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## Determination of COVID-19 Phobia Level in Health Care Workers

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### ABSTRACT

The aim of this study is to determine the COVID-19 phobia level in healthcare workers. The socio-demographic characteristics form and the Coronavirus 19 Phobia (CP19-S) Scale were used as data collection tools. The surveys were shared online on social media. 467 healthcare workers who agreed to participate in the study were reached. Employees who got  $55.30 \pm 14.64$  points from the scale total scores and university graduates were found to have an average of  $55.51 \pm 14.11$ , and their families averaged  $57.84 \pm 15.05$ . As a result, it was determined that the COVID-19 phobia levels of healthcare workers were affected by situations such as gender, education level and elderly family members. In this case, the importance of determining the working areas of healthcare professionals according to their phobia levels is emphasized, as it will affect the quality of care given to patients during the pandemic process.

### KEYWORDS

Community health;  
community psychology;  
COVID-19 pandemic; phobia;  
Turkey

### Introduction

Studies on the new coronavirus infection (COVID-19), also known as acute severe respiratory syndrome (Coronavirus 2, SARS-CoV-2 among health care workers and civilian populations, have demonstrated that incubation time is between 5 and 14 days (Lu et al., 2013; Özsoy, Sönmezer, & Tülek, 2015; Raj et al., 2013; Zaki, van Boheemen, Bestebroer, Osterhaus, & Fouchier, 2012)). In the progression to the severe form of the infection, the immune system switches from protective measures to harm, causing a cytokine storm. The cytokine storm leads to cell death. Cell death substantially increases capillary permeability, causing severe inflammation septic shock and collapsing the cardiovascular system, resulting in, for example, multi-organ failure and immune system paralysis. The main causes of death of patients in intensive care units is multi-organ failure and secondary infections (Yalçın, 2020). Most patients in the infected group do not require intensive care. Notably, most patients treated in intensive care units depend on mechanical ventilation (Assiri et al., 2013; Chan, Lau, & Woo, 2013; Lu et al., 2013). The death rate from COVID-19 infections in patients aged older than 70 years is three to four times higher than that in younger patients. The death rate from COVID-19 infections in patients aged younger than 40 years is less than 0.2%. Men are affected two times more than women are by COVID-19 infections (Yalçın, 2020). Studies have shown that measures based on preventing the spread of COVID-19 infections caused by contact and through droplets are successful (Assiri et al., 2013; Al-Tawfiq & Memish, 2014).

During the COVID-19 pandemic, to prevent infection, society must implement protective steps outside the hospital. According to the World Health Organization (WHO), one of the most essential rules is avoiding social contact. Instead, of meeting individuals face to face, other means of communication should be used, and open-air meeting places should be chosen (World Health Organisation [WHO], 2020). Also essential is maintaining a healthy immune system by sleeping regularly (serhat 5), exercising (Brolinson & Elliott, 2007; Yalçın, 2020), and eating a balanced diet (Yalçın, 2020). We examined the

working conditions of health care workers and observed that avoiding social contact and maintaining a healthy immune system are difficult tasks. During pandemics, health care workers risk their lives because they are among the most exposed groups to the infection. Doctors, nurses, and other health care workers in health institutions undergo stress and must manage the long-term mental consequences (Enli Tuncay, Koyuncu, & Özel, 2020). Although many studies have shown that pandemics do not lead to traumatic consequences for the health care workers, most health care workers have reported biopsychosocial stress (Koh et al., 2005; Marjanovic, Greenglass, & Coffey, 2007; Nickell et al., 2004).

Respiratory infective diseases such as COVID-19 cause high infection rates, especially in certain areas of hospitals. General practitioners overall and workers in emergency departments, intensive care units, and infectious disease wards have a high risk of exposure (Enli Tuncay et al., 2020). Studies have shown a connection between psychological effects and occupation. For example, a study of psychosocial effects of SARS on hospital workers demonstrated that nurses were the most affected group (Marjanovic et al., 2007). Being confronted with the infection inside and outside the hospital, caring for patients with infections in the same place (Kaya, 2020), increased case rates in health institutions, and an insufficient number of health care workers are commonly observed in pandemics and increase psychological stress (Porten, Faensen, & Krause, 2006). This awareness is thought to lead to health care workers' concerns, which might persist and become a phobia.

Worldwide studies have shown that most psychiatric disorders have special phobia types (Bandelow & Michaelis, 2015). Health care workers who worry permanently about contracting the virus, develop a fear that subsequently becomes a phobia. A phobia is a permanent, excessive fear of specific things or situations and is a type of anxiety disorder. There are three phobia subtypes: social phobia, agoraphobia, and specific phobias. In DSM-V, there are five specific phobia subtypes: natural environment, animals, blood injection injury (fear of injection and transfusion, fear of blood, fear of injury, fear of medical care), situational, and other. A prediction is that fear of COVID-19 developed during the pandemic will be long-lasting; thus, it should be a subtype of specific phobia in DSM-V (Arpaci, Karataş, & Baloğlu, 2020). Similar studies have shown that exposure to social media news increased concern and fear among the general population and health care workers. Consequently, psychiatric disorders will also develop (Arpaci et al., 2020; Kim & Song, 2017). Considering the current situation today, in a study conducted after the Covid-19 epidemic, when the secondary traumatization anxiety and depression scores of the patients with COVID-19 were compared with the health workers who work directly, the health workers who do not work directly, and the groups who do not work directly, anxiety and depression scores, while health workers received the lowest score, the non-health worker group received the lowest score (Arpacioglu, Gurler, & Cakiroglu, 2020). In a study conducted with more than 1200 healthcare workers in 34 hospitals in the city of China and Wuhan, mild to moderate depressive symptoms were identified in approximately 14% of physicians and 16% of nurses (Perlis, 2020). To fill the gap identified in the literature, we aimed to determine the level of COVID-19 phobia in health care workers.

## **Research questions**

In this paper, we attempted to answer three research questions:

- (1) What is the level of COVID-19 phobia of healthcare workers during the COVID-19 pandemic, and have the rates of COVID-19 phobia at the start of the pandemic and today changed?
- (2) Are the demographic variable and at work related to COVID-19 phobia?

## **Materials and methods**

### ***Type of study, location, and time***

This research is cross-sectional and thus, a descriptive study. Data were collected in March and August 2020 from health care workers working in Malatya Province, Turkey.

### ***Study population and sample***

The population of this study comprised health care workers working in medical institutions in the Province of Malatya. The effect size was calculated as 7% using the G\*Power version 3.1.9.4 (Heinrich Heine University, Düsseldorf, Germany) software program. The sample size was determined as 102 according to the sample size calculation with 5% type 1 error and at least 95% power. We applied a snowball sampling method using social media over the Internet. Based on the result, our study population comprised 467 health care workers. Participants in institutions no psychological treatment was administered.

### ***Inclusion and exclusion criteria***

We also set inclusion and exclusion criteria to select the participants. Individuals who did not receive any psychological therapy, were over the age of 18, and wanted to communicate with other individuals working in the pandemic institution were included. Individuals unwilling or unable to contact other individuals, on administrative leave during the pandemic, or who were diagnosed with COVID-19 and received treatment were excluded.

### ***Measures***

#### ***Sociodemographics form***

To elicit sociodemographic information from the health care workers, we devised 15 questions on topics relevant to our research, for example, age, gender, education level, marital status, number of children, and when and how many hours of patient care were performed. Eight of these questions were open-ended and seven of them were closed-ended questions.

#### ***COVID-19 Phobia Scale (CP19-S)***

The CP19-S was developed by Arpaci and colleges to quantify COVID-19 phobia. On this 5-point Likert-type self-assessment scale, scale items range from 1 “I strongly disagree” to 5 “Absolutely I agree.” The CP19-S item numbers and their sub-dimension are as follows: 1, 5, 9, 13, 17, and 20 for psychological; 2, 6, 10, 14, and 18 for somatic; 3, 7, 11, 15, and 19 for social; and 4, 8, 12, and 16 for economic. The total score of all sub-dimensions is calculated by summing the sub-scores. The total score is between 20 and 100. The height of points is an indicator of the COVID-19 phobia level (Arpaci et al., 2020). In this study, the total Cronbach's alpha value of the scale was determined to be 0.85. The Cronbach alpha values of the sub-dimensions are; It was found that it was 0.58 in the psychological subscale, 0.74 in the somatic subscale, 0.68 in the social subscale, and 0.77 in the economic subscale.

### ***Data collection***

We uploaded the sociodemographic questionnaires and CP19-S scales to use the online program. As aforementioned, in March and August 2020, this survey was sent to all health care workers in the Province of Malatya through social media and e-mail. We provided the necessary explanations of the study, and the participants had to agree to participate in this research. The data were uploaded and recorded in the system. Health care workers whose data were collected in March or December were classified as Group 1 or Group 2, respectively.

### ***Data analysis***

Statistical analysis of this data was performed using SPSS 22 (Statistical Package for Social Science). First, we transferred our recorded data to analyze the normal distribution. To achieve this objective, we used the Kolmogorov–Smirnov distribution test. To determine internal consistency, we used

Cronbach's alpha value test, and the score was 0.87. To analyze the variables by whether they are parametric or nonparametric, we used the following: a t test, a chi-square test, and Kruskal–Wallis tests and assessments of percentage, mean, and standard deviation. To assess changes in average age, we used correlation analyses. After the data of Group 1 and Group 2 were evaluated separately, the level of the COVID-19 phobia of the whole group was determined.

## Ethics

To fulfill the condition of receiving consent for participation in this research, we added an online informed consent form to the system. Before the health care workers could start the survey, they had to click the accept button to designate their approval. COVID-19 research requires Republic of Turkey. Our Ministry of Health approval (approval code is XXX-2020-06-16T16\_52\_20). After receiving the first approval, a second approval was obtained from the XXX Ethics Committee (decision no: 2020/873)

## Results

The findings were obtained from health workers who agreed to participate in this study. We collected health care workers' data during the COVID-19 pandemic at different times and compared the demographic data to determine similar groups. In Group 1 and Group 2, the average age of health care workers was approximately 34 and 31, respectively. After statistical analysis, only gender differences were observed. The number of female health care workers was higher in Group 2 than in Group 1. Variables such as marital status, individuals living together, family members aged over 65 years, education level, and status of having children were similar in all groups ( $p > .05$ ) (Table 1).

Health care workers in Groups 1 and 2 were asked which sources they used to obtain information on the COVID-19 pandemic, and multiple sources per participant were accepted. Both groups obtained all their information from the internet or social media news. Regarding the inquiry into working in pandemic clinics, 36.3% of Group 1 and 56.3% of Group 2 cared for patients hospitalized in

**Table 1.** Comparison of the demographic data of health care workers in group 1 and 2 during the COVID-19 pandemic period.

	Group 1 (March results)		Group 2 (August results)		X <sup>2</sup>	p
	n	%	n	%		
<b>Gender</b>						
Female	191	73.7	177	85.1	4.066	<b>.044</b>
Male	68	26.3	31	14.9		
<b>Marital status</b>						
Married	172	66.4	119	57.2	0.003	.955
Unmarried	87	33.6	89	42.8		
<b>Living together with</b>						
Partner/children	173	66.8	117	56.3	1.802	.772
Mother/father	39	15.1	67	32.2		
Living alone	47	18.1	24	11.5		
<b>Family members over 65 years old</b>						
Yes	82	31.7	60	28.8	0.998	.318
No	177	68.3	148	71.2		
<b>Educational status</b>						
High school	27	10.4	9	4.3	2.046	.727
University	190	73.4	145	69.7		
Master degree and up	42	16.2	54	26.0		
<b>Having children</b>						
Yes	168	65.4	39	18.8	0.135	.714
No	91	34.6	169	81.2		

**Table 2.** Comparison of differences relating to working condition of health care workers in group 1 and 2.

Information resources about the pandemic	Group 1 (March)		Group 2 (August)		Significance	
	n	%	n	%	$\chi^2$	<i>p</i>
<b>Internet and social media</b>						
Yes	208	80.3	148	71.2	7.359	<b>.007</b>
No	51	19.7	60	28.8		
<b>News on televisione</b>						
Yes	155	59.8	104	50	1.582	.208
No	104	40.2	104	50		
<b>Articles</b>						
Yes	151	58.3	133	63.9	0.006	.937
No	108	41.7	75	36.1		
<b>Ministry of health guide</b>						
Yes	24	9.3	21	10.1	0.661	.719
No	235	90.7	187	89.9		
<b>Working in a pandemic clinic</b>						
Yes	94	36.3	117	56.3	0.056	.813
No	165	63.7	92	43.7		
<b>Occupancy level of the clinic</b>						
Totally occupied	122	47.1	137	65.9	2.771	.250
Half occupied	102	39.4	43	20.7		
Occupied between 1 and 5	35	13.4	28	13.4		

pandemic clinics because of the COVID-19 infection. We also inquired about the occupancy rates of clinics: 47.1% in Group 1 and 65.9% in Group 2 reported that the clinics at which they worked were full (Table 2).

The grade of the COVID-19 phobia of health care workers in Groups 1 and 2 was compared. For Group 1, the mean score of the psychological sub-dimension was  $19.22 \pm 4.30$ , the somatic score was  $10.98 \pm 4.21$ , the economic score was  $9.17 \pm 3.81$ , and the total score of all the sub-dimensions scale scores was  $54.66 \pm 13.98$ ; the mean for Group 1 was higher than Group 2. The mean of the social sub-dimension score in Group 2 was 15.40, and this sub-dimension score was the only sub-dimension score that was higher than in Group 1. However, there were no significant differences between the groups ( $p > .05$ ; Table 3).

The average age of all health care workers surveyed in March and August was obtained, and its relationship was evaluated by using phobia levels. A positive relationship was observed in mean the age, the total score, and the psychological, somatic, and social sub-dimensions. A negative correlation was observed in the economic subscale ( $p > .05$ ; Table 4)

**Table 3.** Comparison of COVID-19 pandemic phobia in group 1 and 2.

Variable of scale	Group 1 (March)		Group 2 (August)		Significance	
	Min-Max	Mean $\pm$ SD	Min-Max	Mean $\pm$ SD	t	<i>p</i>
Psychologic	8–28	19.22 $\pm$ 4.30	6–30	18.92 $\pm$ 4.38	0.148	.882
Somatic	5–23	10.98 $\pm$ 4.21	5–24	10.90 $\pm$ 5.07	0.074	.941
Social	5–25	15.28 $\pm$ 4.63	5–25	15.40 $\pm$ 4.38	–0.526	.599
Economic	4–20	9.17 $\pm$ 3.81	4–20	8.85 $\pm$ 4.02	0.837	.403
Total scale score	26–88	54.66 $\pm$ 13.98	20–97	54.08 $\pm$ 15.01	0.114	.909

\*T-test in dependent groups.

**Table 4.** According to age, correlation analysis results of COVID-19 pandemic phobia scale of health care workers and mean of sub dimension mean.

Variable		Psychologic Subdim.	Somatic Subdim.	Social Subdim.	Ekonomic Subdim.	Total Score
Avarage	Pearson	–0.024	0.040	0.069	–0.016	0.023
Age	<i>p</i>	.610	.383	.138	.732	.619
	N	467	467	467	467	467

We compared the COVID-19 pandemic phobia levels of health care professionals according to some variables. The participants who were single or had children had higher phobia levels, although no significant difference ( $p > .05$ ) was observed. The gender comparison demonstrated that female health care workers' psychological sub-dimension score was  $19.40 \pm 4.36$ , somatic score was  $11.25 \pm 4.68$ , and total score was  $55.30 \pm 14.64$ . These findings show that phobia levels of female health workers are higher ( $p < .05$ ) than those of their male counterparts. According to the level of education, the phobia levels of high school graduates were higher in all sub-dimensions. According to the sub-dimensions, a significant difference in high phobia level was observed, with averages of  $19.41 \pm 4.25$  in the psychological sub-dimension,  $11.28 \pm 4.61$  in the somatic sub-dimension, and  $9.16 \pm 3.92$  in the economic sub-dimension; the average was  $55.51 \pm 14.11$  for the total scale score. Nineteen phobia levels were higher ( $p < .05$ ). When the household members of the participants were evaluated, we observed that the phobia levels of the health workers living with their parents were higher, although not significantly, in the psychological and somatic sub-dimensions and the total scale scores ( $p > .05$ ). For participants whose family members were aged older than 65 years and living in the same household, the mean of the psychological sub-dimension score was  $20.16 \pm 4.31$ , somatic score was  $12.05 \pm 4.95$ , economic score was  $9.72 \pm 4.17$ , and total score was  $57.84 \pm 15.05$ . Consequently, a higher phobia level was observed ( $p < .05$ ). We evaluated the health care workers who cared for patients diagnosed with COVID-19 infections according to sub-dimensions, and the social sub-dimension shows a significant difference, with a mean of  $15.82 \pm 4.07$  ( $p < .05$ ; Table 5).

**Table 5.** Comparison of Covid-19 pandemic phobia levels of health care workers according to some variables.

Variables	Psychologic Subdim.	Somatic Subdim.	Social Subdim.	Economic Subdim.	Total scale score
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
<b>Gender</b>					
Female	19.40 $\pm$ 4.39	11.25 $\pm$ 4.68	15.40 $\pm$ 4.60	9.23 $\pm$ 4.00	55.30 $\pm$ 14.64
Male	17.90 $\pm$ 3.94	9.79 $\pm$ 4.16	15.08 $\pm$ 4.17	8.27 $\pm$ 3.43	51.06 $\pm$ 13.17
Significance (t/p)	<b>3.079/.002</b>	<b>2.816/.005</b>	0.638/.524	<b>2.181/.030</b>	<b>2.614/.009</b>
<b>Marital status</b>					
Married	18.90 $\pm$ 4.24	10.95 $\pm$ 4.46	15.29 $\pm$ 4.29	9.02 $\pm$ 3.75	54.17 $\pm$ 14.04
Unmarried	19.39 $\pm$ 4.47	10.95 $\pm$ 4.86	15.40 $\pm$ 4.66	9.04 $\pm$ 4.15	54.78 $\pm$ 15.09
Significance (t/p)	-1.171/.242	0.020/.984	-0.242/.809	-0.066/.947	-0.439/.0661
<b>Level of education</b>					
High school	18.44 $\pm$ 4.51	10.02 $\pm$ 4.14	14.08 $\pm$ 4.18	8.33 $\pm$ 3.08	50.88 $\pm$ 12.83
University	19.41 $\pm$ 4.25	11.28 $\pm$ 4.61	15.64 $\pm$ 4.53	9.16 $\pm$ 3.92	55.51 $\pm$ 14.11
Master and up	18.19 $\pm$ 4.46	10.10 $\pm$ 4.66	14.75 $\pm$ 4.49	8.82 $\pm$ 4.13	51.87 $\pm$ 15.68
Significance (F/p)	<b>6.569/.037</b>	<b>7.811/.020</b>	5.805/.055	1.939/.379	<b>7.312/.026</b>
<b>Having children</b>					
Yes	18.93 $\pm$ 4.16	11.11 $\pm$ 4.33	15.35 $\pm$ 4.53	9.19 $\pm$ 3.76	54.59 $\pm$ 13.76
No	19.19 $\pm$ 4.51	10.92 $\pm$ 4.76	15.37 $\pm$ 4.53	9.00 $\pm$ 3.99	54.50 $\pm$ 14.90
Significance (t/p)	-0.638/.524	0.426/.668	-0.056/.955	0.504/.615	0.062/.951
<b>Living together with</b>					
Partner-children	18.94 $\pm$ 4.25	10.93 $\pm$ 4.47	15.33 $\pm$ 4.42	9.04 $\pm$ 3.74	54.26 $\pm$ 13.98
Mother-father	19.46 $\pm$ 4.60	11.16 $\pm$ 5.28	15.30 $\pm$ 4.82	8.57 $\pm$ 4.20	54.50 $\pm$ 15.90
Alone	19.14 $\pm$ 4.31	10.67 $\pm$ 4.10	15.39 $\pm$ 4.50	9.63 $\pm$ 4.06	54.84 $\pm$ 14.15
Significance (F/p)	1.314/.518	0.088/.957	0.145/.930	4.099/.129	0.417/.812
<b>Family members being over 65 years old and living under same roof</b>					
Yes	20.16 $\pm$ 4.31	12.05 $\pm$ 4.95	15.90 $\pm$ 4.84	9.72 $\pm$ 4.17	57.84 $\pm$ 15.05
No	18.62 $\pm$ 4.26	10.46 $\pm$ 4.37	15.09 $\pm$ 4.35	8.72 $\pm$ 3.75	52.90 $\pm$ 13.91
Significance (t/p)	<b>3.574/.000</b>	<b>3.470/.001</b>	1.784/.075	<b>2.557/.011</b>	<b>3.441/.001</b>
<b>Caring after Covid-19 infected persons</b>					
Yes	19.25 $\pm$ 4.15	11.22 $\pm$ 4.79	15.82 $\pm$ 4.07	9.14 $\pm$ 3.92	55.44 $\pm$ 13.74
No	18.95 $\pm$ 4.48	10.72 $\pm$ 4.45	14.93 $\pm$ 4.82	8.93 $\pm$ 3.89	53.55 $\pm$ 14.95
Significance (t/p)	0.729/.466	1.166/.244	<b>2.119/.035</b>	0.587/.558	1.413/.158

$p < .05$  significance values are shown in bold.

## Discussion

Infectious diseases affect the physical and psychological health and the well-being of the entire population, regardless of whether individuals are diagnosed with a COVID-19 infection (Aşkın, Bozkurt, & Zeybek, 2020; Çankaya, 2020; Wang et al., 2020). The health care workers working during the pandemic are in the riskiest sector in terms of health and safety. These risks are because of the working environment, physical and chemical, including biological factors and psychosocial structure (Dündar, 2016). On the one hand, society expects health care workers to fulfill social roles such as mother, father, or partner; on the other hand, workers in the health care business have different responsibilities than workers in other types of businesses. Working under the pressure of undertaking different social roles and responsibilities, health care workers are an at-risk group in terms of reported mental concerns (Muslu, Baltacı, Kutanis, & Kara, 2012). Our aim in this study was to determine if phobia levels negatively affect the psychological health of health care workers.

As aforementioned, most health care workers access information on the internet and social media. Bilge and Bilge (2020) found that news and information in the media about the negative consequences of COVID-19 infection caused anxiety about becoming infected or infecting others (Bilge & Bilge, 2020). A study on the anxiety of illness and reliability of media information showed that media has a positive effect on illness anxiety (Bilge & Bilge, 2020; Griffin, Dunwoody, & Zabala, 1998). Health care workers in our study received information through the internet and social media, which might negatively affect COVID-19 phobia.

In this study, a COVID-19 phobia scale was applied to health care workers in different periods of the pandemic. Scores from the beginning of the pandemic and today were compared. There was no significant difference between the scores for the early stage of the pandemic and today. In the beginning, the phobia was minimally higher.

We reviewed the literature to find similar issues. Duman's study of his students demonstrated that the level of the COVID-19 fear was mediocre. In another source, at the initial stage of the COVID-19 pandemic, residents of Europe were optimistic, and the possibility of being infected seemed unrealistic. In the increasing information on basic epidemiological parameters, such as infection and mortality rates, it is mentioned that risk perceptions are changing (Raude et al., 2020). Bilge and Bilge (2020) stated that this situation should be interpreted differently for the Turkish sample because it had the opportunity to obtain information such as transmission routes and worldwide death and increasing case rates. The late start of the pandemic outbreak in Turkey strengthened the perceived severity of the illness. This situation increased the rate of individuals who stayed at home, and "staying at home" was thought to have maybe formed the idea of "I'm am safe" (Bilge & Bilge, 2020). In this research: despite it not being possible for health care workers to be "at home and safe," they have a moderate phobia level and show no significant changes over time. Therefore, we posit that the late start of the outbreak in Turkey is the reason for the same.

We evaluated the relation between the mean scale score of sub-dimensions and age and observed that as the mean age increased, phobia levels except for the economic sub-dimension, even if it was not significant, had a positive correlation ( $p > .05$ ). The study conducted by Bilge and Bilge (2020) found a negative correlation between age and the anxiety of infecting other individuals. Thus, decreasing age leads to increasing fear of infecting other individuals (Bilge & Bilge, 2020). This difference in our study might be due to the absence of significant differences between the ages of the participants. Sakaoğlu, Orbatu, Emiroğlu, and Çakır (2020) demonstrated that the mean of anxiety scores in the top age group, 50–59 years, were slightly higher than those of the other age groups (Sakaoğlu et al., 2020). The research results are similar to those in the literature.

The participants who were single, did not have children, were university graduates, were living with their parents, or who cared for patients with COVID-19 infections had a higher COVID-19 virus phobia level. However, these scores were not significantly different. In many studies, the COVID-19 phobia negatively affects psychological state, stress, anxiety, work-family conflicts, and substance abuse (Baki & Piyal, 2020; García-Reyna et al., 2020). The



COVID-19 pandemic study conducted by Sakaoglu et al. (2020) with health care workers demonstrated that being married increased the mean of the anxiety level significantly (Sakaoglu, 2020). Differences between the studies may have occurred because the anxiety became a phobia, which is more possible in the unmarried participants than in the married participants. This study demonstrated that health care workers living with their parents and caring for patients diagnosed with a COVID-19 infection had a higher phobia level. The literature has reported that health care workers are stigmatized by the community and family members as potential virus carriers. A study reported that 39.1% of health care workers who were confronted with the coronavirus in any way, were isolated, and had infected family members or colleagues demonstrated psychological symptoms (Dai, Hu, Xiong, Qiu, & Yuan, 2020). Health care workers seeing their colleagues being intubated, losing the patients they had cared for, and fearing infecting their families and friends had their feeling of security damaged. Tuncay et al. mentioned that the fear of health care workers being infected is higher than that for the general public (Çankaya, 2020). The information in the literature and the results of our research are similar.

When the phobia level is evaluated with other variables of this study, we found that phobia level was significantly higher in women, university graduates, and health care workers whose family members were aged over 65 years ( $p < .05$ ). For the participants working in COVID-19 services or intensive care units, the level of phobia in the social sub-dimension was significantly high. Bakioglu, Korkmaz, and Ercan (2020), in a study of 960 adults, demonstrated that the fear of COVID-19 was significantly higher in women than in men (Bakioglu et al., 2020). García-Reyna et al. (2020) studied the perception of COVID-19 fear of hospital staff, based on variables. The result demonstrated that women have more fear of COVID-19 than men do (García-Reyna et al., 2020). These results are similar to other research findings. In Duman's study on fear of COVID-19, no differences in gender were observed (Duman, 2020). We propose that the differences between this study and Duman's research and that in the literature are because of education differences and age average.

In this study, we determined that the phobia levels of health care workers with family members aged older than age 65 years are higher ( $p < .05$ ). Bakioglu et al. (2020) stated that the COVID-19 fear differs by whether individuals have relatives diagnosed with infections (Bakioglu et al., 2020). The reason why the results of this research do not match those of Bakioglu et al. could be because this study did not subdivide the age into classes. Sakaoglu et al. mentioned that the most challenging factor for health care workers is risking their children and other family members by infecting them (Sakaoglu et al., 2020). However, in this study, there was no significant difference between participants who had children and those who did not. In the later period of the pandemic, participants who had children learned that children did not have major health problems due to the pandemic. We propose that this decreased the phobia level of the parents.

### **Conclusion and suggestions**

We demonstrated that the sample of health care workers had a moderate level of the COVID-19 phobia. There was no significant difference in the phobia levels between the early stages and the current stage. The main source of information on the pandemic was the internet and social media. As the aged increased, the level of phobia also increased. Female health care workers with a university degree or having family members aged older than 65 years had an increased level of phobia. Therefore, health managers should act to reduce the stress of health care workers, receive feedback from health care workers on the protection measures implemented during the pandemic, reduce stress indicators and provide activities to motivate the health care workers, be thoughtful, and select health care workers with suitable characteristics for positions in clinics.

## Limitations

Due to the restrictions during the COVID-19 pandemic, data collection was the main limitation of this research. This situation prevented the determination of a suitable time to fill in the questionnaire.

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## References

- Al-Tawfiq, J. A., & Memish, Z. A. (2014). Middle East respiratory syndrome coronavirus: Epidemiology and disease control measures. *Infection and Drug Resistance*, 7, 281–287. doi:10.2147/IDR.S51283
- Arpaci, İ., Karataş, K., & Baloğlu, M. (2020). The development and initial tests for the psychometric properties of the COVID-19 Phobia Scale (C19P-S). *Personality and Individual Differences*, 164(110108), 1–6. doi:10.1016/j.paid.2020.110108
- Arpacioglu, S., Gurler, M., & Cakiroglu, S. (2020). Secondary traumatization outcomes and associated factors among the health care workers exposed to the COVID-19. *International Journal of Social Psychiatry*, 67(1), 84–89. doi:10.1177/0020764020940742
- Aşkın, R., Bozkurt, Y., & Zeybek, Z. (2020). COVID-19 pandemic: Psychological effects and therapeutic interventions. *Istanbul Commerce University Journal of Social Sciences Covid-19 Social Sciences Special Issue*, 19(37), 304–318.
- Assiri, A., McGeer, A., Perl, T. M., Price, C. S., Al Rabeeah, A. A., Cummings, D. A., et al. (2013). Epidemiological, demographic, and clinical characteristics of 47 cases of Middle East respiratory syndrome coronavirus disease from Saudi Arabia. A descriptive study. *The Lancet Infectious Diseases*, 13(9), 752–761. doi:10.1016/S1473-3099(13)70204-4
- Baki, S., & Piyal, B. (2020). Work-family conflict as regard to healthcare workers in extraordinary situations such as COVID-19 pandemic. *Journal of Health and Society Special Issue July*, 119–123.
- Bakioğlu, F., Korkmaz, O., & Ercan, H. (2020). Fear of COVID-19 and positivity: Mediating role of intolerance of uncertainty, depression, anxiety, and stress. *International Journal of Mental Health and Addiction*, 19(6), 2369–2382. doi:10.1007/s11469020-00331y
- Bandelow, B., & Michaelis, S. (2015). Epidemiology of anxiety disorders in the 21st century. *Dialogues in Clinical Neuroscience*, 17(3), 327–335. PMID: 26487813; PMCID: PMC4610617. doi:10.31887/DCNS.2015.17.3/bbandelow
- Bilge, Y., & Bilge, Y. (2020). Investigation of the effects of coronavirus and social isolation on psychological symptoms in terms of psychological resilience and coping styles. *Klinik Psikiyatri Dergisi*, 23, 38–51. doi:10.5505/kpd.2020.66934
- Brolinson, P. G., & Elliott, D. (2007). Exercise and the immune system. *Clinics in Sports Medicine*, 26(3), 311–319. doi:10.1016/j.csm.2007.05.001
- Çankaya, M. (2020, October 7). COVID-19 pandemia and the change in the wellbeing of healthcare employees. In *Atlas international congress on social sciences* (pp. 446–460). ResearchGate.
- Chan, J. F. W., Lau, S. K. P., & Woo, P. C. Y. (2013). The emerging novel Middle East respiratory syndrome coronavirus: The “knowns” and “unknowns.” *Journal of the Formosan Medical Association*, 112(7), 372–381. doi:10.1016/j.jfma.2013.05.010
- Dai, Y., Hu, G., Xiong, H., Qiu, H., & Yuan, X. (2020). Psychological impact of the coronavirus disease 2019 (COVID-19) outbreak on healthcare workers in China. *medRxiv*. doi:10.1101/2020.03.03.20030874
- Duman, N. (2020). COVID-19 fear and intolerance to uncertainty in university students. *The Journal of Social Science*, 4(8), 426–437.
- Dündar, Y. (2016). *Are you God?* (Anit matbaa 3rd ed.). Ankara. ISBN: 978-605-88309-8-1. [sonsuzlukules.com/ek/tap/sen-tanr-m-s'n.pdf](https://www.sonsuzlukules.com/ek/tap/sen-tanr-m-s'n.pdf).
- Enli Tuncay, F., Koyuncu, E., & Özel, Ş. A. (2020). Review of protective and risk factors affecting psychosocial health of healthcare workers in pandemics. *Ankara Medical Journal*, 20(2), 488–501. doi:10.5505/amj.2020.02418
- García-Reyna, B., Castillo-García, G. D., Barbosa-Camacho, F. J., Cervantes-Cardona, G. A., Cervantes-Pérez, E., Torres-Mendoza, B. M., ... Cervantes-Guevara, G. (2020, November). Fear of COVID-19 scale for hospital staff in regional hospitals in Mexico: A brief report. *International Journal of Mental Health and Addiction*, (4), 1–12. doi:10.1007/s11469-020-00413-x
- Griffin, R. J., Dunwoody, S., & Zabala, F. (1998). Public reliance on risk communication channels in the wake of a cryptosporidium outbreak. *Risk Analysis*, 18(4), 367–375. doi:10.1111/j.1539-6924.1998.tb00350.x

- Kaya, B. (2020). Effects of pandemic on mental health. *Journal of Clinical Psychiatry*, 23(2), 123–124. doi:10.5505/kpd.2020.64325
- Kim, C. W., & Song, H. R. (2017). Structural relationships among public's risk characteristics, trust, risk perception and preventive behavioral intention: The case of MERS in Korea. *Crisisonomy*, 13, 85–95. doi:10.14251/crisisonomy.2017.13.6.85
- Koh, D., Lim, M. K., Chia, S. E., Ko, S. M., Qian, F., Tan, B. H., . . . Fones, C. (2005). Risk perception and impact of severe acute respiratory syndrome (SARS) on work and personal lives of healthcare workers in Singapore what can we learn? *Medical Care*, 43(7), 676–682. doi:10.1097/01.mlr.0000167181.36730.cc
- Lu, G., Hu, Y., Wang, Q., Qi, J., Gao, F., Li, Y., & Gao, G. F. (2013). Molecular basis of binding between novel human coronavirus MERS-CoV and its receptor CD26. *Nature*, 500(7461), 227–331. doi:10.1038/nature12328
- Marjanovic, Z., Greenglass, E. R., & Coffey, S. (2007). The relevance of psychosocial variables and working conditions in predicting nurses' coping strategies during the SARS crisis: An online questionnaire survey. *International Journal of Nursing Studies*, 44(6), 991–998. doi:10.1016/j.ijnurstu.2006.02.012
- Muslu, C., Baltaci, D., Kutanis, R., & Kara, İ. H. (2012). Quality of life, anxiety and depression in nurses working at primary health care and hospitals. *Konuralp Medical Journal*, 4(1), 17–23.
- Nickell, L. A., Crighton, E. J., Tracy, C. S., Al-Enazy, H., Bolaji, Y., Hanjrah, S., & Upshur, R. O. G. (2004). Psychosocial effects of SARS on hospital staff: Survey of a large tertiary care institution. *Canadian Medical Association Journal*, 170(5), 793–798. doi:10.1503/cmaj.1031077
- Özsoy, M., Sönmezer, M. Ç., & Tülek, N. (2015). MERS-Co virus infection: Epidemiology and recent developments. *Ortadoğu Medical Journal*, 7(3), 140–143.
- Perlis, R. H. (2020). Exercising heart and head in managing coronavirus disease 2019 in Wuhan. *JAMA Network Open*, 3(3), e204006. doi:10.1001/jamanetworkopen.2020.4006
- Porten, K., Faensen, D., & Krause, G. (2006). SARS outbreak in Germany 2003: Workload of local health departments and their compliance in quarantine measures—implications for outbreak modeling and surge capacity? *Journal of Public Health Management and Practice*, 12(3), 242–247. doi:10.1097/00124784-200605000-00004
- Raj, V. S., Mou, H., Smits, S. L., Dekkers, D. H., Müller, M. A., Dijkman, R., . . . Haagmans, B. L. (2013). Dipeptidyl peptidase 4 is a functional receptor for the emerging human coronavirus-EMC. *Nature*, 495(7440), 251–254. doi:10.1038/nature12005
- Raude, J., Debin, M., Souty, C., Guerrisi, C., Turbelin, C., Falchi, A., . . . Colizza, V. (2020). Are people excessively pessimistic about the risk of coronavirus infection? Retrieved from [https://psyarxiv.com/364qj/?mod=article\\_inline](https://psyarxiv.com/364qj/?mod=article_inline)
- Sakaoğlu, H. H., Orbatu, D., Emiroglu, M., & Çakır, Ö. (2020). Spielberger state and trait anxiety level in healthcare professionals during the COVID-19 outbreak: A case of Tepecik Hospital. *Journal of Tepecik Training and Research Hospital*, 30, 1–9. doi:10.5222/terh.2020.56873
- Wang, C., Pan, R., Wan, X., Tan, Y., Xu, L., Ho, C. S., & Ho, R. C. (2020). Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (covid-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*, 17(5), 1729, 1–25. doi:10.3390/ijerph17051729
- World Health Organisation. 2020. *WHO novel coronavirus (COVID-19) situation [www document]*. Author. Retrieved from <https://experience.arcgis.com/experience/685d0ace521648f8a5beeeee1b9125cd>
- Yalçın, S. (2020). *New era COVID-19 pandemic in dentistry and measures to be taken* (pp. 1–40). İstanbul: Quintessence Publishing.
- Zaki, A. M., van Boheemen, S., Bestebroer, T. M., Osterhaus, A. D., & Fouchier, R. A. (2012). Isolation of a novel coronavirus from a man with pneumonia in Saudi Arabia. *New England Journal of Medicine*, 367(19), 1814–1820. doi:10.1056/NEJMoa1211721