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Effects of COVID-19 supplementary payments on healthcare workers performance in Türkiye

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Abstract

Background During the COVID-19 pandemic, supplementary payment systems were introduced in Türkiye as a financial incentive for healthcare workers under extraordinary conditions. Understanding the implications of such incentives for employee performance is important for the development of sustainable health workforce policies.

Methods This cross-sectional study used an electronic survey administered to 626 healthcare workers employed at public health institutions in Türkiye between November 2021 and January 2022. Data were analyzed using reliability analysis, correlation analysis, and linear regression models.

Results The findings indicate that satisfaction in healthcare workers regarding the COVID-19 supplementary payment system is positively but weakly associated with perceived performance ($\beta = 0.217$), and the regression model explains only a limited proportion of variance (Adjusted $R^2 = 0.045$). Rather than demonstrating a strong performance-enhancing effect, findings primarily highlight the issues of perceived fairness, distributive justice, and motivational dynamics within crisis compensation systems.

Conclusions Although supplementary payments appear to have a statistically significant relation with perceived performance, the practical impact of this relationship remains moderate. These findings suggest that financial incentives may be insufficient alone to substantially enhance healthcare workers' performance during crisis periods without complementary organizational and structural support mechanisms.

Keywords COVID-19, Healthcare workers, Supplementary payment system, Financial incentives, Employee performance, Job satisfaction, Health policy, Türkiye

1 Introduction

In December 2019, a pneumonia outbreak of unknown etiology was reported in Wuhan, Hubei province, China. WHO identified the agent that caused this epidemic as a severe acute respiratory syndrome-causing virus under the name COVID-19. The coronavirus is thought to have originated at the Huanan seafood market and is transmitted from person to person, spreading rapidly to more than 200 countries. There have been 108 million COVID-19 cases worldwide so far, and 2.4 million COVID-19 patients have died. [51]. Due to large daily increases in cases, the WHO declared COVID-19 a global

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pandemic on March 11, 2020 [50]. The disease, accompanied by fever, dry cough, and chest pain, was initially attempted to be quarantined in China, but this attempt was unsuccessful [19]. Therefore, priority was given to the various strategies for preventing the spread of the disease. The fact that no effective and specific treatment modality or medication has been found to date, and the increasing information pollution about the virus, worsens the picture for public health and health systems. In addition, according to Decaro et al. [10], the virus's rapid mutation, its ability to change tissue orientation, its capacity to overcome species barriers, and its ability to adapt to different epidemiological situations made the picture even more alarming. Developing vaccines at that stage of the outbreak was crucial to limiting the spread of the infection. While the clinical trials of the vaccines developed show an efficacy rate of 90% to 50%, it is not yet known whether vaccinated people will receive protection at these rates.

An effective response plan requires a multidisciplinary approach that includes global efforts among medical and veterinary clinicians, diagnostics, epidemiologists, public health professionals, vaccine professionals, pharmaceutical industries, and economists [9, 13]. Considering its effects, this multidisciplinary approach becomes meaningful. In fact, COVID-19 outbreak had serious effects on individuals, healthcare workers, and health systems [46]. The rapid spread of COVID-19 underscored the urgent need for a robust healthcare workforce as an integral part of a resilient healthcare system [31]. Healthcare professionals are the backbone of the healthcare system. Due to the nature of their profession, millions of healthcare workers risk their own health in their daily work, and this risk increased during the pandemic. Ensuring workers' rights and providing decent working conditions are crucial to protecting and motivating healthcare workers in the fight to save lives. During the pandemic, many healthcare workers became infected, many experienced social exclusion, and again, many had to cope with long working hours. In addition, they separated from their families for months to protect their families and were deprived of the emotional support they needed in that process.

COVID-19 outbreak forced healthcare professionals to deal with very difficult situations. In addition to the fear of getting sick, they cope with the fear of spreading the disease to family and friends. Moreover, the anxiety prevailing in the general population affected the mental health of health workers negatively [25]. According to a study conducted in a tertiary hospital reserved for COVID-19 in China, it was found that the incidence of anxiety among healthcare workers was 23%, and 27% of the employees experienced stress disorder. In addition, it was found that the rate of anxiety in nurses was higher than in doctors [24]. Managers and healthcare professionals at the high-capacity hospitals have been observed to request psychological support to help them cope with excessive working hours, workload, and unprecedented death experiences [25]. Health workers treating COVID-19 patients are at high risk not only of being infected by the virus, but also of experiencing anxiety, stress, trauma, and other mental health conditions [54].

With schools closed and public life restricted in many countries, healthcare workers, mostly women, faced high professional demands. In addition, women health workers had to organize their homes and care for their dependent family members, which increased their burden. Many primary health care workers experienced tension with patients' and families' requests for treatment [4]. As a result of coping with such difficult decisions, a healthcare worker had to deal with many psychological threats, from anxiety

to post-traumatic stress disorder [35]. In some countries, healthcare workers and public service workers stayed in alternative places, such as low-cost hotel rooms, to protect their families from contamination during the outbreak [56].

The number of healthcare workers was insufficient; therefore, steps were taken to train local healthcare workers to help respond to the pandemic [39]. In response to the increasing number of cases in Türkiye, the Ministry of Health took action to recruit health workers across various positions [22]. These pandemic strategies were seen as an effective tool in countries' fight against COVID-19. Despite these attempts, sustainable health systems depend on forward-looking health planning. Recruitment, logistics, accommodation for healthcare workers, psychological and financial support should also be addressed. In addition to occupational health and safety, social protection, appropriate rest and working times, and wage incentives are essential to help healthcare professionals cope with this process.

Labor markets depend on the economic theory that "a health worker accepts a job if its benefits outweigh its costs." For a healthcare professional, benefits are financial and non-financial incentives that encourage continued participation in the healthcare system. Risks bring as deterrents such as disappointment and opportunity costs [20]. Incentives are important tools for organizations to use to increase, retain, motivate, and please staff, and to improve staff performance. Financial incentives include direct monetary payments to the employee, such as wages, bonuses, Supplementary Payments, and loans [27]. A financial incentive is an existing reward used to influence physicians' and nurses' willingness to achieve and maintain organizational goals [28, 34]. Given the increased workload of healthcare workers, the risks they take, their separation from their families, their need for psychological support, and the overwork and insufficient rest periods during COVID-19 outbreak, financial incentives appear to be an important tool for motivating them to do their jobs. A frequently used financial incentive in the health sector is performance-based supplementary payments.

Performance is the quantitative and qualitative measurement of what workers accomplish in their jobs, in accordance with the objectives set by the business [12]. For healthcare workers, performance is the capacity of individuals to demonstrate their clinical background, technical competence, and professional behaviors in alignment with patient care outcomes, nursing quality, and organizational objectives. Performance includes: efficacy (true intervention), efficiency (optimal use of resources), security (reduction of error rate), and patient-centeredness dimensions [53]. Clinical performance is analyzed through measurable indicators (mortality, rehospitalization, patient satisfaction), team cooperation, and compliance with ethical standards [15, 18]. Within this framework, performance among healthcare workers is a holistic indicator that encompasses not only individual output but also healthcare service processes and the capacity to improve the system's quality.

World Health Organization. [53]. The World Health Report 2006: Working together for health. Switzerland https://www.who.int/publications/i/item/9241563176 Erişim Tarihi: 18.02.2026.

Efficiency in healthcare workers is the ratio of output/production of healthcare services provided at an individual or a team level to a specific input (e.g., working time, number of personnel, resources). This is a quantitative criterion that measures the extent to which healthcare professionals provide services by using their time, knowledge, and

skills (e.g., patient follow-up, in-house procedures, patient care hours) [41]. Efficiency should be measured not only by the amount but also by the quality and effectiveness of the service provided. High efficiency is characterized by shorter waiting times, better patient outcomes, and optimal resource use [33, 41]. To improve healthcare workers' efficiency, organizational strategies such as staying up to date on healthcare service processes, enhancing team coordination, boosting motivation, and providing training should be pursued.

Satisfaction among healthcare workers includes emotional and cognitive evaluations of their jobs. This evaluation focuses on the effects of factors such as job nature, working conditions, wages, career opportunities, and organizational support on the individual's overall job experience ([32], as cited in [11]). Satisfaction of healthcare workers is a direct indicator not only of their personal contentment but also of important organizational outcomes such as organizational commitment, motivation, nursing quality, and patient care outcomes [2]. In the literature, it was noted that increased employee satisfaction had positive effects on service quality and personnel working time [40]. Therefore, personnel satisfaction working in the healthcare sector is assessed as the product of workplace, leadership practices, job security, and social support mechanisms and has a critical relation with its contribution to performance and nursing quality [2, 11, 40].

The performance-based supplementary payment system, primarily designed to support additional services for healthcare workers, is used to motivate and retain them [29]. Considering that financial incentives such as increased salary and supplementary payments are the major motivation source for healthcare workers to continue in the sector, they were developed for the implementation of supplementary payments for healthcare professionals who worked during the COVID-19 outbreak in Türkiye [1, 5, 36]. In accordance with the decision published by the Ministry of Health in March 2020, healthcare workers who provided services during the COVID-19 outbreak would receive supplementary payments from the revolving fund [42].

This study aims to determine the perspectives of healthcare workers at State and University hospitals regarding the effect of COVID-19 supplementary payments on their performance in Türkiye.

2 Methods

2.1 Population and sample

The population consists of nearly 1 million healthcare workers at the State and University hospitals in Türkiye. Within the study's framework and limitations, the confidence interval was 95%, and the sensitivity level was 5%. The questionnaire was distributed electronically, and participation is voluntary. Therefore, a convenience sampling method was employed to reach healthcare workers who were available and willing to participate in the study. In this context, the sample size was calculated to be 385. The study was conducted using an electronic questionnaire from 01.11.2021 to 30.01.2022. 626 healthcare workers participated in the study. All healthcare workers participating in the study were informed of the study in advance, and their consent was obtained after they read the voluntary participation form.

In total, 626 participants completed the questionnaire, and the minimum sample size for this study was determined to be 385 with 95% confidence and a 5% margin of error. A larger sample size increases statistical power, reduces sampling error, and enhances

the precision and stability of regression and correlation coefficients [6, 16]. Increasing sample size also reduces the likelihood of a Type II error by improving the sensitivity of statistical tests for detecting true effects [6]. Therefore, the larger-than-required sample size strengthens the robustness and reliability of the findings.

2.2 Data collection tools

The data collection set, prepared for data collection, consists of two chapters. In the first chapter, there are 9 questions to determine the socio-demographic features of healthcare workers. For the second chapter, the questionnaire was prepared by drawing from the article named " Attitudes of hospital staff about performance-based Supplementary Payment System," which was developed by Çankaya [8]. The scale consists of 3 chapters and 33 questions (socio-demographic features, supplementary payment system, and performance). To determine healthcare workers' perspectives on performance, the "Employee Performance Scale" with 7 statements, used by [44] in his Ph.D. dissertation, was employed. Positive statements in the scale are graded as "strongly agree = 5", "agree = 4", "neutral = 3", "disagree = 2", "strongly disagree = 1". Negative statements are graded as reversely. Measures are made with a 5-point Likert scale.

2.3 Ethical approval

Ethical approval for this research was obtained from the Harran University Social and Human Sciences Ethics Committee under number 2021/05 on 12.01.2021. All methods used in this study were applied in accordance with the relevant guidelines and regulations.

2.4 Data analysis

For the data obtained in the study, reliability, factor, correlation, and regression analyses were performed using SPSS Statistics.

3 Analysis and findings

In this section of the study, the analyses and findings will be presented. The reliability value, an indicator of the degree of consistency in repeated measurements, is used to assess the consistency of statements in the scale used to collect data from units constituting the sample in a given case. The reliability coefficient ranges from 0 to 1. As this value closes to 1, reliability increases; therefore, if it is between $0.60 \leq \alpha < 0.80$, the scale is very reliable; if it is between $0.80 \leq \alpha < 1.00$, the scale is highly reliable e [49]. The reliability coefficient of this research is between $0.72 < \alpha < 1.00$, which can be interpreted as highly reliable.

Information on age, sex, marital status, education, profession, and length of service at participants' institutions and hospitals is shown in Table 1.

Table 1 presents the demographic characteristics of the participants. Most respondents were female (56.9%), married (61.5%), and held a bachelor's degree (52.4%). Nearly half of the participants were nurses or midwives (49.4%).

In Table 2, for the question "Do you have adequate information regarding the supplementary payment System introduced due to the COVID-19 pandemic?", 34.5% of healthcare workers answered "no", and 35.6% answered "partially". For the question, "I support the supplementary payment system introduced due to the COVID-19 pandemic, "47.3%

Table 1 Demographic features of participants

Variables	*N*	%
Age (Year)		
27 or younger	158	25.2
28–34	156	24.9
35–42	177	28.3
43 or older	135	21.6
Sex		
Female	356	56.9
Male	270	43.1
Marital status		
Married	385	61.5
Single	241	38.5
Education		
Secondary	56	8.9
Associate's degree	124	19.8
Bachelor's degree	328	52.4
Graduate/Postgraduate's degree	118	18.8
Profession		
Chief Physician and deputy chief physician, physician, dentist, and academic member	81	12.9
Psychologist, pharmacist, health officer	137	21.9
Nurse/Midwife	309	49.4
Hospital manager, technical services, administrative personnel, and others	99	15.8
Length of service at institution (year)		
5 or fewer	182	29.1
6-10 years	129	20.6
11-18 years	148	23.6
19 or more	149	23.8
No response	18	2.9
Hospital		
State hospital	350	55,9
University hospital	137	21,9
FHC (family health centre) and others	66	10,5
Contact tracing team	24	3,9
Provincial-district directorate of health	49	7,8
Total	626	100

Table 2 Opinions regarding the supplementary payment system introduced due to the COVID-19 Pandemic

Questions		*N*	%
Do you have adequate information regarding the supplementary payment system introduced due to the COVID-19 pandemic?	Yes	187	29.9
	No	216	34.5
	Partially	223	35.6
I support the supplementary payment system, introduced due to the COVID-19 pandemic.	Yes	296	47.3
	No	214	34.2
	Partially	116	18.5
Total		**626**	**100**

of healthcare workers answered "yes". Most participants stated they had limited or no information about the supplementary payment system.

Table 3 reports the mean scores of healthcare workers' perceptions regarding the supplementary payment system introduced during the COVID-19 pandemic. The highest mean score relates to the statement that salaries should be increased equally instead of

Table 3 Perception means of healthcare workers regarding the supplementary payment system, introduced due to the COVID-19 pandemic

No	Statements	$\overline{X}$	SD
1	There have been informative meetings regarding the "supplementary payment system, introduced due to the COVID-19 pandemic, at the institution I work for.	**1.58**	1.087
2	The "supplementary payment system, introduced due to the COVID-19 pandemic," is a proper system that increases personnel efficiency.	3.07	1.704
3	"Supplementary payment system, introduced due to the COVID-19 pandemic," increases the work motivation of personnel.	3.20	1.709
4	"Supplementary payment system, introduced due to the COVID-19 pandemic," is applied fairly to all hospital personnel who benefit from this payment.	**1.65**	1.184
5	Because of the "supplementary payment system, introduced due to the COVID-19 pandemic", the workload of personnel who want to receive supplementary payment has increased.	3.43	1.449
6	"Supplementary payment system, introduced due to the COVID-19 pandemic," has increased the quality of healthcare services.	2.54	1.453
7	"Supplementary payment system, introduced due to the COVID-19 pandemic," causes unnecessary examinations and analysis (Lung CT, Blood test, etc.).	2.81	1.438
8	"Supplementary payment system, introduced due to the COVID-19 pandemic," positively affects the competition among personnel.	2.26	1.413
9	"Supplementary payment system, introduced due to the COVID-19 pandemic," causes injustice in terms of earnings in different professional groups in the hospital.	**3.98**	1.448
10	"Supplementary payment system, introduced due to the COVID-19 pandemic," harms the desire for working together with different professional groups in the hospital.	**3.60**	1.466
11	"Supplementary payment system, introduced due to the COVID-19 pandemic," should be abandoned and completely abolished.	2.49	1.591
12	"Supplementary payment system, introduced due to the COVID-19 pandemic," is useful and should be continued and developed.	3.51	1.580
13	The "supplementary payment system, introduced due to the COVID-19 pandemic," should be continued, but the distribution rates should be reorganized by professional group.	4.27	1.226
14	"Supplementary payment system, introduced due to the COVID-19 pandemic," should be a system in which service standards are determined, and the opinions of patients and their relatives are given more weight.	3.20	1.523
15	Performance-based supplementary system, applied before the "supplementary payment system, introduced due to the COVID-19 Pandemic, was more advantageous in terms of personnel efficiency.	2.74	1.456
16	"Supplementary payment system, introduced due to the COVID-19 pandemic," raises conflicts because it results in different supplementary payments being received within the same professional groups.	**4.08**	1.258
17	Because the "supplementary payment system, introduced due to the COVID-19 pandemic, creates a misperception in society that healthcare workers receive high salaries, violence against healthcare workers increases.	**4.04**	1.380
18	Instead of "supplementary payment system, introduced due to the COVID-19 pandemic", the salaries of healthcare workers should be increased on an equal basis.	**4.59**	0.941

relying on the supplementary payment system (M = 4.59). The lowest mean score relates to the lack of informational meetings about the system within institutions (M = 1.58).

In Table 4, the questionnaire includes 7 statements to measure healthcare workers' opinions on performance. Table 4 presents descriptive statistics for perceived performance. Overall, participants reported high levels of task completion and job performance despite low morale under pandemic conditions.

Findings of Correlation Analysis for the relationship between Satisfaction with the COVID-19 pandemic supplementary payment system and performance are shown in Table 5. According to the findings, the correlation coefficient between these two variables is statistically significant. A positive coefficient indicates a positive relationship

Table 4 Perception means of healthcare workers regarding performance

No	Statements	$\overline{X}$	SD
1	My satisfaction level is high due to working under these conditions.	2.09	1.240
2	My absentee rate is low.	3.94	1.460
3	My morale is high due to working under these conditions.	2.04	1.243
4	I complete my duties in the hospital on time and in full.	4.53	0.950
5	I successfully fulfil my job objectives in the hospital.	4.35	1.063
6	I am sure that I meet the targeted service quality standards.	4.16	1.108
7	I produce solutions as quickly as possible when problems arise during work.	4.34	1.015

Table 5 Findings of correlation analysis for the relationship between satisfaction with the COVID-19 pandemic supplementary payment system and performance

Scales	$\overline{X}$	SD	Satisfaction with the supplementary payment system due to the COVID-19 pandemic	Perception of performance
Satisfaction with the Supplementary payment system due to the COVID-19 pandemic	2.47	0.6870	1	0.217**
Perception of performance	3.64	0.71800		1

(** $p < 0{,}01$)

Table 6 Findings of linear regression analysis for the effect of satisfaction with the covid-19 pandemic supplementary payment system on performance

Constant	Regression coefficients	Standard regression coefficients	t	*p*
	3.077		**29.416**	**0.000**
Satisfaction with the supplementary payment system due to the COVID-19 pandemic	0.226	0.217	5.546	0.000
R	R squared	Adjusted R-squared	F	p
0.217	0.047	0.045	30.758	.000[b]

between the two variables. In other words, if there is an increase in one of the variables, it is expected to increase the other variable.

A linear regression model with Satisfaction with COVID-19 pandemic supplementary payment system as the independent variable and Performance as the dependent variable is shown in Table 6. According to the ANOVA test, the model is statistically significant. The determination coefficient (adjusted) of the model is also found as 0.045. Accordingly, 4.5% of the variability in the performance variable is explained by the Satisfaction with COVID-19 pandemic supplementary payment system variable in the linear regression model. In addition, as seen in the scatter plot in Fig. 1 and in the correlation coefficient between the two variables (0.217), there is a positive linear relationship between the two variables. According to the Student's t-test for the significance of the regression model coefficients, both variables are found to be statistically significant. According to these findings, if performance is shown as PERF and Satisfaction with COVID-19 pandemic supplementary payment system is shown as COV_19.

$$PERF = 3,077 + 0,226 * COV_19$$

The regression line is estimated as above.

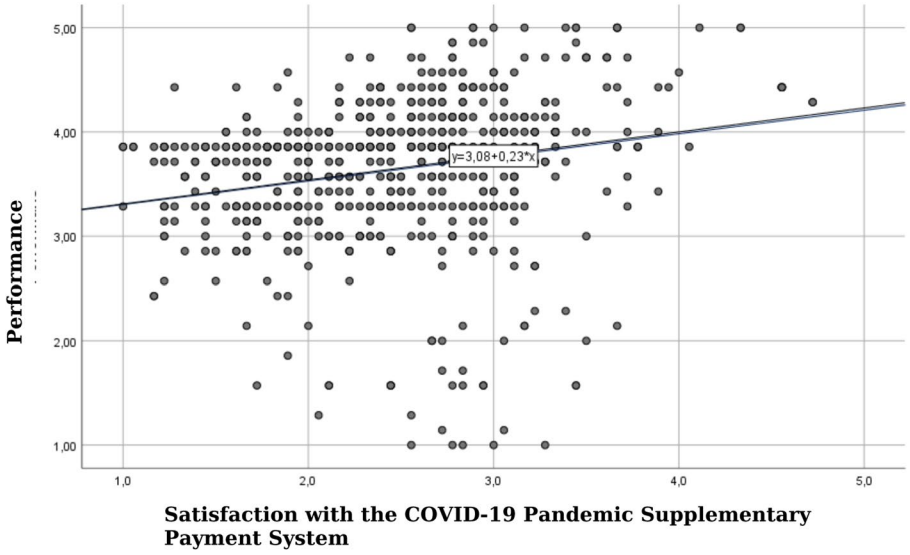


Fig. 1 Scatter plot for the relationship between satisfaction with the COVID-19 pandemic supplementary payment system and performance

According to the standard regression coefficient, a 1-unit increase in the Satisfaction with COVID-19 pandemic supplementary payment system variable is expected to lead to a 0.217-unit increase in the performance variable.

4 Discussion

During the COVID-19 pandemic period, healthcare workers continued to work, taking on risks with limited opportunities and heavy schedules.

According to Williams et al. [54], including European Countries, many countries such as Russia, Israel, Kyrgyzstan, and the USA have provided support, including supplementary payments, child care, psychological support, tax reductions, increased overtime work, accommodation, and transportation for healthcare workers.

When the pandemic intensified, as all over the world, many healthcare workers were affected by COVID-19 infection, and, unfortunately, some of them passed away in Turkey. According to data obtained from the Turkish Medical Association, the total number of healthcare workers who died due to the COVID-19 pandemic across Turkey is 506. Among healthcare workers, physicians have the highest number of deaths, with 172 [48]. Despite all of these, COVID-19 has not been included in the occupational diseases. On the contrary, some people who were infected and in quarantine were unable to receive their salaries during this period. For a certain period, supplementary payments for COVID-19 were given only to physicians, and only a few other healthcare workers benefited, either partially or not at all. In addition, those payments were made from a revolving fund, which caused inequality among healthcare workers; therefore, the phenomenon of "receiving recompense for their work" deteriorated. For example, allied healthcare workers could not benefit from aids such as free accommodation, transportation, and supplementary payments provided during that process. Healthcare workers at private hospitals either received their progress payments belatedly or were forced to take unpaid leave. Not benefiting from the same aids despite risky environments increased healthcare workers' burnout levels much more. Especially the removal of annual leave, the increase in workload, and the suspension of resignations and assignments created

pressure on healthcare workers. After the suspension of resignation was lifted, several personnel resigned, and some retired ([14], p. 353). In a study conducted by Hoşgör et al. in İstanbul in 2021, it was found that healthcare workers' anxiety levels regarding the pandemic were high. The feel of personal success highly gave out [21] According to the Evaluation Report of 6th Month of COVID-19 pandemic prepared by Turkish Medical Association (TTB) [47], healthcare workers faced with pathogens experienced high sense of burnout as a result of long working hours, shift work, being stigmatized in the society as the disease-spreading agents, and not getting social support. In another study, it was found that the burnout and anxiety levels of healthcare workers were high. These levels are higher and more significant among females and nurses ([3], p. 91). In the same study, job satisfaction was low, similar to the satisfaction results in our study. In fact, participants in this study reported working with low morale and motivation.

Another finding of the study was that participants were asked whether they had adequate information about the supplementary payment system introduced during the COVID-19 pandemic. The most common answers are "partially" (35,6%) and "no" (34,5%). This shows that healthcare workers lacked much information about the supplementary payment. In another question, they were asked whether they support the supplementary payment, and 47,3% answered "yes" and 34,2% answered "no". Within this context, financial support was perceived as normatively positive; however, the lack of information poses a potential risk to organizational trust and perceived justice. In a similar vein, the World Health Organization [50, 52] highlights that financial incentives for healthcare workers during the pandemic were important for motivation and system sustainability; however, the lack of information and governance may reduce their effectiveness in implementation. On the other hand, the OECD [37] report states that support for pandemic incentives depends on fairness and transparent implementation, and a lack of information can damage organizational trust.

Additionally, the relatively low R^2 value (0.045) suggests that satisfaction with supplementary payments accounts for only a small proportion of performance variance. This suggests that broader factors, including intrinsic motivation, professional commitment, ethical responsibility, workload intensity, and organizational climate, may influence healthcare workers' performance during crisis periods. Financial incentives may function as supportive rather than primary determinants of performance.

Although the correlation between Satisfaction with COVID-19 supplementary payment system and perceived employee performance is statistically significant ($r = 0.217$, $p < 0.01$), the magnitude of the relationship falls within the small effect size range according to conventional benchmarks [6]. This indicates that satisfaction with the supplementary payment system accounts for only a limited proportion of the variance in perceived performance. This finding suggests that a substantial proportion of performance variance may be influenced by other factors beyond financial incentives. Variables such as intrinsic motivation, professional commitment, ethical responsibility, workload intensity, organizational climate, and leadership support may play a more significant role in shaping healthcare workers' performance during crisis periods. Future studies may therefore benefit from incorporating these additional determinants to better explain performance outcomes in healthcare settings. Therefore, the practical significance of the relationship should be interpreted cautiously. The findings point to a moderate positive relationship rather than a substantial performance-enhancing impact.

It was observed that healthcare workers participating in the study were not informed about the COVID-19 supplementary payment system at their institutions; therefore, they had only partial information about its implementation. Because it was a crisis period and they suddenly found themselves under heavy workloads, it is understandable that institutions did not provide adequate information about the system in question, and healthcare workers could not obtain it. However, informing healthcare workers who spend more hours at work about the existence of a transparent and fair supplementary payment system can help mitigate their burnout, as participants stated that the supplementary payment system increased their motivation. Knowing that a supplementary payment system is applied fairly and that benefits accrue can foster the belief in a healthcare system that cares for and values the healthcare labor force.

Yüncü and Yılan [55] conducted a qualitative study with 36 healthcare workers and analyzed in depth the effects of the pandemic on healthcare workers. According to this study, participants reported that their workload increased. Additionally, midwife participants stated they could not benefit from a supplementary payment. These findings are similar to the results in our study. Participants stated that the pandemic increased their workload and that the supplementary payment was unfair; some health professionals could not share in it. They stated that this unfair earnings situation damaged the spirit of teamwork.

In the meta-analysis study named "COVID-19 pandemic process: Turkish Nurses Association", carried out by Şenol Çelik et al. ([45]: 281), problems like working hours of nurses that last till 24 h, supplementary payment, compulsory unpaid leave, and not receiving a recompense for their overtime work were analyzed. In addition, the supplementary payment was not made at university hospitals or was made in short payments; differences within and between institutions, reduced administrative leave for flexible working, and changes to working hours caused disappointment among nurses. As a result, it was found that supplementary payments, revolving funds, and performance-based salary distribution during the pandemic damaged nurses' sense of justice. In this regard, the TTB General Practitioners Unit [47] stated that supplementary payments should cover all team members in the contact tracing team and be made equally. In another study, carried out by Şenol Çelik et al. ([45]: 26), according to the report prepared by the Turkish Nurses Association, among problems that nurses experienced during the pandemic, there were economic victimization, problems regarding supplementary payment, being forced to unpaid leave, not receiving a recompense for overtime work, unfair distributions, or not getting any payment. In the study, named "Annals of Clinical and Analytical Medicine Original Research The evaluation of supplementary payments during the COVID-19 in Turkey: A qualitative study", carried out by Kurt et al. [30], they had online interviews with 18 people using the focus group method. Supplementary payments made at the maximum wage and perceptions regarding them were analyzed in the study. In the study, it was found that adequate supplementary payments were not made to healthcare workers; even when they were, they were belated, and distributions were unfair. In addition, working hours exceeding 24 h led to unpaid workers. Because of these problems, personnel reported experiencing unfairness, injustice, and burnout. Common findings in these studies include that supplementary payments made during the pandemic were not distributed fairly, that some health professional groups could not benefit from these payments, and that experiencing unfair payments increased

burnout, anxiety, and dissatisfaction. Our study has findings that are exactly similar to these results. In addition, participants stated that the perception of "healthcare workers earn a lot" in society spread with the news regarding supplementary payment, and this turned into violence against healthcare workers. As a matter of fact, several news reports regarding the violence against healthcare personnel were reported during the pandemic. This led to low motivation among some health professional groups that could not receive supplementary payments and still held this perception. In addition, participants stated that the distribution rates of the supplementary payment system should be revised and organized fairly, and that a raise on an equal basis for healthcare workers should be implemented instead of the supplementary payment system introduced due to the COVID-19 pandemic. Despite unfavorable working conditions and the unfair supplementary payment system, participants stated that they completed their duties on time and in full, fulfilled their objectives, met service quality standards, and acted quickly to resolve problems as they arose.

5 Limitations

This study has several limitations that should be acknowledged. First, the study employed a convenience sampling method, which may limit the generalizability of the findings to the broader population of healthcare workers in Türkiye. Although the sample size ($n = 626$) exceeds the minimum required sample size and increases statistical power, the non-probability sampling technique may introduce sampling bias.

Second, the data were collected within a specific time frame between November 2021 and January 2022 during the COVID-19 pandemic period. Perceptions and experiences of healthcare workers may vary across different stages of the pandemic. Therefore, the findings should be interpreted within the contextual conditions of that period.

Finally, the study focuses primarily on the relationship between satisfaction with supplementary payments and perceived performance. Future research may incorporate additional organizational and psychological variables to provide a more comprehensive understanding of performance determinants among healthcare workers.

6 Conclusion

This study aimed to examine the effect of supplementary payments introduced during the COVID-19 pandemic, made to healthcare personnel working at public health institutions throughout Turkey, on performance. As a result of the study, it was found that most healthcare workers either lacked information or had only partial information about COVID-19 pandemic supplementary payment. The fact that the institutions they worked for did not provide adequate information regarding the supplementary payment system in question also affected this result. Although healthcare workers lacked adequate information about COVID-19 pandemic supplementary system, they stated they supported it.

Participants who thought the supplementary system was unfair stated that it damaged the spirit of teamwork among healthcare professional groups. They also said that the distribution rates of the system should be organized fairly and raised equally for healthcare workers, rather than supplementary payments being made. In addition, the supplementary payment system embittered the perception in the society that "healthcare workers earn more than necessary," and, therefore, violence against healthcare workers increased.

This damaged healthcare workers' reputations. Public institutions that made statements regarding the supplementary payment might undermine the above-mentioned perception if they maintain a consistent stance on healthcare workers' right to this system. Because the motivation of healthcare workers may deteriorate when considering the unfavorable experiences like heavy workload, shift work, not receiving the payment they deserve, inadequate rest, the fear of being infected and carrying the disease to their families, being anxious, and being discriminated against as a result of being stigmatized as the disease-spreading agents in society. In fact, participants reported low motivation and morale. Despite all these unfavorable factors, participants who stated that they completed their duties on time and in full noted that they generated solutions as quickly as possible when a problem arose. Participants stated that they fulfilled their job objectives successfully, and they were not below the service quality standard. The high spiritual satisfaction healthcare workers derive from their work can be explained by the fact that healthcare personnel view their job as divine, and patients who are healed and leave the hospital satisfied with the moral reward despite severe and unfavorable working conditions.

The most salient findings of the present study are not primarily related to performance enhancement but rather to perceived injustice and the demand for equal salary increases. The strong agreement among statements reflecting injustice suggests that perceptions of unfair distribution may undermine team cohesion and interprofessional collaboration. Contemporary organizational justice research emphasizes that perceived justice in reward allocation significantly influences employee motivation, organizational commitment, and cooperative behavior [7, 38].

In healthcare settings during the COVID-19 pandemic, perceived injustice in compensation and resource distribution has been associated with increased burnout, emotional exhaustion, and reduced trust in management [26, 43]. In their systematic review on healthcare workers during the COVID-19 pandemic, Shaukat et al. [43] highlight that organizational support and perceived justice are critical determinants of psychological resilience and teamwork under crisis conditions.

Furthermore, pandemic-related financial incentives are effective only when implemented transparently and perceived as fair among professional groups. In crisis contexts characterized by heightened workload and stress, perceptions of injustice may erode collective morale more strongly than financial incentives enhance individual performance [17, 23]. Therefore, the findings of this study suggest that fair distribution elements may play a more decisive role in sustaining teamwork and organizational cohesion than the direct motivational effect of supplementary payments.

In addition, the study found a positive relationship between healthcare workers' satisfaction with COVID-19 pandemic supplementary payment and their perceptions of performance. Hence, according to the study, as satisfaction with the supplementary payment system increases, it is expected that personnel performance will increase accordingly.

If related public institutions provide adequate information to healthcare workers about COVID-19 pandemic supplementary payment system, it could improve satisfaction, as the high effort they put in would not go unrewarded. Also, this would allow healthcare workers who worked under extraordinary working conditions to feel that they were not left alone.

That healthcare workers who could not go home for days and work under highly tiring conditions can have their basic human needs met by institutions, and this would be a concrete step to remove feelings of burnout, loneliness, and being left alone. Making arrangements for less tiring working hours would be highly effective in reducing physical burnout. In addition, creating a safe working environment would make healthcare workers feel safer about being infected or about passing the disease to their families. This would decrease the anxiety levels of healthcare workers regarding the pandemic.

Reorganizing COVID-19 supplementary payment system to ensure fair distribution rates and that no health professional group is excluded would provide a sense of justice to workers and help them trust the healthcare system. In addition, a fair distribution that excludes no health professional group would secure teamwork among professional groups and increase material job satisfaction.

In addition to fair distribution, having related public institutions maintain a consistent stance that these supplementary payments were made in recognition of the ceaseless efforts of healthcare workers would be a positive step toward restoring healthcare workers' lost reputation. Therefore, there would be an improvement in the xenophobic discrimination and violence against healthcare workers. This would also increase healthcare workers' motivation despite these unfavorable conditions.

Author contributions
All authors contributed to all stages of the study.- There are no conflicts between the authors.- Study design: all authors- Wrote the main manuscript text: All Authors- Analysis: all authors- Interpretation of data: All authors- Discussion and conclusion: all authors.

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Data availability
The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
Ethical approval for this research was obtained from the Harran University Social and Human Sciences Ethics Committee under number 2021/05 on 12.01.2021. All healthcare workers participating in the study were informed of the study in advance, and their consent was obtained after they read the voluntary participation form.

Consent for publication
Permission to publish has been granted.

Competing interests
The authors declare no competing interests.

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