

Healthcare workers' anxieties and coping strategies during the COVID-19 pandemic in Turkey

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Abstract

Purpose: This study aimed to investigate the anxiety levels of healthcare workers and the coping strategies they used for stress during the COVID-19 pandemic.

Design and Methods: This descriptive cross-sectional study was carried out in April 2020 in Turkey with 444 healthcare workers via three online questionnaires: A participant information form, the State Anxiety Inventory (SAI), and the Ways of Coping Questionnaire.

Findings: Healthcare workers might be considered to experience more anxiety during the pandemic than shown in the studies conducted before the pandemic. Significant differences in SAI score were found in terms of age, gender, and education status.

Practice Implications: Age, gender, and some variables related to the pandemic affected the anxiety levels and coping strategies of healthcare workers.

KEYWORDS

anxiety, coping strategies, COVID-19, healthcare workers

1 | INTRODUCTION

Some pneumonia cases were reported with unknown etiology in Wuhan city in the Hubei province of China in December 2019.^{1,2} The COVID-19 infection disease was determined to be caused by the most recently discovered coronavirus. The first case was marked as a 61-year-old Chinese patient reported by Thailand on January 13, 2020. The World Health Organization (WHO) declared this disease as pandemic on March 11, 2020.³ According to the 66th Situation Report published by the WHO, as of March 26, 462,684 positive cases, and 20,834 deaths were reported.⁴ The first COVID-19 case in Turkey was reported on March 10, 2020, and 61,000 people were infected by April 13, 2020.⁵ The pandemic is still continuing in Turkey. The reported deaths to now have included mostly older people.¹ However, younger healthcare workers (HCWs) have been infected and have even died in this period throughout the world as well as in Turkey. The number of HCWs infected with COVID-19 was approximately 7,500, with a rate of 6.5% based on the total number of cases as of April 29, 2020.⁶

HCWs worldwide have been going to work at clinics or hospitals risking their lives, whereas millions of people have been staying homes to minimize the risk of transmission of the disease.⁷ All of the HCWs—even if not equally—are at risk for transmission of COVID-19. Having busy schedules, HCWs have had close contact with COVID-19-diagnosed patients. They have also experienced loneliness and challenging expectations that have led to anger, anxiety, and stress due to the uncertainty of the disease.⁸ In addition, they have suffered from physical and emotional fatigue, difficult triage decisions, and losing patients or friends.⁷ In the study conducted by Khalid et al.⁹ with healthcare providers during the MERS-CoV epidemic, participants stated experiencing severe stress due to the witnessing of the death of patients and intubation of their colleagues. All those factors are worrisome for HCWs working hard during pandemic conditions. It is highly possible that such a widespread public health situation can arouse tension, stress, anxiety, and fear, which can lead to psychological disorders in HCWs.^{9–11} These effects should be identified to protect the

mental health of HCWs, to better control contagious disease, and to reduce long-term effects.^{12,13}

This study aimed to investigate HCWs' anxiety levels and coping strategies that have emerged as a result of the COVID-19 pandemic after it spread to Turkey in March and April 2020.

2 | METHODS

2.1 | Study design

This study is cross-sectional using a descriptive design.

2.2 | Sample and procedure

The study comprised 444 HCWs (337 nurses, 39 midwives, 16 doctors, and 50 others) participating from seven regions of Turkey (Figure 1). Twenty-four of the HCWs did not accept to participate in the study, stating that they were working in intensive care units and did not have the time to answer the survey. The inclusion criteria for participants were:

- (1) Being a healthcare worker
- (2) Ability to read and understand the questionnaire in Turkish
- (3) Participated voluntarily in the study

The researchers sent the questionnaire, which was prepared on Google Forms to people such as hospital directors, head nurses, and nurse managers. These people also sent it to the hospital Whatsapp groups. In addition, a questionnaire link was shared by group administrators on the Instagram pages of HCW associations (e.g., Turkish Midwives Association, etc.) and HCW Facebook groups (e.g., Doctors and Nurses Group, Nurses Club, etc.). The participants were directed to the

study after clicking the link. First, two options ("I am a health worker and accept to participate in the study/do not accept to participate in the study") were presented on the informed consent page, including the information on the study and its purpose, inclusion criteria, and contact details of researchers. Only those accepting to participate were directed into the study page and had the right to withdraw from the study at any time. Those who were directed to the questionnaire page responded first to the sociodemographic and occupational-related questions. The second section consisted of the questions for the State Anxiety Inventory (SAI) and the Ways of Coping Questionnaire (WCQ). It was made obligatory to respond to each of the questions to continue. Thus, participants' responses about each item were obtained.

2.3 | Measurements

To collect the required data, a participant information form, which was developed by the researchers in line with the literature and the views of two professionals, SAI, and WCQ was used.

2.3.1 | Participants information form

This form included some questions related to age, gender, education, marital status, children, profession, the department, experience, region, living with family, having family members over 60-years old in the same house, and providing care to a person diagnosed with COVID-19 or a suspected patient.

2.3.2 | State-Trait Anxiety Inventory (STAI)

STAI was developed by Spielberger et al.¹⁴ to measure the anxiety levels of individuals. The Turkish adaptation of the inventory was

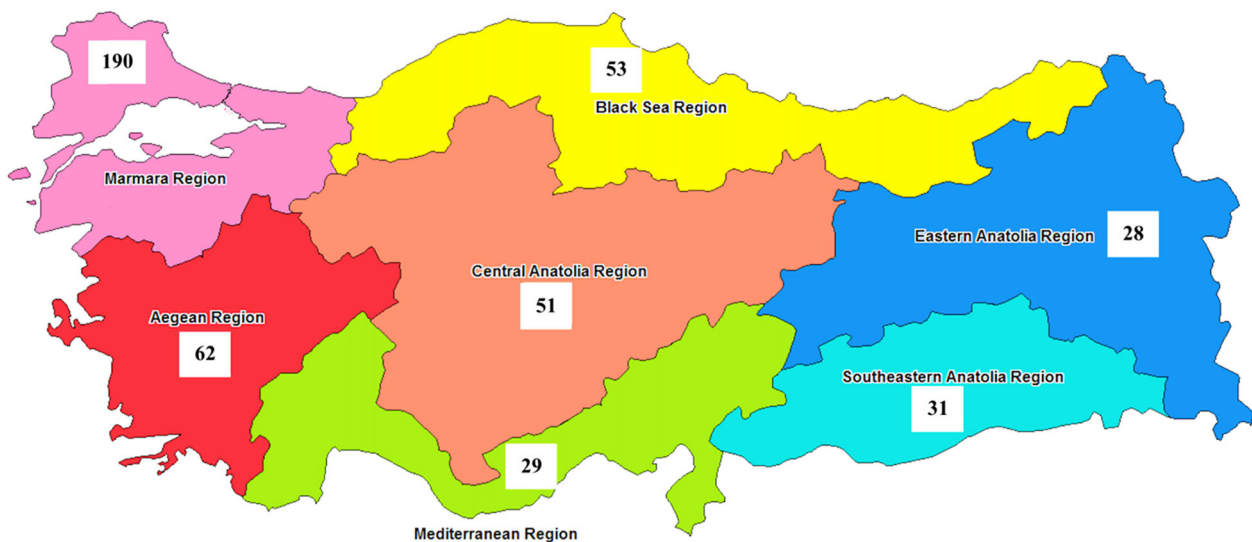


FIGURE 1 Regional distribution of participants (n = 444)

developed by Öner and LeCompte.¹⁵ It is a self-assessment-type scale with brief expressions. This self-report scale includes two subscales as state and trait anxiety. In this study, the SAI was utilized. SAI consists of 20 items questioning how people feel in certain moments and conditions. It was developed to measure the anxiety level of one in a specific moment. The state anxiety level gets higher during periods of immense stress. Responses for the SAI assess the intensity of current feelings "at this moment": (1) *Not at all*, (2) *somewhat*, (3) *moderately so*, and (4) *very much so*. The scale included ten reversed items (1, 2, 5, 8, 10, 11, 15, 16, 19, and 20). The range of scores for each subtest is 20–80, the higher score indicating greater anxiety.¹⁵ The Cronbach's alpha value in the Turkish version of the scale ranged between 0.83 and 0.92; it was 0.93 in the present study.

2.3.3 | Ways of Coping Questionnaire

WCQ was developed by Folkman and Lazarus¹⁶ in 1980 to identify the ways of coping strategies of individuals in general or in certain situations. The Turkish validity and reliability of the scale were realized by Sahin and Durak¹⁷ in 1995. It uses a four-point, Likert-type scale with 30 items and five subscales. The subscales and items are presented as follows: Items 8, 10, 14, 16, 20, 23, and 26 for "self-confident approach"; items 2, 4, 6, 12, and 18 for "optimistic approach"; items 3, 7, 11, 19, 22, 25, 27, and 28 for "helpless approach"; items 5, 13, 15, 17, 21, and 24 for "submissive approach," and items 1, 9, 29, and 30 for "seeking of social support." Items 1 and 9 in the seeking of social support approach were scored reversely. The score of the scale was calculated in two different ways. First, problem-oriented (optimistic, self-confident, and seeking social support approaches) and emotion-oriented (submissive and helpless approaches) are totaled. The lowest and highest subscale scores of the approaches were as follows: 7–28 for self-confident; 8–32 for helpless; 6–24 for submissive; 5–20 for optimistic; and 4–16 for seeking social support.¹⁷ The total raw score received from each of the scales was divided into the maximum score of the related scale and multiplied by 100, so the scores obtained from the scales were converted into scores that ranged between 0 and 100. The Cronbach's alpha internal consistency coefficients of the scale were found as follows: 0.49–0.68 for optimistic; 0.62–0.80 for self-confident; 0.64–0.73 for helpless; 0.47–0.72 for submissive; and 0.45–0.47 for seeking social support. The Cronbach's alpha values of the subscales were calculated as 0.85 for self-confident; 0.73 for optimistic; 0.65 for helpless; 0.56 for submissive; and 0.41 for seeking social support.

2.4 | Data collection

The study was carried out 6 weeks after the COVID-19 pandemic broke out. The data were collected between 13 and 20 April 2020. The duration for responding to the questionnaire, presented via Google Forms and based on self-reporting by the participants, was 10 min, with no incentives provided to the survey participants.

2.5 | Data analysis

The statistical analysis of the data was conducted using the IBM SPSS Statistics (Version 26.0) program. Following the descriptive statistical analysis (n , %), Kolmogorov–Smirnov test was implemented to identify the homogeneity of the distribution. The data were assessed in compliance with normal distribution. The data were presented as mean \pm standard deviation. As for the analysis parametric data, Student's t test in paired groups and one-way analysis of variance (in data including significance between groups post-hoc-LSD) were administered in groups with 3+ participants. To examine the relationship between anxiety levels and coping styles with stress, Pearson correlation analysis was applied. Statistical significance value was accepted as $p < 0.05$.

2.6 | Ethical considerations

Ethical approval was obtained from the Social Sciences Ethical Committee (approval no: 2020.129.IRB3.067) of Koç University. Before the study, each participant was asked to complete an informed consent form. Only those participants who consented were directed to the page of the study and were given the right to withdraw from the study at any time. Moreover, participants completed the surveys anonymously to protect their privacy.

3 | FINDINGS

The mean ages of HCWs included in the study were 30.62 ± 7.58 (min 20–max 55), with 56.8% of them in the 20–29 age group; 85.8% of participants were females, and 54.3% were undergraduates. In this study, 50.7% of participants were single, and 61.3% had no kids. In addition, 75.9% of participants were nurses, 34.5% worked in a clinic, and 33.3% of them had 1–5 years experience in the profession. The majority of the participants (65.8%) lived with family members and 82.9% did not have any family members who were 60 years of age or older living with them. Lastly, 46.6% of participants reported that they had provided care to COVID-19-diagnosed patients and 70.5% to suspected cases.

The corrected mean scores and standard deviations of participants from the WCQ were 70.25 ± 14.07 for self-confident; 63.31 ± 14.59 for optimistic; 74.61 ± 11.77 for seeking social support; 52.78 ± 12.87 for helpless, and 47.12 ± 11.04 for submissive. Problem-oriented approach scores were indicated as 69.17 ± 10.81 , whereas it was 50.37 ± 10.08 for the emotion-oriented approach. The mean score and standard deviation of participants obtained from SAI were determined to be 53.71 ± 10.51 .

The self-confident approach scores ($p = 0.000$) of the HCWs who were 30 years of age and over and the helpless approach scores of those in the 20–29 age group ($p = 0.013$) were found higher than other groups. SAI scores in the 30–39 age group were determined to be significantly lower than those in the 20–29 age group and that of

TABLE 1 Comparison of Ways of Coping Questionnaire subscales and State Anxiety Inventory mean scores regarding the participants' sociodemographic characteristics (n = 444)

Characteristics	Ways of Coping Questionnaire subscales					State Anxiety Inventory
	Self-confident approach	Helpless approach	Submissive approach	Optimistic approach	Seeking social support	
	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD	M ± SD
Age group (years)						
20–29	19.03 ± 3.83	17.39 ± 4.32	11.37 ± 2.48	12.40 ± 2.95	11.90 ± 1.97	54.26 ± 10.14
30–39	20.31 ± 3.79	16.12 ± 3.70	10.91 ± 3.02	12.86 ± 2.80	11.92 ± 1.81	51.65 ± 11.15
40 and over	20.84 ± 4.20	16.44 ± 3.84	11.77 ± 2.50	13.23 ± 2.88	12.08 ± 1.68	55.25 ± 10.33
F	8.27	4.42	2.53	2.71	0.256	3.461
p	0.000***	0.013*	0.080	0.067	0.775	0.032*
Gender						
Female	19.60 ± 3.92	17.05 ± 4.19	11.26 ± 2.71	12.48 ± 2.92	12.04 ± 1.84	54.47 ± 10.26
Male	20.09 ± 4.09	15.95 ± 3.53	11.61 ± 2.19	13.73 ± 2.66	11.28 ± 1.99	49.11 ± 10.90
t	0.905	–1.96	0.974	3.16	–3.00	–3.810
p	0.366	0.029*	0.259	0.002**	0.003**	0.000***
Education						
High school degree	19.26 ± 3.62	18.31 ± 5.10	11.47 ± 3.02	11.83 ± 3.03	11.89 ± 1.81	56.65 ± 9.78
Associate's degree	20.16 ± 3.75	17.26 ± 3.69	11.19 ± 2.81	12.39 ± 2.64	11.94 ± 1.98	56.07 ± 11.49
Undergraduate degree	19.35 ± 3.83	16.73 ± 3.86	11.34 ± 2.41	12.63 ± 2.83	11.93 ± 1.86	54.07 ± 10.22
Master's degree	20.25 ± 4.43	16.06 ± 4.15	10.91 ± 3.02	13.02 ± 3.23	12.06 ± 1.95	50.86 ± 10.36
Postgraduate degree	19.66 ± 3.75	18.88 ± 4.77	12.38 ± 2.70	13.11 ± 2.76	11.33 ± 1.45	50.05 ± 9.45
Expert in medicine	21.77 ± 4.54	16.44 ± 5.31	12.33 ± 1.93	14.33 ± 2.95	12.33 ± 2.44	50.33 ± 11.96
F	1.43	2.64	1.28	1.67	0.522	3.114
P	0.210	0.023*	0.268	0.138	0.760	0.009***
Marital status						
Married	20.09 ± 4.06	16.53 ± 4.15	11.40 ± 2.78	12.92 ± 2.94	11.94 ± 1.86	54.54 ± 10.62
Single	19.27 ± 3.80	17.24 ± 4.06	11.23 ± 2.51	12.40 ± 2.88	11.93 ± 1.90	52.90 ± 10.36
t	–2.185	1.831	–0.660	–1.89	–0.016	–1.648
p	0.029*	0.068	0.510	0.059	0.987	0.100
Children						
Yes	20.40 ± 4.05	16.52 ± 4.09	11.41 ± 2.88	13.04 ± 2.88	12.05 ± 1.85	54.22 ± 11.39
No	19.22 ± 3.81	17.13 ± 4.13	11.25 ± 2.49	12.42 ± 2.91	11.86 ± 1.90	53.39 ± 9.92
t	3.098	–1.518	0.638	2.183	1.007	0.813
p	0.002**	0.130	0.537	0.030*	0.315	0.416
Living with family members						
Yes	20.04 ± 4.03	16.91 ± 4.11	11.43 ± 2.68	12.80 ± 2.97	11.99 ± 1.86	53.96 ± 10.65
No	18.87 ± 3.65	16.85 ± 4.16	11.97 ± 2.57	12.35 ± 2.77	11.82 ± 1.92	53.18 ± 10.21
t	2.918	0.136	1.328	1.532	0.840	0.721
p	0.004**	0.892	0.185	0.126	0.402	0.471
Having 60+ family member at home						
Yes	20.02 ± 4.06	17.59 ± 4.14	11.36 ± 3.14	12.82 ± 2.51	12.17 ± 1.71	54.15 ± 8.36
No	19.60 ± 3.92	16.75 ± 4.10	11.30 ± 2.54	12.62 ± 2.99	11.89 ± 1.91	53.62 ± 10.91
t	0.844	1.618	0.183	0.547	1.179	0.402
p	0.399	0.106	0.873	0.540	0.239	0.688

Abbreviations: F, one-way analysis of variance; M, mean; SD, standard deviation; t, Student t test.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

those of the 40 and over age group ($p = 0.032$) (Table 1). The seeking of social support ($p = 0.003$), helpless approach ($p = 0.029$), and SAI ($p = 0.000$) scores of female participants were found to be higher than their male counterparts; males' optimistic approach scores

($p = 0.002$) were higher than females. In the posthoc analysis to determine the education of the participants, the high school and postgraduate degree graduates' helpless approach scores of those who graduated from high school and/or held postgraduate degrees

were found to be significantly higher than other groups. In addition, high school and associate degree graduates' SAI scores were found to be higher than those with postgraduate and master's degrees ($p = 0.009$). A statistically significant difference was detected among the self-confident approach scores of those HCWs who were married, had children, and/or living with their family ($p = 0.029$, $p = 0.002$, $p = 0.004$, respectively). The optimistic approach scores of participants having children were found higher than those with no children ($p = 0.030$).

The helpless approach scores of doctors were found to be significantly higher than those of nurses ($p = 0.012$). The self-confident approach scores of those working in administration were higher than those of other groups. The helpless approach scores of those participants working in primary care clinics or polyclinics were found to be significantly higher than those of other groups. The self-confident and the optimistic approach scores of participants with 6 years or more work experience were found to be high ($p = 0.000$ and $p = 0.004$, respectively), whereas the helpless approach was low ($p = 0.009$). No significant difference was found between the participants' profession ($p = 0.475$), unit ($p = 0.113$), work experience ($p = 0.385$), or providing care to COVID-19 diagnosed patients ($p = 0.699$) or suspected ($p = 0.161$) cases (see Table 2).

A negative, mid-level relationship occurred between anxiety scores and the self-confident and optimistic approaches ($r = -0.320$ and $r = -0.374$, respectively); whereas a positive, mid-level relationship appeared between anxiety and the helpless approach scores ($r = 0.378$). In addition, anxiety levels were found to be positively correlated with the emotion-focused approach ($r = 0.303$) and negatively correlated with the problem-focused approach ($r = -0.366$) (see Table 3).

4 | DISCUSSION

This cross-sectional study, aimed to assess health workers' anxiety levels and stress-coping strategies during the COVID-19 pandemic and to identify associated factors, is one of the first studies carried out in Turkey. Even though every pandemic has differences in terms of regional, geographical, and pathogenic characteristics and mortality rates, studies suggest that pandemics have negative impacts on HCWs.^{9,18–20} State anxiety levels are closely related to stressful events and ongoing and uncertain events, such as a pandemic, can increase the level of anxiety.²¹ The current study showed that the SAI mean scores were found to be 53.72 ± 10.51 . Even though such a score is similar to those of the studies conducted during the COVID-19 pandemic so far,^{21–23} it was higher than the scores of studies conducted before the pandemic.^{24,25} Similarly, Xu et al.¹⁹ demonstrated that anxiety scores of the surgical staff were higher during the pandemic period than before it. The emotions of HCWs might be affected negatively during an epidemic.^{9,20,26} The primary reason for such a high level of anxiety might be the fact that Turkey is one of the seven countries with the highest infection incidence²⁷ and 70.5% of HCWs were providing care to patients with suspected cases.

HCWs' anxiety levels were affected by multiple factors, whether personal or environmental. As for personal factors, we found that participants differed only by age, gender, and educational status. Our research findings indicated that females experienced anxiety more intensely than males. One of the most common risk factors for stress and anxiety is the female gender.²⁸ Various studies on this issue suggest that female HCWs have been experiencing higher levels of stress and anxiety during the COVID-19 pandemic.^{20,21,23,23,28–34} The fact that women experience more anxiety than men may be related to gender and demonstrates the psychological reaction differences between genders in public health-related situations.²⁹ In addition, higher levels of anxiety in females might be related to risk perception.³⁵

Another personal factor for anxiety levels of HCWs in our study was found to be related to the self-confident approach (Table 3), which can be affected by education level.³⁶ According to the results of this study, anxiety levels of those with master's and postgraduate degrees were found significantly lower than those with high school or associate's degrees. In a study with HCWs recently conducted in Peru during the COVID-19 pandemic, it was reported that low education levels increased anxiety levels.³⁷ Bjelland et al.³⁸ reported that a high education level could be more protective against anxiety. However, in the study by Tercan et al.,³⁴ whose participants were nurses who had graduated from high school and university, it was determined that anxiety levels did not show a significant change based on the participants' education level.

During this difficult time, HCWs struggle with a lot of issues. The pandemic still continues and HCWs must use coping strategies. During this period, HCWs have been using both positive and negative coping styles to manage their stress.³⁹ Many studies have noted that HCWs use support and communication from family, friends, and colleagues as their primary coping mechanisms to manage the negative mental health consequences of the pandemic.^{20,40} Our study supports this idea as we found that seeking out social support was the most common coping method by HCWs. These findings were consistent with previous studies.^{41–43} In this study, a positive significant relationship was found between the emotion-oriented approach and anxiety scores, and a negative relationship with the problem-focused approach. In a study conducted in Italy, the use of emotion-focused coping styles has been associated with increased levels of emotional exhaustion.⁴⁴

Coping styles are affected by two main factors: Personal and environmental.⁴⁵ One of the most important personal factors is age. In the present study, it was revealed that the HCWs in the 20–29 years age group preferred the helpless approach as a coping style whereas it was the self-confidence approach for those 30 years or over. Although it can be argued that age is an important factor influencing coping strategies,²⁰ the study by Phua et al.⁴⁵ conducted during the SARS epidemic claimed the opposite.

The findings in the literature show differences in anxiety levels whether or not HCWs are married or have children. In the present study, although the anxiety scores of HCWs who were married and had children were noted higher than those who were single and had

TABLE 2 Comparison of WCQ subscales and SAI mean scores regarding participants' professions ($n = 444$)

Characteristics	Ways of Coping Questionnaire subscales					State Anxiety Inventory M ± SD
	Self-confident approach M ± SD	Helpless approach M ± SD	Submissive approach M ± SD	Optimistic approach M ± SD	Seeking social support M ± SD	
Profession						
Nurse	19.73 ± 3.93	16.54 ± 3.93	11.19 ± 2.66	12.72 ± 2.89	11.93 ± 1.86	53.35 ± 10.60
Doctor	20.81 ± 4.59	18.31 ± 5.52	12.37 ± 2.06	14.00 ± 3.05	11.81 ± 2.40	52.56 ± 10.68
Midwife	19.84 ± 4.23	17.58 ± 4.22	11.35 ± 2.50	12.38 ± 2.63	12.35 ± 1.75	55.35 ± 9.48
Other	18.80 ± 3.52	18.23 ± 4.42	11.76 ± 2.74	12.03 ± 2.63	11.71 ± 1.95	55.15 ± 10.63
<i>F</i>	1.335	3.703	1.608	2.101	0.925	0.834
<i>p</i>	0.262	0.012*	0.187	0.099	0.429	0.475
Department						
Intensive care	19.30 ± 3.55	16.66 ± 3.51	11.28 ± 2.42	12.23 ± 2.53	11.79 ± 1.90	55.01 ± 10.06
Clinic	20.23 ± 4.03	16.17 ± 4.06	11.22 ± 2.79	13.12 ± 3.05	12.21 ± 1.83	52.67 ± 10.64
Emergency	19.05 ± 3.63	17.33 ± 4.32	11.55 ± 2.64	12.08 ± 2.29	11.75 ± 2.02	54.92 ± 11.19
Primary care clinics	19.80 ± 3.62	18.05 ± 3.99	11.45 ± 2.75	12.55 ± 2.88	11.67 ± 1.99	54.30 ± 11.13
Training dept.	20.00 ± 4.28	13.83 ± 3.25	9.16 ± 1.16	13.00 ± 2.36	12.33 ± 1.03	45.50 ± 2.94
Administration	21.38 ± 4.66	17.30 ± 3.88	11.46 ± 2.78	13.92 ± 3.17	11.53 ± 1.80	49.00 ± 9.43
Policlinics	18.08 ± 4.20	18.14 ± 4.57	11.67 ± 2.57	12.14 ± 2.97	12.05 ± 1.90	52.94 ± 7.23
Other ^a	20.37 ± 4.67	17.86 ± 4.96	11.17 ± 2.77	13.20 ± 3.32	11.75 ± 1.66	55.75 ± 12.31
<i>F</i>	2.121	2.494	0.789	1.934	0.947	1.675
<i>p</i>	0.040*	0.016*	0.596	0.063	0.470	0.113
Experience in profession (years)						
>1	18.23 ± 4.06	18.34 ± 4.56	11.54 ± 1.99	11.65 ± 3.01	12.26 ± 1.81	53.50 ± 10.92
1–5	19.14 ± 3.54	17.05 ± 3.94	11.42 ± 2.64	12.44 ± 2.69	11.82 ± 1.96	54.45 ± 9.62
6–10	20.17 ± 3.92	16.33 ± 4.44	10.86 ± 2.78	13.11 ± 3.10	11.72 ± 2.08	53.15 ± 11.43
11 and over	20.58 ± 4.07	16.44 ± 3.70	11.41 ± 2.81	13.05 ± 2.85	12.05 ± 1.64	53.40 ± 10.63
<i>F</i>	6.946	3.925	1.234	4.484	1.409	0.385
<i>p</i>	0.000***	0.009**	0.297	0.004**	0.239	0.764
Providing care to patients diagnosed with COVID-19						
Yes	19.76 ± 3.95	16.88 ± 4.09	11.30 ± 2.63	12.55 ± 2.99	12.05 ± 1.96	53.92 ± 10.61
No	19.59 ± 3.94	16.90 ± 4.15	11.32 ± 2.67	12.75 ± 2.85	11.83 ± 1.80	53.53 ± 10.44
<i>t</i>	0.449	-0.059	-0.062	-0.719	1.24	0.386
<i>p</i>	0.653	0.953	0.950	0.473	0.215	0.699
Providing care to patients with suspected diagnosis of COVID-19						
Yes	19.78 ± 3.91	16.75 ± 3.89	11.27 ± 2.60	12.63 ± 2.91	12.02 ± 1.90	54.16 ± 10.16
No	19.42 ± 4.02	17.23 ± 4.62	11.42 ± 2.75	12.73 ± 2.93	11.73 ± 1.81	52.63 ± 11.27
<i>t</i>	0.864	-1.125	-0.564	-0.330	1.49	1.405
<i>p</i>	0.388	0.295	0.573	0.742	0.135	0.161

Abbreviations: *F*, one-way analysis of variance; *M*, mean; *SD*, standard deviation; *t*, Student *t* test.

^aEmergency medical technician, audiometrician, radiology technician, physical therapy technician, anesthesia technician, and laboratory technician.

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

no children, there was no significant difference between the anxiety scores. Our study findings are in line with some studies conducted during the pandemic.^{20,23,34} Sun et al.⁴⁶ stated in their current study that nurses having children experienced higher levels of anxiety during the COVID-19 pandemic than those without children. HCWs may be afraid of infecting their families and children.²⁰

According to our research results, it was determined that HCWs' anxiety levels did not differ when providing care to patients with COVID-19 or to those with suspected cases.

Our research finding is in line with studies conducted during the pandemic.^{22,30,34} Parallel to previous studies,^{35,47} it was found that the anxiety levels of HCWs did not change according to the department in which they worked. Similarly, in the study by Liang et al.⁴⁷ that assessed anxiety levels of HCWs, no differences were specified between anxiety levels of those working in COVID-19-associated services and those in unrelated services. A similar result was seen in the study in Saudi Arabia during the MERS-CoV outbreak.³⁵ On the contrary, the anxiety levels of HCWs having

TABLE 3 Relationship between coping strategies and anxiety levels of healthcare workers during the COVID-19 pandemic

Variable	1	2	3	4	5	6	7	8
1. Self-confident approach								
<i>r</i>	1							
<i>p</i>								
2. Helpless approach								
<i>r</i>	-0.381	1						
<i>p</i>	0.000***							
3. Submissive approach								
<i>r</i>	-0.160	0.362	1					
<i>p</i>	0.001***	0.000***						
4. Optimistic approach								
<i>r</i>	0.711	-0.389	0.000	1				
<i>p</i>	0.000***	0.000***	0.992					
5. Seeking social support								
<i>r</i>	0.201	-0.102	-0.199	0.087	1			
<i>p</i>	0.000**	0.032*	0.000**	0.067				
6. Problem-oriented approach								
<i>r</i>	0.924	-0.409	0.850	-0.145	0.423	1		
<i>p</i>	0.000**	0.000**	0.000***	0.000**	0.000**			
7. Emotional-oriented approach								
<i>r</i>	-0.353	0.899	0.733	-0.283	-0.168	-0.366	1	
<i>p</i>	0.000**	0.000**	.000**	0.000**	0.000**	0.000**		
8. Anxiety								
<i>r</i>	-0.320	0.378	0.058	-0.374	-0.044	-0.352	0.303	1
<i>p</i>	0.000**	0.000**	0.220	0.000**	0.355	0.000**	0.000**	

Abbreviation: *r*, Pearson correlation analysis.

p* < 0.05. *p* < 0.001.

contact with a SARS case were reported higher than noncontact staff in Hong Kong.²⁶

4.1 | Limitations

The present study has several limitations. First, the study is restricted to smartphone owners since it was conducted through an instant messaging application. Second, the study was carried out over 7 days and lacked longitudinal follow-up. However, our study

was conducted during the first-wave with a high number of daily cases and with health workers in seven regions of Turkey. Third, although there are only 24 HCWs who refuse to participate in the study, response bias may still be present if they are under too much pressure and too anxious to respond. Fourth, even though other HCWs participated in the study, the highest level of participation comprised nurses (75.9%) and females (85.8%). According to WHO's State of the World's Nursing Report, 59% of all healthcare workers are nurses and 90% of them are female.⁴⁸ Study data were collected as self-reported. However, self-reporting reflects only subjective

experiences instead of providing objective data. Our study variables (personal information, anxiety, and coping with stress) were also directed at individuals' subjective data. Finally, participants had various educational backgrounds (i.e., high school, associate's degree, master's, and postgraduates). Thus, our results might vary in different sample groups.

4.2 | Implications for nursing practice

Although the COVID-19 pandemic has affected the whole world, HCWs have been affected the most. During such risky days when people hesitate to get close to each other, HCWs have fought against the disease on the front lines. These efforts have inevitably increased the anxiety levels of HCWs. According to this study's results, the anxiety levels of HCWs in pandemic conditions were found higher than those in the studies conducted before the pandemic. Anxiety levels were shown to differ according to specific sociodemographic characteristics. In this study, anxiety levels of those in the 20–29 age group, in the 40 and over age group, females, those with an associate's degree, and high school graduates were determined to be higher. HCWs' anxiety levels should be regularly evaluated using online applications (We Chat, Google Forms, etc.). Psychological support groups can be established by ministries of health to reduce the anxiety levels of HCWs and to provide psychological support. With requests for regular online meetings, HCWs' needs and demands can be met by the government.

The most common coping strategy used by participants to manage stress was seeking out social support, and this approach was found to be inversely related to anxiety levels. Seeking out social support is categorized as a problem-focused coping strategy¹⁶ and has been found to effectively reduce stress.³⁹ Therefore, it is thought that attempts to increase social support will be beneficial for HCWs to effectively cope with stress and to reduce their anxiety levels. Also, mentally exhausted HCWs are more likely to make mistakes at work and are also more prone to become infected.⁴⁹ Therefore, hospitals can conduct periodic viral and antibody tests on HCWs. In this way, HCWs can be treated as fast as possible for a potential COVID-19 infection. They can also work under lower stress levels and feel protected and supported. If they live with family at risk, the government should provide a place to live for HCWs who are afraid to infect their family during the pandemic. HCWs who are older than 40 and those who have chronic diseases should not work in clinics that have patients with COVID-19. Though low levels of anxiety can help motivate and excite a person, constant exposure to anxiety can have negative consequences on their physiopsychological health and job performance. In addition, further studies and longitudinal follow-up should be done to understand the mental health and psychological needs and expectations of HCWs during the pandemic.

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CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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