag, 4-7 kg defibrillator / monitor, 30-40 kg ambulance trolley, 10-13 kg chair stretcher and patient load of 50 kg on average) during case management and in 24 hour shifts without frequent rest periods (EMS, 2011). As a result, disproportionate or inappropriate use of body parts during heavy physical workload, or lack of proper body mechanics and handling techniques, weight lifting beyond the physical capacity of the employee, forced posture and repetitive movements cause the back, waist and neck pain, primarily disc herniation.

As a matter of fact, (Robert *et al*., 2015, Kim *et al*., 2012, Khashaba *et al*., 2014, Weaver *et al*., 2015, Patterson *et al*., 2012) the studies reported that work-related traumas in emergency care workers are the most serious stressors, the frequency varies between 11.4% -88.6%, and the number of GCT (musculoskeletal system) injuries is 13 times higher than other health professions. In a study conducted by Tokuç *et al.* (2011) it was determined that 2/3 of the prehospital emergency medical personnel complained of back and low back pain and 1/2 of the neck pain. Rahimi *et al*. (2015) found that while 50.7% of the emergency medical technicians had an average awareness of the basic principles of back care; the majority (71.8%) of them had at least one type of back pain. There were associations between the prevalence of pain and depression (P: 0.049), pain and awareness (P: 0.035), and stress and job satisfaction (P: 0.024).

On the other hand, physical risk factors such as noise, dust, radiation, working environment heat, inadequate or over-lighting can prepare work accidents and occupational diseases for all health workers (TTB, 2008). Hygiene-related factors such as ambient temperature, noise and lighting are very difficult to control for emergency medical staff working in the pre-hospital open area and in the ambulance. Likewise, in the open field case management process, adjusting the thermal conditions of the working environment during hot summer or cold winter days, reducing the problem of inadequate lighting, lowering the noise threshold between 58-70 dB in the ambulance patient cabin and 60-84 dB in the front driver cabin (Price & Goldsmith, 1998) does not seem possible. Studies have reported that the increase in body temperature caused by hot stress has acute effects such as moderate hypotension, peripheral vasodilation and loss of consciousness (NIOSH, 2016), and even death when the core temperature rises above 5 °C (Marchetti *et al*., 2016). Similarly, it has been reported that exposure to continuous bright light in the working environment lead to breast cancer, inadequate lighting, especially in open field cause secondary accidents, working in environments that exceed noise thresholds for occupational hygiene (in ambulance; 58-110 Db) (Ekşi, 2015) leads hearing loss, hypertension, sleep disturbances and performance loss (TTB, 2008).

CHEMICAL RISKS

Disinfectants, hand antiseptics, latex materials and some medicines are among the most threatening risks to health care workers, which are among the 300 harmful chemical components used in health institutions. Likewise, the use, storage and interaction of these substances require strict control (Özkan & Emiroğlu, 2006). In

health workers, latex glove allergy is common (2.7-11.4%) (Caballero & Quirce, 2015), and causes urticaria or anaphylaxis. (Zahariev *et al*., 2012). Mazurek and Weissman (2016) reported that disinfectants, cytotoxic and antiviral drugs caused allergies and asthma; Sylamlal *et al.* (2009) identified a lifetime prevalence of asthma as 11.5% for occupational exposure in this group.

PSYCHOSOCIAL RISKS

Work stress: By nature, emergency health care is a field that involves more work stress than other work environments (Tokuç *et al*., 2011). Emergency health workers offer service twenty-four by seven in challenging conditions on the line of life and death, by racing over time, in the presence of stressed people are at greatest risk, such as work stress, compassion fatigue, burnout and post-traumatic stress syndrome. In the studies conducted, (Önal, 2015; Tokuç *et al*., 2011) it was reported that 23-63% of pre-hospital emergency health workers were experiencing work stress, varying according to the cause.

Violence: Health workers are exposed to violence 16 times more than other service sector members and this action are frequently repeated in 112 ambulance services according to NIOSH (NIOSH, 2016). According to the World Health Organization, 8-38% of health workers are exposed to violence at any point in their working life (WHO, 2016). In a prevalence study conducted by Gormley *et al.* (2016) on EMTs, paramedics and firefighters, it was found that the paramedics were exposed to 2.5-3 times more violence in the last 12 months than the other emergency health workers (Gormley *et al*., 2016). Another study carried out by Magure and Smith (2013) showed that the occupational injury rate of prehospital emergency medical personnel is three times more than the national average for all other occupations.

Furin *et al.* (2015) verbal assault were reported by 88% although physical assault were 80%. Bigham *et al.* (2014) indicated that the majority of Canadian paramedics (75%) reported experiencing violence in the past 12 months. The most common form of violence reported was verbal assault (67%), followed by intimidation (41%), physical assault (26%), sexual harassment (14%), and sexual assault (3%). This study demonstrated that in paramedics the prevalence any form of violence 75.2%, multiple forms of violence 74%: verbal abuse 67.4%, physical assault 26.2%, and sexual assault 2.8%.

In previous studies (Suserud *et al*., 2002, Petzall *et al*., 2011, Boyle *et al*., 2007, Corbett *et al*., 1998)) conducted from Sweden, Australia, the United States, the rate of self-reported exposure to violence in the prehospital workplace ranges from 61 to 90%.

A research conducted in 2016 on paramedic and EMTs (Gülen, 2016), the frequency of physical violence was reported as 39.8% and the frequency of verbal violence as 94.9%. In the study of Çıkrıklar *et al.* (2016), the expose of verbal or physical abuse in pre-hospital emergency health workers was 74%; In Çelebi's study, verbal violence was found 74.1% and physical violence was 11.2% in the same profession group. The source of violence against healthcare workers is usually patients and patient relatives, and the dimension can range from psychological shock to physical injury, transient-permanent disability, or even death (Gülen, 2016).

Post Traumatic Stress Disorder (PTSD): Post-traumatic Stress Syndrome (PTSD) is above 20% and 4-10 times higher than the general population in EMSs who exposed to frequent trauma. In a sample of 362 ambulance workers in Switzerland,

PTSD was 21.5% and 2.6% in the general population (Johnson *et al*., 2003); in a study conducted on 225 ambulance workers in USA (Grevin, 1996), the PTSD frequency was 20%, 5% in males and 10% in females in the general population. According to Lowery *et al*. (2005) findings, 5-22% of pre-hospital emergency medical personnel experience PTSD. A recently conducted study by Rybojad *et al.* (2016) reported that the prevalence of PTSD in paramedics was 40.0% (women = 64.3%, men = 36.1%).

On the other hand, in the study conducted by Donnely (2012), it was reported that the structure of the occupation and the critical conditions encountered cause post-traumatic stress symptoms, which were reported to be associated with alcohol abuse and misuse; the prevalence of post-traumatic stress symptoms was 6.4% in prehospital health care workers.

Burnout syndrome: In the research (Van der Ploeg & Kleber, 2003, Alexander & Klein. 2001, Boudreaux et *al*. 1997, Aasa et *al*. 2005), burnout syndrome was found to be higher in the ambulance workers (8.6%) than in the general population (5.3%). Emotional exhaustion from the subscales of the scale was 12-26%; desensitization was 18-22%; decrement individual performance was 16-36%. Depression, anxiety, alcohol and drug use (<40%) are other common psychosocial distress among emergency medical technicians. In Atan and Tekingündüz's study (2014) on 363 ambulance staff about perceived job stress, job satisfaction and burnout level; individual performance score was highest **(**3.78 ± 0.54), followed by emotional exhaustion score (2.69 ± 1.79). As a result, the level of burnout in ambulance workers was low; job satisfaction was partly on the average; perceived job stress was on the average level.

In the current literature (Dikmen & Aydın, 2016), it has been reported that physical, emotional, social and mental exhaustion experienced in the process of helping (traumatizing, empathizing) tragic cases is defined as compassion fatigue and widespread in health workers as being more intense in nurses. It is considered to be a risk in almost half of the occupations that help people who have been traumatized (Wee & Myers, 2003). Compassion fatigue increases the frequency of occupational accidents and occupational diseases by leading tachycardia, blood pressure fluctuations, muscle tension, insensitivity, attention deficit, irritability and anxiety in employees (Cocker & Joss, 2016).

Addiction: Smoking, alcohol addiction and drug abuse are among the important risk factors in health workers. According to global tobacco research data (Global Adult Tobacco Survey, 2012), one in every four health workers is smoking. This rate is 23.5% for healthcare Ktechnicians and sress was shown as the most important reason (56.8%) for smoking (Koç *et al*., 2015). In Turkey, abuse and addiction of petidin (meperidin, dolantin) among health professionals is common because of the gain right to prescribe (Yargıç, 2009), the authority to apply analgesia-sedation and the ease of access to the substance (Bozdağ *et al*., 2013). Emergency medical technicians may be considered to be at great risk for drug abuse because of the authority to administer medicines without physician request and the ambulatory medicine open to misuse (27181, Resmi Gazete, 2009).

Fatigue: In previous studies (Van der Ploeg & Kleber, 2003, Patterson *et al*., 2010, Patterson *et al*., 2012, , it has been reported that emergency health workers are exposed to severe mental and / or physical fatigue between 9% and 55%. In a recent study by Pyper and Patterson (2016) on 134 ambulance personnel working at rural and

regional level in Australia, the fatigue rate was found to be 55.9%, 35% heavy and 20.9% moderate fatigue. In another study conducted in Australia on 60 Paramedics (Sofianopoulos *et al*., 2011), 92% of the sample group reported fatigue, 88% of them reported that their work performance was affected by fatigue and about half of them reported that they were dozing off while driving ambulance (Patterson *et al*., 2016). According to Patterson et al. (2016), one of the most important reasons for burnout is "working time". Long night shifts and restlessness during these shifts are particularly related to burnout and poor performance. Pirrallo *et al.* (2012) conducted on EMTs and paramedics in a study, it was reported that one or more sleep problems was 71%. In this regard, there is a relation between increased sleep problems and poorer overall health status in EMS providers.

OTHER RISKS

Vehicle accidents: Traffic accidents, which are a major cause of trauma and death worldwide, are a very important risk factor for prehospital healthcare workers. Likewise, traffic accidents involving ambulance have increased significantly when paramedics and EMTs, who also undertake ambulance driving, taking emergency cases to the appropriate medical centers, because of the time pressure, traffic jam, not giving way to ambulance. In studies conducted in Turkey, pre-hospital emergency health workers' exposure to traffic accidents varies between 31% and 81%. In Yilmaz and collegues's research (2016) on EMTs and paramedics, this rate was reported 31.9%, in Ekşi's study (2015) 69.4%, Gülen and collegues's study (2016) 81.4%. On the other hand, traffic accidents are the primary cause of work-related traumatic deaths. The annual mortality rate due to ambulance accidents in prehospital emergency medical personnel is 9.6 in one hundred thousand in the USA and 21.4 in one hundred thousand in Turkey. Similarly, an 83.2% increase in the use of ambulance in Turkey has increased the mortality rate by 40% (Furin *et al*., 2015). In fact, Ekşi (2015) pointed out that the number of cases increasing due to the 113% growth of the field of emergency health care service in the 5 years between 2009 and 2013 may be one of the important reasons for the increase in ambulance accidents. In addition, over-speed, transit superiority problem at crossroads, the transfer of driving duty to inexperienced EMTs and paramedics in ambulances since 2012, are shown as possible causes of increasing traffic accidents.

In terms of other risks, prehospital emergency health workers are facing severe threats such as obesity due to unhealthy eating (44.3%) (Önal, 2015), shifts and long working hours (Khashaba *et al*., 2014), absence of a period between calls, terrorist acts and natural disasters. Pre-hospital health personnel usually work in shifts of 16 or 24 hours. Therefore, the medical error rate is also increasing in parallel with the caseload intensity in the extended shifts. As a matter of fact, it has been reported in the literature (Kıyak, 2016) that long working hours may cause neurological and cardiovascular problems and there is a significant increase in the risk of work accidents after the 9th hour.

DISCUSSION AND CONCLUSION

In this compiled review of selected literature, it is clear that prehospital emergency health workers exposure a range of acute and chronic stress factors such as occupational injuries, illnesses, musculoskeletal disorders, violence, post traumatic

stress syndrome, burnout and fatigue. Injured and fatal traffic accidents involving ambulances are the most serious risk factor. On the other hand, the adverse effect created by a risk creates another risk, leading to exposure to combined risks. For example, workers with post traumatic stress syndrome experience sleep problems and exhaustion; shift and work overtime, intense workload, mental (empathic) and physical fatigue cause job accidents and increased rates of medical errors; non-ergonomic designs and repetitive heavy load lifting / handling cause musculoskeletal system disorders. Shift work, lack of a period between calls, and acute and chronic stress-related hormonal changes are affecting eating behaviors, preparing overweight and obesity.

As a result, prehospital caregivers provide uninterrupted servis under intense and heavy risk burden as well as under the pressure of time, in front of hostile patients and their relatives, in long shifts for seven days and twenty-four hours. Moreover, prehospital caregivers are exposed to unusual vulnerable and unprotected conditions, where possible risks can not be predicted, often can not be controlled even if noticed; they are working within the scope of a complex task definition such as rapid and appropriate care for emergency situations at critical threshold in the life-death line, maintenance and interventions during transport, and transportation to the nearest-appropriate center.

In this profession group, it is urgently needed to conduct large-scale scientific studies that examine risk assessment, risk analysis, risk management and the level of risk perception, which is an important component of risk management; to promote the use of safety-equipped equipments and universal/individual protectors that provide source control; to increase the protective immunity sensitivity and self-protection motivation; to regulate and supervise occupational health and safety training on a periodic basis to ensure patient transport within the safe speed limits.

REFERENCES

Ambulans ve Acil Bakım Teknikerleri ile Acil Tıp Teknisyenlerinin Çalışma Usul ve Esaslarına Dair Tebliği, Resmi Gazete Sayısı: 27181, Resmi Gazete Tarihi: 26.03.2009, T.C. Resmi Gazete, Ankara, 2009

Aasa U., Brulin C., Angquist K.A. and Barnekow-Bergkvist M. (2005). Work-related Psychosocial Factors, Worry and Health Complaints among Female and Male Ambulance Personnel. Scand J Caring Sci, 19:(3), 251-258.

Alexander D.A. and Klein S. (2001). Ambulance Personnel and Critical Incidents: Impact of Accident and Emergency Work on Mental Health and Emotional Well-being. Br J Psychiatry178 :(1),76-81.

Ambulances and Emergency Health Services, and Ambulance Services Regulation, The Official Gazette date: December 7, 2006, Number of the Official Gazette: 26369, T.C. Official Gazette, Ankara, 2006.

Atan M. and Tekingündüz S. (2014). An Investigation into the Burnout Level, Perceived Work Stress and Job Satisfaction of Paramedics in Terms of Personal Characteristics, NWSA-Social Sciences 9(3):54-69.

Bayhan S. (2005). The Level of Knowledge on Occupational Risks of Ankara University Cebeci Health School Nursing Students and Medical Faculty Nurses, Ankara University, Department of Public Health, Master Thesis, Ankara, 34.

Bigham B.L., Jensen J.L., Tavares W., Drennan I.R., Saleem H., Dainty K.N., et al. (2014). Munro G. Paramedic Self-reported Exposure to Violence in the Emergency Medical Services (EMS) Workplace: a Mixed-methods Cross-sectional Survey. Prehosp Emerg Care 18:(4),489-494.

Boudreaux E., Mandry C. and Brantley P.J. (1997). Stress, Job Satisfaction, Coping, Psychological Distress Among Emergency Medical Technicians. Prehosp Disast Med 12: (4), 242-249.

Boyle M., Koritsas S., Coles J. and Stanley J. (2007). A pilot study of workplace violence towards paramedics. Emerg Med J 24: (11),760–763.

Bozdağ Z., Şamdancı E.T., Şahin N., Aydın N.E., Sayın S. and Özcan E.M. (2013) Sudden Death of a Health Worker Due to Petine Abuse. Case Report, Journal of Forensic Medicine 27:(1),76-78.

Caballero M.L., Quirce S. (2015). Identification and Practical Management of Latex Allergy in Occupational Settings. Expert Rev Clin Immunol 11:(9),977–992.

Castellis M. (2000). The Information Age: Economy, Society, and Culture, Vol. I, The Rise of the Network Society. Second Edition. 656 pp., Blackwell. Oxford.

CDC Guidelines for Protecting the Safety and Health of Health Care Workers, NIOSH Publication No. 88-119, 1990

Celebi I. (2016). Çanakkale 112 Acil Sağlık Hizmetleri İstasyonlarında Görev Yapan Sağlık Çalışanlarının Şiddetle Karşılaşma Durumu ve Bu Durumun Tükenmişlik Sendromu Üzerine Etkisi. Hastane Öncesi Dergisi (PESAD)1:(2), 1-13.

Cocker F. and Joss N. (2016).Compassion Fatigue Among Healthcare, Emergency and Community Service Workers: A Systematic Review Int J Environ Res Public Health, 13:(61), 1-18.

Communiqué of the Workplace Hazard Classes Regarding Occupational Health and Safety, Number of the Official Gazette: 28509, The official gazette: 26.12.2012, The official Gazette, Ankara, 2012

Communiqué on Working Procedures and Principles of Ambulance and Emergency Care Technicians and Emergency Medical Technicians, 27181, Official Gazette, Ankara, 2009.

Corbett S.W., Grange J.T. and Thomas T.L. (1998). Exposure of Prehospital Care Providers to Violence. Prehosp Emerg Care 2:(2), 127–131.

Çıkrıklar H., Yürümez Y., Güngör B., Aşkın R., Yücel M. and Baydemir C. (2016). Violence Againts Emergency Department Employees and the Attitude of Employees towards Violence. Hong Kong Med J 22:(5),464-471.

Dikmen Y. and Aydın Y. (2016). Hemşirelerde Merhamet Yorgunluğu: Ne? Nasıl? Ne Yapmalı. J Hum Rhythm 2:(1), 13-21.

Donnely E. (2012). Work-Related Stress and Posttraumatic Stress in Emergency Medical Services. Prehosp Emerg Care 16:(1),76-85.

Ekşi A. (2015). Prehospital Emergency Health Services Management at Mass Events. Second Edition, 56 pp., Kitapana. İzmir.

EMS 2011: Ministry of Health (2011). Research Report on Determination of Obesity and Weakness Status in Health Care Workers Ankara

Furin M., Eliseo L.J., Langlois B., Fernandez W.G., Mitchell P. and Dyer K.S. (2015). Self-Reported Provider Safety in an Urban Emergency Medical System. West J Emerg Med 16:(3),459-464.

Gormley M.A., Crowe R.P., Bentley M.A. and Levine R. (2016). A National Description of Violence toward Emergency Medical Services Personnel. Prehosp Emerg Care, 20:(4),439-447.

Grevin F. (1996). Post traumatic Stress Disorder, Ego Defence Mechanism, and Empathy among Urban Paramedics. Psychol Rep 79: (2),473-479.
Gülen B., Serinken M., Hatipoğlu C., Özaşır D., Sönmez E., Kaya G., Akpınar G. (2016). Work-Related Injuries Sustained by Emergency Medical Technicians and Paramedics in Turkey. Ulus Travma Acil Cerrahi Derg 22:(2), 145-49.
Johnson A., Segesten K. and Mattsson B. (2003). Post-Traumatic Stress among Swedish Ambulance Personnel. Emerg Med J 20:(1), 89-74.
Khashaba E.O.,El-Sherif M.A.F., Adel A.W.I., Neatmatallah M.A. (2014). Work-related Psychosocial Hazards among Emergency Medical Responders (EMRs) in Mansoura City. Indian Community J Med 39:(2), 103-110.
Kıyak M. (2016). ISG Risks in the Health Sector (2. Basım) Okan Universitesi Yayınları, 240-244 pp, Istanbul. ISBN 978-605-589-927-1.
Kim H., Dropkin J., Spaeth K., Smith F., Moline, J. (2012). Patient Handling and MSD among Hospital Workers: Analysis of 7 Years of Institutional Workers' Compensation Claims Data. Am J of Ind Med 55: (8), 683-90.
Koç E.M., Başer D.A., Döner P., Yılmaz T.E., Yılmaz T., Alsancak A.D., et al. (2015). Determination of Smoking Levels of Hospital Employees and Evaluation of Smokeless Airfield Practice. JCEI 6: (1),33-39.
Lowery K. and Stokes M.A. (2005). Role of Peer Support and Emotional Expression on Posttraumatic Stress Disorder in Student Paramedics. J Trauma Stress 18:(2)171–179.
Maguire B. and Smith S. (2013). Injuries and Fatalities among Emergency Medical Technicians and Paramedics in the United States. Prehosp Disaster Med 28:(4),376–82.
Marchetti A., Capone P. and Freda D. (2016). Climate Change impact on Microclimate of Work Environment Related to Occupational Health and Productivity. Ann Ist Super Sanità. 52:(3),338-342.
Mazurek J.M. and Weissman D.N. (2016). Occupational Respiratory Allergic Diseases in Healthcare Workers. Curr Allergy Asthma Rep 16:(11),77.
NIOSH (2016). Criteria for a Recommended Standard Occupational Exposure to Heat and Hot Environments Revised Criteria. Department of Health and Human Services. USA.
Oğan H. Occupational Health and Safety for Healthcare Workers TTB Publications Ankara 2014;53-56.
Önal O. (2015). Acil Sağlık İstasyonlarında Çalışan Personelin Mesleki Risk Durumları. Journal of Contemporary Medicine 5:(4), 239-244.
Özkan Ö. and Emiroğlu O.N. (2006). Hastane Sağlık Çalışanlarına Yönelik İşçi Sağlığı ve İş Güvenliği Hizmetleri. Cumhuriyet Üniversitesi Hemşirelik Yüksekokulu Dergisi 10:(3), 43-50.
Özkılıç Ö. (2008). Hazard and Risk Concepts -Terminology, 5. International Conference on Occupational Health and Safety, November 3, 2008 1. Session Verbal Declaration.
Patterson P.D., Klapec S.E., Weaver M.D., Guyette F.X., Platt T.E. and Buysse D.J. (2016). Differences in Paramedic Fatigue Before and After Changing from a 24-hour to an 8-hour Shift Schedule: a Case Report. Prehosp Emerg Care 20:(1), 132-136.
Patterson P.D., Suffoletto B.P., Kupas D.F., Weaver M.D. and Hostler D. (2010). Sleep Quality and Fatigue Among Prehospital Providers. Prehosp Emerg Care 14: (2),187–193.
Patterson P.D., Weaver M.D., Frank R., Warner C.W., Martin-Gill C., Guyette F.X., et al. (2012). Association between Sleep, Fatigue, and Safety Outcomes in Emergency Medical Services Providers. Prehosp Emerg Care16 :(1),86–97.
Paterson J.,Sofianopoulos S.,Williams B. (2014). What Paramedics think about when thay think about fatigue: Contributing factors. Emerg Med Australas 26:139-144,

doi:10.1111/1742-6723.12216
Petzall K., Tallberg J., Lundin T. and Suserud B.O. (2011). Threats and Violence in the Swedish Pre-hospital Emergency Care. Int Emerg Nurs, 19:(1),5–11.
Pirrallo R.G., Loomis C.C., Levine R. and Woodson B.T. (2012). The Prevalence of Sleep Problems in Emergency Medical Technicians. Sleep Breath 16: (1), 149-162.
Price P.T. and Goldsmith L.J. (1998). Changes in Earing Acuity in Ambulance Personnel. Prehos Emerg Care 2:(4),308-311.
Pyper Z. and Paterson J.L. (2016). Fatigue and Mental Health in Australian Rural and Regional Ambulance Personnel, Emerg Med Australas 28: (1), 62-66.
Rahimi A., Vazini H., Alhani F. and Anoosheh M. (2015). Relationship between Low Back Pain with Quality of Life, Depression, Anxiety and Stress Among Emergency Medical Technicians. Trauma Mon 20:(2),e18686.
Reed E., Daya M.R., Jui J., Grellman K., Gerber L. and Loveless M. (2003). Occupational Infections Disease Exposures in EMS Personnel. J Emerg Med 11:(1), 9-16.
Republic of Turkey Ministry of Health (2014). Global Adult Tobacco Survey Turkey 2012. Anıl Matbaa Ltd. Şti., Publication no: 948, ISBN:978-975-590-502-0.
Roberts M.H., Sim M.R., Black O. and Smith P. (2015). Occupational Injury risk among Ambulance Officers and Paramedics Compared with Other Healthcare Workers in Victoria Australia: Analysis of Workers' Compensation Claims from 2003 to 2012. Occup Environ Med 72: (7), 489-95.
Rybojad B., Aftyka A., Baran M. and Rzonca P. (2016) Risk Factors for Posttraumatic Stress Disorder in Polish Paramedics: a Pilot Study. J Emerg Med 50:(2), 270-276.
Sağlık Istatistikleri Yıllığı 2014: http://www.saglik.gov.tr/TR/belge/1-2952/istatistik-yilliklari.html, (Erişim Tarihi: 15.01.2016)
Sayed M.E., Kue R., Mcneil C. and Dyer K.S. (2011). A descriptive analysis of occupational health exposure in an emergency medical services system. Prehosp Emerg Care 15:(4),506-510.
Sofianopoulos S., Williams B., Archer F. and Thompson B. (2011). The Exploration of Physical Fatigue, Sleep and Depression in Paramedics: a Pilot Study. JEPHC 9:(1),1-33.
Sterud T., Ekeberg Q. and Hem E. (2006). Health status in the ambulance services: a systematic review. BMC Health Serv Res, 6:82. doi:10.1186/1472-6963-6-82
Suserud B.O., Blomquist M. and Johansson I. (2002). Experiences of threats and violence in the Swedish Ambulance Service. Accid Emerg Nurs 10:(3),127-354-9.
Suyama J, Rittenberger J.C, Patterson P.D. and Hostler D. (2009). Comparison of Public Safety Provider Injury Rates, Prehosp Emergency Care 13:(4),451-455.
Syamlal G., Mazurek J.M. and Bang K.M. (2009). Prevalence of Lifetime Asthma and Current Asthma Attacks in U.S Working Adults: An Analysis of the 1997-2004 National Health Interview Survey Data. J Occup Environ Med 51:(9),1066-1074.
Şahin V. (2014). Work Accidents and Occupational Diseases in Health Workers (Work Accidents at Tepecik Training and Research Hospital Operation Room Employees). Beytepe Univ. Social Sciences Institute. Istanbul.
Tekingündüz S. (2008). 112 Acil Sağlık Hizmetleri Performans Toplantıları-2, Kalite ve Hasta Güvenliği, Ankara.
Thomas B., Peter O'Meara P. and Spelten E. (2017). Everyday Dangers-The impact infectious disease has on the Health of Paramedics: A Scoping Review. Prehosp Disaster Med 32:(2), 217-223.
Tokuç B., Turunç Y. and Ekuklu G. (2011). Edirne'de Ambulans Çalışanlarının Anksiyete, Depresyon ve İşe Bağlı Gerginlik Düzeyleri. TTB Mesleki Sağlık ve Güvenlik Dergisi 42 :(11),39-44.

TTB (2008), Occupational Risks of Healthcare Workers TTB Publications 9 pp, Ankara.
Van der Ploeg E. and Kleber R.J. (2003). Acute and Chronic Job Stressors among Ambulance Personnel: Predictors of Health Symptoms. Occup Environ Med 60: (suppl 1), i40-46.
Weaver M.D., Patterson P.D., Fabio A., Moore C.G., Freiberg M.S., Songer T.J. (2015). An Observational Study of Shift Length, Crew Familiarity, and Occupational Injury and Illness in Emergency Medical Services Workers. Occup Environ Med 72:(11),798-804.
Wee D. and Myers D. (2003). Compassion Satisfaction, Compassion Fatigue, and Critical Incident Stress Management. Int J Emerg Men Health 5:(1),33-37.
WHO (2003). Healthcare Worker Safety, Geneva
WHO (2016). Violence and Injury prevention "Violence againts health workers", Geneva. http://www.who.int/violence_injury_prevention/violence/workplace/en/.
Yargıç I. (2009). Addiction Problems and Solutions in Health Care Workers. Klinik Gelişim, 22:(4),84-87.
Yeşildal N. (2005). Sağlık Hizmetlerinde İş Kazaları ve Şiddetin Değerlendirilmesi. TSK Koruyucu Hekimlik Bülteni 4: 280-302.
Yılmaz A., Serinken M., Dal O., Yaylacı S. and Karcıoğlu Ö. (2016). Work-related Injuries Among Emergency Medical Technicians in Western Turkey. Prehosp Disaster Med 31:(5),505–508.
Zahariev V.K., Knezevic B., Bogadi-Sare A., Bubas M., Kristo D., Pejnovic N. (2012). Anaphylactic Reaction to Latex in a Health Care Worker: Case Report. Acta Dermatovenerol Croat 20:(3),207-209.

Chapter 110

Benchmarking in Health

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INTRODUCTION

Today, competition is very intense. One of the reasons for this is the developments in technology, and the other is the globalization that is happening with the effects of developments in technology. These two factors constantly change the competitive environment. Companies that can adapt to change, continue to exist, while those that cannot change are disappearing. Indeed, "either change or disappear" is one of the most widely spoken discourses of our time. Thus, constant change and development are the inevitable components of today. Companies that do not want to go backwards to the competition and want to acquire competitive advantage have also developed different methods. Inspiration, imitation and learning from the rival are some of these methods. Ford developed the band system after seeing during a visit he pays to his friends' butchery that each butcher relays the carcass to the other butchers after slicing some part of it (Yıldız, 2002: 183; Bedük, 2002: 3), and Toyota also developed the just in time production after being inspired by the supermarkets' filling in their empty shelves at night quickly and based on necessity (Bedük, 2002: 3).

There are different ways of achieving competitive advantage. In today's quick-paced competition, experimenting with trial and error in order to catch up with rivals is just a waste of time for companies. To develop core competence by developing a brand new product, technology, method and system that is completely different from rivals in the sector is a more difficult and costly way (Koçel, 2001: 334). So, imitation and learning from the rivals are some of the methods that are comparatively easy to implement and provide the desired results, saving cost and time. Benchmarking includes these concepts and is one of the modern management techniques that enable companies to adapt quickly to change and increasing competition. Benchmarking requires a commitment to change (Jain, 2006). Benchmarking brings an external focus on internal activities, functions, or operations in order to achieve continuous improvement. Starting from an analysis of existing activities and practices within the firm, the objective is to understand existing processes or activities and then to identify an external point of reference or standard by which that activity can be measured or judged (Fuller *et al.*, 2002). Benchmarking's main goal is to shorten the time required for development as much as possible and to catch superiority in competition (Halis, 2001: 55). Benchmarking has the ability to accelerate the progress of companies, improve the performance of companies in a country as a whole, and is therefore widely used, especially in business (Lankford, 2000). During the 1970-1980 period, Xerox revenue fell from 95% to 46% and market share from 49% to 22%. Therefore, Xerox

has revised its competitors' products with all the details. Then it benefited from a superior design or piece and improved benchmarking (Akat *et al.*, 1999: 408; Bedük, 2002: 4). After Xerox received effective results, many companies such as AT & T, DEC, Ford, Toyota, HP, Federal Express, Southwest Airlines, Du Pont, General Electric, IBM, Alcoa, Motorola, Miliken, NEC have begun to use benchmarking. The success of these companies also made the benchmarking technique more common (Bedük, 2002: 4). As a matter of fact, Elmuti *et al.* (1997) stated that more than 70% of companies in Fortune 500 use benchmarking techniques in 1995. It is also stated that this ratio is 90% (Saraç, 2005).

Benchmarking is a technique that can be applied to a wide variety of fields, such as education, health, safety, etc., although it is widely used in the business world (Elmuti & Kathawala, 1997; Çatı *et al.*, 2007). As in other sectors, competition in the health sector is very severe and costs are increasing day by day. Hospital management includes concepts of economy, efficiency and effectiveness (Ağırbaş, 2016: 17). Economy is to provide the inputs at the best prices without compromising the quality of the output. Efficiency is to capture the most output with minimal input. Hospital management should also provide low cost and quality health care services with limited resources (Ağırbaş, 2016: 18). Effectiveness is the degree of reaching the goals. While efficiency is linked up to the internal processes of the hospital, efficacy is related to the output of the hospital. The input of hospitals is quite expensive, and the output is also expensive. For this reason, inputs must be economically provided and efficiently used. Therefore, healthcare institutions can use the benchmarking method as service producing institutions, and they can also adapt best practices to themselves. As a matter of fact, benchmarking has started to be used in mid-1990s to improve the quality of health services (Kay, 2007). It emerged in the United States and the United Kingdom with the imperative of comparing hospital outcomes to rationalize their funding (Ettorchy-Tardy *et al.*, 2012). A survey was conducted with 726 institutions in these years. 52 of these 726 institutions are in the health sector. It has been determined that 36 of these 52 institutions (69%) intend to benchmark (Holloway *et al.*, 1998). Later investigations show that this intention has been put into practice. Van Lent *et al.* (2012) conducted a research on patient logistics in German hospitals. In this study, 78% of the hospitals have used the benchmarking method. Some of the research done within the scope of benchmarking of institutional treatment processes are as follows; eye hospitals (De Korne *et al.*, 2010), oncology practice trends (Barr & Towle, 2012), institutions for children and young people's mental health (Brann *et al.*, 2011), cancer centers and chemotherapy units (Van Lent *et al.*, 2010), emergency services (Schwappach *et al.*, 2003) and pediatric emergency services (Shaw *et al.*, 2003). Some examples of benchmarking related to administrative processes are; monitoring the referral system (Bossyns *et al.*, 2006), reducing length of stay (Borghans *et al.*, 2008), pay-for-performance (de Bruin *et al.*, 2011). In addition, projects for the development and dissemination of international performance indicators have been prepared (Ettorchy-Tardy *et al.*, 2012): The World Health Organization (WHO) initiated the PATH (Performance Assessment Tool for Quality Improvement in Hospitals), the US initiated the International Quality Indicator Program (IQIP), and the OECD initiated Health Care Quality Indicators (HCQI).

In this study, the characteristics, usefulness and limitations of benchmarking,

types, processes and principles are given, and how the benchmarking method can be used in health institutions is discussed.

BENCHMARKING DEFINITION AND ITS FEATURES

Benchmarking is a continuous research and learning experience that enables the best practices to be uncovered, analyzed, and adopted (Mucuk, 2000: 197). From this definition, it can be understood that benchmarking is not a static situation but a dynamic process for implementation. In other words, the company needs to adapt the information it obtains as a result of benchmarking to its own structure and use it better than the benchmarking institution (Yeniçeri, 2002: 212). Benchmarking is actually an agreement between the two institutions to exchange information about their processes and methods with mutual earnings expectation. In this context, benchmarking refers to the examination of other institutions with better performance in order to enhance an organization's performance, to compare its own business practices with its own business practices, to select one of these institutions as its benchmarking partner, to negotiate with it and to apply the results of the comparison. In this context; it can be said that benchmarking is one of the latest methods used in joint ventures (Genç, 2004: 218) to identify the difference, to determine the highest possible standards, to learn from the best of its class, to focus on performance, to gain competitive advantage and to maintain this advantage (Fisher, 1998: 24-25). Therefore, a harmonious relationship, a business association that is constantly contributed by the partners, mutual goodwill and information sharing are important in benchmarking.

The aim of the benchmarking is to learn from its partner and use that knowledge to create value and gain competitive advantage. In this context; benchmarking requires a change in the way the things are done, an identification of fields to be measured that would change the corporate performance (Fisher, 1998: 9). As a result of benchmarking, if the institution who does the benchmarking concludes that it cannot be as succesful in the benchmarked subject as its benchmarking partner is, it can benefit from outsourcing. Because value can also be created by combining complementary forces (Hamel, 1989).

Benchmarking is considered to be a management technique used to improve the performance of organizations (Akat *et al.*, 1999: 405). It is aimed to increase the competitiveness of the institution by making necessary changes and taking necessary precautions in the institution with the benchmarking. (Yeniçeri, 2002: 214). In the benchmarking technique, institutional expectations should be made clear and measured. In this context, performance measures have a critical prescription to achieve the desired results (Elmuti & Kathawala, 1997; Kouzmin *et al.*, 1999). As a matter of fact, Fernandez *et al.* (2001) defined benchmarking as making measures related to existing processes, products and services, and comparing the results of these measures within the institution and with the best institution in the field. Therefore, the expression "it is not possible to manage and improve without measuring" also applies to benchmarking: benchmarking without measurement is not possible.

MEASUREMENT TOOLS TO BE USED FOR COMPARISON IN HEALTH CARE INSTITUTIONS

Although challenging, the principles of objectivity and measurability stated in some benchmarking literature as essential. Benchmarking indicators in health have been

defined as a measurement tool used to monitor and evaluate the importance of governance, management, clinical and support functions (Kay, 2007). In this context, there are measurement tools in hospitals that can be used for comparison purposes. Indeed, clinical indicators are frequently used in evaluating efficiency, quality and performance. In this context, some scales such as average patient stay days, bed turnover rate, bed fullness rate, mortality and infection rates and the autopsy can be used in comparison (Ağırbaş, 2016: 28-39): "Average patient stay day" indicates how many days a patient has stayed in the hospital and shows how efficiently a bed is being used. This is an average of one week in general hospitals, an average of 30 days in hospitals where chronic diseases are treated, and an average of 3 days in maternity hospitals. The average patient stay day also shows quality patient care. On the other hand, more patients can be served when the patient's day of stay falls. Therefore, it is necessary to reduce the length of stay without compromising patient care quality. Thus, it is important to prevent unnecessary hospitalization days. Van Lent *et al.* (2010) reported that the combination of benchmarking and lean management increased bed utilization by 24% and productivity by 12% in chemoteraphy day unit.

"Inpatient rate" is a measure of how many of the patients referred to hospital polyclinics are hospitalized and treated within a certain period of time (such as a month, three months, or a year). "The bed turnover" rate indicates how many patients have used a bed in a given period of time, and indicates whether a bed is used efficiently and shows the patient care quality. It is expected that the bed turnover rate will be high without sacrificing patient care quality. Bed turnover rate is affected by the average length of stay. Bed cycle is an indication of inefficiency, with regard to the patient bed being left empty. It shows how many days a bed has been empty between two patients. "Bed occupancy rate" refers to the rate of use of patient beds. The bed occupancy rate is expected to be 80-85% in general hospitals and 95-100% in hospitals where chronic diseases are treated. According to the Ministry of Health, bed occupancy efficiency ratios are as follows: 72% in education hospitals, 74% in cardiac and vascular surgery education hospitals which are special branch hospitals, 90% in physical therapy and rehabilitation education hospitals.

The rate calculated by dividing the total number of patients who died in clinics within a certain period by the number of patients discharged (including those who died) within the same period is called the "crude death rate". This ratio should be below 3-4%. In order for a patient in the hospital to be diagnosed with the disease and to be able to show the effect of the treatment, a specific period of time is required and 48 hours are considered sufficient. Therefore, there is no effect of hospital service quality on the deaths that occurred within the first 48 hours after the service. It is accepted that the actual care patient quality is shown by deaths occurring after 48 hours. For this reason, the actual quality of patient care is considered to be indicative of mortality after the first 48 hours. It is desirable that the "Net rate of death", which is evaluated in this context, should not exceed 2.5-3%. Maternal death is the loss of mother's life due to pregnancy, abortion and birth. Maternal death is expected to never occur, and in cases where this is not possible it should not exceed 0.25%. Likewise, the infant mortality rate, which can not usually be avoided, should not exceed 2%.

The "operative mortality rate", which is calculated by dividing the number of patients who died within the first 10 days after surgery within a certain period of time in

a hospital divided by the total number of operations, should be less than 1%. The anesthesia mortality rate should not exceed 1/5000 surgeries. The autopsy rate should not be less than 25%. The patient should not undergo unnecessary surgery. The multiplicity of unnecessary surgeries indicates that the diagnoses are not based on scientific grounds and should not exceed 1%. It is desirable that the hospital-acquired infection never develops, but as this is not possible, it is expected that the net infection rate will not exceed 1%. It can be said that the development of hospital infection is due to one of the risk factors such as Interventional treatment practices, not paying attention to cleanliness rules, physical deficiencies, personnel-related problems and factors that negatively affect the patient's immune system. Again, the rate of surgical infection should not exceed 1-2%. All these scales and standards are benchmarking rates.

WHAT NEEDS TO BE CONSIDERED ABOUT THE BENCHMARKING OF HEALTH CARE INSTITUTIONS?

The institution to be benchmarked should be the most successful institution in its sector. Therefore, the health institutions that will use the benchmarking method should identify the institutions that perform best in the health sector or other sectors and identify their practices that are relevant to them. As benchmarking is the process of learning from others, it is extremely natural to select the most successful institutions in their field. Performance and process benchmarking can be assessed in this context, including patient experience benchmarking (Kay, 2007), which focuses on meeting patient expectations, and clinical practice benchmarking (Ellis, 2000), which includes the best clinical practice.

Benchmarking is not a work to be completed after it has been applied once, but a continuous application that requires continuity (Fisher, 1998: 11), because the nature of the benchmarking needs to be recycled and the transactions must be reviewed at every turn (Demirdöğen & Küçük, 2003). Benchmarking is the process of continuous perfection search (Genç, 2004: 221). Perfection can not be achieved with a research, comparison, measurement and evaluation work done for a while. For this reason it should be taken into consideration that other comparisons of institutions may also progress over time. In this context, the benchmarking healthcare institution needs to constantly look for high performance healthcare institutions and institutions in other high performing sectors, new applications and the results of these applications.

Benchmarking aims to provide mutual information exchange between partners. Healthcare institutions who use the benchmarking method can learn and do more than they can or can do on their own. Benchmarking not only benefits the health institution who initiates the benchmarking; but it also benefits the instituion being benchmarked as it creates the opportunity to look at its organization from a different point of view, to realize the issues that could be improved, to understand the indicators and applications of other institutions and to learn these applications and to use them within their own studies (Bedük, 2002: 134). Benchmarking is therefore a process that encourages both parties to learn that the health care institution which is benchmarked, and the health care institution, or the institution in the other sector which is benchmarked is sensitive to their own practice. But benchmarking also includes competition. Therefore, sensitivity to the application of benchmarking principles should be demonstrated, no confidential information should be requested from the benchmarking partner, and no information should be shared with third parties without the permission of the benchmarking partner.

Also, benchmarking partners should be professional and honest with each other, and should not show themselves differently than what they are (Lankford, 2000).

Benchmarking deals with how results are obtained, not outcomes. In this context, the goal of benchmarking is to get information about the process at the end. Because of the successful results obtained by the comparative institution, other institutions needed to make comparisons. In other words the results are the consequence of the practice and the important thing is the process that produces successful results. Healthcare institutions should also use the benchmarking methodology for their best practices to meet their expectations. In order for benchmarking to be successful, first managers should admit that the competitors of their organization are better than their own process that is similar to theirs. Therefore, senior management in health institutions should actively deal with the benchmarking method and its implementation and encourage the implementation of this method. In this context, managers should first admit that some activities in the organization need to be improved and ensure that staff working at different levels to participate in this process. This requires convincing staff to be open to change and new ideas. Since the benchmarking requires knowledge sharing, the organization should be willing to share information. If necessary, in-house training should be given to persuade staff, motivation and information sharing. In particular, staff should be educated about what information can be shared and which can not be shared.

BENCHMARKING BENEFITS AND LIMITATIONS TO HEALTH CARE INSTITUTIONS

Benchmarking will provide healthcare organizations with benefits such as defining and measuring key processes, developing a learning culture, making short and long-term plans, finding new ideas, and providing customer satisfaction. These benefits will also increase the competitiveness of the health care institution which benchmarks, and even the institution is benchmarked to create opportunities to recognize both themselves and their competitors. In addition to this, benchmarking will help the health care institution to determine the reasons for the performance gap between its departments, competitors and the institution that has best practice, and will help determine the priorities for the allocation of resources. In other words, benchmarking will help the health care institution to use its vital resources more effectivelty (Jarrar & Zairi, 2001) and to improve the measurement system through auditing (Balm, 1996).

There are some limitations / disadvantages as well as the benefits that the benchmarking provides to the health institutions. (Elmuti *et al.*, 1997). In this context, the information obtained may not be clear, staff may show resistance, and there may be deficiencies caused by implementation. Benchmarking may have been applied to only one occasion. Supervisors may think benchmarking will reveal their weaknesses, or that comparison is an expensive process, or they can concentrate on figures. Focusing on processes can make it hard to focus on customers and workers. If these disadvantages are taken into consideration and necessary precautions are taken to overcome these disadvantages, the success of benchmarking will increase in health institutions where important decisions about human health are being taken.

Besides the limitations of benchmarking, there are several reasons why a health institution manager may not want to engage in a benchmarking effort, including (Fuller *et al.*, 2002); 1-They want to maintain the status quo. 2-They want to remain where they

are, secure in the knowledge they are doing the best they can. 3-Reality checks are not to their liking. 4-Benchmarking will open the company to change and to humility. 5-Finding out your real rank (your comparative competencies) is a sobering lesson.

Managers who see themselves superior to others or do not want to change do not want to use benchmarking techniques. However, in order to adapt to rapidly changing market and environmental conditions, institutions need to constantly restructure themselves, their organization and their way of doing business. Indeed, nowadays many people are communicating and competing on a more equal footing, in real time, thanks to computers, networks and teleconferencing (Friedman, 2012: 18). Unchanging or non-exchangeable institutions are destined to disappear. As a matter of fact, a study covering 1,000 companies from 15 different sectors indicated that even the most respected and known companies in the world could last up to 15 years of competitive power (Yavuz, 2009). Still, while Microsoft is the 400th in terms of turnover in the world and the third largest in terms of market value of its shares, Bill Gates said that Microsoft is only two years away from failure (Baldock, 2000: 16). This is of course also true for health care institutions. The best practices that organizations have may be lost in time. It is also important for managers to acknowledge this fact in terms of the future of both themselves and their institutions. Any organization that can not adapt to change, is not looking for innovation, and therefore can not renew itself is destined to lose.

TYPES OF BENCHMARKING APPLICABLE IN HEALTH CARE INSTITUTIONS

Benchmarking methods that can be implemented in healthcare institutions are: (1) internal, (2) competitive, (3) industry, and (4) best-in-class. (Fuller *et al.*, 2002; Yıldız, 2002: 186). Each of these is briefly explained below.

Internal Benchmarking, as it is understood from the name, this kind of benchmarking takes place within the institution. It is a comparison of similar processes of different departments and the applications that are run in different ways. Although internal benchmarking is easier and faster in terms of both research and practice, it is the least useful (McGonagle & Fleming, 1998). However, similarities can be found in the processes of different specialties in healthcare institutions such as hospitals. For external benchmarking of clinical practices, it is difficult, given the medical specificity of the indicators to be used, to see how these practices might be compared against other sectors (Ettorchy-Tardy *et al.*, 2012). Therefore, internal comparison in health institutions may be more useful when compared to other institutions. It has been determined that institutions can achieve an efficiency increase of up to 10% through internal benchmarking (Yıldız, 2002: 187).

Competitive Benchmarking compares the rivals' products, services, processes and strategies of a healthcare organization with its products, services, processes and strategies (McGonagle & Fleming, 1998). A recent survey indicates that 56.5% of hospital clinical laboratories utilize benchmarking to some extent. Outreach activities are included in 58.7% of these systems (Steiner *et al.*, 2006). Competitive benchmarking is important in determining the place of the healthcare institution in the market. It's the hardest benchmark type, because competitors desire to protect its position and may not want to share their own business practices and organizational structures with other organizations (Elmuti *et al.*, 1997). It is rare for competing health institutions to make comparisons by mutual agreement, even if mutual agreement is

made, it may not be possible to see how the system works because some information is kept secret. But it is possible for health care institutions to collect some data about their competitors and take advantage of it (Yeniçeri, 2002: 213). In this context, techniques such as public information, seminars and notifications, institution publications, questionnaires, direct observation can be used, (Akdemir, 2003: 159) or consultants can be used (McGonagle & Fleming, 1998). In the competitive benchmarking it is important to identify and focus on best practices of other healthcare institutions. It has been found out that institutions can achieve a productivity increase of up to 20% with competitive benchmarking (Yıldız, 2002: 187).

Functional Benchmarking is the learning of the best practices of any institution that is considered to be perfectly good on a given topic. Therefore, there is no obligation to select another health institution to make comparisons. Their partners generally have common technology or market characteristics (Elmuti *et al.*, 1997). In the functional benchmarking, applications from each sector can be evaluated. In this method, there is no difficulty as it is in the competitive comparison because the comparison can be made by the institutions operating in other sectors besides the health sector. However, the similarity of the culture and conditions of institutions reduces the transfer of information. Due to the unique characteristics of health institutions, it is more convenient to make a comparison with health institutions with similar characteristics (McGonagle & Fleming, 1998). Therefore, functional comparison in health institutions may be more appropriate for applications such as information systems, accounting and recording operations, cleaning and subsistence activities. It has been found that institutions can achieve a productivity increase of up to 35% with functional benchmarking (Yıldız, 2002: 187).

Process / Generic Benchmarking, is the evaluation of processes that can be compared one on one with institutions that do not compete with the health sector but are the leaders of their own sectors and the application of the processes which are found to be more effective in the processes of the benchmarking institution. For non-clinical processes (billing, inventory management, traceability of products used and so on), comparison with other sectors is possible. Thus, comparisons with sectors in which traceability is crucial, such as the pharmaceutical industry or any other sector with strong quality assurance, could be worthwhile (Ettorchy-Tardy *et al.*, 2012). This benchmark is superior due to its lack of competition, its easy access to information, and its low probability of encountering with legal problems. It has been found that institutions can achieve more than 35% efficiency gains with process / generic benchmarking (Yıldız, 2002: 187).

It has also been suggested that the institution should make comparisons in all areas with a holistic view, rather than using a single benchmark (Ahmed & Rafiq, 1998). However, it is not possible to apply each of the above-mentioned benchmarking types at the same time, especially by the same benchmarking team in health institutions. As a matter of fact, in order for the health institutions to obtain the desired results, it is necessary to select the comparison type correctly (Kumar & Chandra, 2001). The comparison of different processes, different organizations and different teams may be more useful in this context. For example, Xerox has established benchmarking agreements with American Express for billing and collection, American Hospital Supply for inventory control, Ford Motor Company for designing the production line,

General Electric for robotics, and Westinghouse for warehouse control and barcode applications (Doğan & Demiral, 2008).

BENCHMARKING PROCESS IN HEALTH CARE INSTITUTIONS

In health institutions, it is important that the comparison is handled within a certain system and as a process in order to obtain useful results. Although the institutions follow different paths in practice (Elmuty & Kathawala, 1997; Ahmed & Rafiq, 1998; Kyrö, 2004), the basic stages of the processes are similar in these applications. The main phases of a typical comparison process in a health care institution can be described as follows (Yıldız, 2002: 189-193; Fernandez *et al.*, 2001):

1. Determination of subjects to be compared: At this stage, the specific subject, practice and methods to be benchmarked must be defined correctly, and what is to be compared with whom. Topics that can be benchmarked can be product / service, performance or process. In this context, the area where the benchmarking healthcare institution is the weakest in can be selected or the area where the highest profit can be obtained can be selected (Demirdöğen & Küçük, 2003). The methods of collecting information should be determined at this stage based on whether the benchmarking will take place within the institution with different units or within the sector or with institutions from other sectors.

2. Creating a Benchmarking Team: The benchmarking team is the team responsible for thinking about benchmarking as a project, planning the work, organizing it and running it in the direction of a plan (Doğan & Demiral, 2008). The benchmarking team to be established in health institutions should be formed from people with different experience, skills and expertise. The fact that the team members have sufficient knowledge and experience in benchmarking will increase the effectiveness of the process. It is also very important that those who have direct knowledge of the comparative subject are included in the benchmarking group and that they have the ability to communicate. Healthcare institutions that do not have a sufficient number of experienced personnel to make benchmarks can benefit from consultants. Once the benchmarking team has been created, training should be provided on how benchmarking is done, what is being targeted, how the benchmarking process works, possible mistakes that can be made and how these errors can be prevented.

3. Identifying Benchmarking Partners: It is important to choose a preferred health institution that is able to apply a particular field in the best possible way, has high performance, is willing to share information, and can discuss its implementation (Jain, 2006). In this context, benchmarking partner's financial indicators can be selected by considering size, corporate culture and management style, similarities in strategies, activities and processes (Doğan & Demiral, 2008). Mission, performance measures, demographics, structure, geographical location, size and similarities in the technology used can also be evaluated in this context (Jain, 2006). This information about the specified benchmarking partner can be obtained from universities and public institutions, can be determined from the special reports published about the institution, can be viewed from the institution's awards (Yıldız, 2002: 191).

4. Data Collection and Analysis: At this stage, the data are collected and analyzed according to protocol guidelines determined by the benchmarking partner. In the data collection process, the benchmarking team has to follow a standard way. In this context,

each member of the benchmarking team should use a standard data collection form, and the type and amount of data to be collected by each member should be determined in advance. It is very important that members of the benchmarking team know their processes before they begin to examine the processes of the benchmarking partner. Otherwise, no comparison can be made. During the information gathering phase, it is necessary to comply with the issues specified by the protocol. It is necessary to avoid non-ethical means by trying to collect non-protocol information. What is the magnitude of the gap between the current performance of the health care institution and the performance of the benchmarking partner? Where does the difference come from? Can the difference be closed if the foreseen changes are made? Can the results be expressed in numbers? Will the benefit of realizing the difference meet the implementation costs? When these questions are answered positively, it is possible to proceed to the next step (Yıldız, 2002: 191-192).

5. Implementation of the Application: If the benchmarking is not going farther than to gather information, it is nothing more than waste of time (Jain, 2006). It is therefore important that an action plan is made. Therefore, after making the plan and approval of the plan by the management, it is necessary to announce the determined targets to the employees of the institution and train the personnel to perform the application. The results obtained from the application are compared with the targets and it is determined whether the targets have been achieved. If necessary, the benchmarking process is revisited and necessary corrections are made.

It can be said that the benchmarking consists of three stages, namely planning, analysis and change (Mohajeri *et al.*, 2009). The planning phase is the stage of the preparation of ideas and includes the issues to be benchmarked, the creation of the benchmarking team, and the benchmarking partnership. The analysis phase involves the collection and analysis of data and the implementation of the application. In the stage of change, it is checked whether the desired changes in the performance of the company are carried out positively or not.

PRINCIPLES TO BE CONSIDERED IN THE BENCHMARKING PROCESS OF HEALTH CARE INSTITUTIONS

The basic principles proposed by the APQC in order to act within the framework of the protocol established with the benchmarking partner and to facilitate business cooperation and to ensure efficiency are the following (Yeniçeri, 2002: 213-214; Yıldız, 2002: 193; Fisher, 1998: 65-66):

1. Legality Policy: Interviews and actions that may lead to the restriction of free trade, contractual market sharing, pre-bid preparation, bribery and other inappropriate situations (such as improper trade secrets being kept, trade secrets hidden or exploited by officials to explain or use these secrets) should be avoided. No relationship should be established with an existing or other rival to receive information on pricer or other date about the market.

2. Changing Policy: Knowledge sharing should be mutual. They must respond to the request of their partner in the same order in detail.

3. Privacy Policy: The information obtained should not be transferred to third parties without the permission of participating partners. Also, an institution should not be announced to others without permission even if it participates in a benchmarking study.

4. Usage Policy: The information obtained as a result of the business cooperation for benchmarking should be used only in the participating institutions' own business. The name or use of a participant's data or practices related to it is subject to the permission of the participant.

5. First Contact Policy: The initial contact between the participating partners must be made by a person designated for benchmarking. At a later stage, an agreement must be reached on the conditions for establishing relations.

6. Third-Party Relationships Policy: In response to a relationship request, permission must be obtained before giving the participant's name.

7. Foundation Policy: Obligations must be mutually fulfilled as long as adequate preparations are made at each step of the process.

It is necessary to strictly comply with the ethical rules such as clearly specifying the basic rules to be followed before starting the benchmarking studies in the framework of the benchmarking principles, not asking for critical data from the benchmark partner, taking a view of a legal counselor, not sharing any information about the business or operations of the partner with third parties (Fisher, 1998: 66-67). This issue is particularly important in healthcare facilities, including privacy.

CONCLUSION

Benchmarking is one of the modern management techniques that should be taken into consideration by organizations in today's intensely competitive world. Benchmarking is the examination of an institution with better performance to improve its performance, comparing and contrasting its own procedures with business practices and applying the results of this comparison. In this context, learning from other institutions is a relatively easy application, from experimenting with trial-and-error methods to creating basic skills and saving time and cost. Mutual information exchange, mutual trust and good faith are of great importance in the success of benchmarking. Benchmarking is not a one-time application, it requires continuity, it deals with the processes in which the results are obtained, not the results. Benchmarking has benefits such as lowering costs, increasing revenues and providing competitive advantage, identifying key processes, and developing a learning culture.

Health institutions can also use service benchmarks to increase service quality, reduce costs, increase customer expectations and satisfaction, and be more competitive in their own industry. Benchmarking is not possible without measuring. In this context, the health sector also has the ratios and measurement tools set for hospitals. Using these scales, partnerships can be established for benchmarking with more efficient, more economical, more effective healthcare institutions. Thus, service quality can be evaluated and improvements can be realized.

In order to be able to use the benchmarking method, it should be recognized that there are issues that can be developed, improved and learned first. The best practices should be identified and the transfer to the institution should be supported by senior management. It is important to note that the selection of institutions with the best performance from the health sector and from other sectors, and the fact that benchmarking is continuous, is another matter to be considered. Each sector has its own knowledge. However, the knowledge and experience of every institution in the health sector is changing and developing at any moment. Internal, competitive, functional and process / generic benchmarking methods can be used in health institutions. It is

important to use these methods to determine benchmarks, to set benchmarking teams for selected topics, to identify partners to benchmark, and to comply with benchmarking principles during the implementation process following data collection and analysis. In this context, considering the developments in medicine and medical technology, the use of benchmarking techniques will increase the quality of services provided by health institutions, reduce costs and increase customer satisfaction.

REFERENCES

Ağırbaş, İ. (2016). Hastane Yönetimi ve Organizasyon, Siyasal Kitabevi, Ankara, ISBN: 6059221306.

Ahmed, P. K., Rafiq, M. (1998). Integrated Benchmarking: A Holistic Examination of Select Techniques for Benchmarking Analysis. Benchmarking for Quality Management & Technology, 52(3), 225-242.

Akat, İ., Budak, G., Budak, G. (1999). İşletme Yönetimi, Barış, İzmir.

Akdemir, A. (2003). Temel İşletmecilik Bilgileri, Türkmen, İstanbul, ISBN: 975-6392-02-9.

Baldock, R. (2000). Büyük Şirketler Yok Oluyor, (Translator: Berat Çelik). MediaCat, İstanbul, ISBN: 9758378627.

Balm, G. J. (1996). Benchmarking and Gap Analysis: What is the Next Milestone?. Benchmarking for Quality Management & Technology, 3(4), 28-33.

Barr, T. R., Towle, E. L. (2012). Oncology Practice Trends from the National Practice Benchmark. J Oncol Pract., 8(5), 292-297.

Bedük, A. (2002). Benchmarking, Nobel, Ankara, ISBN: 9755914269.

Borghans, I., Heijink, R., Kool, T., Lagoe, R. J., Westert, G. P. (2008). Benchmarking and Reducing Length of Stay in Dutch Hospitals. BMC Health Services Research, 8(220). Available at: http://www.biomedcentral.com/1472-6963/8/220 (Accessed: 01 April 2018).

Bossyns, P., Abache, R., Abdoulaye, M. S., Miye, H., Depoorter, A. M., Van Lerberghe, W. (2006). Monitoring the Referral System through Benchmarking in Rural Niger: An Evaluation of the Functional Relation between Health Centers and the District Hospital. BMC Health Services Research, 6(51). Available at: http://www.biomedcentral.com/1472-6963/6/51 (Accessed: 01 April 2018).

Brann, P., Walter, G., Coombs, T., (2011). Benchmarking Child and Adolescent Mental Health Organizatins. Australasian Psychiatry, 19(2), 125-132.

Çatı, K., Kıngır, S., Mesci, M. (2007). Kıyaslamaya İlişkin Teorik Bir Çalışma. Elektronik Sosyal Bilimler Dergisi, 6(21), 147-171.

De Bruin, S. R., Baan, C. A., Struıjs, J. N. (2011). Pay-for-performance in Disease Management: A Systematic Review of Literature. BMC Health Services Research, 11(272). Available at: http://www.biomedcentral.com/1472-6963/11/272 (Accessed: 02 April 2018).

De Korne, D. F., Sol, K. J., Van Wijngaarden, J. D., Van Vliet, E. J., Custers, T., Cubbon, M., Spileers, W., Ygge, J., Ang, C. L., Klazinga, N. S., (2010). Evaluation of an International Benchmarking Initiative in Nine Eye Hospitals. Health Care Manage Review, 35(1), 23-35.

Demirdöğen, O., Küçük, O. (2003). Kıyaslama (Benchmarking) Süreci ve Ürün Odaklı Kıyaslamanın İmalatçı İşletmelerde Uygulanmasının Verimliliğe Etkisi. İktisadi ve İdari Bilimler Dergisi, 17(3-4), 303-320.

Doğan, S., Demiral, Ö., (2008). İşletmelerde Stratejik Yönetimin Etkinliğini Artırmada Önemli Bir Araç: Benchmarking. ZKÜ Sosyal Bilimler Dergisi, 4(7), 1-22.

Ellis, J. (2000). Sharing the Evidence: Clinical Practice Benchmarking to Improve Continuously the Quality of Care. Journal of Advanced Nursing, 32(1), 215-225.
Elmuti, D., Kathawala, Y. (1997). An Overview of Benchmarking Process: A Tool for Continuous Improvement and Competitive Advantage. Benchmarking for Quality Management & Technology, 4 (4), 229-243.
Elmuti, D., Kathawala, Y., Lloyed, S. (1997). The Benchmarking Process: Assessing its Value and Limitations. Industrial Management, 39(4), 12-19.
Ettorchi-Tardy, A., Levif, M., Michel, P. (2012). Benchmarking: A method for Continuous Quality Improvement in Health. Healhcare Policy, 7(4), 101-119.
Fernandez, P. McCarthy, I. P., Rakotobe-Joel, T. (2001). An Evolutionary Approach to Benchmarking. Benchmarking, 8(4), 281-298.
Fisher, J. G. (1998). Kıyaslama (Benchmarking) Yoluyla Performans Nasıl Artırılır?, (Çev.: Ahmet Ünver). Rota, İstanbul, ISBN: 9750780508203.
Friedman, T. L. (2012). Dünya Düzdür, (12.Basım, Trans.: Levent Cinemre). Boyner, İstanbul, ISBN: 9789757004509.
Fuller, J. A., Bessette, R., Freier, M. (2002). Performance Benchmarking: A Literature Review and Analysis for Atmospheric Fluidized Bed Combustion Plants. International Business & Economics Research Journal, 1(9), 91-99.
Genç, N. (2004). Yönetim ve Organizasyon, Seçkin, İstanbul, ISBN: 9753477503.
Halis, M. (2001). Paradigmadan Uygulamaya TKY ve ISO 9000 Kalite Güvence Sistemleri, Beta, İstanbul, ISBN: 9789754869118.
Hamel, G., Doz, Y., Prahalad, C. K. (1989). Collaborate with Your Competitors-and Win, Harvard Business Review, 67(1), 133-139.
Holloway, J., Francis, G., Hinton, M., Mayle, D. (1998). Best Practice Benchmarking: Delivering the Goods?. Total Quality Management, 9(495), 121-125.
Jain, M. (2006). Benchmarking: A Review. Impulse, 1, 40-49.
Jarrar, Y. F., Zairi, M. (2001). Future Trends in Benchmarking for Competitive Advantage: A Global Survey. Total Quality Management, 12(7-8), 906-912.
Kay, J. F. L. (2007). Health Care Benchmarking. Medical Bulletin, 12(2), 22-27.
Koçel, T. (2001). İşletme Yöneticiliği, (8.Basım). Beta, İstanbul. ISBN: 975-486-304-0.
Kouzmin, A., Löffler, E., Klages, H., Korac-Kakabadse, N. (1999). Benchmarking and Performance Measurement in Public Sectors. The International Journal of Public Sector Management, 12(2), 121-144.
Kumar, S., Chandra, C. (2001). Enhancing the Effectiveness of Benchmarking in Manufacturing Organizations. Industrial Management and Data Systems, 101(2), pp. 80-89.
Kyrö, P. (2004). Benchmarking as an Action Research Process. Benchmarking: An International Journal, 11(1), 52-73.
Lankford, W. M. (2000). Benchmarking: Understanding the Basics. Coastal Business Journal, 1(1), pp. 57-62.
McGonagle, J. J., Fleming, D. (1998). Options in Benchmarking. Journal for Quality and Participation, 21(2), 38-42.
Mohajeri, K., Nayeri, M. D., Mashhadi, M. M. (2009). A Model for Stakeholder-Oriented Benchmarking Process. Journal of Applied Sciences, 9(2), 237-247.
Mucuk, İ. (2000). Modern İşletmecilik, (12.Basım). Türkmen, İstanbul. ISBN: 975-7337-55-2.
Saraç, O. (2005). Benchmarking ve Stratejik Yönetim. Sayıştay Dergisi, 56, 53-77.
Schwappach, D. L., Blaudszun, A., Conen, D., Ebner, H., Eichler, K., Hochreutener, M. A., (2003). 'Emerge: Benchmarking of Clinical Performance and Patients' Experiences with

Emergency Care in Switzerland. Int j Qual Health Care, 15(6), 473-485.
Shaw, K. N., Ruddy, R. M., Gorelick, M. H. (2003). Pediatric Emergency Department Directors' Benchmarking Survey: Fiscal Year 2001. Pediatr Emerg Care, 19(3), 143-147.
Steiner, J. W., Murphy, K. A., Buck, E. C., Rajkovich, D. E. (2006). How to Utilize Benchmarking in the Clinical Laboratory. Clinical Leadership & Management Review, 20(6), E4.
Van Lent, W. A. M., De Beer, R. D., Van Harten, W. H. (2010). International Benchmarking of Specialty Hospitals: A Series of Case Studies on Comprehensive Cancer Centers. BMC Health Serv Research, 10, 253.
Van Lent, W. A. M., Sanders, E. M., Van Harten, W. H., (2012). Exploring Improvements in Patient Logistics in Dutch Hospitals with a Survey. BMC Health Services Research, 12(232). Available at: http://www.biomedcentral.com/1472-6963/12/232 (Accessed: 02 April 2018).
Yavuz, H. (2009). Krizde Bile Yükselme Stratejileri. Capital, 1, 96-99.
Yeniçeri, Ö. (2002). Örgütsel Değişmenin Yönetimi, Nobel, Ankara, ISBN: 9755913165.
Yıldız, G. (2002). Kıyaslama (Benchmarking). In: İ. Dalay, R. Coşkun, R. Altunışık (ed.), Stratejik Boyutuyla Modern Yönetim Yaklaşımları, 183-196, Beta, İstanbul.

Chapter 111

Total Quality Management in Hospitals

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INTRODUCTION

In our time and day, there is an intense competition between all businesses which produce goods and services. As in all sectors and industries, within the healthcare sector the viability, sustainability, growth, ability to fulfill their social responsibilities, to compete and to increase their revenues, profits or efficiencies of healthcare institutions and organizations (and of course, that of hospitals) depends on their utilization of the financial resources, healthcare workforce, medical installations, devices and consumables, time, knowledge, place and facilities that they own in the most effective, efficient and economic manner, aspiring for the highest quality possible.

The key to success in healthcare services is providing a different kind of service to the patient, who is the healthcare consumer. Healthcare institutions and organizations which actualize the concept of quality in all their activities in this way achieve an unquestionable superiority over their competitors.

The most important resource of hospital organizations is their workforce. The tendency of self-actualization of healthcare professionals such as physicians, dentists, pharmacists, nurses, midwives, healthcare managers, social workers, dietitians, psychologists, health officers, medical physicists, biomedical engineers etc. who are able to make an efficient use of time, form good relationships with other people, be aware of their skills and abilities and develop them accordingly, is also prevalent during their careers. The performance and efficiency of healthcare workers are among the leading factors that impact the success of hospitals. And the high performance and efficient labour of healthcare and hospital workers depend on their being satisfied with the job that they perform.

In order to have a healthier, happier and more productive society, it should be ensured that healthcare workers have high levels of satisfaction. In respect to this, it is of great importance to determine the job satisfaction levels of healthcare workers and to identify the positive and negative factors which have an impact upon such levels. Failure to satisfy the workers, who are also referred to as the "internal consumers", is a non-negligible drawback with regard to ensuring patient satisfaction. That is to say, it is difficult to satisfy the patient without satisfying the workers. That is because in providing and maintaining quality and total quality, as a matter of philosophy the participation of all workers of the organization is required (Ergenç, 1982; Telman, 2004; Silah, 2000; Ataay, 1987)

Job satisfaction is one of the significant factors of the contemporary understanding of management, and above all, a social responsibility and a moral necessity. Without a doubt, working is a human need. If the individual wishes to work and spends a considerable amount of his/her lifetime within a working environment, the managers

are obliged to render such environment rewarding and trouble-free. The managers need to consider the facts that their employees are not only economic assets but also have a social facet and that they work within an organization in order to satisfy both their financial expectations and their different socio-psychological expectations and needs. Within this scope, ensuring the job satisfaction of workers is also a social duty of organizations (Akıncı, 2002).

Would you feel safe when faced with a sleepy physician or nurse who had to work the night shift for several consecutive nights going into the day shift? Would you put your trust in a physician who does not even look you in the eye and say "Good morning, welcome, what seems to discomfort you?", who does not carry out an examination in line with the diagnostic and treatment protocols or sends you away with a prescription without performing the necessary tests and workups? How would you feel about a patient lying on a stretcher being kept waiting for almost an hour at the door of the emergency service for whatever reason? How would it make you feel if a nurse left his/her post for an hour in an intensive care unit occupied by post-surgical patients and if you saw that patient relatives entered and exited this room with their street clothes? What would you think in a situation in which no doctor or attendant came to the care of a patient who was squirming in sudden and severe pain and who caused all the patients in the service to come out onto the corridor? Would you go to a hospital in such a state which could neither be explained by the insufficiency of staff nor funds? (Aşık, Nuran Akşit, 2010)

Let us assume that our equipment used in medical diagnosis and treatment worked with an error margin of 1%. What could be the results of working 1% erroneously? Think about this if you please. A medical decision made by a physician based on the results of an uncalibrated and malfunctioning device misleads the physician as well as negatively affecting the treatment and can damage patient psychology in a way that is difficult to restore (Anonymous, 2018; Özcan,.2006)

THE CONCEPT OF QUALITY

Health institutions, organizations and businesses that adopt quality as their guide in every stage pre- and post-presentation beginning from the design of all products including medical ones attain success in competition. Quality can be defined as the production and presentation of goods and services which satisfy the consumers even beyond their expectations. The most important factor necessary to provide services or produce goods of high quality is bringing all the procedures concerning quality under control (Akın, 2002).

The dictionary definition of quality is "exceptionally good" or "perfection". While Shewart defines quality as "the perfection of the commodity", J.Francois David asserts that "Quality is the ability of a product to promptly meet the needs of consumers at the minimum cost". Quality is: meeting the needs and expectations of customers; providing the goods and services appropriate for their needs in the most economical manner and at the right time; engaging in the post-purchase services; and fulfilling the enhancement activities (Halis, 2000; Efil, 1999).

Quality, according to J.M Juran is "Suitability for Use.", according to P.B.Crosby it is "Suitability for Conditions." and "The sum total of the features of a commodity or service based on their capability to meet determined needs or needs that may arise." According to K.Iskılowa, it is "Developing the product which is the most economic,

useful and which unfailingly satisfies the consumer, designing, producing and providing the post-purchase services." According to Feigenbaum, it is an effective system in which the quality development, maintenance and enhancement efforts of varying groups in an organization are assembled in order to actualize the production and service at the most economical level, taking customer satisfaction into account. According to Taguchi, it is the minimum damage inflicted on the society after the distribution of the product.

Quality according to the American Society for Quality is: "The sum total of characteristics that manifest the capabilities of a commodity or service to meet a certain need and a systematic approach of the search for perfection." According to the European Organization for Quality, it is "the level of suitability of a commodity or service to the wishes of consumers". The striking point here is the subject of the satisfaction of customers' wishes and expectations. British Standards Institution defines quality as "the sum total of the distinctive features and attributes of the commodity or service regarding the capability of the commodity or service to meet the determined or implied needs". According to the Japanese Institute of Standards, quality is a system of production which produces the commodity or service in an economical way and which responds to the wishes of consumers. (Bozkurt, 1995; Johns, 1992; Taner, 2004).

Turkish Standards Institution, on the other hand, defines quality in the ISO-9000 series as the sum total of characteristics of a commodity or service based on its capability of meeting the determined or possible needs.

Quality is the sum total of characteristics of a commodity or service based on its capability of meeting determined or possible requirements. In line with this definition, as the requirements will change in time, specifications should be revised accordingly. Quality is the essential features' meeting of needs. The features that the producer seeks in the quality of commodity or service are ascertained in production centers, in a factory for merchandise or in a hospital for health service, through project work or a patient treatment plan. Consequently, medical devices to use in the progress and development of the production of health services, medical instruments, medical consumables or medical systems are determined. For instance: while a special operating room containing an MRI scanner is used for a neurosurgery operation; different medical devices, instruments or systems are used in the operating room in a cardiac transplant and while a general operating room is used for a standard operation; a local operating room is used for a nail removal operation. In this way, the necessary precautions are taken in advance for the production of a high-quality commodity or service. In quality, approval and cost are intertwined. A hospital may ensure hybrid or varied manufacturing and create twelve different products from a women's health and diseases service, for instance. The quality conditions of some products are determined nationally as in TSI, regionally as in European Organization for Quality or internationally as in ISO and these standards need to be complied with.

Hospitals which produce health services in Turkey and which have TSI and JCI (Joint Commission International) certification admit patients from abroad and contribute to the national economy by creating substantial levels of foreign currency inflow through services export (İncesu, 2011; Aydoğmuş, 2015).

In the practices, various concepts of quality are mentioned such as must-be quality, attractive quality and design and suitability quality.

Must-be quality: Expresses the unconditional expectation of the customer from the product. In health, the recovery of the patient is a must-be quality.

Attractive quality: The features added on top of the existing expectations which the customer does not expect, demand and does not formerly have an idea about. For instance, the application of epidural anaesthesia instead of local anaesthesia or testing a newborn for hepatitis without phlebotomy and with a new technological device.

Design and Suitability Quality: Design quality is that the preferred qualities exist in the design of products and services. Suitability quality is that the production that takes place complies with the features specified in the design (Sermin, 2018).

CERTAIN CONCEPTS RELATED TO QUALITY

There are quite a few concepts related to quality. Some of these are concepts such as strategy, vision, mission, values, domestic and foreign customer.

Strategy: The meaning of the word strategy is expressed as "establishing and coordinating unity of action in order to achieve a goal". This is a management technique which enables the specification of aims and objectives and identifying the necessary procedures in order to reach these objectives. Strategy is a general projection that shows how and through which ways the future will be reached (Coşkun, 1998).

Vision: Vision is the creation of a future image desired for the company, combining the facts and expected future conditions (Koçel, 2001). Creating a vision, which is too important of a leadership to transfer to others, should start at the top rank of institutions and organizations such as hospitals. All the employees of the business should participate in the process of crystallizing the vision. A palpable vision can give the personnel inspiration and sufficient energy for the prospect of their institution becoming a worldwide organization. Top executives should be encouraged to set a good example of the mission and employees should be given the opportunity to identify with principle-centered leadership (Taner, 2004). Vision shows the place and state desired to be reached in the long run, and the direction to move towards. Vision is the ability to design, develop and share a future that is aspired for regarding hospitals. It is the ability to create a future through the concatenation of facts, aspirations and opportunities, being able to take risks. The vision of a hospital should be:

- To be a excellence-oriented and reliable partner for healthy life
- Values
- Honesty
- Leadership
- Teamwork
- Patient and employee satisfaction
- Excellence.

Mission: Mission is the fundamental purpose of a hospital service and consists of its future aspirations, current state, public image and corresponding executives' world-view. What will the institution, hospital, company or organizations do, how will it do it and for whom will it be done? That is exactly what the mission statement expresses. Mission in hospitals is expressed as: keeping up with the scientific and technological developments with an outstanding staff making no concessions of ethical principles; oriented towards the satisfaction of patients, patient relatives and employees; and being a world brand at international standards of quality through making a difference with industry-leading practices.

Values mean creating the value of customer or patient, communicating and catching it. Value is primarily to bring together the right combination of quality, services and costs for the intended population, namely the patients and patient relatives. The succeeding of hospitals and healthcare institutions and organizations depends on their ability to devise a superior value proposition and a superior value conveyance system. A value proposition is more than a hospital's relevant positioning on a single quality. Value proposition is the total result of the experience the product promises to convey and the reliable transmission of this experience. Values for a hospital are listed as: honesty, exemplary and leading practices, research, reliability, keeping up with the latest developments, fair treatment, responsibility, continuous improvement, team spirit, being patient-oriented, being caring and being employee-oriented (Ak, 2018).

Customer: In its conventional meaning, customer is "the persons and institutions who purchase and use a commodity or service." The employees or units who use the work output (as commodity or service) of employees such as doctors and nurses or units such as clinics and operating rooms etc. as input are called internal customers; while persons such as patients or institutions such as social security institutions who purchase and use the commodity or health service are called external customers (Iso, 10002).

DIMENSIONS OF QUALITY

The conventional definition of quality is "compliance to standards." However, this definition falls short in our day and time and rather; quality is considered as the suitability to customers' demands. What is expected of quality is that it ensures economical rationality. This is only possible through the enhancement of competitive capacity by means of market growth, design growth and increasing efficiency. The existence of varying definitions of quality which have arisen throughout the 20th century is due to quality being multi-dimensional. D. Garvin states that the dimensions of quality are as follows.

Performance: Relates to the primary features of the product.

Other Factors: Secondary characteristics which ensure the attractiveness of the product.

Compliance: Relates to the compliance with specifications, relevant documents and standards.

Reliability: Relates to the continuity of performance for the commodity or service throughout its lifespan of use and efficacy.

Durability: Relates to the usability or utilizability of the commodity or service.

Serviceability: Relates to the extent to which problems regarding the commodity or service can be resolved.

Aesthetics: The allure of the commodity or service and its capability to appeal to emotions.

Reputation: Relates to the past performance of the commodity, service or other production items.

Quality appears before us as a combination. The elements that constitute this combination are the dimensions of quality (Ak, 2017; Ak, 2018).

QUALITY IN THE HEALTH SERVICES

Health has a great importance in the sustainment of human life and the formation of life quality. The presentation of health services is an area that directly affects people's

quality of life and happiness. Within this scope, the level of health services in a country is accepted as an indicator of its level of development (Asuna, 2005). Quality in health is the health services' or products' meeting of the needs and providing the expected result (Runciman, 2007). Quality in health can be described as "patient satisfaction" as well. The whole of activities oriented towards patient satisfaction such as correct diagnosis, correct treatment, friendly service without delays, comfortably spacious environment and reasonable prices etc. comprise the most important factors of quality in health services (İncesu, 2011).

Quality in the health system is the capability of the whole infrastructure (such as the necessary knowledge for health service, people, material and technology) consummately meeting the needs of the one who needs health service (Aydın, 2008). If quality is the objective in health services, the aim should be to serve with an approach which ensures the continuous improvement of well-rounded health services, prioritizes the ones in more critical conditions and adopts reciprocity, supportiveness and quality improvement as a principle. A health institution that is conscious of the concept of quality and that constantly renovates itself will always be the preferred and respected institution in its region.

Health institutions are currently working in an environment where the competition is much greater compared to the past. Outclassing the others in competition for these institutions has necessitated embodying important changes, marking down the costs, performance measurements in order to increase efficiency and quality improvement work. A large part of sanctions oriented towards quality improvement comprise internationally accepted hospital quality criteria.

THE CHARACTERISTICS OF SERVICE AND QUALITY STANDARDS

Services have three main characteristics as intangibility, heterogeneity and integrity.

1- Intangibility: Services are intangible because they cannot be measured, are impalpable, uncountable and untestable. Since it is out of the question for health services to be stored and showcased, it is not possible to quality-control at the final phase as it is done in the manufacturing sector.

2- Heterogeneity: Health services are for health customers, namely patients, who have a myriad of different needs. It is obvious that different individuals who have the same disease will have varying expectations in terms of hospital environment, treatment and care.

3- Integrity: In the manufacturing sector, quality is added to the product through certain methods while it is in the factory and later it is presented to the customer. Nonetheless, this is not possible with regard to health services. While health services are being provided, quality is either actualized or not at the moment when demand and supply meet and the health service is being provided (Hayran, 1998).

Health service standards are listed below as:

1. Institutional Service Management
2. Health Service Management
3. Support Service Management
4. Indicator Management

so as to include all the departments of a health institution and organization. The standards created should be open to development and change through the enrichment of scientific data (Akçay, 2018).

THE DEVELOPMENT OF QUALITY

The roots of quality go back a long way. A variety of sources ranging from the Code of Hammurabi to the Hippocratic Oath, from the traits that Sultan's chief physician need to have in the Ottoman Empire to Bayezid II's Firman of Bursa and Turkish-Islamic Guild comprise the foundation of the concept of quality. When viewed from the perspective of production management, a process involving quality control, quality assurance, total quality and total quality management is seen.

Quality control involves monitoring the compliance of the commodity or service with pre-specified properties and measures and ameliorating errors at the end of the production process. The task in quality control is to monitor the commodities and services, detect and fix the possible errors.

Quality assurance is the planned and systematic efforts that ensure compliance of a commodity or service with quality standards or its fulfillment of all the expectations in terms of quality. (Halis, M. 2000). In later years, instead of the end product being put to inspection, the idea to secure the production system so as not to necessitate such control has developed and quality assurance systems have emerged. This system led to the development of total quality management in which the aim is to achieve 100% customer satisfaction by ensuring participation from top management and all the employees. (Şimşek, 2000).

Quality assurance system occupies an important place within Total Quality. It is advisable for businesses to establish the quality assurance system first and to later move on to total quality. Quality assurance system can be regarded as the outset of transition to total quality management (Çetin, 2001).

Quality assurance involves the activities concerning the quality measurement of services provided and making the required adjustments in line with evaluation results when necessary. The World Health Organization (WHO) refers to three main factors in quality assurance. These are listed as:

- Standards on which a consensus has been arrived at,
- Comparison of the status quo with these standards and
- Efforts to ameliorate activities that do not comply with standards (Ak, 2018).

In quality assurance which has a wider scope in comparison to quality control, after the standards are specified, the ways and rules to achieve them are turned into a program and it is ensured that the intended level of quality be reached in accordance with this plan. Instead of fixing the errors at the end of the production process, it is important to ensure compliance with pre-specified levels of quality at every stage of production using statistical methods. Data collection, periodic monitoring and evaluation, continuity and customer satisfaction are at the forefront (Özden, 1995).

Health is a non-stationary process of balance between human population and environment. The penalties of not fulfilling a series of specific needs arising out of balance would be disease and death (Sepulveda, 1995).

In health services, the concept of quality has a much different structure than the concept of quality that total quality management prescribes. Patients or social security

and health insurance institutions are liable to know what is the level of quality they buy with their money and how it is measured.

In the USA, a serious problem of credibility is observed between organizations that provide health services and those that buy these services. It has been possible to observe that even for the same service that does not exhibit the property of complication, there are differences reaching up to 800% in the invoicing of health services in hospitals located around the same street. The general opinion accepted by the public in the USA is that hospitals do not provide health services taking the settled standards into account and that they act indifferently and insensibly with regard to costs. This brought forth a severe confidence crisis in the area of hospital management in the USA and serious work with the aim of standardizing health services and determining levels of quality have started. In order not to create uneasiness in patients or persons and institutions in relation to patients, these problems are not addressed as part of their own administration concepts but as quality improvement work. (Kutlu, 1998) These days, the concept of "Quality" is

being replaced by the concept of "Total Quality". The fundamental philosophy of this concept does not focus on the quality of output acquired at the end of the system, but on ensuring quality at every stage (Düz,.2018).

TOTAL QUALITY MANAGEMENT

Total Quality Management (TQM) is a management system which is initiated against the crisis that capitalism faced in the 70s and which aims to put into action new practices that will elevate efficiency by incorporating the labour force on a voluntary basis in the restructuring process comprising all areas of life.

Total Quality Management is currently conceived in its most general form as achieving profitability by consistently ameliorating of all the activities in an organization and satisfying the customers and society through the absolute active participation of all the employees.

In the total quality approach, a significant change has been occurring in the roles that employees and executives are expected to assume, unlike the classical approach. In the new approach, a new employee behaviour should be displayed in which the employees are expected to consummately fulfill their responsibilities as well as constantly thinking about working more efficiently and improving work processes and contribute their thoughts and skills to the system through various systematic participation methods; while it has become an important need that executives set up a human resources planning system which encourages employees to participate, take initiative, assume responsibility and create innovations.

Quality circles have been established in order to ensure employees' participation in the system and playing active roles in the decision-making process by assuming authority and responsibility. Quality circles can be conceived as a part and an implementation unit of the total quality management (Düz, 2018). Quality circles (i.e. quality improvement teams) are groups who continuously carry out quality determination activities according to the general principles of quality control circles published by Japanese scientists and engineers in places where their members work and who continuously perform their duties as a part of quality programs, self-development, flow control in workplace and amelioration. Or they can be smaller groups who perform

their activities voluntarily and run programs of information gathering, suggestion production, education, workflow control and amelioration. In TQM applications, they consist of people who are to actuate employees and assume an encouraging role in every stage of the application on the basis of necessary decisions and resources. These circles which work in order to remedy certain malfunctions in the system or ameliorate the system better detect errors that individuals cannot easily trace and actualize more lasting ameliorations.

Quality circles value the workers not only as bodily power but also as individuals who always contribute their minds, thoughts, emotions and experiences to their work. By means of circles, wage earners are ensured to be proud of their work by providing them with opportunities of using their own ideas and brainpower. Quality circles help realize both individual aims and foundational aims by ensuring that members find solutions to work-related problems and thereby securing responsible participation of the members. Wage earners start to get to know each other better when circles become operational. This situation leads to the gradual development of the feeling of togetherness (team spirit) in the group. Wage earners learn to show empathy to each other, work together and cooperate towards a common a goal (Gülsen, 2012).

By the application of the Total Quality Management model to hospitals, the corresponding expectations are: quality in service presentation, augmentation in the satisfaction of employees and service buyers, quality of the management and personnel, rationality in decision mechanisms, that information systems be based on records and activity of communication factors. Moreover, it is aimed to ensure patient satisfaction, development of team spirit through team work and most importantly to benefit through quality. In this way, it will be ensured that people are healthier and happier (İncesu, 2011).

There is a vast difference between the total quality management applications in manufacturing and service sectors and total quality management applications in the health sector. When a product exhibit errors in the industry, its production can be halted and measures to fix the error can be taken, the manufactured material can be put aside as faulty. In the service sectors, in case that customer satisfaction is not achieved, an apology is proffered and perhaps the customer might be lost due to this, yet measures are to be taken in order not to iterate the same error. In the health industry, however, the word 'apology' is one that should never be uttered. This is also the same for the word 'error', yet in the health sector, personal or institutional errors can occur and these are addressed as medical malpractice and medical liability insurances are arranged as precaution. That health services directly concerns human life and the notion that errors made might cause irrevocable affairs renders ensuring the quality indispensable in health services and health administrations (Aslantekin, 2007).

SERVICE CRITERIA IN TQM

One of the main reasons of the disruption that occurs in the presentation of health services is there being no concordance in service criteria. In establishing the service criteria, three fundamental factors hold significance as standards on which consensus is reached, comparison of these standards with the status quo and efforts to remedy activities that do not meet standards (Gökmen, 1998). The following three main objectives need to be borne in mind in order to develop quality indicators at the design

stage in hospitals which are to adhere to the philosophy and methodology of total quality management:

1-Establishing an original quality indicator system which encompasses all the processes in hospital service, serves the purpose of continuously ameliorating institutional quality and is comprised of gaugeable parameters.

2-Ensuring that hospital management continuously monitors and evaluates the quality performance of all institutional functions at the macro level.

3-Ensuring that medical, administrative and patient care units which provide direct or indirect service to the patient monitor, evaluate and improve their own quality performance on the basis of indicators (Türköz, 1998). In total quality management, the intended result and the acquired result need to be compared via measurement. This is possible through well-determined indicators in health service presentation.

There are several service functions which focus on the patient in the treatment and care of a disease. These are: diagnosis, treatment and care, laboratory and monitoring tests, nutrition/diet, housekeeping (hotel services) and procedures concerning hospital management services. In order for the hospital administration to achieve success, it should emphasize the processes that are of particular concern to quality management, plan them in unison with other service processes, conduct human resources management in a coordinated and organized manner and ensure continuity.

In the service flow, continuous analysis of and amelioration activities for the main processes and support processes which affect them need to be done. Of the services operated in the hospital, customer satisfaction feedback; regular controls of work processes; detecting deficiencies and malfunctions; and quality system make up the foundation of functioning.

Physicians regard using the term 'customer' for patients with disfavour. In industrial production, TQM focuses on meeting the needs of the customer and strives to gain their appreciation. The external customers of the hospital are: persons or institutions applying to benefit from health services; patients; patient relatives; public/private institutions transferring patients; insurance companies; and whoever demands health services and pays for expenses in return. Even only the patients exhibit great differences as customers. The treatment of women's, men's, elderly people's and children's diseases, medical check-up and people who make applications in order to protect from disease form part of customer traits.

If that the hospital management can control at least 85% of the work processes is accepted, it reveals that quality problems resulting from employee errors will not exceed 15%. A substantial part of personnel errors can also be eliminated through continuous training (Çoruh, 1998).

THE AIM OF TOTAL QUALITY MANAGEMENT

General aims of total quality management are pointed out as ensuring collaboration between employees who work in hospitals or other administrations and executives, continuous amelioration, striving for the top level of quality, taking zero defect as a foundation and thereby preventing wastage, reducing the operation time of products and services, making fast delivery, reducing the development time for products and services, selling high-quality products and services for cheaper prices by diminishing the costs and achieving high competitive power, satisfying the patients and

customers fully, ensuring that hospitals and other administrations achieve the designated goals and reducing the number of in-process procedures (Şimşek, 2012).

TOTAL QUALITY MANAGEMENT IN THE HEALTH SECTOR (CONTINUOUS QUALITY IMPROVEMENT- CQI)

In the health sector, Total Quality Management is more commonly called continuous quality improvement (CQI). Only when health services provided in the health sector have 100% reliability can there be mention of zero defect. This is why services provided in the health sector need to have higher quality in comparison to other services. Since health services provided in the health sector directly concerns human health and life/death, the qualifications and reliability of employees such as physician and nurse are rather significant. The smallest error to be made by healthcare professionals can sometimes lead to very dangerous results which may sometimes prove fatal. Therefore, health institutions and organizations such as hospital etc. which produce health service should aim to achieve "zero defect" (Bircan, 2004). Concerning reducing the variability of results, several studies have emphasized that total quality management successfully executed can bring about quite significant results (Talib, 2011) These results can be listed as: the enhancement of service quality; the improvement of healthcare quality and performance; patient satisfaction; the reduction of healthcare instutions' application costs; and employee satisfaction. The purpose of continuous quality improvement is meeting patient, i.e., customer needs at the lowest possible cost (Sarıkaya, 2003: 58). It also leads to positive results such as efficiency increase, simplification of the methods, standardization in product/service and that people who work at the initial stages be proud of their work, as well as a reduction in cost (Kovancı, 2001). The elements necessary in quality improvement for continuous improvement and their relations with each other can be seen in Figure 1.

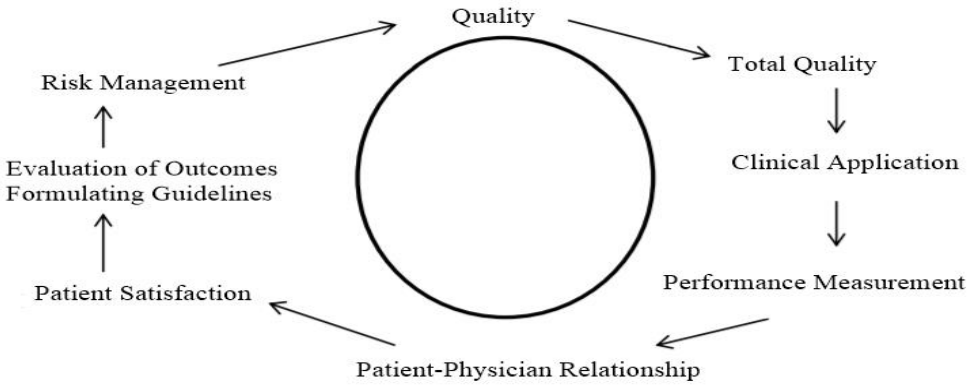

Figure 1. Continuous Quality Improvement in Health Services. (Akalın, H.Erdal, 2000)

Currently in applications oriented towards continuous quality improvement, patient-centred, computer-based, easy-to-reach when necessary and electronic patient records are being used, which have become the nucleus of all health information systems. This application ensures that performance-based care quality evaluation work be done more easily by enabling electronic access to clinical data necessary to measure healthcare results and contributes significantly to continuous quality improvement

(Öztürk, 2012). Quality standards in health which takes the improvement of quality of the service and results obtained from it as its foundation have found application areas as a tool that evaluates quality in every stage of health service and in this sense, as a guide for healthcare workers in the amelioration and improvement of quality (Güler, 2012; Fedai, 2013; Akalın, 2000; Çatalca, 2003; Ecer, 2002; Tanrıverdi, 2010).

The main features of total quality management or continuous quality improvement in its more common name for the health sector are that they are oriented towards evaluating organizational performance, approach activities that are measured and evaluated in association with the whole organization and that they assume the obligation of continuously improving quality. An important point is that classical approaches to quality assurance should not be completely rejected and that new applications be created so as to be based on past foundations, improving it (Pozantı, 1995).

DONABEDIAN'S APPROACH TO PATIENT SATISFACTION AND QUALITY

Patient satisfaction plays an important role in the design and execution of the quality management program. Patient satisfaction can be defined as patients' or persons' gratification who benefit from the service itself, its presentation format and the service environment and them being able to have their expectations fulfilled.

Donabedian puts forth that seven properties of health services determine quality. These properties are: activity; effectiveness; efficiency; optimality; acceptability; legitimacy; and equality.

1- Activity: The skill to ensure the best care that might enhance health status.

2- Effectiveness: The degree to which improvement in health status can be achieved.

3- Efficiency: Producing maximum benefit out of minimum expenditure.

4-Optimality: Relates to establishing the best balance between costs and benefits.

5- Acceptability: Patient-physician relations, using the service easily, cost of healthcare and suitability to patients' preferences and wishes.

6- Legitimacy: Relates to the suitability to societal preferences.

7- Equality: Securing the justice in service presentation and use.

According to Donebedian, there is a logic and model to total quality management in health institutions. These days, customers/patients who request health service are ones who expect to get their money's worth, to be informed while they are getting the service, is inquisitive and demands standards of health service that match those of the West.

In order to be able to talk about quality in health services: that there is a solid management model; that by whom, when, where and with which tools the work is being done, that top-level executives have confidence in quality and that healthcare labour force has strong characteristics and infrastructure.

Health service exhibits a different appearance in comparison to product manufacturing. Complex mental, physical and psychological interplays occur between the keystones of the structure. Thereby the conception of quality is different from that in manufacturing sector and modeling is harder. Accepted as the prevailing method,

Donebedian model consists of three main parts as structural quality, process quality and outcome quality.

- Structural Quality: Quality of the equities (staff, building, appliances etc.) and their organization for a high-quality service.
- Process Quality: Quality of the actual health service provided to patients.
- Outcome Quality: What is of importance here is to what extent an improvement is achieved by various combinations of structure quality and process quality. The most important factor here is outcome quality. However, it is very hard to measure this in the health sector. This is because the health service provided generally takes a long time to produce its effect, exhibits an openness to individual and subjective judgment as well as making it difficult to effectuate quality criteria such as patients' approach to health post-treatment, nutrition, shelter and social and psychological environment (M.P.M.1995; Üstel, 1995; Okutan, 1994; Yumak, 1994; Ersoy, 1995; Cihangiroğlu, 1996; Özgen, 1995; Ak, 1996; Ak, 1990).

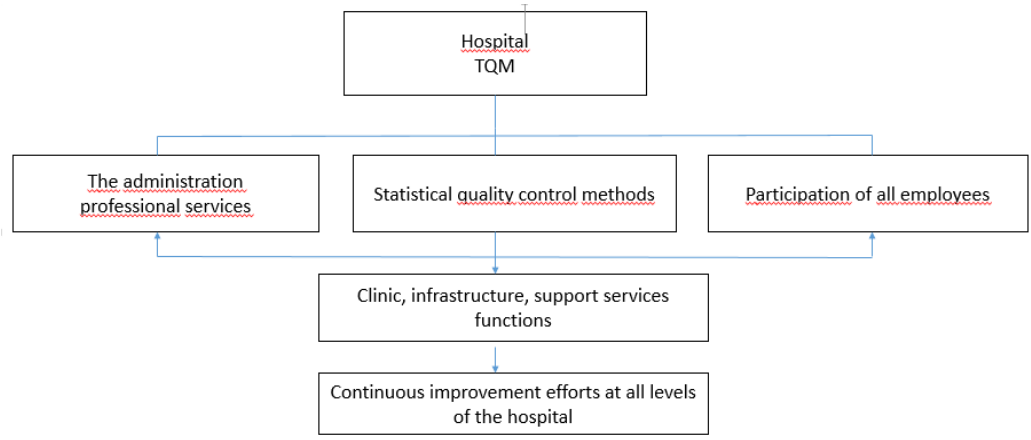

Figure 2. Total Quality Management in health organizations

THE EMERGENCE OF THE NEED FOR TOTAL QUALITY MANAGEMENT IN THE HEALTH SECTOR

In the emergence of the need for total quality management in the health sector; increase in individuals' purchasing power, the initiation of competition between medical treatment institutions, proliferation of the demand for high-quality care in health services and that it delivers a solutions to quality-cost discrepancy.

The rapid increase observed in health expenditure, x-rays and scans that are overdone as observed in some medical treatment institutions, caesarian section, hysterectomy, operations such as coronary by-pass, unnecessary patient admission and unnecessary operations, discharging, reasons such as the occurrence of delays and errors in accrual and cash proceeds led to the need to improve quality in patient care services and to readjust management/organization. (Çoruh, 1995)

DIFFICULTIES IN CLINICAL APPLICATIONS IN TOTAL QUALITY MANAGEMENT

Hospital functions are comprised of diagnosis, treatment and patient care along with financial, technical, support and administrative services. An important part of diagnosis, treatment and patient care services are carried out by doctors and nurses. In doctors' tasks of diagnosis and treatment, there is individual authority and liability as well as inflexible planning and application mentality. Since clinical work is accepted as an area belonging to physicians, it cannot be controlled by hospital administrators, physicians manage their clinics in line with their own plans and only collaborate with other clinic officials when necessary. While customer description is easily done in the industry and service sector; in the case of inpatient treatment institutions, the "patient" may be the customer along with physicians, health insurance companies, medical supply companies and pharmaceutical companies. It is not enough that the patient be satisfied by health services for a high-quality treatment and care. It is also necessary that the hospital be equipped with cutting-edge technological tools and materials that its professional staff can be relied upon by the public and that health services be easily accessible when required. (Çoruh, M.1995)

TOTAL QUALITY MANAGEMENT APPLICATIONS IN HOSPITALS

There are many examples of total quality management applications in hospitals. Here, the applications in Japan will be mentioned where total quality management is prevalently practiced. The administration of the Toyota Hospital in Japan which has been opened in 1987 has formed the hospital managerial team before the hospital has been opened and put them through total quality management training. The fundamental approach in this training was that cost-effectiveness and costs be rendered optimal. Quality workgroups have been formed in the year 1991. These groups have initiated work to minimize the inventory for medical procurement, pharmacy prescriptions and nursing unit procurement. Another application in Japan is the quality-related work in Chugoku Electric Power Company Hospital in Hiroshima. Here, the hospital administration has formed 17 quality control teams and a working plan has been prepared. In this plan;

1- Former nursing plan
2- Reducing the occurrence of burning accidents while cooking
3- Reducing the operation hours,
4- Using sterilized equipment,
5- Reducing patient waiting time,
6- Developing nursing notes
7- Reducing the number of people who get damaged by X-RAY
8- Control system for office supplies,
9- Supply in cases of emergency,
10- How to get organized after a medical exam,
11- Cleaning the sickrooms,
12- Reducing the patient complaints against Hot-Pack cures,
13- How the services will be improved for every patient has been addressed (Ak, 1996).

CONCLUSION

The final point that quality-related work has reached is total quality management. Such practices which are named "Continuous Quality Improvement" in the health sector have a greater importance in comparison to other sectors. This is because the expectation of health consumers is zero defect. Only if the health services provided in the health sector have 100% reliability can zero defect be mentioned.

In health services which require implementation and support within an integral framework, especially in hospitals, continuous quality improvement is very important since health service directly affects human life and the critical process between life and death.

That patients are healed and satisfied depends upon ensuring the satisfaction of hospital employees, who are named 'internal customer'. It is hard to ensure patient satisfaction with physicians, nurses and other hospital personnel who have not been satisfied through material and non-material tools. This is why health and hospital administrators need to place emphasis on the satisfaction and motivation of healthcare personnel.

In the information age, the behaviour and expectations of the information society and its members have changed drastically. People with high levels of education earn income by working in good jobs, placing importance on quality when fulfilling their demands and preferences and are willing to pay the price for quality. These conditions are also applicable for health consumers and the demand for high-quality health services is increasing. Also, the members of the information society act inquisitively and have more confidence in themselves. For this reason, a knowledge sharing has been done, ranging from the concept of quality to total quality management. The knowledge accumulated here has been aimed to be of use to people who wish to work on this subject by providing them with some knowledge on total quality management and its applications in hospitals.

REFERENCES

Acuner, T., Akın, Ş. (2001). Müşteri Memnuniyetine Ulaşmada İlk Adım:Mutlu İç Müşteriler, Standard,Aralık 2001, Ankara,s.90

Ak, Bilal, (1996)."Hastanelerde Toplam Kalite Yönetimi", Standart Dergisi, TSE Yayını, Haziran 1996, s. 55-68

Ak, B. (1990), "Hastane Yöneticiliği ", Özkan Matbaası, Ankara 1990, s.69-73

Ak, B. (2017). Kalite Kavramı, Ders sunusu, s.16, 17, Toros Üniversitesi Sosyal Bilimler Enstitüsü Sağlık Kurumları İşletmeciliği Programı, Mersin, 2017

Ak, B. (2018). Sağlık Kurumları İşletmeciliğinde Toplam Kalite Yönetimi, Ders Sunusu, s.4-9,Toros Üniversitesi Sosyal Bilimler Enstitüsü Sağlık Kurumları İşletmeciliği Programı, Mersin, 2018

Akalın, H. Erdal; (2000), "Sağlık Hizmetlerinde Sürekli Kalite İyileştirme", ANKEM Dergisi, Sayı: 14, No: 3, s. 254-257

Akçay, Şule, (2018). Toplum Sağlığı ve Sağlık Politikaları, https://docplayer.biz.tr/7860795-Toplum-sagligi-ve-saglik-politikalari-prof-dr-sule-akcay-baskent-universitesi-tip-fakultesi-gogus-hastaliklari-ad-ogretim-uyesi.html,08.07.2018

Akın, B., M. İnce and R. Usta. (2002). ISO 9000: Beklentiler ve Gerçekler.Standart Dergisi. s. 59.

Akıncı, Zeki. (2002). "Turizm Sektöründe Çalışan Doyumunu Etkileyen Faktörler: Beş Yıldızlı Konaklama İşletmelerinde Bir Uygulama, Akdeniz İ.İ.B.F. Dergisi (4) 2002, s.2.
Aslantekin, Filiz. Göktaş, Bayram, Uluşen Mesude, Erdem Ramazan, (2007). Sağlık Hizmetlerinde Kalite Deneyimi: Dr. Ekrem Hayri Üstündağ Kadın Hastalıkları ve Doğum Hastanesi Örneği, Fırat Sağlık Hizmetleri Dergisi, 2(6), 58-60
Asuna, Kutlu, Tuncer, (2005). Sağlık Hizmetlerinde Kalite, Kamu Yönetiminde ve Kamu Hizmetlerinde Kalite, Ed.: Coşkun Can Aktan, Ulvi Saran, Hizmet İş Sendikası Yayını, 2005, Sayfa:. 159-182, Ankara. S.159-182)
Aşık, Nuran Akşit (2010). Çalışanların iş doyumunu etkileyen bireysel ve örgütsel faktörler ile sonuçlarına ilişkin kavramsal bir değerlendirme Türk İdare Dergisi Sayı: 467 Haziran 2010, 3132
Ataay, İ., D. (1987). İşletmelerde İnsangücü Verimliliğini Etkileyen Faktörler, MESS Yayını, Eğitim Kitapları Dizisi:19.,s.71
Aydın, Sebahattin (2008). Sağlık sisteminde kalite ve güvenlik, 17.kalite kongresi Kaliteli çalışmak, kaliteli yaşamak, 24-26 kasım 2008,istanbul,s.2
Aydoğmuş, B. (2015). Hastanelerde toplam kalite yönetiminin çalışan tatminine etkileri ,"bir vakıf üniversitesi hastanesinde toplam kalite yönetiminin hekim tatminine etkileri konusunda bir araştırma" T.C. Ufuk Üniversitesi, Sosyal Bilimler Enst., Işletme Anabilim Dalı, Sağlık Kurumları Işletmeciliği Bilim Dalı, Yüksek Lisans Tezi, Ankara, 2015, s.6
Bircan, Hüdaverdi, Baycan, Serap, (2004). Sağlık Sektöründe Verimlilik ve Kalite Sistemi: Cumhuriyet Üniversitesi Hastanesi Örneği, C.Ü. Sosyal Bilimler Dergisi Aralık 2004 Cilt : 28 No:2, s. 173
Bozkurt, R. ve N. Asil. (1995). Kalite Politikası Oluşturma Süreci. Verimlilik Dergisi (3). , s. 34
Çatalca, Huriye, (2003), Sağlık Hizmetlerinde Toplam Kalite Yönetimi, Beta Yayınları, İstanbul.
Fedai Çavuş, M. - Gemici, E. (2013). "Sağlık Sektöründe Toplam Kalite Yönetimi", Akademik Sosyal Araştırmalar Dergisi Yıl (Y.)1, S.1,
Çetin, C., B. Akın, ve V. Erol (2001). Toplam Kalite Yönetimi ve Kalite Güvence Sistemi (ISO 9000-2000 Revizyonu) İlke, Süreç, Uygulama. Beta Basım: İstanbul, s. 363-364
Cihangiroğlu, Necmettin, (1996). "Sağlık Bakım Kalitesi ve Hasta Tatminin İncelenmesi", (Yayınlanmamış Yüksek Lisans Tezi), GATA, s.19-31
Çoruh, Mithat, (1995), Toplam Kalite Yönetimi, Hastane Uygulamaları Gerçekler ve Güçlükler, (Ed. Mithat Çoruh,Sağlık Sektöründe Toplam Kalite Yönetiminin Yeri, Haberal Eğitim Vakfı yayını,Yeni Fers Mat,Ankara, içinde),s.2
Çoruh, Mithat, (1998). Hastanelerde Toplam Kalite Yönetimine Nasıl Geçmeli?,Modern Hastane Yönetimi,Cilt-2,Sayı-2,Mart 2998,İstanbul,s.1)
Coşkun Can Aktan, (1998).Geleceği Kazanmanın Yolu: Stratejik Yönetim,http://moodle.baskent.edu.tr/pluginfile.php/147118/mod_resource/content/2/hafta2_ders_notu.pdf
Düz, Murat (2018). Kalite Nedir?http://egitim5.tripod.com/tky.htm,08.07.2018
Ecer, Ferhat; Demirel, Yavuz; Uslu, Sevilay, (2002), "Sağlık Sektöründe Toplam Kalite Yönetiminin Uygulanabilirliği Üzerine Bir Araştırma", Standard Dergisi, Yıl: 41, Sayı: 490.
Efil, İ. (1999). Toplam Kalite Yönetimi ve ISO 9000 Kalite Güvence Sistemi. Alfa Basım Yayım Dağıtım: İstanbul. s. 18

Ergenç, A. (1982). “İş Doyumunun Belirleyicileri Olarak Beklenti, Algılama Tutarsızlığı ve Çalışma Değerleri”, Yönetim Psikolojisi Ulusal Sempozyumu (II, 16-19, 11-1991), Ankara: TODAİE,s.311).

Ersoy, Korkut, Özgen, Hacer, (1995). "Sağlık Bakımından, Hizmetlerinde Kalitenin Gelişimine Kısa Bir Bakış", Önce Kalite Dergisi, Kalder Yayını, Ekim 1995, s. 5-9

Güler, Hasan. (2012). “Sağlıkta Ulusal Kalite Sistemine Giden Yol: SKS”, (Ed. Hande Aydemir), Sağlık ve İnsan Dergisi, Sayı: 10, s.12).

Gülsen, E. (2012), “Toplam Kalite Yönetimi ve Türkiye’deki Uygulamaları”, Toplum ve Demokrasi, Yıl 6, Sayı 13-14, Ocak-Aralık, 2012, s. 93-109.

Gökmen, Ceyhan, (1998). Sağlık Bakanlığı Devlet Hastanelerinde Toplam Kalite Yönetimi, Modern Hastane Yönetimi, Cilt-2, sayı-4,Mayıs’98, İstanbul,s.18

Halis, M. (2000). Paradigmadan Uygulamaya Toplam Kalite Yönetimi ve ISO 9000 Kalite Güvence Sistemleri: ISO 90002 Kalite Belgesi Çalışmaları. İstanbul: Beta Basım. s. 42, 227).

Hayran, Osman; Uz, Hulki (1998), “Sağlık Hizmetlerinde Toplam Kalite Yönetimi”, Sağlık Hizmetleri El Kitabı, Editörler: Osman Hayran, Haydar Sur, İstanbul: Yüce Yayınevi.

Hizmet kalite standartları rehberi, (2018).SB Kalite Dairesi Başkanlığı, Ankara, http://www.kalite.saglik.gov.tr/TR,8850/saglik-kalite-standartlari.html.08.07.2018

İncesu, Emrullah, Yorulmaz, Mehmet, (2011). Sağlık Hizmetlerinde Kalite Kavramı ve Toplam Kalite Yönetimi, 5.Sağlık Ve Hastane İdaresi Kongresinde Poster Bildirisi, Ekim 2011.s.3,10

Iso 10002 Müşteri Kavramları,http://www.iso10002belgesi.net/iso-10002-musteri-kavrami.html

Johns, N. (1992). Quality Management in the Hospitality Industry: Part1.Definition and Specification. International Journal of Contemporary Hospitality. , pp. 14

Kovancı, Ahmet, (2001), Toplam Kalite Yönetimi, Fakat Nasıl?, Sistem Yayıncılık, İstanbul.s.294

Koçel, T. (2001). İşletme Yöneticiliği 8.Baskı. Beta Basım: İstanbul. s. 94

Kutlu, Merih, (1998). Toplam Kalite Yönetimi Paradigması ve Sağlık İşletmeleri için Uygulama Potansiyelleri, Modern Hastane Yönetimi, Cilt-2, Sayı-5,Haziran-Temmuz, İstanbul, s.9,10

Milli Prodükvite Merkezi, (1995). Verimlilik Dergisi Toplam Kalite Özel Sayısı, Ankra, s.171-207.

Okutan, Gökhan Ata, (1994). "Sağlık Hizmetlerinde Kalitenin Çok Yönlü Boyutu", Önce Kalite Dergisi, Kolder Yayını, Nisan 1994, s. 13-17

Öztürk, Hakkı, (2012), “Sağlıksız Bir Bilgi Akışı ve Bilişim Yapılanmasının Başarılı Olması Mümkün Değildir”, (Ed. Hande Aydemir), Sağlık ve İnsan Dergisi, Sayı: 10, s.68.

Özden, Özlem, Ölmez, Fulya, (1995). Kalite Kavramının Gelişimi, (Ed.Mithat Çoruh, Sağlık Sektöründe Toplam Kalite Yönetiminin Yeri,Haberal Eğitim Vakfı yayını,Yeni Fers Mat,Ankara, içinde),s.18

Özcan, Ercüment Ekrem, (2006). Biyomedikal Test ve Kalibrasyonun Önemi, sunu, Antalya,s.2-5

Özgen, Hacer, (1995). "Sağlık Bakım Hizmetlerinde Kalite Nedir? Hasta Tatmini Boyutuyla İlgili Bir Değerlendirme", Toplum ve Hekim Dergisi, Türk Tabipler Birliği Yayını, Eylül-Aralık 1995, s. 47-53

Pozantı, Süheyl, (1995), Sağlık Hizmetlerinde Kalite ölçümü ve Değerlendirilmesi, , (Ed.Mithat Çoruh,Sağlık Sektöründe Toplam Kalite Yönetiminin Yeri,Haberal Eğitim Vakfı yayını,Yeni Fers Mat,Ankara, içinde),s.35

Runciman, A. Marry and M.Watson, (2007). Safety in Health Care, Ashagate, Burington, VT, p.29
Sepulveda, Claudio (1995). Sağlıkla İlgili temel Hizmetlerin Yönetiminde Kalite Arayışı-Esaslar, (Ed. Mithat Çoruh, Sağlık Sektöründe Toplam Kalite Yönetiminin Yeri,Haberal Eğitim Vakfı yayını,Yeni Fers Mat,Ankara, içinde),s.55)
Sermin Elevli, (2018). Kalite, Toplam Kalite Yönetimi ve Hizmet Kalitesi, https://slideplayer.biz.tr/slide/2890571/. 08.07.2018
Silah, M. (2000). Çalışma Psikolojisi, Selim Kitabevi, Ankara. s.102).
Şimşek, M. (2012). Tematik Yazılar, Toplum ve Demokrasi, Yıl 6, Sayı 13-14, Ocak-Aralık, 2012, s. 93-109. 114
Şimşek, M. (2000). Toplam Kalite Yönetiminin Rekabet Gücüne Etkisi. Standard Dergisi Kasım, s. 37).
Tanrıverdi, Haluk; Erdem, Şennur, (2010), "Sağlık Hizmetlerinde Hizmet Kalitesi İle Tatmin Düzeyi Arasındaki İlişkinin İncelenmesi ve Bir Uygulama", Türkiye Sosyal Araştırmalar Dergisi, Sayı : 1, Ankara,s.73-92
Türköz, Yeşim, Taş, (1998). Bayındır Tıp Merkezi Kalite İndikatör Sistemi, Modern Hastane Yönetimi, Yıl-2,Sayı-2,Mart 1998,İstanbul, s.5
Taner, Bahar, Kaya. (2004). İlke, Toplam Kalite Yönetimi'nin Başarıyla Uygulanma Esasları – Bir Hizmet İşletmesi Örneği, http://dergipark.gov.tr/download/article-file/50210
Telman, N., Ünsal P. (2004). Çalışan Memnuniyeti, Epsilon Yayınları, İstanbul.s.12
Talib, Faisal; Rahman, Zillur; Azam, Mohammed, (2011), "Best Practices of Total Quality Management Implementation in Health Care Settings", Health Marketing Quarterly, pp.235
Üstel, İsmail, (1995). "Toplam Kalite Yönetimi Işığında Sağlık Hizmetleri", Tüketici Bülteni, TSE Yayını Nisan 1995, s. 43-48
Yumak, Hüseyin, (1994). "Toplam Kalite İçinde Yönetimin Rolü", Önce Kalite Dergisi, Kolder Yayını, Nisan 1994, s. 31-35

Chapter 112

The Concept of Violence in Healthcare Sector and Its Reflections

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INTRODUCTION

Violence is considered as an important phenomenon worldwide. Today it is seen in every field and is a threat risk with a growing importance for employees. The concept of violence includes only physical violence in a narrow sense, and it is used to reflect harmful activities for individuals and society, malicious use of physical power, rude and harsh behaviors and extreme emotional state in a broad sense. When it comes to the health sector, it is seen that violence is very intense and health workers are exposed to violence. It is stated that especially patients, patients' relatives and friends in the working environment exhibit different types of violence such as threats, physical assaults, sexual assaults, economic abuse in the health sector. Not only physical but also psychological and social problems arise in the worker exposed to violence, his/her health is affected in a negative way and the quality of work life declines.

In this chapter, the concept of violence and its types will be defined, the concept of violence in healthcare and causes will be explained, examples from the results of research on violence in the health sector and its reflections will be introduced and solutions will be given.

The concept of violence and its types

The concept of violence, which is stated that it emerged with the history of human, is defined as one of the facts faced both individually and socially (Çamcı and Kutlu 2011; Dursun 2012; İlhan et al., 2013; Kocacık 2001), and it is claimed that it arises from the social relations depending on the basis of the conflicts of interest (Kocacık 2001). At this point, it is very important how violence is taken by the society and whether it is internalized as a life style (Kocacık 2001; Özerkmen 2012).

There is no agreed definition for violence, and it is accepted as one of the concepts that are difficult to define (Bal 2014; Kocacık 2001; WHO 2002). There is variety of definitions for violence since it has been handled and explained by different disciplines (Bal 2014). The World Health Organization (WHO) stated that violence is a prevalent and complex public health problem (Aşkın 2017; Büyükbayram and Okçay 2013; Karaca et al., 2015; Pınar and Pınar 2013; WHO 2002). In the literature it is seen that the concept of violence is handled from various aspects such as toughness, harsh and hard behaviors, force, misused power or energy, oppression (Bal 2014), not obeying laws, giving harm to people, insulting, maltreatment, violation of rights and torture (Kocacık 2001). Violence is defined as doing something or making someone do

something by using force or oppression, and it manifests itself in the ways of forcing, using brute force, hurting and agonize physically and spiritually (Kocacık 2001). The term of violence is also used to describe the approaches such as forcing physically, using force or threat displayed in ways to harm psychologically (Annagür 2010; Aşkın 2017; Bal 2014; Bilişli and Hizay 2016; Büyükbayram and Okçay 2013; Dursun 2012; WHO 2002; Öksüz et al., 2016), cause developmental impairment, injure and even cause death that an individual performs towards himself or against a group (Annagür 2010; Aşkın 2017; Bal 2014; Bıçkıcı 2017; Bilişli and Hizay 2016; Büyükbayram and Okçay 2013; Dursun 2012; WHO 2002).

It is stated that the types of violence can be determined by a point of view defined as violence tunnel by Collins. Accordingly, an individual can stay in the violence tunnel in short, mid and long ranges, and the time individuals spend in the violence tunnel is evaluated as the types of violence. When looking from this point of view, a few minutes is stated as short range, a few hours as mid-range and a few days or weeks as long range (Bal 2014).

Another point of view used to determine the types of violence is the classification as violence between people and collective violence (Bal, 2014; Özerkmen 2012). Suicide, accidents, violence resulting in death, physical violence, sexual violence (Özerkmen 2012) and violence against women (Bal, 2014) are among the types of violence between people, and rebellions, revolutions, ethnic groups (Bal 2014), terrorism, wars and industrial violence are accepted as collective violence (Özerkmen 2012).

In the classification for the types of violence at work, a dual approach as the source of the violence and the form of violence is preferred. According to ***the source of the violence***, there is a classification of four: the criminal actions performed by those who had no relation with the institution before and whose main target is cash money or valuable things, a physical or psychological assault by a customer, violence from one employee to another and violence performed by the relatives of an individual and reflecting to the workplace. According to ***the form of violence***, there is a dual distinction as physical violence and psychological violence. It is stated that physical violence can cause physical, sexual and psychological effects on the individual depending on the applied physical force, and psychological violence can be classified as verbal violence, mobbing and sexual harassment. Mobbing includes the activities such as humiliation, exclusion and ignoring for an employee by other employees or chiefs, and it causes the employee to resign in the long run (Pınar and Pınar 2013).

The most common classification of the types of violence is as physical violence, verbal violence, psychological violence, sexual violence (Bal 2014; Büyükbayram and Okçay 2013) and economic violence (Büyükbayram and Okçay 2013). ***Physical violence*** includes the harsh and painful intentional actions such as beating, slapping, punch, kicking, pushing, choking (Büyükbayram and Okçay 2013), biting (Pınar and Pınar 2013), nipping (Yeşildal 2005) and burning for the physical integrity of an individual (Bilişli and Hizay 2016). Verbal violence is a type of violence manifesting itself with insulting, scolding, yelling, swearing, talking badly and humiliating, and aiming to scare. ***Psychological violence*** is explained as a type of violence that disrupts the psychological well-being of the individual, causes the individual to feel under pressure and threat, has sad, offending and traumatic effects and manifests itself in the

form of exclusion, speaking up, restricting the activities (Büyükbayram and Okçay 2013) and humiliating (Yeşildal 2005). In this type of violence, an atmosphere of fear related to the use of physical force is created and a pressure on the individual is generated (Pınar and Pınar 2013). ***Sexual violence*** expresses the type of violence including verbal harassment, groping or even raping, involving physical violence in tow, and applied especially to children, the young and women (Büyükbayram and Okçay 2013). The individual exposed to sexual violence feels scared, humiliated and offended. Sexual violence emerges in various forms such as physical harassment, verbal harassment, harassment with gestures, harassment with writing or pictures and psychological harassment (Bilişli and Hizay 2016; Pınar and Pınar 2013). Economic violence is defined as the type of violence that economic sources is used for threat and control and causes the individual to be dependent and poor (Büyükbayram and Okçay 2013).

The concept of violence in health and its reasons

It is stated that violence, which has a tendency of increase in recent years can affect everybody and can emerge as an important health problem in every sector (Bal 2014; Bıçkıcı 2017; Durak et al., 2014; İlhan et al., 2013; Karaca et al., 2015), and it is pointed out that work life is one of the fields having high risk of violence (Dursun 2012). Besides, it is seen that health sector is one of the leading sectors that violence is prevalent (Aşkın 2017; Adan and Dönmez 2011; Bal 2014; Bıçkıcı 2017; Bilişli and Hizay 2016; Çamcı and Kutlu 2011; Dursun 2012; İlhan et al., 2013; Karaca et al., 2015; Öksüz et al., 2016; Pınar and Pınar 2013), and healthcare workers are exposed to a higher level of violence than those working in other sectors (Aşkın 2017; Durak et al., 2014; Dursun 2012; İlhan et al., 2013; Karaca et al., 2015; Pınar and Pınar 2013; Yeşildal 2005). Violence in health is defined as a situation containing risk for healthcare workers that involves any kind of threatening behaviors and verbal threats performed by patients, patient relatives or anybody (Saines 1999; Bilişli and Hizay 2016; Büyükbayram and Okçay 2013).

To explain violence, which is described as a complex concept, some theories have been developed for its reasons, and they are called as biological theory, social learning theory and damage-aggression theory (Annagür 2010; Bıçkıcı 2017). Biological theory handles violence in terms of functioning of the brain (Bal 2014; Büyükbayram and Okçay 2013), and it states that some individuals can show the tendency of violence depending on neurologic, genetic and hormonal reasons, and a medical approach is necessary in such situations (Annagür 2010; Bıçkıcı 2017). Social learning theory, which focuses on social factors and personality traits (Büyükbayram and Okçay 2013) emphasizes that violence is a learnt behavior like the other social behaviors, and it is pointed out people who are exposed violence previously can have the tendency of violence (Annagür 2010; Bıçkıcı 2017). Damage-aggression theory argues that individuals can show the tendency of violence depending on the disappointment they have in the case that their expectations are not met, and the violence in health is explained by this theory (Annagür 2010; Bıçkıcı 2017).

In the literature, it is seen that the violence in health sector emerges because of the reasons such as long waiting periods and 24-hour uninterrupted service (Bilişli and Hizay 2016; Çamcı and Kutlu 2011; Durak et al., 2014), patient intensity (Adan and

Dönmez 2011; Bilişli and Hizay 2016; Büyükbayram and Okçay 2013; Bıçkıcı 2017; Öztürk and Babacan 2014), presence of the patients having mental or behavioral disorders (Bıçkıcı 2017; Öztürk and Babacan 2014), dissatisfaction of patients and relatives, low education level, not obeying the rules, the intense stress that patients and relatives have, long working hours, having communication problems, inadequate number of staff and insufficient security measures (Bilişli and Hizay 2016; Bıçkıcı 2017; Çamcı and Kutlu 2011; Öztürk and Babacan 2014), inadequate number of beds, medication and equipment (Büyükbayram and Okçay 2013; Öztürk et al., 2016), being alone with the people to be exposed to violence, the inadequacy of legal regulations and health policies to prevent and manage violent incidents (Büyükbayram and Okçay 2013), welfare loss, seizure of natural rights and sources and social inequality (Bal 2014).

Besides, it is stated that the frequency of exposure to violence changes depending on some reasons such as the unit that the healthcare staff work for, the place of the violence and other factors. According to this point of view, the possibility to exposure to violence for the staff working for emergency services, psychiatry clinics (Annagür 2010; Atan and Dönmez 2011; Büyükbayram and Okçay 2013), intensive care units, geriatric care units and surgical units is higher than those working for other units (Büyükbayram and Okçay 2013). It is pointed out that some reasons such as being between life and death of the cases that require immediate treatment and requirement of long waiting hours for these cases, negative conditions that the waiting areas have, being under extreme stress and fear of unknown trigger the violence seen in emergency services and cause patient relatives to show aggressive tendencies. Violence except emergency services and psychiatric clinics occurs mostly in patient rooms. It is also stated that alcohol and drug addicted patients and relatives, patients' thought that they cannot receive sufficient care services, shift working, patient relatives' beliefs that not everyone is being treated fairly, inability of the staff to struggle with aggressive behaviors, inadequate lighting conditions in the hospital and everyone's belief that their situation is more urgent are among the reasons of violence in healthcare sector (Atan and Dönmez 2011). In addition to these, high expectations of patients and relatives, their beliefs that things in the healthcare institution are not organized, spiritual needs related to the role of being patient and the sense of despair can be listed among the reasons of violence in health sector (Büyükbayram and Okçay 2013). When the problem is handled in the macro level, it is seen that both individuals' and the country's economic situation, socio-cultural problems (Aşkın 2017; Büyükbayram and Okçay 2013) and inadequacy in the education cause violence to increase (Büyükbayram and Okçay 2013).

Violence in healthcare sector and examples from reflections

It is seen in the literature that there are many studies on the incidents and types of violence experienced in healthcare sector and against healthcare staff, the general characteristics of those committing violence and the reflections of violence, and violence is defined as an occupational hazard that should be overemphasized (Adan and Dönmez 2011; Bal 2014; Büyükbayram and Okçay 2013). In this chapter, the findings of the studies on the violence in healthcare sector will be stated, and it is aimed to

present a view point on the subjects such as the prevalence of violence, its types, the reactions given to violence and the effects of violence on individuals.

It is stated that 25% of the violence exposed around the world and Turkey is in healthcare sector, and about 50% of healthcare staff are exposed to violence (Adan and Dönmez 2011; Büyükbayram and Okçay 2013). When the point of views of the countries related to violence is examined, different results are obtained. Accordingly, while USA has announced that violence is an emergent state of health, England, Europe and Australia have decided to put the violence on the agenda. According to the results of a study conducted in Finland, psychiatric nurses and physicians are the group of professions most exposed to violence after prison guards and policemen, and it is stated that 62% of the nurses in Taiwan, 95% in Australia (Adan and Dönmez 2011) and 60% of the healthcare staff in Canada are violence victims (Adan and Dönmez 2011; İlhan et al., 2013; Pınar and Pınar 2013). According to another study conducted in Japan, 36% of the workers are exposed to violence, and verbal violence occurs more than physical violence. In another study conducted in Egypt it is stated that verbal violence is more common than physical violence. According to the results of a research conducted in different regions of Turkey, 68% of the workers are exposed to violence, and the violence emerges in the forms of physical and sexual violence (Pınar and Pınar 2013). In pursuant of the findings of a research conducted by Dursun (2012), the most common type of violence that healthcare staff in Turkey is exposed is the verbal violence, and it is followed by physical and sexual violence. In other studies on this subject, similar results have been obtained, and it is stated that in hospitals, especially in the emergency services, the frequency of physicians to exposure violence has increased, and even patients and patient relatives are affected by the violence environment (Karaca et al., 2015).

The studies aimed at determining the types of violence indicate that verbal violence is more common than physical violence (Bilişli and Hizay 2016; Öztürk and Babacan 2014; Büyükbayram and Okçay 2013), verbal violence emerges in the form of yelling, and physical violence emerges in the forms of pushing, beating, slapping and punching (Büyükbayram and Okçay 2013). According to the findings of another study conducted to find out the workplace violence aimed at healthcare workers, more than half of the healthcare workers (72.6%) are exposed at least one type of the violence during the time they work for healthcare sector, and respectively, verbal violence, mobbing, physical violence and sexual harassment are the most experienced types of violence. While physical and verbal violence and sexual harassment are committed generally by patients and patient relatives, mobbing is committed by directors, and mostly nurses, physicians and other healthcare staff are exposed violence (Çamcı and Kutlu 2011).

When national and international studies are examined, it is seen that those committing violence in healthcare institutions have similar characteristics in many ways (Büyükbayram and Okçay 2013). According to the results of a research aimed at determining the characteristics of those committing violence, it is revealed that those having the tendency of violence are generally men (Annagür 2010; Adan and Dönmez 2011; Büyükbayram and Okçay 2013; Çamcı and Kutlu 2011; Durak et al., 2014), they have low socio-economic levels, they have guns with legal or illegal reasons, they have had problems with the legal authority and sometimes they have a history of detention

(Annagür 2010; Adan and Dönmez 2011; Durak et al., 2014). In addition, it is stated that people having a poor life for a long time, exposed social exclusion, preferring using violence to solve their problems and having mental disorders tend to violence (Büyükbayram and Okçay 2013).

When looking at the possible effects of the violence in healthcare sector, it is seen that there are both individual and organizational reflections (Adan and Dönmez 2011). In terms of workers, physical, psychological and social disorders emerges and the level of satisfaction decreases (Adan and Dönmez 2011). In terms of organization, the quality of the healthcare service decreases (Adan and Dönmez 2011; Pınar and Pınar 2013), medical errors increase, and work efficiency and quality of life decreases (Durak et al., 2014). According to another point of view, the case of violence causes many social and economic problems as well as individual and organizational problems. Some psychological problems such as stress, depression, increasing anxiety levels, family problems, loss of self-confidence, isolation, alcohol problems, and lack of concentration are the leading problems that are seen in the employees exposed to violence. As well as the psychological problems caused by violence, some physical problems such as headache, backache, stomachache, sleeplessness, heart diseases, eating disorders and fatigue also emerge. In addition, exposing violence also causes increase in occupational accidents, increase in the possibility to resign, the burnout syndrome that is described as the burnout of spiritual and physical energy, desensitization of the employee and increase in the sense of alienation towards the work (Dursun 2012). Increase in smoking, decrease in the respect for the profession, self-reproach, relationship breakdowns and even increase in suicide cases are also among the unsolicited situations caused by violence incidents in healthcare sector (Adan and Dönmez 2011). Another fact that should not be ignored is that, as well as the healthcare staff, the co-workers and the family of the individual exposed violence are also affected by violence (Pınar and Pınar 2013).

The reactions of healthcare staff when they are exposed violence vary (Adan and Dönmez 2011); sometimes they scream, and sometimes they reveal behaviors such as attempt of hitting or physical attack (Durak et al., 2014). The common point of the national and international studies is that the cases of violence that is more common in healthcare sector are less recorded (Bilişli and Hizay 2016; Büyükbayram and Okçay 2013). According to the results of a research conducted in Canada, approximately 30% of the nurses who are victims of violence prefer to stay away when they encounter violence and ignore violence. According to the results of research conducted in the USA, health workers who have experienced violence have stated that they have to change jobs. When the results of the research conducted on why violence has not been reported are examined, it is seen that the following reasons are stated: The thought that violence will be brought under control, the cloudy minded perpetrator and apologizing, considering that reports are not taken into consideration (Adan and Dönmez 2011). Considering that only serious events such as injury are violence, perception of that exposure to violence while working is natural to the profession, disbelief of the director support and fear for the negative results that will emerge (Büyükbayram and Okçay 2013), worry that they will be perceived as the initiator or the creator of the problem (Aşkın 2017), lack of information and knowledge of which behaviors to be evaluated within the scope of violence, the inadequacy of the use of the reporting and notification

system, worries caused by the thought of losing their jobs, being punished or blamed (Dursun 2012).

Suggestions of solution for violence in healthcare

The frequent violence cases in healthcare sector make it necessary to carry out some related regulations. Within this frame, there are two main methods used to cope with violence. The first one is the precautions to be taken at patient and staff level, and the second is the hospital-level regulations (Annagür 2010; Adan and Dönmez 2011). Risky situations must be specified and existing violence rates must be determined in the working environment for these methods to be successful (Adan and Dönmez 2011). The close monitoring of the patient, taking a detailed history, using the methods employed to cope with stress in approaching the patient, using some implementations such as isolation or medication treatment are also stated as patient and employee-focused preventive measures. On the other hand, the use of the appropriate reporting system in health institutions, the organization of effective security trainings, the training of security officers on how to treat people and aggression, the placement of security cameras, the use of metal detectors and panic alarms and the regular keeping of records are among the measures to be taken at the hospital level (Annagür 2010; Adan and Dönmez 2011).

International Council of Nurses (ICN) has also specified some objectives related to the nurses exposed to violence intensively in the healthcare sector. Accordingly, the prevalence, frequency and effects of violence intended to healthcare staff should be examined, the reactions of the nurses to the violence incidents should be defined, security factors related to the working environment should be determined, and strategies should be adopted to decrease and prevent violence (Adan and Dönmez 2011). In Turkey, to determine the levels of the violence incidents in hospitals (Öksüz et al., 2016) and to prevent the violence intended to healthcare staff, the implementation of "White Code" has been initiated as the emergency management tool (Beyaz Kod 2017). With the White Code notification system, it is aimed to intervention to the healthcare staff exposing violence, providing external security force support and taking necessary security measures. In this way, healthcare staff can call the number 113 which provides uninterrupted service for 24 hours or can report the violence exposure by filling out the notification form at www.beyazkod.saglik.gov.tr (Beyaz Kod 2017).

As it is seen from the explanations made so far, violence cases are increasingly widespread in the society, and the health sector is also affected in a negative way due to the increase in violence. The point reached today is that the phenomenon of violence is one of the problem areas that are widespread in the health sector and must be solved (Adan and Dönmez 2011). This situation leads the necessity of carrying out the efforts aimed at preventing violence in healthcare system in a systematic and conscious way, make these efforts sustainable and taking some steps both at individual and organizational level. The suggestions proposed for this purpose are listed below:

- Initially, studies should be done to determine the risk areas in the health sector (Adan and Dönmez 2011; Bilişçi, Hizay 2016; Büyükbayram and Okçay 2013; İlhan et al., 2013; Karaca et al., 2015),

- Employees should be explained what events will be considered as violence and what they should do (Dursun 2012; Öztürk and Babacan 2014; Pınar and Pınar 2013),
- Prevention of violence should be regarded as a fundamental principle for the establishment of a healthy and safe work environment (Adan and Dönmez 2011; Durak et al., 2014; Pınar and Pınar 2013),
- Studies on causes, prevalence nd reflections of violence should be carried out and care should be taken to prevent them from occurring and to take preventive measures (Bilişli and Hizay 2016; Çamcı and Kutlu 2011; Karaca et al., 2015; Öztürk and Babacan 2014),
- Employees should be informed about their own rights and the measures taken at the managerial level (Bilişçi, Hizay 2016; Büyükbayram and Okçay 2013; Öztürk and Babacan 2014),
- Nurses and physicians who are most exposed to violence in the health sector should be taught on violence in health sector and coping methods during their education (Adan and Dönmez 2011; Büyükbayram and Okçay 2013),
- In-service trainings on health violence and prevention should be organized so that health workers can follow the developments from the moment they begin their career (Annagür 2010; Adan and Dönmez 2011),
- Awareness should be raised about the reduction of violence tendencies of patients and their relatives (Durak et al., 2014; Öztürk and Babacan 2014; Pınar and Pınar 2016),
- In the media, making news that will affect the public in a negative way and that will cause the legitimacy of violent behaviors should be avoided, responsible publishing principles should be performed and ethical values should be protected (Büyükbayram and Okçay 2013; Karaca et al., 2015; Öztürk and Babacan 2014),
- Integrity should be ensured in healthcare services provided at home, outpatient and in healthcare facilities to prevent overcrowdedness during the provision of health services (Aşkın 2017),
- In order to prevent violence tendencies, arrangements should be made to prevent inequalities and imbalances during healthcare service presentation (Aşkın 2017),
- Healthcare personnel should be informed in order them to communicate with patients and their relatives effectively and to improve empathy skills (Bıçkıcı 2017; Bilişçi, Hizay 2016; Büyükbayram and Okçay 2013),
- The health personnel exposed to the violence should be made to feel that they are not alone, their rights should be protected, and legal, organizational and social support should be provided (Büyükbayram and Okçay 2013; Dursun 2012),
- Legal infrastructure should be improved to prevent violence and deterrent measures should be taken (Bıçkıcı 2017; Durak et al., 2014; İlhan et al., 2013),
- Combat against violence should be accepted as an indispensable principle of the institutional culture and organizational climate (Bilişli and Hizay 2016; Dursun 2012),

- Reporting process should be facilitated so that healthcare workers who are exposed violence can record violence (Adan and Dönmez 2011; Bıçkıcı 2017; Bilişli and Hizay 2016; Dursun 2012; Öksüz et al., 2016),
- Regulations should be made to ensure adequate safety measures are taken in health institutions (Bilişli and Hizay 2016; Büyükbayram and Okçay 2013; Durak et al., 2014; Dursun 2012).

Conclusions

Today, violence in healthcare is one of the priority issues of occupational health and safety problems and is considered as a complex and occupational hazard. The studies show that workers in the healthcare sector are exposed or witnessed different forms of violence. Working in a safe and healthy environment is the most natural right of healthcare professionals, who aim to help patients and carry out an effective diagnosis and treatment process. Besides, it should be remembered that it is important to solve the problems about violence and to raise awareness related to violence, its reasons and coping methods in employees and managers in the process of improving the quality of healthcare services.

Regardless of who exposes violence, it is unacceptable. So it should be prevented, preventive measures should be taken, employees should be supported, regulations related to the safety of employees and patients should be made, and healthcare managers should present Professional approaches managing the process well. It is predicted that the steps to be taken in this direction will reveal effective results in coping with violence.

REFERENCES

Annagür, B. (2010). Sağlık Çalışanlarına Yönelik Şiddet: Risk Faktörleri, Etkileri, Değerlendirilmesi ve Önlenmesi. Psikiyatride Güncel Yaklaşımlar, 2(**2**), 161-173.

Aşkın, U. (2017). Dünya'da ve Türkiye'de Sağlığa ve Sağlık Çalışanlarına Yönelen Şiddet. http://www.isguvenligi.net/dunyada-ve-turkiyede-sagliga-ve-saglik-calisanlarina- yonelen-siddet/

Atan, S.Ü., Dönmez, S. (2011). Hemşirelere Karşı İşyeri Şiddeti. Adli Tıp Dergisi, 25(**1**), 71-80.

Bal, N. (2014). Sosyolojide Şiddet Kavramı. https://yurtvedunyadergisi.files.wordpress.com/2014/02/6-3.pdf

Beyaz Kod (2017). http://www.ankara112.gov.tr/TR,280/beyaz-kod.html

Bıçkıcı, F. (2017). Sağlık Çalışanlarına Yöneliş Şiddet ve Neden Olan Faktörler: Bir Devlet Hastanesi Örneği. http://dergipark.gov.tr/download/article-file/303528

Bilişli, Y., Hizay, D. (2016). Sağlık Çalışanlarına Yönelik İşyerinde Şiddet: Üniversite Hastanesi Örneği. The Journal of Academic Social Science, Winter 52, 473-486.

Büyükbayram, A., Okçay, H. (2013). Sağlık Çalışanlarına Yönelik Şiddeti Etkileyen Sosyo-Kültürel Etmenler. Psikiyatri Hemşireliği Dergisi, 4(**1**), 46-53.

Çamcı, O., Kutlu, Y. (2011). Kocaeli'nde Sağlık Çalışanlarına Yönelik İşyeri Şiddetinin Belirlenmesi. Psikiyatri Hemşireliği Dergisi, 2(**1**), 9-16.

Durak, T.Ç., Yolcu, S., Akay, S., Demir, Y., Kılıçaslan, R., Değerli, V., Parlak, İ. (2014). Bozyaka Eğitim ve Araştırma Hastanesi Sağlık Çalışanlarına Hasta ve Hasta

Yakınları Tarafından Uygulanan Şiddetin Değerlendirilmesi. Genel Tıp Dergisi, 24, 130-137.
Dursun, S. (2012). İşyeri Şiddetinin Çalışanların Tükenmişlik Düzeyi Üzerine Etkisi: Sağlık Sektöründe Bir Uygulama. Çalışma İlişkileri Dergisi, 3(**1**), 103-113.
İlhan, M.N., Çakır, M., Tunca, M.Z., Avcı, E., Çetin, E., Aydemir, Ö., Tezel, A., Bumin, M.A. (2013). Toplum Gözüyle Sağlık Çalışanlarına Şiddet: Nedenler, Tutumlar, Davranışlar. Gazi Medical Journal – GMJ, 24, 5-10.
Karaca, B.K., Aydın, B., Turla, A., Dündar, C. (2015). Samsun'da Hekimlerin Meslekleri Nedeniyle Yaşadıkları Şiddetin Özellikleri ve Şiddeti Önleme Stratejileri Konusundaki Düşünceleri. Adli Tıp Bülteni, 20(**2**), 76-82.
Kocacık, F. (2001). Şiddet Olgusu Üzerine. C.Ü. İktisadi ve İdari Bilimler Dergisi, 2(**1**), 1-7.
Öksüz, P.E., Uygun, A., Özdem, Ş. (2016). Sağlık Çalışanlarına Yönelik Şiddet: Bir Kamu Hastanesindeki Şiddet Olaylarının Araştırılması. Balkan Sosyal Bilimler Dergisi, Aralık, 104-112.
Özerkmen, N. (2012). Toplumsal Bir Olgu Olarak Şiddet. Akademik Bakış Dergisi, 28, 1-19.
Öztürk, H., Babacan, E. (2014). Hastanede Çalışan Sağlık Personeline Hasta/Yakınları Tarafından Uygulanan Şiddet: Nedenleri ve İlgili Faktörler. Sağlık ve Hemşirelik Yönetimi Dergisi, 2(1):70-80.
Pınar T., Pınar G. (2013). Sağlık Çalışanları ve İşyerinde Şiddet. TAF Preventive Medicine Bulletin, 12(**3**), 315-326.
Saines, J.C. (1999). Violence and Agression in A&E: Recommendations for Action. Accident and Emergency Nursing, 7, 8-12.
WHO. (2002). World Report on Violence and Health, Geneva Switzerland.
Yeşildal, N. (2005). Sağlık Hizmetlerinde İş Kazaları ve Şiddetin Değerlendirilmesi. TSK Koruyucu Hekimlik Bülteni, 4(**5**), 280-302.24 93

Chapter 113

Innovation Management in Healthcare Services R & D, Innovation and Creativity

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INTRODUCTION

Healthcare services are an area in which medical knowledge and technology are used extensively. Factors such as the need for healthcare services and the change in expectations, the development of the medical knowledge and technology, the increase in social and scientific opportunities, and the increase in the society's knowledge level reveal the need for development in healthcare services. Together with this need, services with higher capacity and high technological level are developed. The development of healthcare services provides a significant contribution in terms of meeting social needs in a better way and increasing the healthcare level.

The technology used in healthcare services includes medicine and medical equipment. These areas are affected by developments in science and technology and use innovations efficiently and extensively. Furthermore, these areas are open to socioeconomic developments, social and political effects (Sargutan, 2005). In parallel with developments in science and technology, the techniques and technologies used have developed, become diversified and complicated by entering a rapid and continuous change. The developments in the delivery of healthcare services lead to an increase in the costs of healthcare services, health expenditures and consequently resources allocated to healthcare services. Although the aforementioned cost increase is regarded as a huge load for the country's economy in the short term, it ensures obtaining efficient and effective outputs reducing the costs in the long term.

Regular policies are applied regarding technology in developed countries, but in developing and undeveloped countries, chaos resulting from user demands, resource problem, managers, and planners is experienced. In every case, developing new techniques and technologies is among the important factors influencing the cost of healthcare services (Sargutan, 2005). Technological change is one of the main factors contributing to the economic growth. Research and development decisions in many businesses ensuring profit growth define the rate of technological change in the economy. States also support the economic growth by increasing their R&D expenditures (Davidson, Segerstrom, 1998). In developed countries, the development of new products and processes is the main factor behind the economic growth. The total level of innovative activities must be taken into account to understand one of the significant sources of the economic growth (Stokey, 1995).

At this point, it is useful to make the definition of health technology. Health-related techniques and technologies include all the fields of protection, diagnosis,

treatment and health improvement. Health technology means all the technological adaptations together with any health-related philosophies, systems, ideas, methods, practices and similar techniques applied for producing and presenting a healthcare service / product, including not only the equipment and machines with advanced technologies but also the ones practiced without using any device (Sargutan, 2005).

In many sectors including the health sector, obtaining contemporary, high-technology and developed outputs is achieved with innovative production processes. The understanding of innovative production requires efforts, inventions and discoveries to improve something available, to acquire something different from the available one or the unavailable innovation. The term innovativeness includes the research and development processes which emerge together with creativity and all the processes enabling innovation and thus the development of new goods and services. New inventions and discoveries, new ideas and new technologies are the necessary ways to present better products and services (Polenakovik and Pinto, 2010). Production amount and quality increase, more quality products and services are produced with lower costs and higher productivity, and new business lines and industrial fields appear with technological innovations. This has an effect on the economic development and the increase in social welfare (Barutçugil, 2009:16-17).

1. RESEARCH AND DEVELOPMENT (R&D)

Research-development (R&D) activities are regular studies conducted for the purpose of obtaining new information that will ensure the development of science and technology or producing new materials, products and tools, establishing new systems, processes, and services or developing the ones available with the available information (Can, 2001). Research-development includes activities for finding new principles of nature, producing and testing new products and means of production that meet the needs. It embodies activities related to the examination, analysis, and interpretation of all the functions in an organization with scientific methods (Barutçugil, 2009:27). Generally, unrealistic or quite uncertain targets are followed in R&D studies, and the environment bears great uncertainties. Organizations are aware of the fact that they will not be able to eliminate uncertainty, but they can take measures and develop solutions against uncertainty (Matheson and Matheson, 1999:152). The main purpose of research-development activities is to ensure the adaptation of businesses to environmental changes, their development, growth and consequently continuity (Zerenler et al., 2007).

Research-development activities are examined under three main headings. These are basic research, applied research and industrial product development. Basic research is studies aiming at the improvement of scientific knowledge, not having any commercial goals, containing processes related to the comprehension of topics and the acquisition of new information, and presenting new hypotheses, theories and general laws. Applied research is studies covering the production processes conducted for certain practices or commercial purposes and aimed at obtaining new information. Applied research ensures finding new ways and methods by using the findings of basic research. Industrial product development includes technical studies performed to turn new findings into a product or a production type. It expresses the use of the results obtained in basic and applied research for creating new materials, tools, products, systems, production processes and developing the available ones (Barutçugil, 2009: 27-

29).

While defining or assessing the research-development activities, it is difficult to distinguish which activities have the research-development quality. Therefore, all the activities including renewal, novelty, exchange, and change in a business are considered within the research-development activities, and chaos is caused. Here, the separation point is the presence of innovation. It can be defined as an R&D activity when the aim is to perform additional technical improvements on a product or process. However, it is not correct to mention about an R&D activity if a previously created product, process or approach are in question and the aim is to develop a market, plan production or ensure the smooth operation of a production or control system accordingly (Frascati Manual, 2002).

Innovative activities are the key to organizational change. Nevertheless, many activities providing organizational change are not innovative (Woodman, Sawyer, Griffin, 1993). Definitely, activities such as novelty, innovation, R&D, scientific research, experiment, etc. are conducted altogether in synergy. In this sense, it is not possible to separate each activity from the other clearly. Activities with a clear R&D quality such as the development of new production systems, new products, and services are easy to separate. However, activities that do not bear an R & D quality such as infrastructure investments and market research may be a part of processes related to the use of R & D activities and the outputs obtained with R&D activities. The formation of innovative outputs covers all the processes starting from the first studies and hypotheses until the presentation of the output obtained to the society. For this reason, it will not be correct to exclude the parts of an activity without the R&D quality, which is conducted to obtain an R&D output, from the activity. It is necessary to assess sections with and without an R&D quality separately within the same activity but by keeping them together.

According to the differentiation of the OECD, establishing prototypes and pilot facilities is considered as an R&D activity. After-sales services, patent and license procedures, routine tests, data collection, regulations for public standards are out of R&D activities. While the design of new products in activities such as industrial design and industrial product design is covered by R&D, production-related design operations are outside the scope of R&D (Frascati Manual, 2002). Such activities must be divided and subjected to an R&D assessment.

The separation of R&D activities is more difficult in service processes. In the service sector, R&D findings may appear with processes which may not be innovative technically but are innovative due to their function. In the service sector, some criteria can be helpful for the separation of R&D activities. These can be listed as follows:

- Connection to public research laboratories,
- Participation of the personnel with the Ph.D. degree or Ph.D. students in studies,
- Publication of research findings in scientific journals, organization of scientific conferences or participation in scientific investigations,
- Establishing prototypes or pilot facilities (Frascati Manual, 2002)
- Educational activities at universities,
- Reports and publications except for the ones explaining R&D results,
- General-purpose activities performed by public institutions,

- Feasibility studies in engineering projects,
- Ordinary / routine medical studies (Barutçugil, 2009:31).

2. Innovation / Novelty / Innovativeness

The term innovation is used synonymously with the term novelty. The term innovation, which means becoming new and novelty (Turkish Language Association, 2005), is also used as the utilization of new outputs, conversion of the new outputs obtained with novelty into concrete products, in a richer meaning than the term novelty.

Innovation corresponds to words such as novelty, renewal and innovative in Turkish, and it is defined as a new and different result (Yavuz, Albeni, Göze Kaya, 2009). Innovation is defined as the conversion of the findings obtained as a result of scientific studies, technological processes and R&D activities into ready-to-use products, and as their utilization in products. It can be expressed as the sub-area of a quite wide organizational change structuring. Innovation may include the adaptation of products or processes obtained previously (Woodman, Sawyer, Griffin, 1993).

Novelty is the purposeful presentation or the implementation of new ideas, processes, products or procedures, which will be useful for individuals, within a role, group or organization (West, 1990,309). The concept of novelty means accessing practices, processes, outputs, results and end products, which are different from the ones available. It is necessary to differentiate the available ones or introduce something previously unavailable in order to mention novelty. According to the Oslo Manual, novelty is defined as "the achievement of a new or significantly improved product (good or service) or process, a new marketing method or a new organizational method in intra-business practices, business organization or external affairs". The minimum requirement for novelty is being a new or significantly improved product, process, marketing method or organizational method for the company (Oslo Manual, 2005). The clear difference created with novelty is expressed in this definition. The difference does not have to occur only in a tangible product. The difference created in processes, usages, practices, perspectives, and ideas is also included within the scope of novelty.

Novelty and innovative approach are a concept which organizations find very important and include in company policies for reasons such as increasing profitability and market share, providing a competitive advantage and ensuring the development in the operated sector. Organizations have become obliged to create a difference in their products, production processes and sector to comply with the advancing technology and changing environmental conditions and more importantly to stay active and sustain their presence. The occurring new situation directs all institutions to think differently, behave differently and obtain new and different products, processes and outputs. Within this change, organizations have made the innovativeness and novelty concepts a significant element of their foundations.

Within the economic system, novelty has started to be accepted as the most important production factor in the redefinition of classical production factors. Novelty constitutes the main component of change, differentiation and advancement for economic structures. Novelty is the basic dynamics of sustainable economic growth, social development and level of welfare for the country's economy. Novelties are not only applied in technological products, they also ensure the efficient usage of resources in a broad area from the creation of new markets to the production of new energy

resources, a decrease in the cost and the more efficient and productive usage of resources (Uzkurt, 2008:9-10). It is easier to see the novelty in a concrete good. Therefore, novelty, creativity, R&D and innovation outputs come to the forefront more in organizations producing goods. Even an opinion that concepts such as R&D, innovation, technological novelty belong only to such organizations is adopted. However, innovative activities are practiced, R&D and innovation outputs are formed in the service sector as well. Here, production processes, techniques, understanding novelty are in question. In the service sector, structural differences such as simultaneous consumption, inability to stock and producing abstract outputs are present. It is not always easy to see the connection between products and processes and production techniques due to the structural qualities of services. The novelty in services is related to the development of new processes and ideas, conducting scientific research and obtaining findings. The utilization of the obtained outputs is more important while providing service as much as it is possible to transfer them to new concrete products and develop new devices and equipment. The creation of different service delivery forms with the innovative approach should be mentioned. The abstract structure of the services created with this understanding prevents the aforementioned novelty from being considered. However, results such as higher profitability, productivity, employee and customer satisfaction, satisfaction, cost minimization acquired as a result of a differentiated, renewed or newly created service are significant criteria for the evaluation of the novelty.

Novelty activities are all the scientific, technological, organizational, financial and commercial stages ensuring the application of novelties. While some novelty activities are innovative by themselves, others are not innovative on their own but have the attributes required to achieve innovations. Novelty activities also include R&D processes (Oslo Manual, 2005). Innovation management is a holistic term which expresses providing the processes necessary to obtain all these outputs. The understanding, which includes not only the management of a process regarding technology or production but also the change of the organizational culture, also embodies changing the perspectives and awareness, consequently putting studies, tests, new production processes and new products into use.

3. CREATIVITY

Creativity is the ability to get a different result than what is available. It is defined as presenting new and useful ideas. The term creativity is included in novelty and has become the keyword in the information economy. Creativity and novelty complete each other. Creativity represents the ideas forming novelty, novelty and innovation explain the implementation of the ideas (Pratt and Jeffcutt, 2009). The creativity, innovation, novelty and R&D terms are related to each other. A different perspective necessary for R&D and innovation activities to appear emerges with the creativity ability. However, creativity should not only be regarded as a skill or practice of which limits are defined. The term creativity defines a point which combines all the other innovative practices, takes its source from them and again ensures that the same innovative practices occur.

Whereas innovation expresses the conversion of ideas into new services and products, creativity is defined as the production of ideas. In this case, innovation is the application of the results of creativity, and therefore creativity is a part of the innovation

process (Alves, Marques, Saur and Marques, 2007).

Creativity enables the organizational change, which plays a key role in efficiency and continuity, to be observed (Woodman, Sawyer and Griffin, 1993). Innovation management in businesses leads to new problems and requires new and creative solutions (Barutçugil, 2009:162-163). Creativity is what encourages and supports the creation of innovative outputs in businesses. For a competitive advantage, creativity and novelty are structured instead of additional costs. Product novelties develop with an increase in the individual, organizational, regional and economic creativity (Pratt, Jeffcutt, 2009). Organizational creativity represents an undiscovered area in terms of organizational change and innovation. It is the formation of new valuable, useful products, services, ideas or individual processes working together in a complex social system. Creativity can be defined as the subset of innovation (Woodman, Sawyer and Griffin, 1993).

The production of creative ideas and innovative outputs is influenced by some factors. These factors which are related to the structure of the organization, environmental conditions or individuals are presented below:

- Organizational strategy and accessible resources
- New technologies
- R&D intensity
- Organizational culture and communication
- The structure of the organization
- The motivation and participation of employees (Alves, Marques, Saur and Marques, 2007).

CONCLUSION

Innovation management should be considered as the combination of creativity, innovation, research-development processes or an approach or process that must be applied for the presentation and finalization of each of them. The advancement of technology, the change in environmental conditions, the limited amount of economic resources, the increase in production costs and competitive pressure on businesses made it compulsory to produce outputs with higher productivity, efficiency, lower costs and different from other businesses. All businesses have included the subjects of R&D, innovation, and innovation management in their activities. Employees should be encouraged for creative and innovative ideas at workplace. Novelties and innovative activities are supported in the policies of both businesses and countries, and a share is allocated to them from the budget. This emerging new management and policy understanding paves the way for change in all sectors.

In the health sector, a production process which is continuously changing, renewed and forced into renewing is present. The novelty in healthcare services may include significant improvements in service delivery forms, the addition of new functions or properties to the present services or the creation of completely new services (Uğurluoğlu and Doğanay Payziner, 2011:144). Actors, funds, policies, technology, customers and responsibility forces included in the delivery of healthcare services affect innovation in healthcare services (Herzlinger, 2006). Factors such as the advancements in medical science, the awakening of demanders and the increase in their number, the increase in the delivery costs of healthcare services, new needs and expectations, the

increase in competitors providing services in the health sector encourage healthcare services to change continuously, be renewed and adapt themselves to new techniques and technologies. All around the world, the need for the delivery of healthcare services with lower costs, more efficiently and more extensively increases this effect. With the combination of all of these, innovation management, R&D, innovation, and creativity have become a part of the delivery of healthcare services.

In the novelty processes of healthcare services, outputs are obtained with the development in medical practices, the difference in the way healthcare services are delivered, the development of diagnostic and treatment techniques, and the development of new medical devices and materials. Here, as in all service sectors, generally abstract results, which are achieved with abstract practices, are obtained. Results such as delivering services with lower costs, the shortening of treatment durations, more effective diagnostic and treatment processes, the increase in patient satisfaction, the efficient use of healthcare institutions and more rational economic values are included in these abstract outputs. The development of medical devices and materials constitutes the other dimension of innovative outputs within healthcare services. As in other sectors producing goods, change and development are ensured in healthcare services through the renewal of both production processes and production means. The services provided with innovative and advanced medical equipment are turning into profitability, rationality and productivity tool.

REFERENCES

Alves, J.; Marques M.J.; Saur I.; Marques P. (2007). Creativity and Innovation Through Multidisciplinary and Multisectoral Cooperation, Creativity and Innovation Management, Volume: 16 Number: 1. DOI:10.1111/j.1467-8691.2007.00417.x

Barutçugil, İ. (2009), "Ar-Ge Yönetimi", İstanbul: Kariyer Yayınları. ISBN: 978-9944-300-38-4.

Can, N. (2001). Avrupa Birliği'nde ve Türkiye'de Sağlık Sektöründe Araştırma-Geliştirme (Ar-Ge) Faaliyetleri, T.C. Sağlık Bakanlığı Avrupa Birliği Koordinasyon Dairesi Başkanlığı, Ankara. Erişim: http://dosyasb.saglik.gov.tr/Eklenti/1406,argepdf.pdf.

Davidson, C.; Segerstrom, P. (1998), R&D Subsidies and Economic Growth, RAND Journal of Economics, Vol. 29, No. 3, Autumn 1998 pp. 548-577. DOI: 10.2307/2556104

Frascati Kilavuzu (2002). Araştırma ve Deneysel Geliştirme Taramaları için Önerilen Standart Uygulama: Frascati Kılavuzu, (2. Baskı), OECD, Fransa. Çeviren: TÜBİTAK, (2005), TÜBİTAK Yayınları. ISBN: 975-403-361-7.

Herzlinger, R. (2006), "Why Innovation in Health Care is So Hard", Harvard Business Review. 84(5):58-66, 156. ISSN : 0017-8012 0017-8012.

Matheson, D.; Matheson, J. (1999), "Akıllı Örgüt, Stratejik Ar-Ge ile Değer Yaratma" Boyner Holding Yayınları, İstanbul. ISBN:975-7004-22-7.

Oslo Kilavuzu, (2005), Yenilik Verilerinin Toplanması ve Yorumlanması İçin İlkeler "Oslo Kılavuzu", OECD – Eurostat Ortak Yayını, Fransa. Çeviren: TÜBİTAK, (2006), TÜBİTAK Yayınları, 3. Baskı, ISBN: 975-403-362-5-1.

Pratt, A.; Jeffcutt, P. (2009). Creativity, Innovation and the Cultural Economy: Snake Oil for the Twenty-First Century, Creativity, Innovation and the Cultural Economy,

AC Pratt, P Jeffcutt (Ed), Rootledge Studien in Global Competition, New York. ISBN: 0-203-88001-3.
Polenakovik, R.; Pinto, R. (2010). The National Innovation System and its Relation to Small Enterprises: The Case of the Republic of Macedonia, World Review Science, Technology and Sustainable Development, 7(1). DOI:10.1108/20425945201000007.
Sargutan, E. (2005), Sağlık Teknolojisi Yönetimi, Hacettepe Sağlık İdaresi Dergisi, Cilt:8, Sayı:1 (2005). e-ISSN: 2148-9041
Stokey, N.L. (1995), R&D and Economic Growth, Review of Economic Studies (1995) 62, 469-489. DOI:10.2307/2298038.
Türk Dil Kurumu, (2005), Türkçe Sözlük, Türk Dil Kurumu Yayınları, 549, 10. Baskı. ISBN: 975-16-0070-7.
Uğurluoğlu, E.; Doğanay Payziner, P. (2011), Sağlık Hizmetlerinde Yenilikler ve Yeniliklerin Yayılımı, H.O. Yeloğlu (Ed), Yeniliklerin Yayılımı, Kuramsal ve Uygulamalı Tartışmalar, Siyasal Kitabevi, Ankara. ISBN: 978-605-5782-78-8.
Uzkurt, C. (2008), Pazarlamada Değer Yaratma Aracı Olarak Yenilik Yönetimi ve Yenilikçi Örgüt Kültürü, Beta Basım Yayım Dağıtım, 1. Baskı, İstanbul. ISBN: 978-975-295-817-3.
West, M. (1990). The social psychology of innovation in groups. In M. A. West, & J. L. Farr (Eds.), Innovation and Creativity at Work: Psychological and Organizational Strategies, pp. 309-333,. Chichester: John Wiley & Sons, Ltd. ISBN: 978-0471931874.
Woodman, R.; Sawyer, J.E.; Griffin, R.W. (1993), Toward A Theory Of Organizational Creativity, Academy of Management Review, Vol. 18, No. 2, 293-321. DOI:10.5465/AMR.1993.3997517
Yavuz, A.; Albeni M.; Göze Kaya, D. (2009), Ulusal İnovasyon Politikaları Ve Kamu Harcamaları: Çesitli Ülkeler Üzerine Bir Karşılaştırma, Suleyman Demirel University The Journal of Faculty of Economics and Administrative Sciences, Vol.14, No.3 pp.65-90. ISSN: 1301-603.
Zerenler, M.; Türker, N.; Şahin, E. (2007). Küresel Teknoloji, Araştırma-Geliştirme (Ar-Ge) Ve Yenilik İlişkisi, Selçuk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, Vol:17, pp:653-667. ISSN: 1302-1796.

Dentistry

Chapter 114

Dental Health in Elderly

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Aging is a natural and complex process. Throughout life, the accumulation of various harmful variables in the body gradually destroys the functions of cells and tissues and eventually leads to death. Changes in aging can be attributed to genetic and developmental disorders, environmental factors, diseases and congenital process (Harman, 2001). Nowadays, improved living standards provide the prolonged life span and the elderly population is also increasing. As the elderly population increases, there is also an increase in the number of adults with acute and chronic diseases (Niessen & Fedele, 2002).

Oral diseases are not usually fatal for older people, but they can affect active disease or eating comfort, talking and socializing. In general, the purpose of dental services for elderly people is to increase the quality of life and to ensure the suitable physical, emotional and social functioning. (McgGrath & Bedi, 1999).

Malnutrition is a vital factor in reducing the quality of life for the elderly. This also accelerates physical and mental degeneration. At the same time poor oral health and nutritional status can be a detrimental factor in general health (Razak *et al.,* 2014).

In elderly people, the oral and the dental health is very important and it can not be neglected. In addition to the effects of aging on the orofacial region, systemic diseases that develop in older ages and medicines used in their treatment lead to undesirable changes in the oral condition. Along with aging, there are some changes in jaw bones, teeth, salivary glands and soft tissues in the mouth. Dental loss (erosion, atrision), periodontal problems, xerestomia, tooth loss, atrophy and senile changes in jaw bones are the most frequent changes (Petersen & Yamamoto, 2005).

The first indication of almost all systemic diseases has oral findings that can be seen by the dentist (Long *et al.,* 1998). Recent studies revealed that there is a relationship between systemic diseases such as diabetes, cardiovascular disease, stroke, respiratory tract infections, Alzheimer's disease, and oral diseases (Issrani *et al.,* 2012). Xserestomia may develop as a result of diabetes, cancer radiotherapy or side effects of drugs (Chen *et al.,* 2013, Yao & MacEntee, 2013). Furthermore, the occurrence of certain systemic diseases does not only affect the individual's ability to improve oral hygiene and oral health, but also reduces the quality of life (Razak *et al.,* 2014). A better understanding of how the oral health affects the lives of the elderly can help not

only assist dentists but also target oral health promotion strategies in communities (Strauss & Hunt, 1993).

Changes in the orofacial region with aging require a multi-disciplinary approach. The purpose of this article is to examine the structural and functional problems in the oral region in elderly individuals and to evaluate treatment approaches in terms of dentistry.

OROFACIAL CHANGES

Tooth Apperance

Along with aging, there are differences in both appearance and structural features of teeth (Zach, 1979). Structural changes are observed in the hard, soft and peripheral tissues of the teeth. At the same time, these changes become apparent due to exposure to mechanical and chemical influences during biting, chewing and speech functions. Physiological changes begin with the eruption of the teeth and continue for life-long. The most prominent change observed with aging is the reduction in the volume of the pulp chamber due to the sustained release of odontoblasts and the dentin matrix (physiologically secondary dentinogenesis) (Solheim, 1992). With age, permeability of enamel decreases, fragility increases, and dentin can be released, especially due to chewing forces. Depending on environmental factors, color change, fluoride and magnesium increase with age can also be observed (Molnar, 1971, Razak *et al.,* 2014). With age in dentin, odontoblasts form physiological secondary dentin, and with the accumulation of peritubular dentin causes narrowing of the dentin tubules (Nazlıel, 1999). The surface of the cement becomes smooth and irregular and rough. In the elderly, apical canal blockage can occur with a continuous increasing in apical cementum. At the same time, cement resorption is one of the properties of aged cement (Chiego, 2014). Fibrosis becomes more prominent with decreasing size of pulp with the increase of colloidal fibers at aging. This is indicative of a decrease in cellular activity and reduces the ability of the pulp to self-repair (Chiego, 2014). The pulp contains more fibrosis, fewer cells and less blood with age (Nanci, 2008).

Dental Caries and Tooth Loss

Age-related saliva changes, a poor diet, gum removal and root surface clearance, and xerostomia, a side effect of drug treatments lead to caries and and this remains an important oral health problem for the elderly (Gil-Montoya *et al*., 2015, Thomson, 2004, Wyatt *et al*., 2014). In the elderly population, root surface caries are highly observed (Kandelman *et al*., 2008, Morse *et al.,* 2002). Depending on the periodontal problems, the gingival recession and the root surface exposition are favorable conditions for plaque accumulation and caries formation occur in these regions. In addition, due to the structural and chemical properties of tooth roots, cement and dentin, they are less resistant to mechanical effects than tooth crowns (Fejerskov & Nyvad, 1986, Zach, 1979). It has also been reported that excess sugar intake, poor oral hygiene and partial prosthesis use are associated with the risk of root caries (Steele *et al.,* 2001).
Although aging is not one of the causes of tooth loss, functional loss, systemic and increased frequency of dental problems together with aging process may provide the basis for toothlessness in elderly individuals (Haikola *et al*., 2008, Nalçacı *et al*., 2007). A significant proportion of tooth loss in the elderly is caused by tooth decay and periodontal disease. However, it varies according to the individual's life style, socio-

economic, geographical and cultural conditions (Shah & Sundaram, 2003). In addition, health problems lead to faster progression of periodontal diseases and tooth loss. Nutritional problems and systemic diseases are more common in individuals with excessive tooth loss. In toothless individuals, bad oral conditions have a significant negative impact on daily life. Too much tooth loss reduces chewing performance and affects food choice (Walls *et al*., 2000).

Periodontal diseases

Periodontal diseases are the most common dental diseases and include cases of gum stones, inflammation and bleeding of gums, loss of dental attachment, tooth movement and tooth loss. Degenerative changes associated with aging are caused by prolonged exposure to primary factor-plaques and other risk factors throughout life with a cumulative effect. For this reason, periodontitis is not simply an inevitable consequence of aging: on the contrary, there may be many contributing factors (Suresh, 2006). Many chronic inflammatory conditions share some common physiological and biochemical elements with periodontal disease (Iacopino & Cutler, 2000). Periodontitis is more than localized infections. Recent data indicate that periodontitis can initiate changes in immunocompetence, serum cytokine / lipid levels, systemic physiology that changes tissue homeostasis, and changes in biochemistry (Iacopino & Cutler, 2000). Periodontal disease is not a specific condition in the elderly, but increased periodontal degradation leads to long-term exposure of periodontal tissues to bacterial plaque and general health problems that develop with age cause periodontitis (Suresh, 2006).
Bad oral hygiene and poor overall health are interrelated. Most elderly people regularly use brushes and dental flosses as well as young people, but in this age group, factors such as salivary gland hypofunction and a reduced immune system against infection, difficulties in brushing and using dental floss contribute to poor oral health (Kelsall & O ' Keefe, 2014).

Oral mucosa

In addition to tooth decay and periodontal diseases, oral mucosal diseases in elderly populations are also a serious problem and affect the general health of the patient. Oral mucosa is an important tissue that fulfills the basic protective functions of the individual (Jainkittivong *et al*., 2004). Loss of elasticity of oral mucosa, hyperkeratosis tendency, atrophy and thinning of surface epithelium, thinning of submucosal layer, degenerative changes in connective tissue are mucosal changes observed with aging (Shklar, 1966). Under these conditions oral mucosa becomes more permeable to harmful substances and is more vulnerable to external carcinogens. Decreased protective barrier function of oral mucosa with aging makes mucosa more sensitive to pathogens, mechanical and chemical irritations (Jainkittivong *et al*., 2004, Razak *et al*., 2014).

Various oral mucosal conditions have been identified in the elderly and more frequently associated with prosthesis. The most common problems among dentures are; are stomatitis and traumatic ulcers that can be exacerbated by malnutrition and unhealthy lifestyles, including poor oral hygiene, excessive alcohol consumption and tobacco use (Petersen *et al*., 2010). Denture-related conditions include Candida-induced prosthetic stomatitis, hyperplasia caused by prosthetic irritation, angular cheilitis, and traumatic ulcers (Jainkittivong *et al*., 2004, MacEntee *et al*., 1998).

Precancerous lesions, such as leukoplakia and lichen planus, are other oral mucosal lesions that are frequently seen in the elderly and especially in relation to low socioeconomic conditions (Kendelman *et al*., 2008). The risk of oral cancer increases with age, and most cases occur in populations over 60 years of age. Oral cancers are more prevalent among populations in less developed countries than in developed countries (Steward & Kleihues, 2003). Furthermore, the risk of developing oral cancer in elderly individuals with smoking and / or smoking history may increase (Levy *et al*., 2013).

Bone

With aging, both maxilla and mandibular resorption occur (Betts & Barber, 1995), due to increased risk of systemic disease, reduced metabolic activity, and tooth loss. In the advanced age group, osteoporotic changes are seen in the jaw bones as well as in the other bones of the body. Osteoporosis is an age-related condition and is classified as primary and secondary type. Primer osteoporosis includes postmenopausal and senile types; secondary osteoporosis occurs due to endocrine and renal diseases. Osteoporosis is a disease characterized by a decrease in bone density, often associated with a decrease in postmenopausal estrogen levels in women (Loza *et al*., 1996). It is difficult to use prosthesis in patients with advanced alveolar bone resorption.

Saliva

Apart from digestive function, saliva also has important roles for oral cavity. These are to provide antibacterial effect (by secretion of enzymes such as immunoglobulin A, lysozyme, lactoperoxidase and histatins), tasks such as to neutralize cariogenic bacteria, to help remineralization through the minerals in the structure, to prevent water loss of the mucous membrane, to moisturize the oral cavity, to soften the food and to help the taste (Cassolato & Turnbull, 2003). Xerostomia is a condition associated with a reduction in the amount of saliva produced and with a change in chemical composition, thus causing oral instability (Cassolato & Turnbull, 2003). With aging, atrophy in salivary glands and degenerative changes in major salivary glands are observed. In this case, a decrease in the salivary secretion and mouth dryness occur (Vissink *et al*., 1996). Chronic dry mouth is seen in a significant proportion of elderly people and affects the quality of life associated with oral health of patients, affecting conditions such as speaking, eating and comfortable use of dental prostheses. (Locker, 2003, Cassolato & Turnbull 2003, Thomson, 2014). Not only does the malfunctioning of the salivary glands cause mouth instability, but also systemic and autoimmune diseases (Sjögren's syndrome) in the aging process, radiotherapy of the head and neck region and some drugs used cause xerostomia (Thomson, 2014, Cassolato & Turnbull, 2003, Baum, 1989). In advanced age, not only due to somatic pathology but also because of the large number of drugs taken (non-selective β-adrenoceptor blockers, selective β-1 adrenoceptor blockers, antipsychotics, antidepressants, anxiolytics, anticholinergics, osteoporosis, diuretics, sedatives / hypnotics, inflammatory medications / analgesics) decrease in saliva flow (Johanson *et al*., 2015, Thomson, 2014).

Decreased salivary flow may be a major factor in oral diseases such as tooth decay and mucosal lesions. Hyposalivation is associated with dysphagia and bad breath and affects social activities. (Takeuchi *et al*., 2015, Chen & Kistler, 2015). Many patients with oral diseases suffer from a number of problems, such as caries, periodontal

disease, traumatic ulcers, fungal infections, and decreased retention of prostheses used. In addition, the mouth dryness can affect many simple, but important everyday tasks such as speech (Issrani *et al*., 2012).

DENTAL TREATMENTS IN ELDERLY PEOPLE

Along with aging, changes in the orofacial region require a multidisciplinary approach in the diagnosis and treatment planning. For a successful treatment, the dentist should be able to adopt a humanitarian attitude, develop a better relationship and better understand the feelings and attitudes of the elderly, and dental treatment should be specially considered (Vincent *et al*., 1992). The dentist should consider the medication regimen used by the patient and plan their treatment accordingly (Issrani *et al*., 2012). Oral infections have a significant impact on the morbidity and mortality of patients at risk for medical conditions, such as with cancer or those receiving chemotherapy. Today, elimination of oral infections before beginning radiation therapy, chemotherapy or various heart conditions is a standard of care in most medical institutions and should be implemented in all dental units (Glick, 2005).

Patients need more attention because of psychological, mental and physiological changes and inadequacies caused by diseases in the elderly during dental treatments (Rai *et al.,* 2011). Preventive dental counseling for geriatric patients includes two components: education and motivation. Having preventive knowledge and skills will help maintain the most appropriate oral health condition in the elderly (Razak *et al*., 2014).

Preservation of periodontal health is important for elderly patients. Periodontal infections and inflammations disrupt the function of oral tissues and low-grade systemic inflammation associated with periodontal disease increases the risk of developing severe chronic systemic disease in the patient (Otomo-Corgel *et al*., 2012). For this reason, good oral hygiene is especially important for elderly people, and dentists should be part of the oral health care programs for older patients with frequent periodontal care treatments. It should help to improve the ability of the elderly person to brush effectively and thoroughly. Individuals with reduced hand strength can benefit from the use of traditional mechanical toothbrushes, rotary electric toothbrushes, or manual brushes adapted or customized for each individual (Razak *et al*., 2014). It has also been reported that mouth rinsing with chlorhexidine solution tends to reduce gingival inflammation, pocket depth and the incidence of prosthetic stomatitis (Persson *et al*., 1991).

Fluoride use is effective in preventing dental caries in elderly individuals. Topical application and fluoride mouthrinses have been shown to reduce the number of caries lesions on the root surface and dentures containing fluoride are effective in preventing both coronal and root caries (Wallace *et al*., 1993, Wyatt & MacEntee, 2004, Jensen & Kohout, 1988).

Moving prostheses or crow-bridge prostheses are usually applied because geriatric patients suffer from excessive tooth loss. Both the chewing function and aesthetically pleasing conditions that disturb the appearance of the patient should be removed. In this patient group prostheses which are easy to clean and repair after prosthetic treatment should be selected. In elderly individuals, due to excessive tooth loss and the use of removable dentures, it is difficult to chew foods and bacterial plaque build up due to

soft food consumption. It is very important to remove the bacterial dental plaque in order to ensure full oral hygiene. Routine and regular dental control is required in this group of patients for the diagnosis of oral mucosal lesions and the early recognition of precancerous lesions (Nazlıel, 1999).

As a result; the proportion of elderly individuals continues to increase worldwide, especially in developing countries. For the control of oral diseases, health projects should be initiated to improve health and improve quality of life. Dentists and assistant personnel should be aware of the physical and mental changes that occur in old age and should aim for optimal oral health in the treatment of elderly individuals.

REFERENCES

Baum, B.J. (1989). Salivary gland fluid secretion during ageing. J Am Geriatr Soc 37: (5),453- 458.

Betts, N.J. & Barber, H.D. (1995). The Pathophysiology of Aging, Fonseca RJ-Davis WH (Ed.): Reconstructive Preprosthetic Oral and Maxillofacial Surgery. W.B. Saunders Co, Philadelphia, p 10-13.

Cassolato, S.F. &Turnbull, R.S. (2003). Xerostomia: Clinical Aspects and Treatment. Gerodontology 20: (2), 64–77.

Chen, X.; Chen H.; Douglas, C.; Preisser, J.S.; Shuman, S.K. (2013). Dental Treatment Intensity in Frail Older Adults in the Last Year of Life. J Am Dent Assoc. 144: (11), 1234-1242.

Chen, X. & Kistler, C.E. (2015). Oral Health Care for Older Adults with Serious İllness: When and How? J Am Geriatr Soc. 63 :(2), 375-8.

Chiego, D.J. (2014). Essentials of oral histology and embryology a clinical approach (4th edt.) Elsevier Health Sciences, Mosby.

Fejerskov, O. & Nyvad, B. (1986). Pathology and Treatment of Dental Caries in the Aging Individual. Holm-Pedersen P-Löe H (Ed.): Geriatric Dentistry. A Textbook of Oral Gerontology. Munks-gaard. Copenhagen, p 238-262.

Gil-Montoya, J.A.; de Mello, A.L.; Barrios, R.; Gonzalez-Moles, M.A.; Bravo, M. (2015). Oral Health in the Elderly Patient and Its Impact on General Well-Being: A Nonsystematic Review.Clin Interv Aging 11:10, 461-7.

Glick, M. (2005). Exploring our role as health care providers. J Am Dent Assoc 136: (6), 716–718.

Haikola, B.; Oikarinen, K.; Söderholm, A.L.; remes-Lyly, T.; Sipila, K. (2008). Prevalence of Edentulousness and Related Factors among Elderly Finns. J Oral Rehabil 35: (11), 827-35.

Harman, D. (2001). Aging: Overview. Ann N Y Acad Sci. 928: 1-21.

Iacopino, A.M. & Cutler, C.W. (2000). Pathophysiological Relationships between Periodontitis and Systemic Disease: Recent Concepts Involving Serum Lipids. J Periodontol. 71: (8), 1375-1384.

Issrani, R.; Ammanagi, R.; Keluskar, V. (2012). Geriatric Dentistry--Meet the Need. Gerodontology 29:(2), e1-5.

Jainkittivong, A.; Aneksuk, V.; Langlais, R.P. (2004). Medical Health and Medication Use in Elderly Dental Patients. J Contemp Dent Pract 15; (5)1, 031-041.

Jensen, M.E. & Kohout, F. (1988). The Effect of a Fluoridated Dentifrice on Root and Coronal Caries in an Older Adult Population. J Am Dent Assoc 117: (7), 829–32.

Johanson, C.N.; Osterberg, T.; Lernfelt, B.; Ekstrom, J.; Birkhed, D. (2015). Salivary Secretion and Drug Treatment in Four 70-Year-Old Swedish Cohorts during a Period of 30 Years. Gerodontology 32: (3), 202-210.

Kelsall, D. & O'Keefe, J. (2014). Good Health Requires A Healthy Mouth: Improving The Oral Health of Canada's Seniors, CMAJ 2; 186(12), 893.

Kendelman, D.; Petersen, P.E.; Ueda, H. (2008). Oral Healty, General Healty, and Quality of Life in Older People. Spec Care Dentist 28: (6), 224-236.

Levy, N.; Goldblatt, R.S.; Reisine, S. (2013). Geriatrics Education in U.S. Dental Schools: Where Do We Stand, and What Improvements should be Made? Journal of Dental education, 77:(10), 1270-1285.

Locker, D. (2003). Dental Status, Xerostomia and the Oral Health-Related Quality of Life of an Elderly Institutionalized Population. Spec Care Dent 23: 86–93.

Long, R.G.; Housek, L.; Doyle, J.L. (1998). Oral Manifestations of Systemic Diseases. Mt Sinai J Med 65:(5–6), 309–315.

Loza, J.C.; Carpio, L.C.; Dziak, R. (1996). Osteoporosis and Its Relationship to Oral Bone Loss. Curr Opin Periodontol 3:27-33.

MacEntee, M.I.; Glick, N.; Stolar, E. (1998). Age, Gender, Dentures and Oral Mucosal Disorders. Oral Dis 4: (1), 32–36.

McGrath, C. & Bedi, R. (1999). The importance of oral health to older people's quality of life. Gerodontology 16: (1), 59-63.

Molnar, S. (1971). Human Tooth Wear, Tooth Function and Cultural Variability. American Journal of Physical Anthropology 34: (2), 175-189.

Morse, D.E.; Holm-Pedersen, P.; Holm-Pedersen, J.; Katz, R.V.; Viitanen, M.; von Strauss, E.; Winblad, B. (2002). Prosthetic Crowns and Other Clinical Risk Indicators of Caries among Old-Old Swedish Adults: Findings from the KEOHS Project. Kungsholmen Elders Oral Health Study. Gerodontology 19: (2),73-9.

Nanci, A. (2008). In: Ten Cate's Oral Histology. Development, Structure, and Function, 7th Ed. St. Louis, Missouri; Mosby.

Nalçacı, R.; Erdemir, E.O.; Baran, I. (2007). Evaluation of the Oral Health Status of The People Aged 65 Years and over Living in Near Rural District of Middle Anatolia, Turkey. Arch Gerontol Geriatr 45: (1), 55-64.

Nazlıel, H. (1999). Yaşlıda Ağız ve Diş sağlığı. Turkish Journal of Geriatrics, Geriatri 2: 14-21.

Niessen, L.C. & Fedele, D.J. (2002). Aging Successfully: Oral Health for the Prime Of life. Compend Contin Educ Dent 23: (10 suppl), 4-11.

Otomo-Corgel, J.; Pucher, J.J.; Rethman, M.P.; Reynolds, M.A. (2012). State of the Science: Chronic Periodontitis and Systemic Health. J Evid Based Dent Pract 12: (3 Supp), 20-8.

Persson, R.E.; Truelove, E.L.; Leresche, L.; Robinovitch, R. (1991). Therapeutic Effects of Daily or Weekly Chlorhexidine Rinsing on Oral Health of a Geriatric Population. Oral Surg Oral Med Oral Pathol 72: (2),184–91.

Petersen, P.E.; Kandelman, D.; Arpin, S.; Ogawa, H. (2010). Global Oral Health of Older People –call for Public Health Action. Community Dent Health. 27:(4 Suppl 2),257–267.

Petersen, P.E.& Yamamoto, T. (2005). Improving the Oral Health of Older People: The Approach of the WHO Global Oral Health Programme. Community Dent Oral Epidemiol 33: (2), 81–92.

Rai, S.; Kaur, M.; Goel, S.; Bhatnagar, P. (2011). Moral and Proffesional Responsibility of Oral Pysician toward Geriatric Patient with İnterdisciplinary Management-the Tima to Act is Now! J Midlife Health 2:(1), 18-24.

Razak, P.A.; Richard, K.M.; Thankachan, R.P.; Hafiz, K.A.; Kumar, K.N.; Sameer, K.M. (2014). Geriatric Oral Health: A Review Article. J Int Oral Health 6 :(6),110-116.

Shah, N. & Sundaram, K.R. (2003). Impact of Socio-Demographic Variables, Oral Hygiene Practices and Oral Habits on Periodontal Health Status of Indian Elderly: A Community-Based Study. Indian J Dent Res, 14: (4), 289-97.

Shklar, G. (1966). The Effects of Aging upon Oral Mucosa. J Invest Dermatol Aug; 47:(2),115-20.

Solheim, T. (1992). Amount of Secondary Dentin as an İndicator Of Age. Scandinavian Journal of Dental Research, 100 :(4), 193–199.

Steele, J.G.; Sheiham, A.; Marcenes, W.; Fay, N.; Walls, A.W. 2001). Clinical and Behavioural Risk Indicators for Root Caries in Older People. Gerodontology 18: (2), 95-101.

Steward, B.W. & Kleihues, P. (2003). World Cancer Report. Lyon, France: WHO International Agency for Research on Cancer.

Strauss, R. & Hunt, R. (1993). Understanding the Value of Teeth to Older Adults: Influences on the Quality of Life. J Am Dent Ass 124: (1), 105-110.

Suresh, R. (2006). Aging and Periodontal Disease. Prevention and Treatment of Age Related Diseases, The Netherlands: Springer; p 193-200.

Takeuchi, K.; Furuta, M.; Takeshita, T.; Shibata, Y.; Shimazaki, Y.; Akifusa, S.; Ninomiya, T.; Kiyohara, Y.; Yamashita, Y. (2015). Risk Factors for Reduced Salivary Flow Rate in A Japanese Population: the Hisayama Study. Biomed Res Int 2015:381821.

Thomson, W.M. (2004). Dental Caries Experience in Older People over Time: What can the Large Cohort Studies Tell us? Br Dent J 196:(2), 89–92.

Thomson, W.M. (2014). Epidemiology of Oral Health Conditions in Older People. Gerodontology. 31:(Supply) 1, 9-16.

Vincent, J.R.; Tenenbaum, M.P.; Massicotte, P. (1992). Teaching of Geriatric Dentistry; Training of "Mobile Dental Service" Dentists. J Dent 29: 15–17.

Vissink, A.; Spijkervet, F.K.; Amerongen, V.A. (1996). Aging and Saliva: A Rewiev of the Literatüre. Spec Care Dent 16:(3), 95-103.

Wallace, M.C.; Retief, H.; Bradley, E.L. (1993). The 48-Month Increment of Root Caries in an Urban Population of Older Adults Participating in a Preventive Dental Program. J Public Health Dent 53: (3), 133–7.

Walls, A.W.G.; Steele, J.G.; Sheiham, A.; Marcenes, W.; Moynihan, P.J. (2000). Oral Health and Nutrition in Older People. J Public Health Dent 60: (4), 304–7.

Wyatt, C.C. & MacEntee, M.I. (2004). Caries Management for İnstitutionalized Elders using Fluoride and Chlorhexidine Mouthrinses. Community Dent Oral Epidemiol 32: (5), 322–8.

Wyatt, C.C.; Wang, D.; Aleksejuniene, J. (2014). Incidence of Dental Caries among Susceptible Community-Dwelling Older Adults using Fluoride Toothpaste: 2-Year Follow-Up Study. J Can Dent Assoc.; 80: e 44.

Yao, C.C & MacEntee, M.I. (2013). Inequity in oral Health Care for Elderly Canadians: Part 1. Oral Health Status", Journal (Canadian Dental Association), vol. 79, pp. d114.

Zach L. (1979). The Oral Cavity. Rossman I (Ed.): Clinical Geriatrics. J.B. Lippincott Co. Pb Philadeiphia., pp 618-637.

Chapter 115

Oral Examination and Findings of Women Exposed to Violence

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INTRODUCTION

Violence against women is a violation of human rights and a form of gender-based discrimination (García-Moreno et al., 2015). Violence against women has existed in every culture and time period regardless of geographical location, socio-economic condition, religion and level of education (The World Health Organization (WHO), 2002; Subaşı & Akın, 2003). Women of every age or marital status might be exposed to one or more types of physical, sexual, psychological (emotional) and economic violence (WHO, 2005; Subaşı & Akın 2003; Richardson et al., 2002). For this reason, it is recognized as both a major health concern and a serious social problem (Fenton, 2000).

Violence against Women and Health

The World Health Organization (WHO) highlights violence against women as a priority health issue (WHO, 2002). According to 2013 WHO report, *Global and regional estimates of violence against women*, 1 out of every 3 woman (35%) is exposed to physical or sexual violence by their spouses or their domestic partners (WHO, 2013; Pallitto et al., 2013).

Violence affects the health of women negatively by leaving light or heavy physical or psychological marks in accordance with its level (Kadının Statüsü Genel Müdürlüğü (KSGM), 2015; Yetim & Şahin, 2008). Violence against women may result in directly deaths, injuries such as fractures and internal organ injuries, organ losses, permanent disabilities, unwanted pregnancy, sexually-transmitted diseases (STD), human immune deficiency virus (HIV)/ acquired immune deficiency syndrome (AIDS) infection transmission (Gökkaya, 2009; Martin & Curtis, 2004; Türmen, 2003; Campbell, 2002). Violence can also lead to many physiological disorders and chronic health problems such as asthma, hypertension, cardiac diseases, etc. in the later stages of women's life (Gökkaya, 2009; Özvarış et al., 2008; Campbell, 2002). The psychological trauma due to violence continues for a long time. Psychological problems such as depression, horror, anxiety, low self-esteem, eating disorders, obsessive compulsive disorder, and Post Traumatic Stress Disorder (PTSD) are also very common in women exposed to violence, especially sexual violence (Gökkaya, 2009; Sevil &Yanıkkerem, 2006; WHO, 2005; Subaşı & Akın 2003). Suicide attempts, smoking, alcohol and substance use are also seen among the women who have psychological problems as a result of violence (Tatlılıoğlu & Küçükköse, 2015).

Besides this, women are exposed to violence during their pregnancy. Violence also affects the fetus that is growing and causes miscarriage, low weight birth, premature birth and fetal injuries (Duman et al., 2016; KSGM, 2015; European Union Agency for Fundamental Rights (FRA), 2014; Gökkaya, 2009; Taft & Watson, 2008).

Globally, 38% of the homicides where the victim is a woman are committed by the spouse or the partner (WHO, 2013; Pallitto et al., 2013). 1 out of every 4 women has reported that they got injured as a result of physical and/or sexual violence. 6 out of every 10 violence victim women are injured as a result of violence. The fact that approximately half of these injuries needs treatment emphasizes that violence is a serious threat to the physical health of women (KSGM, 2015).

Health institutions provide primary and prior service to violence victim women and the women under risk (Duman et al., 2016; Özvarış et al., 2008). However, it has been determined that the ratio of violence victim women that reports to the police, health institutions, other governmental agencies and non-governmental organizations is very low (KSGM, 2015). Most women violence victims hide violence and only go to the health institutions as a last resort when there are serious injuries and the violence becomes unbearable (Duman et al., 2016; Özvarış et al., 2008; Yanıkkerem et al., 2007). In the applications of women to health institutions, if their findings are not related to violence, violence will be silent, violence can not be detected and recorded (Kayrın, 2011; Coker et al., 2000).

The Role of the Dentist in Detecting the Oral Symptoms of Violence

Head, facial, neck, mouth, lip, teeth and orofacial tissue injuries are significant markers for violence and contain important evidences about the physical, sexual and emotional violence (Ferreira et al., 2014; Patel et al., 2014; Garbin et al., 2012; Fenton et al., 2000). It was reported 94% of violence victims who applied to a health institution due to trauma have an injury in the head, face and neck region (Ochs et al., 1996). Since the face is a common target in assault and the routine dental examination involves a close inspection of the patient's head, neck and oral cavity, dentists may be the first persons to identify the signs of violence in the facial and neck area (Nalbantlar, 2013; Zeybek, 2011; Nelms et al., 2009; Coulthard & Warburton, 2007; Yaşar & Akduman, 2007; Hsieh et al., 2006)

Dentists have an important duty and responsibility in detecting the oral symptoms of violence in an early stage, giving the necessary treatment and reducing its effects and even preventing of women from violence (Duman et al., 2016; Patel et al., 2014; Yetim & Şahin, 2008; Yanıkkerem et al., 2007). With the help of forensic dentists, the perpetrator can be identified through an analysis of the individual characteristics of chin, arch form, malformations, missing teeth, teeth fillings, restorations, prostheses, orthodontic apparatus and bite marks (Patel et al., 2014; Garbin et al., 2012; Zeybek, 2011).

Oral Examination of Women Exposed To Violence

The dentist should be the first professional to suspect violence from the injuries including orofacial tissues (Tirali et al. 2014; Nalbantlar, 2013; Fenton, 2000). When the dentist confronts with violence victim or suspects from violence, s/he should perform both extraoral and intraoral examination (Olğar, 2011; Yaşar & Akduman,

2007; Afşin, 2004). Before the examination, the general health status of the female patient should be evaluated and a detailed anamnesis taken (Topçu, 2009; Afşin, 2004).

General Physical Status

The first clinical signs of maltreatment of women generally can be noticed in the waiting room. The appearance and behavior of the patient should be considered first. Even if they can not speak, they reflect the signs of violence with the skin tone, facial expressions, eyes and anxiety in their posture. They reveal the stories of "with their bodies" and indirectly explain the violence they are exposed to (Sevil &Yanıkkerem, 2006, Tsang & Sweet, 1999).

The following findings;

* Whether or not the patient's clothing is consistent with the weather at that moment,

* Whether or not there is any wound or bruise on the victim's face or body,

* The type, size, and position of the wounds in physical injuries,

*How is she responds to questions about injuries?

can also give clues about violence (Kamay, 2011; Tsang & Sweet, 1999). Women who have been exposed to violence may display aggressive, withdrawn, depressed, agitated, or anxious behavior and avoid eye contact (Kamay, 2011).

Anamnesis

If traumatic findings are found in the examination of the general physical status of the woman, the dentist should suspect the possibility of violence against to woman (Kamay, 2011). S/he should respect to the patient and privacy rights of victim and fulfil the necessary responsibilities regarding it (Kayrın, 2011). S/he should ask clear and specific questions about violence in a non-judicial manner (Kamay, 2011; Afşin 2006). When the history reveals the following findings;

*Indefinite somatic complaints (headache, insomnia, hyperventilation, gastrointestinal problems, chest, neck, back and pelvic pain, muscle pain etc.)

* Depression, anxiety,

* Gastrointestinal and digestive problems, such as stomach ulcers, gastric reflux,

* Frequent use of tranquilisers or pain killers, etc.

the possibility of violence should come to mind (Afşin, 2006; Afşin, 2004).

If the story of the accident is uncertain; explanation of the patient and mechanism, appearance and size of injury, and timing are inconsistent; there is an unexplainable delay in receiving medical help; and if there are multiple injuries and/or injuries in different stages of healing, dentist should strongly suspect the presence of violence (Kamay, 2011; Andressen et al. 2007).

Extraoral Examination

The violent attacks against to women include punching, kicking, biting, or assault with an object in about 50% of the cases. Beating is the most common cause of injury in women (Fenton et al., 2000). Face, head, eyes, noise and throat should be examined in terms of asymmetry, swelling, bruises, scars, tears and abnormalities. The forehead region should be assessed for bruising and scalp for hair –pulling. Neck area is an important area for forensic medicine. Injuries to this area indicate a life-threatening attack (Afşin, 2004; Tsang & Sweet, 1999).

When there is a suspicion of violence, it should be investigated whether the following injuries are present or not in the extraoral examination (Afşin, 2004):

* Head, face, neck, abdominal injuries,
* Hair loss (caused by forceful pulling)
*Skin injuries, scars, ecchymoses, abrasions, scratches, bite marks, cigarette burns,
* Eye injuries, periocular bruises,
* Bone fractures, dislocations, cracks,
* The presence of old wounds with new wounds,
* Ear injuries,
* Nasal injuries,
* Loss of feeling,

Maximum vertical angulation and deviations should be noted. Surgical findings, trauma and facial asymmetry should be recorded. Temporomandibular joint (TME) functions should be assessed with pre-trauma status. Muscle tone and balance should be examined (Maguire et al., 2007; Gawinski & Ruddy, 2005; Kellogg, 2005; Tsang & Sweet, 1999).

Intraoral Examination

When dentist encounters a violence victim or suspects that a patient is a violence victim, s/he should make a detailed intraoral examination. Intraoral examination of dental and dentoalveoler injuries involve visual examination, palpation, jaw manipulation, pulp vitalite tests and percussion (Kamay, 2011; Afşin, 2004). Teeth, buccal and alveolar mucosa, gingiva, frenulums, hard and soft palates, floor of the mouth, alveolar sockets of the maxilla and mandible, tongue and throat area should be examined carefully (Tirali et al., 2014).

* Current state of mouth in terms of caries, soft and hard tissue injuries, oral hygiene and previous dental treatments,
* Ability to open and close the patient's mouth normally,
* Maximum vertical angulation and deviations
* Centrik occlusion status,
* Maxilla and mandibular injuries,
* Muscle tone and balance
* Temporomandibuler joint (TME) functions,
* Mobility of teeth and their reaction to percussion,
* The presence of missing, broken, discolored teeth,
* Size and functions of tongue
* Closing classification.

should be evaluated (Kamay, 2011; Andressen et al., 2007; Afşin, 2004).

Orofacial Injuries

The middle third of the face was the site of the most common soft tissue injuries, and nasal fractures were the most common fracture in violence injuries (Le et al., 2001; Hendler and Sutherland, 2007). The region of the injuries can direct or indirectly influence the victim’s life, affecting their appearance and communication. Dental trauma can cause functional, esthetic, psychological and social problems (Garbin et al., 2012).

Muelleman and others identified some specific injury types that are more common in abused women, and battered women are 18 times more likely to have facial abrasions or contusions than non-battered women with injuries; 16 times more likely to have neck abrasions or contusions; nearly 10 times more likely to have an orbit, zygoma or nasal fracture or a loose or fractured tooth; and nearly 6 times more likely to have a facial laceration (Muelleman et al., 1996).

Different types of violence against women cause different injuries that display different clinical findings and consequences.

Oral Findings of Physical Violence

As a result of physical violence; depending on the trauma to the head and facial area fractures of nasal, mandibular, maxillary, zygomaticomaxillar and orbital; dislocated jaw; fractured, subluxated, or avulsed teeth; tooth displacements such as intrusion (displacement into the socket) and extrusion (displacement out of the socket); pulp necrosis; scratches, ecchymoses, abrasions, bruises and lacerations in the lip, oral mucosa and labial frenulum; burn marks; bite marks around the mouth and the eyes; bruising of the pharynx; eye injuries and other injuries may be observed. Scarring of the lips is rare and, if present, could indicate repeated violence (Tirali et al., 2014; Olğar, 2011; Andressen et al., 2007; Yaşar &Akduman, 2007).

Orofacial injuries such as abrasion and laceration on the face may be inflicted by nails or various objects such as rings (Olğar, 2011; Andressen et al. 2007)

Abrasions occur as a result of friction between exposed skin and an object, such as scraping. Abrasions can be painful because they may involve terminal nerve fiber endings; however, bleeding is usually minor (Patel et al., 2014).

A bruise and a contusion are synonyms and are defined as discoloration under the skin from blunt or compression forces that result in bleeding from vessels (Sheridan & Nash, 2007).

Any tear in the soft tissue (skin or mucosa) is considered a laceration. Skin lacerations are very common. Lacerations result from sharp-edged objects, such as a knife, razor, or glass, but also from underlying bony fractures (Patel et al., 2014; Sheridan & Nash, 2007).

An injury in which a structure is forcibly detached from its normal point of insertion is an avulsion. Avulsion injuries to the face can involve many structures including the skin, ears, eyelids, lips, and teeth, all of which will lead to exposure of underlying structures. Pain and bleeding are usually present (Patel et al., 2014).

The bruises, bite marks, scratches, abrasions, cigarette burns and lesions due to friction can be observed in the face, ear, perioral and perioculer area (Patel et al., 2014).

It has been reported that bones are broken in 1/3 of the cases of physical violence. Subluxation and fractures are the most predominant type of dental trauma. Incisors were the most frequently injured teeth (Garbin et al., 2012).

Alveolar bone fractures involve injury to the alveolar process in the presence or absence of teeth. These fractures usually are accompanied by other injuries such as tooth displacement, crown fractures, root fractures, and soft-tissue injuries (Patel et al., 2014).

Maxilla fractures may result in aesthetic deformities such as impaired facial appearance and functional disorders such as airway obstruction, olfactory defect, and

lacrimal duct obstruction due to hemorrhage, edema, and hematoma development, backward migration of maxillary and displaced teeth. Clinical findings of maxillary fractures may include malocclusion, maxillary and midface mobility, edema, orbital ecchymosis (Patel et al., 2014).

Lacerations and mucosal ecchymosis suggest mandible fracture (Bailitz & Hedayati, 2016). In mandibular fractures, the mouth can not be closed, the jaw movement is painful and fractures usually occur in the teeth. Deviation and crepitus are other diagnostic findings (Kamay, 2011; Afşin, 2004). Clinical examination findings of mandibuler fracture may include malocclusion, trismus, jaw deviation, jaw segment mobility, step defects, mandibular and mental nerve paresthesia, pain, gingival lacerations, ecchymosis, and tooth mobility (Patel et al., 2014). A finger should be place into the external auditory canal and ask the patient to open and close the mouth gently to detect mandibular condyle fractures (Bailitz & Hedayati, 2016).

The tongue also should be inspect for lacerations that may result in significant swelling later on. The tongue blade test has been reported to be 96% sensitive in identifying clinically significant mandibular fracture injuries in facial trauma patients. The patient without a mandible fracture can bites down forcefully enough on a tongue blade to allow the dentist to snap the tongue blade with a twisting motion (Bailitz & Hedayati, 2016).

Any trauma to the mandible can direct the force of impact to either or both temporomandibular joints (TMJs) and cause TMJ trauma. Clinical findings of TMJ trauma may include TMJ pain, limited range of motion, trismus, clicking, popping, or locking (Patel et al., 2014).

The presence of one or more of these findings should bring to mind physical violence (Tirali et al., 2014).

All findings, whether or not compatible with history, should be recorded by marking the region and characteristics of the injury on body shapes. The color, shape and vertical and horizontal dimensions of injuries should also be noted. The traces of soft tissue injuries should be reported. The photographs should be taken with a measurement scale to evaluate the size of the lesion. The detailed recording of all identified injuries is important for further legal prosecution. It will helpful in determining the cause and timing of the injury (Zeybek, 2011; Yaşar et al., 2004).

In the suspicious cases, intraoral all bone structures should be palpated, and suspicious areas should be examined radiologically. Radiological screening methods demonstrate hidden bone findings and soft tissue injuries, and may be helpful to identify of violence (Olğar, 2011). Mainly used methods for hidden trauma are Scintigraphy, Cranial Computed Tomography (CT), Cranial Magnetic Resonance (MR), Panoramic Radiographs and Ultrasonograph (Naeem et al., 2017; Olğar, 2011).

Differential Diagnosis

Dentoalveolar injuries can result from many types of trauma, such as falls, fights, sporting injuries, motor vehicle accidents, and violence (Bailitz & Hedayati, 2016). The dentists should be able to recognize the indicators of physical violence in women victims, and distinguish these injuries from others.

Avulsions commonly occur with motor vehicle accidents, bites, and falls (Patel et al., 2014). If the tooth injuries have occurred as a result of falling, ecchymosis or

abrasions should be seen in the hands or wrists associated with teeth. Violence should be considered when these additional injuries are absent. These persons should be examined very carefully and the patient should be evaluated especially in terms of bilateral or multiple trauma (Andressen et al., 2007; Afşin, 2004). Clinically, it has been observed that, in general, accidental injuries tend to be more distal region whereas intentionalinjuries tend to be more proximal or central (Sheridan & Nash, 2007).

Various diseases may be confused with physical violence: for example, impetiginosa lesions, cause similar injuries to cigarette burns (Olğar, 2011; Andressen et al., 2007). Birth marks can be mistaken with bruises, and conjunctivitis can be mistaken with trauma. (Nalbantlar, 2013; Kamay, 2011; Andressen et al., 2007).

Violence may manifest itself with ecchymosis, contusion and scratch marks at different ages. The color of ecchymoses may be important at the time when the injury occurs. A red-blue or purple color can be seen immediately or within the first 5 days. This first color turns green in 5-7 days, yellow in 7-10 days, and brown in 10-14 days. The different colors of ecchymoses also indicate that the woman has previously or systematically been exposed to violence (Afşin, 2004).

When common ecchymoses are present; hemophilia, coagulopathies, disseminated intravasculer coagulation, immun trombocytopenic purpura, Henoch-schonlein vasculitis, Ehler Danlos syndrome are the diseases to be considered. Ecchymosis due to accident often occur on the prominent regions of the bones, such as the cheeks, chin, nose, mouth, and forehead. It should be checked whether there are traces specific to the object used, such as belts, cords, hangers or cigarettes. If there is a history of easy bleeding and extensively bruising; total blood count, platelet count, fibrinogen, thrombin time, prothrombin time, and partial thromboplastin time, thrombocyte evaluation and coagulation screening should be performed for the elimination of cases such as extensively morphea, blood discrhains (eg leukemia), platelet insufficiency (eg thrombocytopenia) and other haemorrhagic disorders (eg hemophilia, von Willebrand disease) (Olğar, 2011; Andressen et al., 2007).

About 10% of physical violence constitutes burns. Unusual burns caused by cigarettes, the top of a stove, hot grease, or acids should be suspected as intentional injury unless proved otherwise. The burns have asymmetrical, irregular, numerous splash lesions and different degrees of burns are seen together in the presence of violence (Andressen et al., 2007). However; accidental burns are often seen on the upper lip, face, neck as a result of boiling hot liquids. Cigarette burns are wider in diameter, deeper and circular than burns that are accidental (Olğar, 2011). Dermatitis, some systemic diseases (Behçet's disease, epidermolysis bullosa, etc.), cellulitis, impetigo should be considered in the differential diagnosis (Olğar, 2011; Andressen et al., 2007).

It is likely that the woman has previously exposed to trauma when there is one or more dark discolored teeth that are not related to decay. In such cases, no decision should be made during the initial examination and a definite decision must be made as a result of the control examinations in terms of differential diagnosis (Kamay, 2011; Andressen et al., 2007)

For fractures, Menkes syndrome, osteomyelitis, bone dysplasia, osteogenesis imperfecta should be considered in differential diagnosis. When the fractures of the skull, facial bones, mandibula, maxilla, and orbital bones are suspected, intraoral x-rays

and color photographs should be taken. Fractures that occur as a result of violence are usually more common on the left side of the face (right-handed perpetrators) (Le et al., 2001).

Dentists should approach every injury with suspicion; however, s/he shouldn't make a diagnosis based on just one symptom (Nalbantlar, 2011).

Oral Findings of Sexual Violence

Oral cavity is an area that is also exposed to sexual violence very often. This is why the consultation with the dentist in the cases where sexual violence is suspected is very important. Oral signs of sexual violence include oral lesions associated with sexually transmitted diseases, bruising of the hard or soft palate, and injuries or tears to the lingual frenulum (Tirali et al., 2014).

Intraoral indications of sexual violence are reported as gonorrhea, condylamata acuminata, syphilis, HSV type II, erythema and petechiae (Kamay, 2011; Yamaç & Aytepe, 2008). Gonorrhea can involve the face, the lips, the mouth, and the pharynx. In these areas, erythema and ulcerative lesions may occur. Common gonococcal stomatitis can be seen in the mouth. Syphilis may cause lesions as cankers on lips or gingival (Olğar, 2011; Yaşar & Akduman, 2007; Andressen et al., 2007; Afşin 2004). Hemorrhage and ecchymosis due to traumatic kissing can be seen in the perioral region. Lacerations may occur in the lips due to severe pressure. Abrasions can occur in the teeth. Bite marks seen in the oral area may occur during sexual violence (Tirali et al., 2014).

It may be observed evidences of the sexual contact such as erythematous on the back part of the palate or the sublingual region, and hair and sperm residue in the oral cavity as a sign of the oral penetration of the penis may be encountered (Kamay, 2011; Andressen et al., 2007; Yaşar & Akduman, 2007; Afşin, 2004).

Differential Diagnosis

If suspected that a patient is a sexual violence victim during the clinical examination, correctly evaluating of these injuries is crucial. Any sign of oral soft tissue infection should be tested and examined for sexual origin, including syphilis, gonorrhea, erythema / petechial palate**,** herpes, moniliasis, and condyloma acuminatum (Ovayolu et al., 2007). In the presence of clinical findings that indicates sexually transmitted diseases (STDs), other lesions such as genital ulcers and localization of the infection should be investigated. Genital, anal and pharyngeal involvements are important to assess the case (Kellog 2005; Afşin, 2004). The possibility of sexual violence should be definitely ruled out if an STD is diagnosed (Yaşar & Akduman, 2007).

If there is a sexual violence suspicion after a detailed examination, collecting swap samples from buccal mucosa and tongue is crucial in evaluating the findings accurately (Olğar, 2011; Yaşar & Akduman, 2007; Afşin, 2004). Prophylaxis should be performed against the possibility of infection and pregnancy (Kamay, 2011; Ovayolu et al., 2007).

The suck marks can indicate sexual violence. Bite marks on the lips and in the oral area may also occur during quarrels and fight. In cases of violence, human bite marks are often accompanied by other injuries. Multiple bite marks in various stages of healing are a strong indicator of repeated violences. The size of the injury and its

location on the victim play a important role in the diagnosis of bite mark. These marks match the tooth structure and teeth marks of the perpetrator, and can help to identify him. Dentists can determine if the bite marks were inflicted by an adult, by evaluating the bite mark imprint or by fabricating a bite mark diagnostic cast using dental impression material and plaster (Zeybek, 2011; Fenton et al., 2000). There is never a possibility that an adult's bite marks occur by accidentally (Kamay, 2011). The photographs should be taken with/without the ruler. Because the ruler may be hidden the traces of bite marks (Afşin, 2004).Analysis of any bite mark should include the anatomic location, surface contour, and tissue characteristics (Fenton et al., 2000). As a differential diagnosis, some fungal diseases or urticaria in the skin should be considered (Kamay, 2011).

Oral Findings of Psychologcal (Emotional) Violence

Psychological (emotional) violence may cause bruxism, joint problems, and habits such as thumb sucking, eating nails and teeth grinding among the women who are exposed to stress and violence. These habits may cause dental and skeletal malocclusions and dental damages in time. It is stated that violence causes anxiety, depression and stress which could lead to poor oral health behavior (Tirali et al., 2014). Women with a history of violence reported greater dental fear, and women with high dental fear scores were nearly twice as likely to have been victims of multiple violences (Kundu et al., 2014). This could be the possible reason for poor oral health status among violence victims. Neglect towards dental care due to the personal issues of a woman, lack of care and socio-economic problems may result in multiple dental cavities, insufficient dental hygiene, periodontal diseases which then result in pain, infection and loss of function unless they are treated (Tirali et al., 2014).

CONCLUSION

Violence agaist women can result in orofacial and dental trauma. Dentists can play an important role in identifying and referring victims of violence. Dentists also can assist the emergency physician in evaluating the presenting orofacial injuries and determining the likelihood of intentional trauma, even if the victim denies the attack (Fenton et al., 2000). .Dentists have moral, ethical and legal responsibilities in the detection, treatment and notification of cases of violence when s/he encounters a violence victim or suspects that a patient is a violence victim (Kamay, 2011).

- The dentist should examine the extraoral and intraoral areas with a detailed medical anamnesis.
- All of the orofacial tisues and bone structures should be palped, the sensitive areas should be radiologically evaluated.
- If necessary, laboratory examination and consultation should be requested.
- All of the signs and findings that are collected from the anamnesis and examination must be recorded. All of the legal processes regarding violence can only become active and effective, if there are medical records of violence. The violence must be documented in written form. The recording process should be very extensive for the medical follow-up of the patient, the identity of the perpetrator, and his/her relationship with the victim.

- Lesions should be photographed with a measurement scale to indicate size of injury from multiple angles.
- After the detection of the violence; the necessary, primary and urgent treatments should be carried out, further treatments should be planned and the case should be referred to a higher health institution if necessary.
- During the medical care and treatment, suspicious cases must be reported to the related authorities (health board, law enforcement, and legal authorities) even if the women don't report it or denies it as a legal obligation (Olğar 2011).
- In order to prevent violence against women, early detection is very important. When the diagnosis of violence can not be made, the victim is again exposed to violence and perhaps even loses her life. For this reason, even if it does not refer to the violence, every woman who comes to a health institution with injury must be assessed in this respect and should be considered violence victim until proven otherwise.

REFERENCES

Afşin H. (2001). Adli Diş Hekimliğinde Isırık İzleri ve Analizleri, Klinik Adli Tıp. 1(2):31-46.

Afşin, H. (2004). Adli Diş Hekimliği. Adli Tıp Kurumu Yayınları. S: 311- 339.

Afşin, H. (2006). Diş Hekimliğinde Anamnez. Nobel Tıp Kitapevleri. S. 327-329.

Andressen J O, Andressen F M, Andersson L. (2007). Textbook and Color At- las of Traumatic Injuries to the Teeth 4. Edition 'Child Physical Abuse' 207-215.

Bailitz, J; Hedayati T. (2016). Tintinalli's Emergency Medicine: A Comprehensive Study Guide, 8th Edition. Chapter 259: Trauma to the Face.Ed. Tintinalli JE., Stapczynski JS, Ma OJ, Yealy DM, Meckler GD, Cline DM. The McGraw-Hill Companies. New York. USA. www.accessmedicine.com

Campbell, JC. (2002). Health consequences of intimate partner violence. Lancet; 359:1331-6.

Coker, AL, Smith PH, McKeown RE, King MJ. (2000). Frequency and correlates of intimate partner violence by type: physical, sexual, and psychological battering. Am J Public Health. 90(4): 553-9.

Coulthard, P & Warburton A L. (2007). The role of the dental team in responding to domestic violence. Br Dent J. 203: 645-648

Duman, NB, Büyükgöneç L, Güngör T, Yılmazel G, Topuz Ş, Koçak DY. (2016).Sağlık Çalışanlarının Kadına Yönelik Şiddet Algılayışı ve Etkileyen Faktörler Perception of Violence Against Women Among Health Care Proffessionals And Affecting Factors. Jinekoloji - Obstetrik ve Neonatoloji Tıp Dergisi The Journal of Gynecology - Obstetrics and Neonatology; 13(4):154-159.

European Union Agency for Fundamental Rights (FRA). (2014). Violence against Women: An EU-Wide Survey: Main Results. Luxembourg: Publications Office of the European Union, available at: http://fra.europa.eu/en/ publication/2014/vaw-survey-main-results-1_en.pdf. (Access Date, July 9, 2018)

Fenton, SJ, Bouquot JE, Unkel JH. (2000).Orofacial considerations for pediatric, adult, and elderly victims of abuse. Emerg Med Clin North Am. 18(3):601-17.

Ferreira, MC, Batista AM, Ferreira Fde O, Ramos-Jorge ML, Marques LS. (2014). Pattern of oral axillofacial trauma stemming from interpersonal physical violence and determinant factors. Dent Traumatol. 30(1):15-21.

Garbin, CA, Guimarães e Queiroz AP, Rovida TA, Garbin AJ. (2012). Occurrence of traumatic dental injury in cases of domestic violence. Braz Dent J. 23(1):72-6.

García-Moreno C, Hegarty K, d'Oliveira AF, Koziol-McLain J, Colombini M, Feder G. (2015). The health-systems response to violence against women. Lancet. 385(9977): 1567-79.

Gawinski B & Ruddy N. (2005). Ailenin korunması: aile içi şiddet ve birinci basamak hekimi. (Çeviri: HN Dağdeviren). McDaniel SH, Campbell TL, Hepworth J, Lorenz A (Editörler). Aile yönelimli birincil bakım. İstanbul: Yüce Yayım. S.377-99.

Gökkaya VB. (2009). Türkiye'de şiddetin kadın sağlığına etkileri C.Ü. İktisadi ve İdari Bilimler Dergisi. 10(2):167-179.

Hendler JT & Sutherland ES. (2007). Domestic Violence and its Relation to Dentistry: A Call for Change in Canadian Dental Practice. J Can Dent Assoc.;73(7):617a-f.

Hsieh, N K, Herzig K, Gansky S A, Danley D, Gerbert B. (2006).hanging dentists' knowledge, attitudes and behavior regarding domestic violence through an interactive multimedia tutorial. J Am Dent Assoc. 137: 596-603.

Kadının Statüsü Genel Müdürlüğü (KSGM). (2015). Türkiye'de Kadına Yönelik Aile İçi Şiddet Araştırması. T.C. Aile ve Sosyal Politikalar Bakanlığı Kadının Statüsü Genel Müdürlüğü. Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü. Ankara: Elma Teknik Basım Matbaacılık. http://kadininstatusu.aile.gov.tr/data/542950d5369dc32358ee2bba/Ana%20Rapor.pdf (Access Date, July 9, 2018).

Kamay, C. (2011). Çocuk İstismarı ve Pedodontideki Yeri. (Graduation Thesis). Ege Üniversitesi DişHekimliği Fakültesi. İzmir

Kayrın, N. (2011). Fiziksel şiddette uğramış kadınlar ve tıptan beklentileri: kadın hasta hakları çerçevesinde bir değerlendirme. (Doctoral Thesis). Adana: Çukurova Üniversitesi.

Kellogg, N. (2005). Oral and Dental Aspects of Child Abuse and Neglect. Pediatrics. 116 (6):1565-1568.

Kundu H, P B, Singla A, Kote S, Singh S, Jain S, Singh K, Vashishtha V. (2014). Domestic violence and its effect on oral health behaviour and oral health status. J Clin Diagn Res. 8(11):9-12.

Le BT, Dierks EJ, Ueeck BA, Homer LD, Potter BF. (2001). Maxillofacial injuries associated with domestic violence. J Oral Maxillofac Surg. 59(11):1277–83; discussion 1284–4.

Maguire S, Hunter B, Hunter L, Sibert J. R, Mann M, Kemp AM. (2007). Diagnosing Abuse: A Systematic Review of Torn Frenum and Other İntra-oral Injuries. Arch Dis Child 92: 1113-1117.

Martin, S L & Curtis S. (2004). Gender-based violence and HIV/AIDS: Recognising links and acting on evidence. The Lancet, 363(9419), 1410–1411.

Muelleman RL, Lenaghan PA, Pakieser RA. (1996).Battered women: injury locations and types. Ann Emerg Med 28(5):486–92.

Naeem A, Gemal H, and Reed D. (2017). Imaging in traumatic mandibular fractures.Quant Imaging Med Surg. 7(4): 469–479.
Nalbantlar P. (2013). Aile İçi Şiddet ve Adli Diş Hekimliğindeki Yeri ve Önemi. (Graduation Thesis). Ege Üniv. Tıp Fak. Adli Tıp Anabilim Dalı., İzmir.
Nelms AP, Gutmann ME, Solomon ES, Dewald JP, Campbell PR. (2009). What victims of domestic violence need from the dental profession. J Dent Educ. 73(4):490-8.
Olğar M. (2011). Çocuk İstismarı ve İhmalinin Adli Diş Hekimliğindeki Yeri ve Önemi. (Graduation Thesis). Ege Üniversitesi Tıp Fakültesi. İzmir.
Ochs HA, Neuenschwander MC, Dodson TB. (1996). Are head, neck and facial injuries markers of domestic violence? J Am Dent Assoc. 127(6):757-61.
Ovayolu N, Uçan Ö, Serindağ S. (2007). Çocuklarda Cinsel İstismar ve Etkileri. Fırat Sağlık Hizmetleri Dergisi. 2 (4):13-22.
Özvarış ŞB, Demirören M, Şener Ş, Tumay Ş. (2008). Kadına Yönelik Aile İçi Şiddetle Mücadelede Sağlık Hizmetleri. Akın A (Ed). TC Başbakanlık Kadının Statüsü Genel Müdürlüğü. Ankara.
Pallitto, C. C., Garcia-Moreno, C., Jansen, H. A.F.M, Ellsberg, M., Heise, L. ve Watts, C. (2013). Intimate partner violence, abortion, and unintended pregnancy: Results from the WHO multi-country study on women's health and domestic violence. International Journal of Gynecology & Obstetrics, 120(1), 3-9.
Patel PB, Stanton DC, Granquist EJ. (2014).
Common dental and orofacial trauma: evaluation and management. Med Clin North Am. 98(6):1261-79.
Richardson J, Coid J, Petruckevitch A, Chung WS, Moorey S, Feder G. (2002). Identifying domestic violence: cross sectional study in primary care. BMJ, 324(7332): 274.
Sevil Ü & Yanıkkerem E. (2006) Kadına Yönelik Aile içi şiddet, İzmir Güven Kitabevi.
Sheridan DJ, Nash KR. (2007).
Acute injury patterns of intimate partner violence victims.Trauma Violence Abuse (3):281-9.
Subaşı N, Akın A. (2003). Kadına Yönelik Şiddet; Nedenleri ve Sonuçları. Akın A (Ed). Toplumsal Cinsiyet, Sağlık ve Kadın. 231-47. Ankara: Hacettepe Üniversitesi Yayınları.
Türmen T. (2003)."*Toplumsal Cinsiyet ve Kadın Sağlığı*", Toplumsal Cinsiyet, Sağlık ve Kadın (Ed. A. Akın).Ankara: Hacettepe Üniv. Kadın Sorunları Araştırma ve Uygulama Merkezi (HÜKSAM), HÜ Yayınları.
Taft, A & Watson, L F. (2008). Depression and termination of pregnancy (induced abortion) in a national cohort of young Australian women: The confounding effect of women's experience of violence. BMC Public Health, 8, 75.
Tatlılıoğlu K & Küçükköse İ. (2015). Türkiye'de Kadına Yönelik Şiddet: Nedenleri, Koruma, Önleme Ve Müdahale Hizmetleri Dicle Üniversitesi Sosyal Bilimler Enstitüsü Dergisi (DÜSBED) 7(13):194-209.
Tirali R, Soydan S, Oğuz Y. (2014). Çocuk İstismarı ve İhmalinin Oral Bulguları. Atatürk Üniversitesi Diş Hekimliği Fakültesi Dergisi. 9: 154-157.
Topçu S. (2009). Silinmeyen İzler: Çocuk, Genç ve Engellilerin İstismar ve İhmali. Phoenix Yayınevi

Tsang A, Sweet D. (1999). Detecting Child Abuse and Neglect - Are Dentists Doing Enough? Journal of the Canadian Dental Association.65 (7): 387-391.
World Health Organization. (2013). Global and Regional Estimates of Violence against Women: Prevalence and Health Effects of Intimate Partner Violence and Non-partner Sexual Violence. Geneva. Switzerland.
World Health Organization. (2005). Department of gender, women and health, family and community health. Adressing violence against women and achieving the millennium goals. Geneva.
World Health Organization (2002). World Report on Violence and Health. Chapter 4. Violence by Intimate Partners. Geneva.
Yamaç E & Aytepe Z. (2008).Çocuk İstismarı ve İhmalinin Diş Hekimliği Açısından De- ğerlendirilmesi. İstanbul Üniversitesi Diş Hekimliği Fakültesi Pedodonti Ders Notları.
Yanıkkerem E, Kavlak O, Sevil Ü. (2007). Şiddetin Kadın Sağlığına Etkileri ve Sağlık Çalışanlarının Rolü. Kadın Çalışmaları Dergisi. 2(4):32-45.
Yaşar F, Afşin H, Hancı H. (2004) Adli Diş Hekimliği. TBB Dergisi, Sayı 54, 351-354.
Yaşar ZF & Akduman GG. (2007). Çocuk İhmali-İstismarı ve Adli Diş Hekimliği. TSK Koruyucu Hekimlik Bülteni. 6 (5): 389-394.
Yetim D & Şahin EM. (2008). Aile Hekimliğinde Kadına Yönelik Şiddete Yaklaşım. Aile Hekimliği Derg - 2 (2):48-53.
Zeybek Sİ. (2011). Diş ve Isırık İzlerinin Adli Tıp Açısından Değerlendirilmesi. (Graduation Thesis). Ege Üniversitesi Tıp Fakültesi. İzmir.

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