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Which of us were more affected by the pandemic? The psychiatric impacts of the COVID-19 pandemic on healthcare professionals in the province where the first quarantine units were established in Turkey

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Abstract

Introduction: Psychiatric problems, such as stress and anxiety disorders, are encountered amongst healthcare professionals fighting epidemics. Considering that COVID-19 suddenly became a pandemic and healthcare professionals have not had access to sufficient information, it is a fact that healthcare professionals have been affected on a large scale. Heavy workloads, insufficient equipment and anxiety over families increase this impact. We aimed to investigate the extent to which healthcare professionals have been psychologically affected by COVID-19 and related factors.

Methodology: Data obtained through questionnaires completed by 348 healthcare professionals working during the COVID-19 pandemic and 350 participants who are in the control group were investigated. The Impact of Event Scale-revised (IES-R) for post-traumatic stress disorder (PTSD) and the Severity Index (ISI) for insomnia were used. Differences regarding gender, occupation, age group, marital status and subgroups were statistically analysed.

Results: Of the 348 healthcare professionals, 176 (50.6%) were women and 172 (49.4%) men, while 190 (54.6%) were doctors and 158 (45.4%) nurses. The incidence of PTSD was statistically significantly higher in the healthcare professionals group than in the control group ($P < .001$). The incidence of PTSD was statistically significantly higher amongst nurses ($P = .001$), women ($P = .002$) and those who were married ($P = .007$). Both PTSD and insomnia were found to be statistically significantly higher amongst those working in the "area of final diagnosis" ($P = .016$ and $P = .002$, respectively).

Conclusions: The determination of the groups most affected amongst professionals working in epidemics is important for the planning of in-service training and psychological support studies. If the fight against pandemics includes health teams with strong psychological grounding, it leads to qualified medical care for patients.

What's known

- Such psychiatric problems as stress and anxiety disorders are encountered among healthcare professionals struggling against epidemics.

What's new

- HSP directly involved in the diagnosis, treatment and care of the patients with COVID-19 disease are at the risk of developing psychological distress and psychiatric symptoms.
- Such factors as the ever-growing number of suspicious and confirmed cases, heavy workload, the insufficiency for protective equipment, lack of specific medications and inadequate psychological support can all increase the mental burden over healthcare professionals.
- We aimed here to investigate the extent to which healthcare professionals have been psychologically affected by COVID-19 and related factors.

1 | INTRODUCTION

In late December 2019, an outbreak of novel pneumonia, caused by a new coronavirus called COVID-19, was reported in Wuhan City in the province of Hubei in China.[1] The virus has been termed severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). The World Health Organization (WHO) held an emergency meeting on January 30, 2020, and declared that the global COVID-19 has become an alarming international public health emergency.[2] The epidemic had already become a global pandemic, affecting most countries, by February 29, 2020.[3,4] Since the epidemic was diagnosed in Iran prior to being seen in Turkey, quarantine measures were introduced first in the province of Van, located on the border with Iran, because of the novel COVID-19 disease.

Exposure to trauma is associated with post-traumatic stress disorder (PTSD) and psychological distress.[5] Post-traumatic stress disorder is a condition of psychological imbalance experienced after exposure to traumatic events, and individuals with PTSD often experience recurring memories of traumatic events, as seen amongst US soldiers following the Vietnam War, show avoidance behaviour and become frustrated.[6] Healthcare professionals (HSPs) are always at the forefront during adverse events such as epidemics, pandemics and natural disasters. Considering that long-term traumatic exposure is more strongly associated with PTSD than short-term exposure, outbreaks lasting for a long time affect healthcare workers' health status even more severely, compared with shorter exposure.[7,8] The HSPs directly involved in the diagnosis, treatment and care of patients with COVID-19 are at risk of developing psychological distress and psychiatric symptoms. Such factors as the ever-growing number of suspected and confirmed cases, heavy workloads, insufficient personal protective equipment, lack of specific medications and inadequate psychological support can all increase the mental burden on HSPs.[9] At the start of the sudden COVID-19 outbreak, HSPs had little knowledge of the new coronavirus and were not psychologically ready, and this has led to different levels of psychological trauma.[10]

The psychological assessment, support and treatment of HSPs are of great importance for the control of large-scale disasters and epidemics or pandemics. The psychological support given to the medical staff is also beneficial on a large scale to improve rapid social recovery as well as to control disasters and pandemics.[11]

The aim of this study is to determine the severity and prevalence of distress and insomnia symptoms in HSPs and to investigate the psychological effects of exposure to life-threatening pandemics by analysing the potential risk factors associated with diseases such as COVID-19.

2 | MATERIALS AND METHODS

2.1 | Study design and participants

Four different departments were allocated for the follow-up and treatment of patients with suspected and diagnosed COVID-19 in the Training and Research Hospital of Van, a province located on the south-eastern border with Iran. The departments were composed of "the suspected patient area (SPA)" in the emergency room, "the quarantine-treatment units (QTUs)" in two separate settings and "the intensive care unit (ICU)" allocated for COVID-19 patients. The patients with an initial diagnosis of COVID-19 on admission are followed up in the SPA established in the emergency unit to perform the essential diagnostic procedures. However, those meeting the criteria of a probable case formulated by the Turkish Ministry of Health are directed to one of the two QTUs and treated there.[12] Patients in poor general condition on admission and those whose condition deteriorates after admission to either of the QTUs are transferred for treatment in the ICU for COVID-19 patients, if they fit the follow-up criteria determined by the Ministry of Health.[12] The follow-up and therapeutic modalities for the patients in the SPA are conducted by emergency specialists and general practitioners (GPs). However, those in the ICU for COVID-19 patients are followed up and treated by specialists from the departments of chest diseases, anaesthesia and ICU, neurology, internal medicine and general surgery. All the remaining specialists are responsible for the follow-up and treatment modalities in the QTUs. The coordination activities for the patients in the QTUs and ICU, such as decisions on hospitalisation and discharge, treatment plan or transfer to ICU, as well as daily visits to all patients, are implemented by specialists from the Department of Infectious Diseases. In addition, nurses work on a voluntary basis in all the departments. All the specialists and nurses who work in these departments and agreed to participate were included in the study. A control group was formed with 350 patients who attended

the infectious diseases, clinical microbiology and urology outpatient clinics with any complaints and who had not had COVID-19 before, and they were required to complete the IES-R and ISI. Those with known comorbidities and regular drug users were excluded from the study.

The researchers informed the participants of the purpose and design of the study, stating that the results would be used for research purposes only, and information provided would be confidential. Verbal informed consent was also obtained from all participants prior to the study. Each participant was required to submit the questionnaire at any time within 10 days. To ensure privacy and to secure the data, the questionnaire was created anonymously. Approval was obtained from the medical ethics committee of the Van Training and Research Hospital for the clinical research prior to the study (Approval number: 2020/08).

2.2 | Measures

A questionnaire that included such demographic data as age, gender, occupation, marital status and information related to the departments where the participants worked was prepared by the researchers and delivered to each participant. In terms of age, the participants were classified into four categories, namely 18-25, 26-30, 31-40 and >40 years and, in terms of occupational status, into two categories, doctors and nurses. All participants were also grouped according to the marital status, single or married. Those who were divorced or widowed were included in the single group, because of their having no familial relationships. In addition, the settings where the HSPs worked were classified as "the final diagnosis area (FDA)" and the SPA. The FDA consisted of the professionals working in the QTUs and the ICU for COVID-19 patients.

In addition to the questionnaire, the participants were also required to complete the Impact of Event Scale-Revised (IES-R) and the Insomnia Severity Index (ISI) to evaluate symptoms of PTSD and insomnia. Ranging from 0 to 88, IES-R is a 22-item Likert-type scale that evaluates three symptom clusters of PTSD: eight items on intrusive thoughts, eight items on avoidance behaviours and six items on hyperarousal, each rated on a 5-point scale, with the following points of distress: normal (0-8), mild (9-25), moderate (26-43) and severe (44-88). The Turkish version of IES-R was adapted byCorapcioglu et al for validity and reliability in 2006.[13] The ISI includes seven questions with scores ranging from 0 to 28 and is a reliable, valid and easy-to-use scale designed to assess the severity of insomnia; it is used to rate difficulty in falling and remaining asleep, waking up too early, satisfaction from sleep patterns, deterioration in daily functionality, awareness of impaired sleep and stress arising from insomnia. The points obtained from the ISI are scored as normal (0-7), mild (8-14), moderate (15-21) and severe (22-28). The validity of the Turkish version of the ISI was performed by Boysan et al, and it demonstrates good psychometric features.[14]

In our study, these categories were determined in the light of the literature. To detect the symptoms of distress and insomnia, the cutoff values were determined at 26 and 15, and participants with scores higher than the cutoff value were considered symptomatic.[15,16]

2.3 | Statistical analysis

The normal distribution of continuous variables was evaluated by visual (histogram and probability plots) and analytical (Kolmogorov-Smirnov and Shapiro-Wilk tests) methods. In the descriptive findings, categorical variables are given in numbers (percentage), and continuous variables are presented with medians (minimum-maximum) for normal non-scattering data. For the categorical variables, statistical differences amongst the groups were determined through Pearson's chi-square and Fisher's exact tests. For the continuous variables, the statistical differences amongst the groups were determined through the Mann-Whitney U and Kruskal-Wallis H tests. Correlations between continuous measures were determined with Spearman's (r_s) correlation. Univariate and multivariate logistic regression analyses were performed to determine the risk factors to predict severe anxiety and insomnia. Statistical significance was accepted as $P < .05$. The R version 3.6.3 was used for the statistical analysis of the research data.

3 | RESULTS

3.1 | Demographic data

A questionnaire prepared by the researchers was distributed to a total of 459 HSPs. The number of professionals who responded to the questionnaires was 348 (75.8%). The number of the control group who responded to the questionnaires was 350. While the median age was 31 (19-55) in the HSP group, the median age was found to be 33 (18-60) in the control group. The number of the HSPs in the various age groups was 65 (18.7%), 94 (27%), 153 (44%) and 36 (10.3%) for the groups, 18-25, 26-30, 31-40 and >40 years, respectively. Other demographic characteristics of the participants in the HSP and the control groups are shown in Table 1. There was a significant difference between the HSP and control groups in terms of marital status ($P = .023$).

When the units where the HSP worked were taken into account, the distribution rates were found to be 132 (37.9%) in the SPA,147 (42.3%) in the QTUs and 69 (19.8%) in the ICU for COVID-19 patients. For the doctors, the rates were 67 (35.3%) in the SPA and 123 (64.7%) in the FDA, while the rates for nurses were determined to be 65 (41.1%) in the SPA and 93 (58.9%) in the FDA (Table 1).

3.2 | Measurements

Amongst the HSP and control groups, the symptoms of stress disorder were seen in 134 (38.5%) and 44 (12.6%) individuals and the symptoms of insomnia in 61 (17.4%) and 45 (12.9%) individuals,

TABLE 1 Distribution of demographic data according to groups

	Healthcare professionals (number, percentage)	Control group (number, percentage)	P
Total participants	348	350	
Gender			
Women	176 (%50.6)	164 (%46.9)	.326
Men	172 (%49.4)	186 (%53.1)	
Age			
Years [median(min-max)]	31 (19-55)	33 (18-60)	.509
Marital status			
Single (divorced, widowed)	118 (%33.9)	148 (%42.3)	**.023**
Married	230 (%66.1)	202 (%57.7)	
IES-R			
No PTSD	214 (%61.5)	289 (%82.6)	**<.001**
PTSD	134 (%38.5)	61 (%17.4)	
ISI			
No Insomnia	304 (%87.4)	305 (%87.1)	.933
Insomnia	44 (%12.6)	45 (%12.9)	
Occupation			
Physician	190 (%54.6)	N/A	N/A
Nurse	158 (%45.4)		
Departments			
SPA	132 (%37.9)	N/A	N/A
FDA (QTUs and ICU for COVID-19)	216 (%62.1)		

Abbreviations: FDA, Final diagnosis area; ICU, Intensive care unit; min-max, Minimum-Maximum; QTUs, Quarantine-Treatment Units; SPA, Suspected patient are.

respectively. The incidence of stress disorder symptoms was statistically significantly higher amongst the HSPs ($P < .001$). The rates of stress disorder and insomnia symptoms were detected in 66 (34.8%) and 22 (11.6%) doctors, and in 68 (43.1%) and 21 (13.3%) nurses, respectively. However, while the distributions of stress disorder and insomnia symptoms were found to be 76 (43.1%) and 20 (11.4%) amongst female HSPs, the rates amongst the male HSPs were detected as 58 (33.7%) and 23 (13.4%), respectively. Of all the HSP participants, the distribution of stress disorder and insomnia in regards to marital status was 33 (27.9%) and 10 (8.5%) for the single and 101 (43.9%) and 33 (14.3%) for the married participants, respectively. While the rates of stress disorder and insomnia symptoms amongst the HSPs working in the SPA were 38 (28.8%) and 6 (4.6%), the distribution of stress disorder and insomnia symptoms in those working in the FDA was determined to be 96 (44.4%) and 37 (17.1%), respectively.

In regard to the severity and rate of stress disorder and insomnia symptoms amongst HSPs, a statistically significant difference was seen in occupation ($P = .001$), gender ($P = .002$), marital status ($P = .007$) and the unit worked ($P = .016$) in the subgroups analyses performed on the IES-R data. However, when the statistical subgroup analyses conducted on the ISI data were evaluated, a statistically significant difference was found only in the unit where the professionals worked ($P = .002$) (Table 2).

The median values of the IES-R that evaluates the stress disorder and the ISI that evaluates the insomnia symptoms of the HSPs were found to be 23 (1-87) and 6.5 (0-28), respectively. The median values of the IES-R and ISI were 9 (0-74) and 6 (0-28), respectively, for the control group. The median value of the IES-R was statistically significantly higher in the HSP group ($P < .001$). While the median value detected through the IES-R was found to be 21 (1-81) for the doctors, the value was 24 (1-87) for nurses. The median value of the IES-R for nurses was statistically significantly higher ($P = .003$). In addition, the median value of the IES-R was found to be 24 (2-79) for women and 18 (1-87) for men. The median value of the IES-R for women was statistically significantly higher ($P = .003$). The median value of the IES-R was 14.5 (1-75) for the single (including the divorced and the widowed) group, while found to be 24 (1-87) for the married participants. The median value of the IES-R in the married group was statistically significantly higher ($P < .001$). According to the units where the professionals worked, the median value of the IES-R was found to be 13.5 (1-81) for those working in the SPA and 24 (2-87) for those working in the FDA. However, the median value of the IES-R was statistically significantly higher amongst those

TABLE 2 Severity of scales in all cohort and sub-groups

	Total Number (%) (n = 348)	Occupation Doctors (n = 190)	Nurses (n = 158)	Gender Women (n = 176)	Men (n = 172)	Age Groups 18-25 (n = 65)	26-30 (n = 94)	31-40 (n = 153)	>40 (n = 36)	Marital Status Single (n = 118)	Married (n = 230)	Departments SPA (n = 132)	FDA(QTUs andICU for COVID-19) (n = 216)
IES-R													
Normal (0-8)	105 (30.2%)	61 (32.1%)	44 (27.8%)	51 (29%)	54 (31.4%)	21 (32.3%)	28 (29.8%)	45 (29.4%)	11 (30.6%)	44 (37.3%)	61 (26.5%)	47 (35.6%)	58 (26.9%)
Mild (9-25)	109 (31.3%)	63 (33.1%)	46 (29.1%)	49 (27.9%)	60 (34.9%)	22 (33.8%)	26 (27.6%)	50 (32.7%)	11 (30.6%)	41 (34.8%)	68 (29.6%)	47 (35.6%)	62 (28.7%)
Moderate (26-43)	54 (15.5%)	37 (19.5%)	17 (10.8%)	21 (11.9%)	33 (19.2%)	5 (7.7%)	15 (16%)	27 (17.6%)	7 (19.4%)	20 (16.9%)	34 (14.8%)	19 (14.4%)	35 (16.2%)
Severe (44-88)	80 (23%)	29 (15.3%)	51 (32.3%)	55 (31.2%)	25 (14.5%)	17 (26.2%)	25 (26.6%)	31 (20.3%)	7 (19.4%)	13 (11%)	67 (29.1%)	19 (14.4%)	61 (28.2%)
P		0.001*		0.002*		0.774*				0.007*		0.016*	
ISI													
Normal (0-7)	205 (58.9%)	115 (60.5%)	90 (57%)	105 (59.6%)	100 (58.1%)	40 (61.5%)	54 (57.4%)	89 (58.2%)	22 (61.1%)	71 (60.2%)	134 (58.3%)	81 (61.3%)	124 (57.4%)
Mild (8-14)	100 (28.8%)	53 (27.9%)	47 (29.7%)	51 (29%)	49 (28.5%)	18 (27.7%)	29 (30.9%)	43 (28.1%)	10 (27.8%)	37 (31.4%)	63 (27.4%)	45 (34.1%)	55 (25.5%)
Moderate (15-21)	30 (8.6%)	17 (9%)	13 (%8.2)	14 (8%)	16 (9.3%)	5 (7.7%)	9 (9.6%)	13 (8.5%)	3 (8.3%)	7 (5.9%)	23 (10%)	3 (2.3%)	27 (12.5%)
Severe (22-28)	13 (3.7%)	5 (2.6%)	8 (5.1%)	6 (3.4%)	7 (4.1%)	2 (3.1%)	2 (2.1%)	8 (5.2%)	1 (2.8%)	3 (2.5%)	10 (4.3%)	3 (2.3%)	10 (4.6%)
P		.635*		.955*		.995**				.728**		.002**	

Abbreviation: FDA, Final diagnosis area; ICU, Intensive care unit; IES-R, Impact of events-reversed; ISI, Insomnia severity index; QTUs, Quarantine-Treatment Units; SPA, Suspected patient area.

**Fisher's exact test; *Pearson's chi-square test.

TABLE 3 Scores of scales in all cohort and sub-groups

	Total Score, Median (Min-Max)	Occupation (Median) (Min-Max)			Gender (Median) (Min-Max)			Age (years) (Median) (Min-Max)					Marital Status (Median) (Min-Max)			Departments (Median) (Min-Max)		
		MD	Nurses	P	W	M	P	18-25	26-30	31-40	>40	P	S	M	P	SPA	FDA	P
IES-R	23 (1-87)	21 (1-81)	24 (1-87)	.003*	24 (2-79)	18 (1-87)	.003*	22 (5-79)	24 (1-85)	22 (1-87)	20.5 (2-78)	.738**	14.5 (1-75)	24 (1-87)	<.001*	13.5 (1-81)	24 (2-87)	<.001*
ISI	6.5 (0-28)	6 (0-28)	7 (0-27)	.087*	7 (0-27)	6 (0-28)	.460*	7 (0-27)	7 (0-28)	6 (0-27)	6 (0-24)	.361**	6 (0-28)	7 (0-27)	.279*	6 (0-27)	7 (0-28)	.034*

Note: FDA, Final diagnosis area; IES-R, Impact of events-reversed; ISI, Insomnia severity index; IQR, Interquartile range; MD, Medical doctor; M, Men; SPA, Suspected patient area; W, Women.

*Mann-Whitney U test; **Kruskal-Wallis H test.

working in the FDA ($P < .001$). There were no significant differences between subgroups of the HSPs in terms of the median values of the ISI (Table 3).

According to the multivariate logistic regression analysis, it was found that being a nurse is a risk factor for stress disorder [Odds ratio (OR) 2.55, 95% confidence interval (CI), 1.45-4.46 and $P = .001$]. In addition, being a woman and married were detected as risk factors for stress disorder (OR, 2.74, 95% CI, 1.55-4.86 and $P = .001$) and (OR, 3.65, 95% CI, 1.84-7.25 and $P < .001$), respectively. Working as a professional in the FDA was also found to be a risk factor for stress disorder (OR, 2.59, 95% CI, 1.40-4.77 and $P = .002$) (Table 4).

4 | DISCUSSION

In this study, the psychological status of HSPs involved in the fight against COVID-19 in the province of Van and worked under the algorithm created by the Turkish Ministry of Health was investigated, immediately after the first COVID-19 case was diagnosed on March 15, 2020. This descriptive study was designed to evaluate the extent and severity of PTSD and related insomnia symptoms experienced by the HSPs after the epidemic turned into a pandemic with characteristic rapid infection and posed a death risk for both the patients and HSPs.

A high number of symptoms of PTSD was evidenced in all HSPs. The fact that this rate was seen to be high in studies investigating previous SARS and COVID-19 outbreaks indicates that all HSPs perceive and react to the situations such as natural disasters.[17-20] In addition, it is also known that repeated exposure to traumatic factors tends to lead to all kinds of psychological symptoms in HSPs, and such symptoms affect medical workers for a longer period of time.[21] The high incidence of such symptoms amongst HSPs was reported to be associated with factors such as anxiety concerns on the health status of both the professionals and their families, isolation from the social environment, uncertain features arising from the epidemic and a lack of personal protective equipment.[9,22,23]

The fact that, in our study, PTSD and insomnia symptoms were detected to be more common amongst the nurses in terms of both the rate and severity than those in doctors may be because of several factors related to the nature of the nursing profession. Some of these factors may be because of the fact that nurses have more frequent contact with the patients during the day, are mostly female, and may not have sufficient knowledge, compared with the doctors, about the outbreaks and their outcomes, considering the training given at nursing faculties.[9,17,20] In other studies that investigated the effects of outbreaks on medical workers, nurses were observed to tend to develop an anxiety status as a result of such factors.[10,23-25] The higher rate of PTSD and insomnia symptoms amongst nurses shows that the nursing profession should receive more attention in terms of both psychological support and in-service training.

Regarding the gender differences, women were seen to develop symptoms of PTSD 2.38-2.49 times more than men.[21,26] Consistent with these findings in the literature, our study also showed that

TABLE 4 Univariate and Multivariate Analysis in Predicting Severe Anxiety (IES-R)

Univariate and multivariate analysis in predicting severe anxiety (IES-R)							
		OR	CI	*P*	OR	CI	*P*
Occupation*	Nurses	2.64	1.57-4.43	**<.001**	2.55	1.45-4.46	**<.001**
	Doctors	ref					
Gender*	Women	2.67	1.57-4.54	**<.001**	2.74	1.55-4.86	**<.001**
	Men	Ref.					
Age (years)	18-25	1.31	0.52-0.3.28	.564			
	26-30	1.38	0.58-3.30	.457			
	31-40	0.93	0.40-2.16	.878			
	>40	ref					
Marital Status*	Married	2.87	1.50-5.49	**<.001**	3.65	1.84-7.25	**<.001**
	Single	Ref.					
Settings*	FDA	2.34	1.32-4.13	**.003**	2.59	1.40-4.77	**.002**
	SPA	Ref.					

Abbreviation: CI, Confidence interval; FDA, Final diagnosis area; IES-R, Impact of events-reversed; ISI, Insomnia severity index; OR, Odds ratio; Ref, Reference category; SPA, Suspected patient area.
*Included into multivariate analysis.

these symptoms were higher amongst the female participants. Several studies reported that women are prone to internalise the trauma they experience, creating more psychological symptoms.[10,27] In addition, the fact that the rate of PTSD symptoms is seen to be higher in nurses where the female gender predominates also supports this notion.

We consider that the higher rates of stress disorder amongst young participants seen in our study are related to professional experience. In a study conducted by Tang et al, who investigated the anxiety levels in nurses after the H7N9 outbreak, it was found that anxiety levels were higher amongst the younger participants and that this was related to insufficiency in knowledge, skills and professional experience.[17] In addition, in another study in which Xu et al evaluated PTSD symptoms amongst university students after the H1N1 outbreak, it was stated that the accumulated knowledge of the epidemic was not a parameter to predict the symptoms of the pandemic.[28]

Based on the literature, from the studies that evaluated the symptoms of PTSD stemming from outbreaks, different results have been obtained regarding how the companionship of a partner or living alone affects the rate and severity of stress symptoms. In a study by Li et al that investigated the psychological effects of COVID-19 on healthcare workers, it was demonstrated that single participants had more psychological symptoms, but the researchers did not comment on possible causes.[19] In addition, in various studies conducted after the SARS outbreak, the married health workers were found to be more concerned about their own health status along with their families, and, therefore, concluded that the married medical workers exhibit more PTSD symptoms.[18,29] In our study, we consider that the probable causes of the higher anxiety levels amongst the married healthcare workers are based on similar reasons.

The severity of both PTSD and insomnia symptoms amongst those working in the quarantine-treatment units and ICU for COVID-19 was observed to be consistent with those reported in the literature. In previous studies conducted with healthcare workers after the SARS and COVID-19 outbreaks, PTSD symptoms were found to be significantly higher amongst the staff on the front lines.[9,19,24,30] The staff working in the departments on the front lines are in more frequent contact with the patients because of the follow-up and treatment procedures, and all of the patients in those departments are the individuals with confirmed diagnoses. Therefore, the staff employed in such settings are much more likely to become infected, and we consider that this issue is the main reason for the higher rate of symptoms of PTSD amongst those working in high-risk areas.

There are some limitations to our study. The Turkish versions of the IES-R and ISI, not the original ones, were used to evaluate the symptoms of PTSD and insomnia. The fact that almost all of the doctors working in our hospital were employed in COVID-19-related units during the outbreak resulted in an inability to compare the staff working in the quarantine areas to those working outside. The presence of many patients in the same environment in the intensive care unit and the more contagiousness of these patients with heavier clinics may create more stress for HSPs. However, in this study, both ICU and QTUs staff were evaluated in the FDA group. In addition, the study participants were composed of only HSPs working in the Van Training and Research Hospital. Therefore, we consider that our findings cannot be generalised to other regions of Turkey, and conducting multi-centric studies with larger sample sizes may provide more significant findings. Another limitation is that the HSPs who participated in this study were not followed up in the long run. The responses were evaluated 10 days after the questionnaires were distributed. Our study is of a descriptive design, and examining

the causal associations between the parameters and revealing the pathogenesis may be more important to prevent future challenges.

5 | CONCLUSION

In conclusion, HSPs working or employed in the fight against outbreaks are psychologically affected by the epidemics and exhibit related symptoms. Our study is important to reveal which groups of medical professionals are most affected and provides valuable information in terms of providing psychological support and prioritising staff at risk. If measures are taken early on to address anxiety and psychological stress by providing psychological support and arranging in-service training to increase the awareness and experience of the HSPs, the impacts of the outbreak can be minimised and support can be optimal when combating major future outbreaks.

CONFLICT OF INTEREST
The authors declare that they have no conflict of interest.

AUTHORS' CONTRIBUTIONS
Dilek Bulut, Merve Sefa Sayar, Buket Koparal: Study Design. Sebahattin Çelik: Statistical Analysis. Dilek Bulut, Merve Sefa Sayar, Ender Cem Bulut: Data Interpretation. Dilek Bulut, Buket Koparal, Ender Cem Bulut: Manuscript Preparation. Ender Cem Bulut: Literature Search.

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