



## The Relationship Between the Anxiety Levels of Healthcare Workers and Their Fear of Transmitting COVID-19 in the COVID-19 Pandemic

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### Abstract

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The aim of this study is to determine the anxiety level of healthcare workers during the COVID-19 pandemic and the relationship between the anxiety level and the fear of transmitting COVID-19. The research was conducted descriptively and cross-sectionally with 164 healthcare workers between May and August 2021. Data were collected online using the "Personal Information Form", "Generalized Anxiety Disorder Test-7 (GAD-7)" and "Fear Form of Contamination and Transmission of COVID-19". Data were analyzed using descriptive statistical methods, chi square and Kruskal Wallis H tests. 85.9% of the participants in the study are nurses and 39.6% are between the ages of 30-39. The average anxiety score of nurses was higher and significant compared to other employees ( $7.6 \pm 4.4$ ,  $p=0.03$ ). In the business life of healthcare professionals with high anxiety scores; It was determined that the skin problems on his hands increased, the patient with COVID-19 experienced intense stress during his treatment, and was considering working flexibly (short-term) from the management, requesting a unit change, and quitting the profession. In your social life; It was observed that complaints such as loss of appetite and insomnia increased, they did not want to go home, and thoughts of leaving the house and infecting their relatives/acquaintances were intense.

**Anahtar Kelimeler:** Anxiety, COVID-19, Healthcare Workers, Nursing

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### COVID-19 Pandemisinde Sağlık Çalışanlarının Kaygı Düzeyleri ile COVID-19'u Bulaştırma Korkuları Arasındaki İlişkinin İncelenmesi

#### Öz

Bu çalışmanın amacı, COVID-19 pandemisinde sağlık çalışanlarının kaygı düzeyini ve kaygı düzeyi ile COVID-19'u bulaştırma korkusu arasındaki ilişkiyi belirlemektir. Araştırma, tanımlayıcı-kesitsel olarak Mayıs-Ağustos 2021 tarihleri arasında 164 sağlık çalışanı ile yapılmıştır. Veriler, "Kişisel Bilgi Formu", "Yaygın Anksiyete Bozukluğu testi-7 (YAB-7)" ve "COVID-19'u Bulaştırma ve Bulaştırma Korku Formu" kullanılarak online ortamda toplandı. Veriler tanımlayıcı istatistiksel yöntemler, ki kare ve Kruskal Wallis H testleri ile analiz edildi. Çalışmadaki katılımcıların %85,9'u hemşire, %39,6'sı 30-39 yaş arasındadır. Diğer çalışanlara göre hemşirelerin kaygı puan ortalaması daha yüksek ve anlamlı idi ( $7,6 \pm 4,4$ ,  $p=0.03$ ). Anksiyete puanı yüksek olan sağlık çalışanlarının iş hayatında; ellerindeki cilt problemlerinin arttığı, COVID-19'lu hastanın tedavisi sırasında yoğun stres yaşadığı, yönetimden esnek (kısa süreli) çalışmayı, birim değişikliği talebinde bulunmayı ve mesleği bırakmayı düşündüğü belirlendi. Sosyal hayatında; iştahsızlık, uykusuzluk gibi şikâyetlerin arttığı, eve gitmek istemediklerini, evi ayırma ve hastalığı yakınlarına/tanıdıklarına bulaştırma düşüncelerinin yoğun olduğu görüldü. Sağlık çalışanlarından özellikle hemşirelerin kaygısının daha yüksek olduğu ve sağlık çalışanlarının iş ve sosyal yaşamının etkilendiği sonucuna varıldı.

**Key Words:** Kaygı, COVID-19, Sağlık Çalışanı, Hemşirelik

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## **Introduction**

The COVID-19 pandemic has caused the death of five and a half million people all over the world (COVID, 2022), and it still continues as of December 2019 (Akboğa Şahin, 2020). During the treatment of COVID-19, healthcare workers (HCW's) were also infected and their lives were seriously threatened (Demirtürk Selçuk and Demirbağ, 2021). The World Health Organization has estimated that approximately 115,500 HCW's will die from COVID-19 (WHO, 2022). The frequent infection, quarantine or death of HCW's with COVID-19 has led to a decrease in the number of active HCW's, and an increase in workload and working hours. In addition, insufficient protective equipment during care service delivery, and the increase in the duration and frequency of contact with the patient greatly increased the risk of transmission of COVID-19 (Çalışkan Pala and Metintaş, 2020; WHO, 2022). In a study conducted in China, it was shown that working hours and work stress increased considerably during the COVID-19 pandemic (Mo et al., 2020). In a study, it was reported that during the pandemic, HCW's faced many situations such as protecting themselves from COVID-19, infecting their relatives with COVID-19, inability to meet the physical needs of other individuals at home, losing their colleagues due to COVID-19 (Menon and Padhy, 2020). These experiences during the pandemic process caused physiological and psychological changes in HCW's and negatively affected the daily lives of HCW's (Yakut et al., 2020). In a systematic review, it was found that the rate of distress and depression in HCW's was 49% (Saragih et al., 2021). In a study conducted in Turkey, it was shown that the fear of being infected with COVID-19 or transmitting COVID-19 to first-degree relatives and acquaintances is 49.5%. At the same time, in this study, it was shown that psychological symptoms (such as depressive attitude, extreme stress and anxiety disorder) increased even more in HCW's (Arpacıoğlu et al., 2021). In the anxiety experienced, it has been reported that HCW's even made requests from the government for accommodation, nutrition and sleep requirements in an area close to the hospital (Shanafelt et al., 2020). Although the anxiety level of HCW's is reported in the literature (Saragih et al., 2021), it is not reported which issues are most affected in the work and social lives of HCW's with high anxiety levels. In the light of this information, the study was conducted to determine the relationship between the anxiety level of HCW's and the fear of transmitting COVID-19.

## **Research questions**

H<sub>1</sub>: What is the level of anxiety of HCW's in the COVID-19 pandemic?

H<sub>2</sub>: Is there a relationship between the anxiety level of healthcare professionals and the fear of contracting COVID-19 in work life?

H<sub>3</sub>: Is there a relationship between the anxiety level of healthcare professionals and the fear of contracting COVID-19 in their social lives?

## **Material and methods**

### **Design**

This research was designed as descriptive and sectional.

### **Place and Time of Research**

The research was carried out between May-August 2021 with healthcare professionals in the tertiary care research and application center located in the Central Anatolia region of Turkey.

### **Population and Sample of the Research**

The research was conducted with 320 healthcare professionals (doctors, nurses, technicians, etc.) working in the tertiary care research and application center located in the Central Anatolian region of Turkey. All healthcare workers who were over 18 years of age, volunteered to participate, and were not on unpaid annual leave were included in the study. The study was completed with 164 HCW's who participated voluntarily. The participation rate is 51.25%.

### **Data collection and data collection tools**

The data of the study were collected with a questionnaire consisting of three parts. "Individual Characteristics Form" (Yurtseven and Arslan, 2021) in the first part, "Generalized Anxiety Disorder test-7 (YAB-7)" developed according to DSM-IV-TR criteria in the second part (Spitzer et al. 2006; Konkan et al., 2013; Kroenke et al., 2007) and in the third chapter, the literature was obtained by the researchers (Ahmet et al., 2020; Du et al., 2020; Alzoid et al., 2020; Chatterjee et al., 2020; Roy et al., 2020) "Fear Form of Contamination and Transmission of COVID-19" was used. Data was collected online via google form.

#### *Individual Characteristics Form:*

This form consisted of a total of eight questions questioning the age, gender, marital status, educational status, unit of work, working year, position in the unit and family type of HCW's (Yurtseven and Arslan, 2021).

#### *Generalized Anxiety Disorder test-7 (GAD-7)*

It was developed by Spitzer et al. (2006) according to DSM-IV-TR criteria. It is a short and self-reported test that evaluates generalized anxiety disorder in the last 2 weeks. The scale is a seven-item four-point Likert type (0=never, 1=many days, 2=more than half of the days, 3=almost every day). The scores of 5, 10 and 15 (mild, moderate and severe anxiety, respectively) obtained from the scale are the cut-off points. It is necessary to investigate and confirm the diagnosis of GAD with different methods in patients with a total score of 10 or more. When the total score threshold was 10, the sensitivity of the diagnosis of GAD was 89% and the specificity was 82% (Spitzer et al. 2006; Konkan et al., 2013; Kroenke et al., 2007). In this study, Cronbach's a value was found to be 0.88.

#### *Fear Form of Contamination and Transmission of COVID-19*

This section questions the fear of healthcare professionals of transmitting COVID-19 to themselves and especially to their immediate relatives. Since there is no scale for contamination and fear of transmission regarding COVID-19, this form consisted of 21 statements obtained by scanning the literature (Ahmet et al., 2020; Du et al., 2020; Alzoid et al., 2020; Chatterjee et al., 2020; Roy et al., 2020). In the form, the frequency of the behaviors that healthcare professionals pay attention to because of the fear of transmitting COVID-19 in their work or social life was questioned. The frequency of the behaviors was determined in a five-point Likert type, as “1=always, 2=often, 3=sometimes, 4=sometimes, 5=never”. In order to evaluate the content validity of the statements obtained, the opinions of five clinical academicians with at least a doctorate degree were taken. After the feedback of the academicians, statements were prepared by the researchers in line with the suggestions. The internal consistency coefficient of the questionnaire was found to be 0.81.

### **Data collection**

Data were collected online by sending a message via watsapp with the questionnaire generated from the Google form. In the first tab of the online survey, information was given about the purpose, content, duration and scope of the research. Filling out the questionnaire took 15-20 minutes.

### **Evaluation of data**

A statistical package (IBM SPSS Statistics 26 (IBM SPSS, Turkey) program was used for statistical analysis. Descriptive statistics, mean, standard deviation and frequency analysis were performed. Relationship between anxiety scores and fear of contagion of COVID-19 in the evaluation of data. The significance level was accepted as  $p < 0.05$ .

### **Results**

It was determined that the mean age of the health workers participating in the study was  $32.5 \pm 7.3$  years. 72% of health workers were women, 58.5% were married, and 61% were undergraduates. In addition, 86% of the participants were working as nurses and 52.4% were working in the surgical clinic. It was determined that 32.9% of the health workers had been working for 0-5 years and 65.9% had a nuclear family structure. It was determined that the mean GAD-7 score of health workers was  $7.4 \pm 4.6$  (moderate) (Table 1). When the relationship between the personal information of health workers and the average score of GAD-7 is examined; only nurses' anxiety level was found to be higher and significant compared to other employees ( $p=0.03$ ) (Table 1).

Table 1. The relationship between personal information and generalized anxiety disorder total score (n:164)

Personal information	n (%)	$\bar{x} \pm SD$	Test statistics, p
Age			
20-29 years	61 (37.2)	$7.8 \pm 4.6$	$H=3.46,$ 0.17
30-39 years	65 (39.6)	$6.8 \pm 4.8$	
40-50 years	38 (23.2)	$7.7 \pm 4.2$	
Gender			

Male	46 (28.0)	6.6 ± 4.7	<i>H</i> =1.75,
Woman	118 (72.0)	7.7 ± 4.5	0.080
<b>Marital status</b>			
Single	68 (41.5)	7.4 ± 4.3	<i>U</i> =3.202.50,
Married	96 (58.5)	7.4 ± 4.8	0.83
<b>Educational status</b>			
High school	14 (8.5)	9.9 ± 6.2	
Associate degree	16 (9.8)	7.7 ± 4.6	<i>H</i> =2.47,
Licence	100 (61.0)	7.1 ± 4.5	0.48
Graduate	34 (20.7)	7.0 ± 4.0	
<b>Worked unit</b>			
Surgical clinic	86 (52.4)	7.1 ± 4.6	
Intensive care	29 (17.7)	8.0 ± 4.3	<i>H</i> =1.29,
Other (internal clinic etc.)	49 (29.9)	7.6 ± 4.8	0.52
<b>Year of study</b>			
0-60 months (0-5 years)	54 (32.9)	8.0 ± 4.7	
61-120 months (5-10 years)	35 (21.3)	6.7 ± 4.2	<i>H</i> =1.73,
121-180 months (10-15 years)	46 (28.0)	7.6 ± 5.1	0.63
Over 181 months (over 15 years)	29 (17.7)	6.8 ± 4.0	
<b>Position in the unit</b>			
Nurse	141 (86)	7.6 ± 4.4	<i>U</i> =1.166.50,
Other (physician, technician etc.)	23 (14)	6.0 ± 5.4	<b>0.03</b>
<b>Family structure</b>			
Living alone	39 (23.8)	7.1 ± 4.9	
Nuclear family	108 (65.9)	7.6 ± 4.7	<i>H</i> =0.82,
Extended family	17 (10.4)	7.1 ± 3.3	0.66
<b>Total</b>	<b>164 (100)</b>	<b>7.0 ± 4.63</b>	

H: Kruskal Wallis H test, U: Man Whitney U test,  $p < 0.05$

The healthcare professionals involved in the study did not always want to enter the work area without wearing protective equipment (glasses, apron, etc.) during the pandemic during the pandemic (61%), the patient with COVID-19 experienced intense stress during the treatment (35%), and before leaving the institution. It was determined that he performed the necessary disinfection procedures (50%) (Table 2). During the pandemic, it was determined that most of the participants did not experience a decrease or increase in eating in social life (48%, 37%, respectively). In addition, it was determined that he always avoided close contact (hugging, kissing) with other individuals during the pandemic (64%), could not stop myself from the thought of transmitting COVID-19 to my relatives / acquaintances (41%), and suggested that he should comply with the measures (56%) (Table 2).

Table 2. Distribution of the frequency of contamination and fear of contamination (n:164)

Contagion and contagion fear situation	Always n (%)	Usually n (%)	Often n (%)	Some times n (%)	Never n (%)
1. Recently, skin problems started to appear on my hands.	44 (27)	53 (32)	34 (21)	23 (14)	10 (6)
2. I carry hand sanitizer in my pocket.	43 (26)	30 (18)	19 (12)	20 (12)	52 (32)
3. I do not want to enter the work area without wearing protective equipment (glasses, apron, etc.).	100 (61)	41 (25)	12 (7)	9 (6)	2 (1)
4. I experience intense stress during the treatment of a patient with COVID-19.	57 (35)	35 (21)	26 (16)	25 (15)	21 (13)
5. I follow myself in terms of symptoms after close contact with the patient with COVID-19.	6 (4)	18 (11)	27 (17)	29 (18)	84 (50)

6. I take care to maintain social distance in the COVID-19 unit.	59 (36)	56 (34)	25 (15)	19 (12)	5 (3)
7. When I cannot maintain social distance with the patient with COVID-19 during the procedure, I immediately have the necessary diagnostic tests done.	12 (7)	20 (12)	19 (12)	40 (24)	73 (45)
8. I couldn't help myself from the thought of requesting flexible (short-term) work from the management.	41 (25)	28 (17)	28 (17)	31 (19)	36 (22)
9. I could not help myself from the thought of requesting a unit change from the management.	14 (9)	12 (7)	8 (5)	20 (12)	110 (67)
10. I thought about quitting the profession.	15 (9)	12 (7)	17 (10)	30 (18)	90 (56)
11. Before I leave the institution, I disinfect the equipment (card holder, watch, ring) I use.	82 (50)	44 (27)	21 (13)	13 (8)	4 (2)
12. I always change my clothes when I get home from work.	97 (60)	30 (18)	5 (3)	4 (2)	28 (17)
13. During the pandemic process, I experienced a decrease in the amount of food I eat.	3 (2)	15 (9)	39 (24)	27 (17)	80 (48)
14. During the pandemic, I experienced an increase in the amount of food I eat.	23 (14)	23 (14)	33 (20)	24 (15)	61 (37)
15. I started to have sleep problems (such as not sleeping, waking up frequently) at night.	28 (17)	22 (13)	40 (24)	41 (26)	33 (20)
16. Any shortness of breath, fever, malaise, etc. When I had complaints such as COVID-19, I suspected and went to the hospital.	2 (1)	2 (1)	8 (5)	27 (17)	125 (76)
17. I don't want to go home when I suspect COVID-19.*	19 (12)	24 (15)	22 (13)	36 (22)	63 (38)
18. Even the thought of separating my home during this epidemic affects me mentally. *	31 (19)	25 (15)	26 (16)	25 (15)	57 (35)
19. I avoid close contact (hugging, kissing) with other individuals.	104 (64)	33 (20)	12 (7)	11 (7)	4 (2)
20. I can't help but think of infecting my relatives/acquaintances with the COVID-19 disease.	68 (41)	48 (29)	24 (15)	18 (11)	6 (4)
21. During the pandemic, I advised those around me to follow the measures.	90 (56)	48 (29)	17 (10)	5 (3)	4 (2)

\* If you live alone, you can tick the no option.

When the relationship between the fear of infecting COVID-19 in the business life of the participants and the total score average of GAD-7 is examined; Increase in skin problems in the hands of healthcare workers with high anxiety levels, carrying hand sanitizer in their pocket, experiencing more intense stress during the treatment of the patient with COVID-19, constantly monitoring oneself for symptoms after close contact with the patient with COVID-19, flexible (short) management It was determined that there was a significant difference between the status of working (for a long period of time) or requesting a unit change or considering leaving the profession ( $p < 0.05$ ). It was determined that this difference was between healthcare professionals with high anxiety scores and those with low anxiety scores (Table 3).

Table 3. The Relationship between Contamination and Fear of Contamination in Business Life and GAD-7 Total Score Averages (n:164)

Contagion and contagion fear situation	GAD-7 total score		Test statistics, $p$
	$\bar{x} \pm SD$	$M (min - max)$	
1. Recently, skin problems started to appear on my hands.			
Always	$8.9 \pm 4.6^a$	8 (2 - 19)	$H=18.93,$

Usually	7.3 ± 4.5 <sup>ac</sup>	7 (0 - 18)	<b>0.00</b>
Often	8.2 ± 4.5 <sup>c</sup>	7.5 (1 - 19)	
Sometimes	4.8 ± 3.6 <sup>c</sup>	4 (0 - 12)	
None	4.6 ± 4.2 <sup>b</sup>	3 (0 - 15)	
2. I carry hand sanitizer in my pocket.			
Always	9.4 ± 5.0 <sup>a</sup>	8 (1 - 19)	<i>H</i> =19.16, <b>0.00</b>
Usually	8.0 ± 4.1 <sup>ab</sup>	7.5 (2 - 18)	
Often	6.7 ± 5.1 <sup>ab</sup>	6 (0 - 19)	
Sometimes	7.9 ± 3.9 <sup>ab</sup>	7.5 (0 - 14)	
None	5.5 ± 3.8 <sup>c</sup>	5 (0 - 19)	
4. I experience intense stress during the treatment of a patient with COVID-19.			
Always	9.5 ± 4.8 <sup>a</sup>	8 (2 - 19)	<i>H</i> =26.66, <b>0.00</b>
Usually	8.1 ± 4.4 <sup>ac</sup>	7 (0 - 19)	
Often	5.3 ± 3.4 <sup>bc</sup>	4.5 (1 - 15)	
Sometimes	6.3 ± 3.6 <sup>bc</sup>	7 (0 - 12)	
None	4.5 ± 3.8 <sup>b</sup>	3 (0 - 13)	
5. I follow myself in terms of symptoms after close contact with the patient with COVID-19.			
Always	13.6 ± 4.1 <sup>a</sup>	14 (9 - 19)	<i>H</i> =28.08, <b>0.00</b>
Usually	10.8 ± 5.0 <sup>a</sup>	12 (1 - 19)	
Often	7.8 ± 3.3 <sup>ab</sup>	7 (3 - 16)	
Sometimes	8.1 ± 4.7 <sup>ab</sup>	7 (2 - 19)	
None	5.8 ± 4.0 <sup>b</sup>	5 (0 - 19)	
8. I couldn't help myself from the thought of requesting flexible (short-term) work from the management.			
Always	9.0 ± 5.7 <sup>a</sup>	8 (0 - 19)	<i>H</i> =11.31, <b>0.02</b>
Usually	7.5 ± 2.8 <sup>ab</sup>	7 (3 - 14)	
Often	7.8 ± 5.2 <sup>ab</sup>	8 (0 - 18)	
Sometimes	7.2 ± 3.5 <sup>ab</sup>	7 (3 - 16)	
None	5.4 ± 4.0 <sup>b</sup>	4 (0 - 19)	
9. I could not help myself from the thought of requesting a unit change from the management..			
Always	10.7 ± 5.4 <sup>a</sup>	10.5 (0 - 19)	<i>H</i> =18.52, <b>0.00</b>
Usually	10.5 ± 3.5 <sup>a</sup>	10.5 (6 - 16)	
Often	9.3 ± 4.1 <sup>ab</sup>	8 (4 - 16)	
Sometimes	7.3 ± 4.4 <sup>ab</sup>	6.5 (0 - 16)	
None	6.5 ± 4.3 <sup>b</sup>	5 (0 - 19)	
10. I thought about quitting the healthcare profession.			
Always	10.3 ± 5.8 <sup>a</sup>	9 (3 - 19)	<i>H</i> =27.07, <b>0.00</b>
Usually	10.7 ± 4.1 <sup>a</sup>	10 (6 - 16)	
Often	6.7 ± 3.9 <sup>ab</sup>	7 (0 - 19)	
Sometimes	9.4 ± 3.9 <sup>a</sup>	9.5 (2 - 16)	
None	5.9 ± 4.1 <sup>b</sup>	5 (0 - 19)	

*H* = Kruskal Wallis H Test, Superscripts a and c in the row show the difference between frequencies. The frequencies with the same letters are statistically similar.  $p < 0.05$ .

*Statistically meaningful items are included in the table.*

When the relationship between the GAD-7 total score averages of the participants and the fear of transmitting COVID-19 in their social life is examined; A significant difference was determined among healthcare workers with high anxiety levels in terms of decreased eating, having sleep problems, not wanting to go home when suspected of COVID-19, separating the house and transmitting the disease to my relatives/acquaintances ( $p < 0.05$ ). It was determined that the difference was between healthcare professionals with high anxiety scores and those with low anxiety scores (Table 4).

Table 4. The relationship between social life contagion and fear of contagion and GAD-7 total score averages (n:164)

Contagion and contagion fear situation	GAD-7 total scores
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	$\bar{x} \pm SD$	$M (min - max)$	Test statistics, $p$
13. During the pandemic process, I experienced a decrease in the amount of food I eat.			
Always	10.0 ± 6.0 <sup>a</sup>	7 (6 - 17)	$H=22.25,$ <b>0.00</b>
Usually	9.0 ± 4.0 <sup>ab</sup>	9 (4 - 16)	
Often	9.8 ± 5.0 <sup>a</sup>	10 (0 - 19)	
Sometimes	7.3 ± 4.3 <sup>b</sup>	7 (1 - 16)	
None	5.9 ± 3.9 <sup>c</sup>	5 (0 - 19)	
15. I started to have sleep problems (such as not sleeping, waking up frequently) at night.			
Always	10.3 ± 5.6 <sup>a</sup>	8,5 (1 - 19)	$H=43.16,$ <b>0.00</b>
Usually	9.8 ± 4.3 <sup>a</sup>	9,5 (3 - 19)	
Often	8.3 ± 3.9 <sup>ab</sup>	7,5 (0 - 16)	
Sometimes	6.0 ± 3.5 <sup>bc</sup>	7 (0 - 14)	
None	3.9 ± 2.6 <sup>c</sup>	4 (0 - 13)	
17. I don't want to go home when I suspect COVID-19.			
Always	10.0 ± 4.5 <sup>a</sup>	9 (4 - 19)	$H=12.92,$ <b>0.01</b>
Usually	8.7 ± 4.7 <sup>ab</sup>	8 (1 - 19)	
Often	8.1 ± 5.2 <sup>ab</sup>	7.5 (0 - 18)	
Sometimes	6.5 ± 3.5 <sup>ab</sup>	6.5 (0 - 16)	
None	6.4 ± 4.5 <sup>b</sup>	5 (0 - 19)	
18. Even the thought of separating my home during this epidemic affects me negatively.			
Always	9.8 ± 4.6 <sup>a</sup>	8 (1 - 19)	$H=12.34,$ <b>0.01</b>
Usually	7.6 ± 4.4 <sup>ab</sup>	7 (0 - 16)	
Often	7.0 ± 4.7 <sup>ab</sup>	6 (0 - 18)	
Sometimes	6.1 ± 3.8 <sup>b</sup>	7 (0 - 14)	
None	6.8 ± 4.6 <sup>b</sup>	6 (0 - 19)	
20. I can't help but think of infecting my relatives/acquaintances with the disease.			
Always	9.1 ± 5.1 <sup>b</sup>	8 (0 - 19)	$H=23.95,$ <b>0.00</b>
Usually	6.7 ± 4.0 <sup>ab</sup>	6 (0 - 19)	
Often	7.3 ± 3.1 <sup>b</sup>	7 (0 - 13)	
Sometimes	3.9 ± 3.6 <sup>a</sup>	3 (0 - 12)	
None	4.5 ± 2.6 <sup>ab</sup>	4 (2 - 9)	

$H$  = Kruskal Wallis H Test, Superscripts a and c in the row show the difference between frequencies. The frequencies with the same letters are statistically similar.  $p < 0.05$

*Statistically meaningful items are included in the table.*

## Discussion

With the emergence of the COVID-19 disease, the whole world was frightened, and health workers took the main burden in the fight against infection. The great sense of responsibility and the fear of infecting himself and those closest to him increased the anxiety experienced in healthcare workers (Menon and Padhy, 2020).

In this study, it was found that the majority of the participants (85.9%) were nurses, the anxiety level of the health workers was moderate, and the anxiety score average of the nurses was higher and significant compared to the other workers. Kang et al. In the study (2020), it was determined that 34.4% of healthcare workers experienced mild anxiety and 22.4% had moderate anxiety during the COVID-19 pandemic. Pappa et al. (2020) reported that during the pandemic, nurses had higher levels of anxiety and depressive mood, and the rate of post-traumatic stress disorder increased. In a study conducted in China, it was found that the anxiety level of nurses is higher than other healthcare workers (Du et al., 2020). In a systematic review of thirty-eight full texts; It was seen that 43.7% of the participants included in the study were nurses, 40% had anxiety and 49% had post-traumatic stress disorder due to the pandemic (Saragih et al., 2021). In a study conducted in Italy, it was determined



that the psychological disorders of healthcare workers increased due to the pandemic (Moccia et al., 2020). In a different study, 71.5% of the participants were nurses, it was reported that mental health worsened with the pandemic, and nurses experienced stress and anxiety intensely (Prasad et al., 2020). Babore et al. In the study (2020), it was determined that with the increase in the number of patients with COVID-19, the workload of healthcare professionals increased and the increased workload further increased the anxiety level of healthcare professionals. In a meta-analysis evaluating the anxiety status of the society during the pandemic, it was found that 29.6% of the society experienced stress, 31.9% experienced anxiety and 33.7% had depression (Salari et al., 2020). In a study conducted with six hundred and fifty Italian healthcare workers, it was reported that nurses contacted patients with COVID-19 more during service provision and experienced psychological disorders (such as anxiety, depression) with the fear of transmitting COVID-19 to themselves and their relatives (Gorini. et al., 2020). As in the studies conducted and in this study, the anxiety experienced by healthcare professionals is quite clear. It is thought that the cause of anxiety in healthcare workers should be fully defined and solutions for the problem should be found. For example, in one study, it was reported that nurses' anxiety was reduced by providing adequate protective equipment and providing the desired social support (Jiang et al., 2020). In one study, it was reported that health workers had many concerns such as contracting COVID-19, infecting their families, increasing working hours and not being able to meet family needs. It has been reported that the anxiety of health workers is tried to be reduced by asking state leaders for financial and moral support (such as accommodation needs when separated from the family, child care services) (Shanafelt et al., 2020).

Healthcare workers providing care in different areas were infected with COVID-19 and experienced life-threatening danger. In addition, the fear of infecting himself and his close acquaintances has led to many lifestyle changes in healthcare workers (Mrklas et al., 2020; Termorshuizen et al., 2020). In the current study, it was seen that health workers with high anxiety score averages had increased skin problems due to the pandemic, carried hand sanitizer, had sleep problems, were considering quitting the profession, had a decrease in eating, had anxiety about infecting their acquaintances, and were considering separating their home. Considering the relevant literature, it was determined that psychological disorders such as anxiety and obsessive-compulsive disorder, and especially repetitive hand washing rates increased significantly in healthcare workers (Mrklas et al., 2020). In another study, it was found that the anxiety experienced by healthcare professionals significantly reduced sleep quality (Du et al., 2020). In two different studies, it has been reported that nurses have high rates of anxiety, depression and insomnia during the pandemic process (Khanal et al., 2020; Shanafelt et al., 2020). In a study conducted in Saudi Arabia, it was determined that 87.3% of healthcare workers were afraid of infecting themselves and their families with COVID-

19. In addition, it was observed that the anxiety level of health workers living with their families was higher and significant (Alzaid et al., 2020). The fear of being able to find food with increasing restrictions during the pandemic was reported to increase binge eating attacks in 65.5% of 1,121 American and Dutch participants (Termorshuizen et al., 2020). It is inevitable that the anxiety level of the health worker who takes an active role in the front field increases and the anxiety reflects on the behavior, unlike the society that is locked in with an unpredictable disease. What health workers will need more in times of crisis can be determined through studies. We think that the administration, state leaders and social support will have a great role in reducing the anxiety and solving the problem.

### **Conclusion and recommendations**

In this study, it was determined that the psychological health of health workers, especially nurses, was negatively affected during the pandemic process. It was observed that the anxiety experienced was reflected in many different behaviors in business and social life (washing hands, eating, worrying about their relatives, requesting flexible working, etc.). The results of the study indicated in which subjects health workers experienced more anxiety. In the COVID-19 pandemic, although the countries are different, it was seen that health workers were affected psychologically, as in the fight against all infectious diseases. In order to improve the mental, work and social status of health workers, health workers should be supported with understanding by the state, administration and society. Causes of anxiety of healthcare workers should be identified and solution methods should be developed, and familial, managerial and psychological support should be provided. It should not be overlooked that more measures are needed to protect the mental and physiological health of healthcare professionals. Another important suggestion of the study is to develop a comprehensive scale for the fear of transmitting COVID-19 and to fill this gap in the literature.

### **Limitations**

There are several limitations in this study. First of all, it cannot be generalized to the whole society, as it is the result of health professionals working in Turkey. Another limitation is that data is collected online due to quarantine enforcement. This factor can be considered as a limitation for the findings obtained. Data sources could be diversified (eg online/phone and face-to-face interviews) to obtain more in-depth data.

### **Ethical aspect of research**

Permission was obtained from the relevant hospital and local ethics commission to conduct the study (Ethics Commission date=22.04.2020 and no=09). Participants were informed about the content and duration of the study, and their consent for participation was obtained by clicking the approval button.

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## Declaration of competing interests

The authors declare that they have no conflict of interest and that the content has not been published or submitted for publication elsewhere.

## Author Contributions

Study design: All authors, Data collection: All authors, Data analysis and interpretation: All authors, Draft of the article: All authors, Critical revision of the article: All authors

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