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Does Gender and Social Support Matter in the Associations between Loneliness, Resilience, and Psychological Distress?*

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In this study, a moderated mediation analysis was conducted to assess whether psychological resilience mediates the association between loneliness and psychological distress and whether this association is moderated by social support or/and gender. So, three different two- and three-way moderated mediation models were tested. The study group of this research consists of 1251 participants from the general population of Turkey. It was determined that loneliness and psychological distress of the group receiving high social support decreased. Resilience shows a partial mediation in the relationship between loneliness and psychological distress. Besides, the relationship between loneliness and resilience is significant. Our study shows that one of the most important variables in reducing psychological distress, regardless of gender, is to reduce loneliness. This study showed that the psychological distress variable, which is one of the most

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Ethical Approval. All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent. Informed consent was obtained from all individual participants included in the study.

Conflict of Interest. The authors declare that he has no conflict of interest.

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important components in the evaluation of psychological well-being, is directly related to loneliness and resilience variables.

Keywords: loneliness, resilience, psychological distress, perceived social support, moderated mediation model

- Reducing loneliness is one of the most crucial factors in lowering psychological distress, regardless of gender.
- Resilience shows a partial mediation in the relationship between loneliness and psychological distress.
- Loneliness and resilience are directly correlated with psychological distress, which is one of the most significant factors in the evaluation of psychological well-being.

Well-being, which is a multifaceted structure, is one of the most important concepts in positive psychology (Tov, 2018). Although many different conceptualizations have been made for well-being, one of the most discussed types of well-being has been psychological well-being (PW). PW is the combination of feeling good and functioning effectively in one's life (Huppert, 2009). According to Veenhoven (1991), psychological well-being is the totality of psychological elements that make up and affect a person's life and serve as a yardstick for life satisfaction. Positive human performance fueled by life's aims and meanings is a sign of high psychological well-being (Ryff, 1989). PW is affected by many different factors. In the present study psychological distress, loneliness, psychological resilience, and social support variables, which are indicators of PW, are included.

The World Health Organization (2005) defines mental health as "a state of well-being, in which an individual realizes his/her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community". Therefore, psychological distress can be considered as an effective variable to be considered when it comes to a more inclusive psychological condition such as PW. Psychological distress is defined as psychological symptoms that an individual has experienced in the last few weeks, including impairments in normal or healthy functioning (Goldberg, 1978). Psychological distress includes important negative psychological indicators such as depression and anxiety (Jex, 1998) and is one of the important mental health outcomes (Drapeau et al., 2012). According to a longitudinal study throughout COVID-19 waves, psychological health had an impact on distress in COVID-19's latter

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waves (Wang et al., 2021). Therefore, it is important to determine the factors that cause psychological distress and to investigate the underlying mechanisms of these factors on psychological distress.

Loneliness is a condition with potentially serious mental and physical health consequences (Hwang et al., 2020). According to Jong-Gierveld (1987, p.120) "Loneliness is a situation experienced by the individual as one where there is an unpleasant or inadmissible lack of (quality of) certain relationships". Increasing loneliness is leading to an aging population and is supported by technologies that replace face-to-face contact (Holt-Lunstad et al., 2015). These trends point to strong associations between loneliness and negative mental health outcomes, including increased risk of depression and suicide (Beutel et al., 2017). In particular, it concerns the strong evidence linking loneliness and psychological distress (Beutel et al., 2017). Some studies show that there are direct (Cox et al., 2020; Kahn & Hessling, 2001) and indirect (Wormald, McCallion, & McCarron, 2019) associations between loneliness and psychological distress. After controlling for various dimensions of personality, Cacioppo et al. (2006) found that the correlation between loneliness and anxiety, one of the components of psychological distress, was significant. This research supports Weiss and Bowlby's (1980) study, which suggests Cacioppo et al. (2006) study that loneliness can be viewed as a chronic illness. Psychological distress from loneliness may be a harbinger of possible future mental health disorders. Losada-Baltar et al. (2021) concluded that higher loneliness was associated with higher distress. According to two separate meta-analysis studies (Mahon et al., 2006; Pinquart & Sörensen, 2001) examining the connection between loneliness and a variety of real-life issues, it is linked to a decline in the quality of social ties, fewer contact opportunities, limitations on daily competence, lower income, and lower levels of education. Additionally, it was discovered in these studies that loneliness was linked to melancholy, shyness, social anxiety, low self-esteem, and lack of social support. So, it can be said that one of the negative psychological indicators that can affect psychological distress is loneliness.

Research findings on psychological resilience led to the idea that this is an important variable that affects PW of individuals (Benetti & Kambouropoulos, 2006; Jason et al., 2017; Mak, Ng, & Wong, 2011; Schure, Odden, & Goins, 2013; Zhang et al., 2018). In the literature, there are studies that also deal with the psychological distress variable while examining the resilience of individuals (Bacchi, & Licinio, 2017; Zou et al., 2016). Because resilience is considered a key component in reducing the risk of psychological distress (Zou et al., 2016). Roth and Von Collani

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(2007) defined this construct as a personality factor that includes flexibility, inventiveness, and harmony that protects individuals against negative emotions and life events. Psychological resilience is also defined as individuals' staying healthy despite negative life events, stress, and risks (Bonanno, 2004). It is known that psychological resilience plays a very important role in improving mental processes and behaviors and protecting an individual from potentially negative effects of stress factors (Fletcher & Sarkar, 2013).

Resilience has been reported to be negatively associated with psychological distress in many studies (Chi et al., 2016; Jamshidi et al., 2017; Wilks & Croom, 2008). Besides, some studies show an indirect association between resilience and psychological distress (Gao et al. 2018; Prime, Wade, & Browne, 2020; Yan, et al. 2019). A meta-analysis consisting of 60 studies identified resilience as one of the protective factors against psychological distress across diverse samples (Hu, Zhang, & Wang, 2015). Accordingly, it can be said that resilience is another predictor of psychological distress. As a result of testing models including resilience and loneliness variables in the literature, a significant negative relationship was found between these two variables (Batmaz et al., 2021; Gerino et al., 2017). In two different studies conducted during the COVID-19 period, it was observed that psychological resilience had an effect on reducing loneliness and improving quality of life (Pineda et al., 2022; Tu et al., 2022). Therefore, resilience may mediate the association between loneliness and psychological distress.

Examining the moderator effect of perceived social support and gender variables in explaining the correlations between these three psychological variables was also included in the study.

Perceived Social Support as a Moderator Variable

With its general definition, social support is the experience provided by others with resources that help the individual in daily activities (Rayle, 2006). A previous study has shown that perceived social support has a stronger effect on mental health than actual social support (Hefner & Eisenberg, 2009). Therefore, in this study, perceived social support was emphasized. Perceived social support is defined as individuals' perceptions of the general availability of social support and/or overall satisfaction with the support provided (Sarason, Sarason, & Pierce, 1990). Rutter and Rutter (1993) stated that psychological resilience is strongly influenced by social relationships rather than heredity or internal influences. Some studies have shown the positive effect of social support on resilience (Wilks & Croom, 2008; Wilks & Spivey, 2010). It is expected

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that resilience as a personality trait will also have a positive effect on seeking social support (DeLongis & Holtzman, 2005). Loneliness is the personal experience of social isolation. It has been defined as an unpleasant subjective state of feeling the inconsistency between the level of expected friendship or emotional support and the level that exists in the person's environment (Blazer, 2002). Considering the studies showing that loneliness may be a predictor of psychological distress, it is thought that perceived social support may be a moderator variable. In addition, Wilks and Croom (2008) stated in their study that social support moderates the relationship between stress and resilience.

Gender as a Moderator Variable

Research findings show that they believe that adherence to traditional masculinity ideology causes males to hide their psychological distress from others and thus explaining their problems will cause others to see them as "weak" and "vulnerable" (Levant, Hall, & Rankin, 2013). Cox et al. (2020) stated that feeling not understood by others and loneliness mediated the relationship between hiding psychological distress and symptoms of depression. Males who favored hiding higher levels of psychological distress reported feeling less understood by others, which was associated with feeling more alone, ultimately contributing to greater depressive symptoms. In the same study, it was also stated that the role of feeling understood in depressive symptoms was explained by loneliness. Males who are afraid to explain their problems because their masculine self-concepts are under threat, however, will find the opportunity to encounter social support when they open themselves to their social environment. This social support could possibly facilitate feelings of being understood by others, which in turn could alleviate feelings of loneliness among males. It is possible that the risk of psychological distress is higher among males whose loneliness level increases because they are less comfortable sharing their troubles (Cacioppo et al. 2010).

Females benefit positively from social support, especially since they are satisfied with talking about their feelings with their friends. Therefore, social support can be a moderator variable for females (Greenglass, 2002). Studies on the reduction of psychological distress by receiving social support produced mixed findings in male and female groups. In some studies, social support was found to be a significant moderator variable only in female groups (Graham et al., 2000; Llabre & Hadi, 1997) while in some studies, social support was found to be a significant moderator variable in male groups (Cohen & Wills, 1985). Some studies indicate that gender does not play a role in the moderator effect of social support (Felsten, 1998).

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Current Study

First of all, it is thought to be useful to define what the mediator and moderator variables are. A moderator is a significant interaction effect and a third variable that influences the zero-order correlation between the other two variables. It is included in the model under study as an exogenous variable. A moderation variable means that the joint effect of the moderator and the independent variable on an outcome is different from what would be expected from the sum of their main effects. A mediator is a third endogenous variable that must be associated in certain aspects with the independent variable and the outcome. The mediator variable changes the significance of the relationship between the independent variable and the dependent variable. Although it is also useful to consider the variables of mediator and moderator variables separately, examining both by integrating them into a single model allows researchers to reach even more nuanced relationships among variables (Edwards & Konold, 2020).

In the literature review, no study was found on the mediating role of resilience in the association of loneliness with psychological distress. Therefore, it is not known what effect social support and gender might have as moderator variables. Although there are many examples of moderation and mediation analyses in social science research, it is stated that the number of studies combining both analyzes in a single model is less (Edwards & Konold, 2020). This research basically emerged from the necessity of establishing complex models to reveal these kinds of relations. In this study, a moderate mediation analysis was conducted to assess whether psychological resilience mediates the association between loneliness and psychological distress and whether this association is moderated by social support or/and gender. So, three different moderated mediation models were tested. In the first hypothesis, the mediator role of resilience and the moderator role of social support in the association of loneliness with psychological distress was tested by considering the female group. In the second hypothesis, the same model was established for the male group. Because these two hypotheses contain only one moderator and one mediator variable, they are defined as a two-way moderated mediation model. In the third hypothesis, the mediator role of resilience in the association of loneliness with psychological distress and the moderator role of gender and social support were tested. A three-way moderated mediation model was tested because one mediator and two moderator variables were used using all sample data. The models established to test the relevant hypotheses can be seen in Figure 1.

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Method

Participants

The study group of this research consists of 1251 participants from the general population in Turkey. The age of the participants ranged from 18 to 69 (M = 25.72, median = 22, SD = 8.48). Most of the participants were women (65.8%; n = 823). Also, most of the participants are students (72.5%) and not working (68.7%). The inclusion criteria were: being an adult aged 18 or over and giving consent to participate in the study.

Procedure

Ethics committee approval was obtained by the Akdeniz University Social and Human Sciences Scientific Research and Publication Ethics Committee with document number 305468. Participants were selected by convenience sampling method. Study information and data collection tools were delivered to the participants via e-mails and content shared on social media. Shared e-mails and social media posts included a link directing people to the online survey. To provide informed consent, all participants actively chose that they agreed to participate in the study before proceeding with the items.

Measures

Personal Information Form. It includes items about some demographic variables such as gender, age, employment and student status.

De Jong Gierveld Loneliness Scale (DJGLS). DJGLS (Jong-Gierveld, & Kamphuis, 1985) is a well-known loneliness scale that is frequently used in international research (van Tilburg et al., 2004) and consists of 11 items. Six of these treats in the direction of loneliness ("I miss having a really close friend") and the other five are in the opposite direction of loneliness ("There is always someone I can talk to about my day-to-day problems"). In this research, we used the Turkish version of the scale adapted by Çavdar et al. (2015). In this adaptation study, the two-factor structure of the scale (emotional and social loneliness) was tested and this structure was accepted via exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). This scale uses a 4-point response category (1-*Not true at all*, 2-*Hardly ever true*, 3-*True most of the time*, 4-*Always true*). The total score obtained is evaluated in four different categories: 0-2 points indicate not lonely, 3-8 points indicate moderate lonely, 9-10 points indicate severe lonely, and 11 points indicate very severe lonely. The alpha coefficient was .87. However, it has recently been stated

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that this scale is suitable for the bifactor structure and has essentially unidimensionality (Grygiel, Humenny, & Rębisz, 2019). Considering this result, the analyzes were carried out on the total score in the current study. The omega coefficient of the general factor of the scale was calculated as .901.

The 10-Item Kessler Psychological Distress Scale (K10-PDS). Nonspecific psychological distress experienced in the last 30 days was measured by self-assessment using K10-PDS (Kessler et al., 2002). The scale consists of 10 items with total scores ranging from 10 to 50, with higher scores indicating higher levels of psychological distress. Previous research has shown that a score greater than 15 indicates moderate to severe psychological distress, and a score of 20 or higher indicates a higher probability of mental disorder (Andrews & Slade, 2001). In this research, we used the Turkish version of the K10-PDS adapted by Altun et al. (2019). In this adaptation study, the uni-dimensional structure of the scale was tested with EFA and the explained variance was 71.2%. Besides, the Cronbach alpha coefficient was calculated as .95 in the same study. The omega coefficient of the general factor of the scale was calculated as .912.

The Multidimensional Scale of Perceived Social Support (MSPSS). The MSPSS is a 12-item scale that measures the adequacy of perceived social support from three different areas: family, friends, and significant others (Zimet et al., 1988). It has a three-dimensional factor structure with each subscale comprising four items addressing practical help, emotional support, availability to discuss problems, and help in decision-making (Grey et al., 2020). In this research, we used the Turkish version of the MSPSS translated and adapted by Eker et al., (2001). In this adaptation study, the three-dimensional structure of the scale was confirmed by EFA. The validity of the scale's capability to produce a total score was demonstrated in the same research. Alpha reliability coefficients range from .80 to .95. Osman et al. (2012) provided strong support for the bifactor model for the MSPSS. For this reason, in the current study, the presence of the general factor was accepted and the analyzes were carried out on the total score. The omega coefficient of the general factor of the scale was calculated as .884.

10-item Connor–Davidson Resilience Scale (CD-RISC-10). The Connor-Davidson Resilience Scale was developed to measure psychological resilience, which means that individuals can return to their normal state after experiencing negative events (Connor & Davidson, 2003). CD-RISC-10 (Campbell-Sills & Stein, 2007) is based on the CD-RISC-25 (Connor & Davidson, 2003). In this

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research, we used the Turkish version of the CD-RISC-10 adapted by Kaya and Odacı (2021). In this adaptation study, the uni-dimensional structure of the scale was confirmed by EFA and CFA (χ^2 = 73.21; df = 34; NFI = .96; CFI = .98; RMSEA = .055; SRMR = 0.041). The scale contains 10 items and has a five-point response category. The alpha coefficient was .81 in this adaptation study. The omega coefficient of the general factor of the scale was calculated as .857.

Analysis

First of all, *t*-tests were conducted to see if gender was to be included in the model as a moderator variable. It was examined whether the four continuous variables differed according to gender. It was determined to be statistically significant according to the mediator variable resilience ($t(1249) = 6.54$, $p = .000$) and the moderator variable social support ($t(1249) = 3.58$, $p = .000$) variables with gender groups. Considering the studies on the effect of gender on related latent features in the literature, it was decided to include gender in the model. Gender (male = 0, female = 1) and perceived social support (low = one standard deviation below the mean, high = one standard deviation above the mean) variables were included in the model as moderator variables.

All statistical analysis were performed with MPLUS 8.3 (Muthén & Muthén, 2017). The main part of the analysis is to test moderated mediation models. In testing the two-way moderated mediation models established to test the first two hypotheses, the data set was divided into two groups (male and female), and each data set was analyzed separately. In these two hypotheses, the mediator role of resilience and moderator role of social support in the association of loneliness with psychological distress was tested. In the third hypothesis, the mediator role of resilience in the effect of loneliness on psychological distress and the moderator role of gender and social support were tested. A three-level moderated mediation analysis was performed because two moderator variables and a single independent variable were used using all sample data. All assumptions of the analyzes (normality, outlier, etc.) were tested and the data sets were verified. First of all, the model data fit of each model was tested and it was determined whether the models were verified or not. To evaluate the model-data fit three different model-data fit indicators were reported: (a) root mean square error of approximation (RMSEA), (b) Tucker–Lewis index (TLI), and (c) comparative fit index (CFI). The following criteria were used to declare that a model fit the data well: CFI and TLI above .90 (better if above .95) and RMSEA below .08 (Marsh et al., 2004). Maximum likelihood estimator (ML) and 10,000 bootstrap samples were used for all

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models. Besides, the index of moderated mediation (IMM) is calculated for all models. With IMM, the strength of the indirect effects between the various levels of the moderator variable can be determined. The absence of zero value in the confidence intervals of the IMM values obtained when 10,000 bootstrap samples are used is evidence that the moderator mediation model is provided. All continuous variables were standardized by converting to z-scores before analysis.

Results

Descriptive Statistics and Correlations for Study Variables

In Table 1, the Pearson correlation coefficients of the correlations between all continuous latent variables used for the research, are given. All self-report measures showed adequate internal consistency and were significantly correlated.

Table 1

Means, Standart Deviations, Internal Consistency, and Correlations for Study Variables

Items	M	SD	α	1	2	3	4
1. Perceived Social support	60.56	16.73	.89	-	-.65***	.26***	-.39***
2. Loneliness	26.03	8.20	.91		-	-.35***	.49***
3. Resilience	34.21	7.72	.90			-	-.37***
4. Distress	24.36	6.96	.87				-

Note. M = mean; SD = standard deviation; α = Cronbach alfa; *** p < .001; All correlations are Pearson correlations

The Mediating Effect of Resilience and Moderating Effect of Social Support

In order to explore the possible moderating effect of perceived social support, two different moderated mediation models were tested (model-1 = female, model-2 = male). The model was validated according to the model data fit values (RMSEA = .057, CFI = .994, and TLI = .947) of Model-1 established to test the first hypothesis. According to Model-1, as seen in Table 2, direct (β = .34, $p < .001$) and total indirect (β = .07, $p = .001$) effects of the mediating role of resilience in the association between loneliness and distress in the low perceived social support group were found to be statistically significant. In addition, the direct (β = .32, $p < .001$) and total indirect (β = .09, $p = .001$) effects of the mediating role of resilience in the association between loneliness and distress in the high perceived social support group were statistically significant. In this case, the findings of both groups support the partial mediation model. However, when the moderator role of perceived social support was examined by IMM, it was determined that perceived social

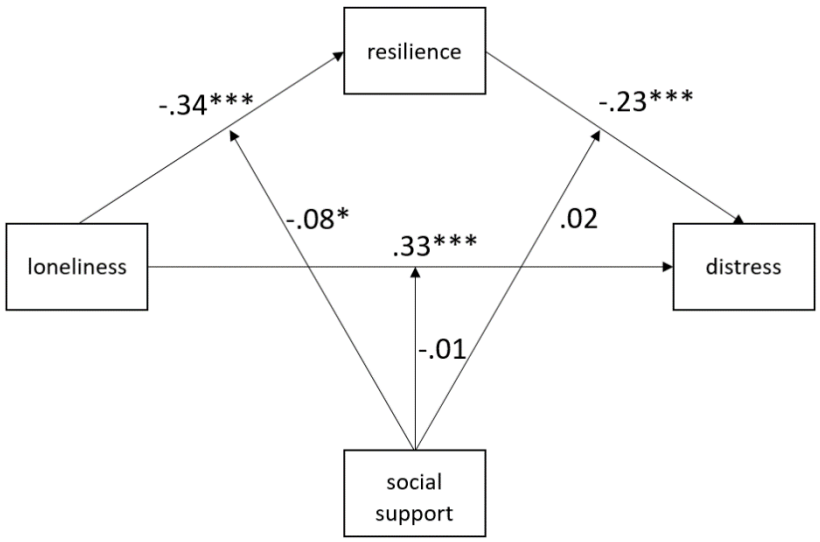
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support did not have a moderator role in women, since this value was not statistically significant and the confidence interval include a zero value.

Model-2 was validated using model-data fit indicators (RMSEA = .057, CFI = .991, and TLI = .916) to test the second hypothesis. According to Model-2, as seen in Table 2, direct (β = .38, $p < .001$) effects of the mediating role of resilience in the association between loneliness and distress in the low perceived social support group were found to be statistically significant but total indirect (β = .04, $p = .079$) effects were not found to be statistically significant. So, in the male group, resilience did not mediate the association between loneliness and distress in the low perceived social support group. But, the direct (β = .26, $p < .001$) and total indirect (β = .05, $p = .034$) effects of the mediating role of resilience in the association between loneliness and distress in the high perceived social support group were statistically significant. These findings for high perceived social support group sustain the partial mediation model. However, when the moderator role of perceived social support was examined by IMM, it was determined that perceived social support did not have a moderator role in men, since this value was not statistically significant and the confidence interval include a zero value.

Model-1

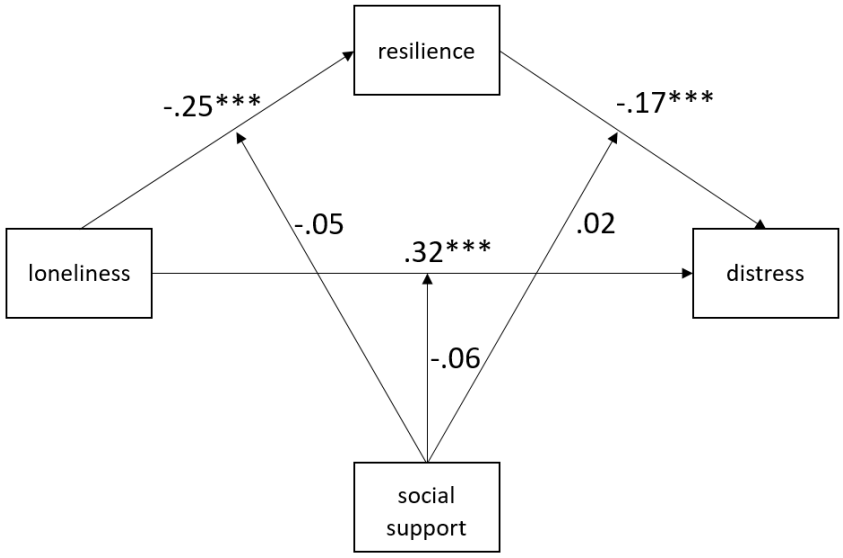
Moderated Mediation Model with one Moderator Variable (Female Group)



Model-2

Moderated Mediation Model with one Moderator Variable (Male Group)

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Model-3

Moderated Mediation Model with two Moderator Variables (All Groups)

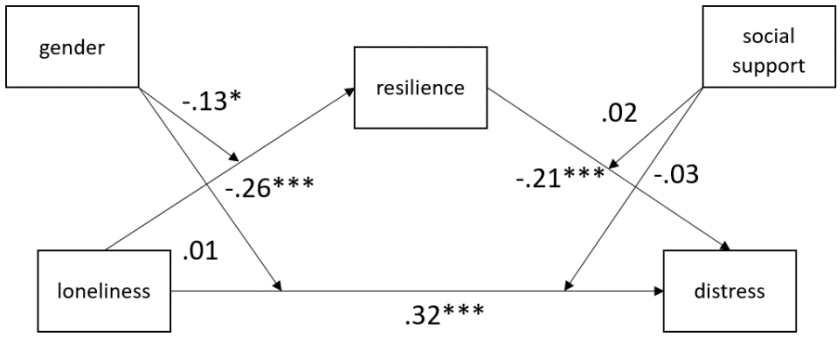


Figure 1

Model Diagrams of all Models

Note: All parameter coefficients are standardized results. * $p < .05$ *** $p < .001$

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Table 2

Direct, Indirect, and Total Effect Analysis for the First and Second Hypothesis Model

Female (Model-1)						
From loneliness → resilience → distress						
	Low Perceived Social Support			*High Perceived Social Support*		
Effects	*β*	*p-value*	*95% CI*	*β*	*p-value*	*95% CI*
Total effects	.406 (.044)	<.001	.334, .477	.408 (.047)	<.001	.332, .485
Direct effect	.339 (.046)	<.001	.264, .415	.318 (.052)	<.001	.235, .405
Total indirect effect	.067 (.019)	.001	.040, .104	.090 (.026)	.001	.051, .137
IMM	.013 [-.012, .034]			.009 [-.016, .040]		
Male (Model-2)						
	Low Perceived Social Support			*High Perceived Social Support*		
Effects	*β*	*p-value*	*95% CI*	*β*	*p-value*	*95% CI*
Total effects	.413 (.074)	<.001	.293, .532	.309 (.060)	<.001	.210, .408
Direct effect	.377 (.075)	<.001	.254, .498	.263 (.063)	<.001	.162, .369
Total indirect effect	.036 (.021)	.079	.011, .082	.046 (.022)	.034	.017, .089
IMM	.006 [-.019, .023]			.004 [-.018, .030]		

Note. IMM = index of moderated mediation.

The Mediating Effect of Resilience and Moderating Effects of Gender and** Perceived **Social Support

The model data fit of Model-3 (RMSEA = .063, CFI = .977, and TLI = .901), which examines the moderator role of gender and perceived social support in the mediator role of resilience in the association of loneliness with distress, is sufficient. According to Model-3, as seen in Table 3, in low perceived social support groups, direct (β = .36, $p < .001$) and total indirect (β = .09, $p = < .001$) effects of the mediating role of resilience in the association between loneliness and distress in the female group were statistically significant. In addition, direct (β = .35, $p < .001$) and total indirect (β = .06, $p = < .001$) effects of the mediating role of resilience in the association between loneliness and distress in the male group were found to be statistically significant. In this case, the findings of both groups support the partial mediation model. For women with low perceived social support, IMM shows that gender and perceived social support are moderator variables. Confidence intervals for the IMM value do not include zero. However, the same cannot be said for the men.

In Model-3, also, in high perceived social support groups, direct (β = .30, $p < .001$) and total indirect (β = .08, $p = < .001$) effects of the mediating role of resilience in the association between loneliness and distress in the female group were statistically significant. The direct (β = .29, $p < .001$) and total indirect (β = .05, $p = < .001$) effects of the mediating role of resilience in

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the association between loneliness and distress in the male group were found to be statistically significant. In this case, the findings of both groups support the partial mediation model. For men with high perceived social support, IMM shows that gender and perceived social support are moderator variables. Confidence intervals for the IMM value do not include zero. However, the same cannot be said for the women.

Table 3

Direct, Indirect, and Total Effect Analysis for the Third Hypothesis Model

Low** Perceived **Social Support						
From loneliness → resilience → distress						
	Female			*Male*		
Effects	*β*	*p-value*	*95% CI*	*β*	*p-value*	*95% CI*
Total effects	.446 (.039)	<.001	.380, .508	.405 (.053)	<.001	.318, .493
Direct effect	.356 (.040)	<.001	.290, .421	.345 (.054)	<.001	.256, .434
Total indirect effect	.090 (.017)	<.001	.064, .120	.060 (.014)	<.001	.040, .086
IMM*	.025 [.001, .050]			.023 [-.001, .048]		
High** Perceived **Social Support						
	Female			*Male*		
Effects	*β*	*p-value*	*95% CI*	*β*	*p-value*	*95% CI*
Total effects	.377 (.040)	<.001	.312, .443	.341 (.049)	<.001	.261, .422
Direct effect	.300 (.043)	<.001	.230, .370	.289 (.052)	<.001	.204, .373
Total indirect effect	.077 (.016)	<.001	.052, .105	.051 (.013)	<.001	.033, .076
IMM*	.021 [-.003, .048]			.025 [.001, .050]		

Note. * IMM = index of moderated mediation.

It has been determined that social support has a moderator effect only when it is considered together with gender. However, as can be seen in Figure 2, it is possible to say that gender and perceived social support may have a moderator effect.

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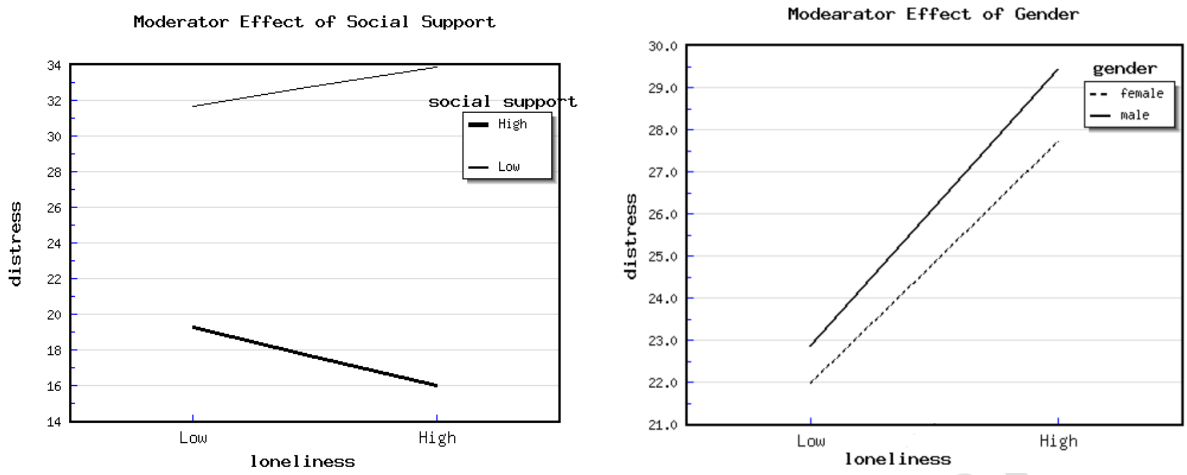


Figure 2

Moderator Effect of Perceived Social Support and Gender (Model-3)

Discussion

This study aimed to assess whether psychological resilience mediates the association between loneliness and psychological distress and whether this association is moderated by perceived social support or/and gender. For this purpose, firstly, as a basic model, a moderated mediation model was created about the mediating role of resilience and the moderator role of perceived social support in the association of loneliness with psychological distress. This moderated mediation model was tested separately for female and male groups. Then, in order to test the moderator role of gender, gender was included in the model as a moderator variable and a third moderated mediation model was tested. Thus, the interaction effect of gender and perceived social support could also be examined.

Zhang et al. (2018) considered gender as a moderator variable in the model they built with psychological resilience distress, and perception social support variables. The researchers determined that while the psychological distress of male university students was more closely related to resilience, the psychological distress of female students was more closely related to perceived social support. Due to such differences, the models tested in the present study were first discussed separately for men and women, and a more detailed examination was made. Researchers point out that women have a wider social network than men (Caetano et al., 2013) and state that social support has a more important role in reducing the risk of major depression in women than in men (Kendler et al. 2005). Besides, while previous studies have found a statistically significant moderator role of social support in the female group, these findings were generally not available

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in the male group (Barnett et al., 2021; Graham et al., 2000; Llabre & Hadi, 1997). However, no statistically significant moderator role of perceived social support was determined in the male and female groups in this study.

The moderated mediation model could not be established in the low social support moderator group of Model-2. Indirect effects were not statistically significant. However, all other moderated mediation models in Model-1 and Model-2 showed partial mediation. In this case, resilience shows a partial mediation in the relationship between loneliness and psychological distress. However, resilience explains 8% of the variance in psychological distress in the male group, while it explains approximately 16% in the female group. This shows that resilience is a more important mediating variable in explaining distress in women. This finding is similar to previous research findings (Ahola & Hakanen, 2007; Iacovides et al., 2003; Zou et al., 2016). Besides, Chen et al. (2022), in their study conducted only on immigrant women, determined that resilience had a mediating effect on the dependent variable of psychological distress. In Model-3, statistical evidence was obtained regarding the co-moderator role of gender and social support. For men with high social support and for women with low social support IMM shows that gender and social support are moderator variables. However, the graphs obtained (see Figure 2) indicate that social support may have some mediating role. Other studies have also addressed the mediating role of social support (Bellman et al., 2003; Felsten, 1998). It was determined that the loneliness and psychological distress of the group receiving high social support decreased. Besides, all other moderated mediation models showed partial mediation in Model-3. Lorente, Vera, and Peiró (2021), in their study consisting of a group of mostly women nurses, determined that the resilience variable partially mediated the variables associated with psychological distress, as in this study. Also, Chernova et al. (2021) examined the mediation of the resilience variable on the effect of partnership situation on psychological distress and found that resilience has a partial mediating role between these two variables.

It can be said that the results of this study related to our study are quite consistent, considering that the partnership status with the loneliness variable is quite relevant. Some loneliness studies on the elderly, young homeless, and students have shown that resilience can mediate the relationships between loneliness and other psychological health-related variables (Gerino et al., 2017; Pakdaman et al., 2016; Zhao et al., 2018). In our research findings, significant associations were obtained between loneliness and resilience. While loneliness explains 16% of

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the variance in the resilience variable in the male group, it explains approximately 15% in the female group. In this case, the associations of loneliness on resilience are independent of gender. Other moderator findings also support this situation.

As with previous research findings, the associations between loneliness and psychological distress are significant both directly and indirectly (Cox et al., 2020; Kahn & Hessling, 2001). While loneliness explains 25% of the variance in the distress variable in the male group, it explains 31% in the female group. This finding shows that one of the most important variables in reducing psychological distress, regardless of gender, is to reduce loneliness.

Clinical Implementations

This study showed that the psychological distress variable, which is one of the most important components in the evaluation of psychological well-being, is directly related to loneliness and resilience variables. Gender and perceived social support have a partial effect on distress. Therefore, it is recommended to consider these variables in the evaluation and treatment of psychological distress.

Strengths, Limitations, and Further Research

To our knowledge, this is the first study to examine the mediator role of resilience and the moderator role of gender and perceived social support in the association of loneliness with psychological distress. In this research, the establishment of three new moderated mediation models and the use of a sample that includes a large mass of society from a wide age range can be specified as the strengths of this research. This study is an exploratory one. Therefore, our findings may be quite different from other future studies. It is also possible to mention some limitations of this study. While other studies similar to this study worked with a specific (adolescent, elderly, etc.) group, we preferred a general sample. This is, of course, both a limitation and a strength. But the sample in this study, which was conducted on the general sample, is unbalanced in terms of gender and age group membership. Another limitation is the collection of data via online platforms. Besides, this study is cross-sectional and based solely on self-report data. Because of the study design, only self-reported questionnaires could be used, which may be subject to desirability bias.

Our first recommendation for future research is to collect face-to-face data. It can be suggested to establish new models with more mediating variables by developing moderated mediation models that we created with a single mediator variable. In addition, the co-moderator

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effect of social support with other demographic variables can also be a research topic. In addition, it is thought that new models can be established with empirical and longitudinal data by not being content with only self-report data. Finally, other psychological variables associated with PW (e.g. self-esteem, positive and negative affect, etc.) can also be added to the model as a mediator variable.

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Da li su rod i socijalna podrška bitni u odnosima usamljenosti, rezilijentnosti i psihološkog distresa?

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U ovom istraživanju, sprovedena je analiza moderirane medijacije kako bi se procenilo da li psihološka rezilijentnost posreduje u vezi između usamljenosti i psihološkog distresa i da li je ova povezanost moderirana socijalnom podrškom i/ili polom. Testirana su tri različita dvosložna i trosložna modela moderirane medijacije. U ovom istraživanju je učestvovala 1251 osoba iz opšte populacije Turske. Utvrđeno je da su usamljenost i psihički distres grupe koja je ima visoke skorove na socijalnoj podršci bili niži. Rezilijentnost se pokazala kao delimični medijator odnosa između usamljenosti i psihološkog distresa. Osim toga, povezanost usamljenosti i rezilijentnosti je statistički značajna. Naše istraživanje pokazuje da je jedna od najvažnijih varijabli za smanjenje psihološkog distresa, bez obzira na pol, smanjenje usamljenosti. Ovo istraživanje je pokazalo da je psihološki distres, koja je jedna od najvažnijih komponenti u evaluaciji psihološkog blagostanja, direktno povezana sa varijablama usamljenosti i rezilijentnosti.

Ključne reči: usamljenost, rezilijentnost, psihološki distres, percipirana socijalna podrška, model moderirane medijacije

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