

# Investigation of the psychiatric factors that determine the fear of COVID-19 in healthcare workers and hospital staff in a university hospital in Turkey

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## Abstract

To examine the association of health and hospital workers' fears of coronavirus disease 2019 (COVID-19) with anxiety, anxiety sensitivity, depression, and sociodemographic variables during the COVID-19 pandemic. A total of 527 participants (237 men/289 women) were included, 222 of the participants were doctors, 99 nurses, 22 assistant health personnel, and 182 hospital personnel without health education. Participants filled in the socio-demographic data form, Beck Depression Inventory, Beck Anxiety Inventory, Anxiety Sensitivity Index-3, and Fear of COVID-19 Inventory. In linear regression analysis, independent predictors of the fear of COVID-19 were determined as Beck Anxiety Inventory ( $p < 0.001$ ), Beck Depression Inventory ( $p = 0.001$ ), and Anxiety Sensitivity Index-3 Physical subscale ( $p = 0.001$ ). The fear of COVID-19 is associated with the physical subscale of anxiety, depression, and anxiety sensitivity.

## KEYWORDS

anxiety, anxiety sensitivity, depression, fear of COVID-19, healthcare workers, hospital staff without health education, pandemic

## 1 | INTRODUCTION

Healthcare workers (HCWs) are under physical and psychological pressure during the coronavirus disease 2019 (COVID-19) pandemic (Wu et al., 2009). It is stated that the effect of the pandemic on healthcare personnel is primarily depressive and anxiety symptoms (Bohlken et al., 2020). Based on the results of a systematic review of healthcare workers during the COVID-19 pandemic, the prevalence of anxiety was determined to be 25.8% and the prevalence of depression was determined to be 24.3% (Salari et al., 2020). In Chinese studies, this rate was expressed as between 11% and 28% for anxiety and between 43% and 46% for depression (Liu et al., 2020; Zhu et al., 2020). It has been stated that these problems are more prominent in women and nurses (Pappa et al., 2020; Spoorthy, 2020).

Anxiety and depression were determined to be associated with the fear of COVID-19 (Muller et al., 2021; Tzur Bitan et al., 2020). In a study conducted in Bangladesh, it was indicated that participants with depressive symptoms both in the general population and among healthcare workers experienced fear of COVID-19 (Sakib et al., 2021). A study conducted in the Malaysian population also stated that fear of COVID-19 is associated with symptoms of anxiety and depression (Kassim et al., 2021). Likewise, in our country, participants who reported higher fear of COVID-19 were noted to have higher anxiety and depression (Belen, 2021).

People with high anxiety sensitivity perceive harmless bodily stimuli as "dangerous," therefore anxiety sensitivity was determined as a predictor of the fear of COVID-19 (Taylor et al., 2007; Waqas et al., 2020). Anxiety sensitivity in the physical field was declared as an important predictor of the fear of COVID-19 (Waqas et al., 2020). As far as we could detect, analysis of the relationship between anxiety sensitivity and fear of COVID-19 is limited to a total of seven studies (Baiano et al., 2020; Malesza & Kaczmarek, 2021; Manning et al., 2021; Rogers et al., 2021; Sadeghzadeh et al., 2021; Waqas et al., 2020; Xia et al., 2021). Three of these were conducted on university students (Baiano et al., 2020; Sadeghzadeh et al., 2021; Waqas et al., 2020), three on the general population (Malesza & Kaczmarek, 2021; Manning et al., 2021; Rogers et al., 2021), and one on healthcare workers (Xia et al., 2021).

To the best of our knowledge, the studies in the literature that address anxiety, depression, and fear of COVID-19 separately in hospital workers with and without health education are limited. In a study, the anxiety level of doctors and nursing personnel due to the pandemic was reported lower than that of administrative personnel, logistics personnel, and other personnel (Xia et al., 2021).

We anticipate that our study will contribute to the literature as it has addressed anxiety sensitivity in addition to the fear of COVID-19, anxiety, and depression in both healthcare professionals and hospital employees without health education. That is why we have planned this study.

## 2 | MATERIALS AND METHODS

### 2.1 | Participants

All healthcare personnel and hospital staff working at Süleyman Demirel University (SDU) Medical Faculty Hospital were included in our study. Sixty-nine individuals refused to participate in the study after reading the voluntary informed consent form. Scales were applied to 559 personnel who agreed to participate in the study. Thirty-two people were not included in the study due to missing information. The information provided by the remaining 527 people was evaluated. Inclusion criteria were to be a healthcare worker or hospital worker at the SDU Faculty of Medicine; exclusion criteria were mental retardation that prevented answering the questions, dementia, presence of neurological disease that may cause severe disability, being on psychotropic treatment, being in a manic episode of psychotic disorder or bipolar disorder, autism spectrum disorder, presence of organic brain damage, alcohol, and substance use disorder.

Study procedures were conducted in accordance with the 2013 version of the Declaration of Helsinki and local laws and regulations governing human research. The study protocol was approved by the SDU ethics committee (protocol 153/2020). Written and verbal informed consent was obtained from all participants.

## 2.2 | Scales

During the study, participants filled the sociodemographic data form (SDDF), Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), Anxiety Sensitivity Index-3 (ASI-3), and Fear of COVID-19 Scale (FCV-19S) face-to-face.

## 2.3 | Sociodemographic data and participants' self-evaluation form

Participants' gender, age, occupation, level of knowledge about COVID-19, whether they needed psychological support, whether their economic situation was affected by the pandemic and whether there was an increase in their handwashing frequency were evaluated.

## 2.4 | Beck Depression Inventory (BDI)

It was developed by Aeron Beck to determine the level of depression and to evaluate depressive symptoms and attitudes. It is a 4-point Likert-type self-report scale consisting of 21 items. Provides information about the severity of depression. A high total score on the scale indicates a high level of depression and/or its severity. Turkish validity and reliability study was carried out by Hisli (1988).

## 2.5 | Beck Anxiety Inventory (BAI)

It is a 4-point Likert-type scale consisting of 21 items, developed by Aaron Beck et al., that measures the frequency and severity of anxiety symptoms. High scores on the scale indicate a high level of anxiety. Turkish validity and reliability study was conducted (Ulusoy, 1993).

## 2.6 | Adult Anxiety Sensitivity Index-3 (ASI-3)

The state of sensitivity, stemming from the belief that emotions have physical, cognitive, and social harmful consequences, has been defined as "Anxiety Sensitivity" (Rodriguez et al., 2004). The most commonly used tool to measure Anxiety Sensitivity is the Anxiety Sensitivity Index-3, developed by Taylor et al. (2007). It is a 5-point Likert-type scale. The Anxiety Sensitivity Index-3 consists of one higher-order factor and three sublevel factors: physical (P), social (S), and cognitive (C) concerns. It consists of a total of 18 items, six items in each subscale. The score that can be obtained from the scale is between 0 and 72. Turkish validity and reliability study was conducted (Mantar, 2008).

**TABLE 1** Sociodemographic data

	Total	Male	Female	Doctor	Nurse	Assistant health personnel	Other
<i>n</i>	527	237	289	222	98	23	182
%	100	45	55	42.3	18.7	4.3	34.7
Age							
Mean ± SD	35.7 ± 8.52	36.45 ± 9.31	35.19 ± 7.77				

Note: Independent samples *t*-test; SD, standard deviation.

## 2.7 | Fear of COVID-19 Scale (FCV-19S)

It is a Likert-type scale consisting of seven items created by Ahorsu et al. (2020). For each option, the lowest score is 1, the highest score is 5. The total score is evaluated between 7 and 35. The higher the score, the higher the fear of COVID-19 (Ahorsu et al., 2020). Turkish validity and reliability study was conducted (Biçer et al., 2020).

## 2.8 | Statistical analysis

Statistical Package for Social Sciences (SPSS), version 23.0 for Windows (SPSS Inc.) software package was used for statistical analysis of research data. In the descriptive statistics section, categorical variables were given as a number (*n*) and percentage (%), while continuous variables were given with mean ± standard deviation. The Kolmogorov–Smirnov test was performed to determine whether continuous data were normally distributed. In the analysis of continuous data, independent samples *t*-test was used for variables with normal distribution. The one-way analysis of variance (ANOVA) test was used to determine whether there was a difference between three or more groups with respect to a particular variable. Post hoc Bonferroni analysis was used to determine which groups differed. The relationship between the scales was examined using the Pearson correlation analysis method. Linear regression analysis was used to evaluate the predictors. The results were evaluated with a 95% confidence interval and  $p < 0.05$  significance level.

## 3 | RESULTS

A total of 527 people were included in our study, 237 participants were men (45%) and 289 participants (55%) were women. The mean age of all participants was  $35.7 \pm 8.52$  years, the mean age of men was  $36.45 \pm 9.31$  years; the mean age of women was  $35.19 \pm 7.77$  years. Of the participants, 222 (42.3%) were physicians, 98 (18.7%) nurses, 23 (4.3%) assistant health personnel, and 182 (34.7%) hospital personnel without health education. Sociodemographic data of the participants are presented in Table 1.

Based on the participants' own evaluations, their level of knowledge about COVID-19, their history of mental disorders, whether they needed psychological support due to the pandemic, whether they were adversely affected economically, whether there was an increase in handwashing frequency during the pandemic period, and the effect of these on the scale scores are given in Table 2.

Participants' BAI mean score was  $5.93 \pm 8.58$ , BDI mean score was  $7.36 \pm 8.29$ , FCV-19S mean score was  $16 \pm 5.47$ , ASI-3P mean score was  $5.30 \pm 5.14$ , ASI-3C mean score was  $6.18 \pm 5.05$ , mean ASI-3S score was  $4.03 \pm 4.06$ , and ASI-3 T mean score was  $15.5 \pm 12.8$ . These data are presented in Table 3a.

**TABLE 2** Scale scores according to the participants' self-assessment during the pandemic period

Variables	n	%	BAI Mean ± SD	FC-19S Mean ± SD	BDI Mean ± SD	ASI-3P Mean ± SD	ASI-3C Mean ± SD	ASI-3S Mean ± SD	ASI-3T Mean ± SD
<b>Do you think your level of knowledge about COVID-19 is sufficient?</b>									
No	53	10	10.4 ± 10.6	17.9 ± 6.31	10.6 ± 8.77	8.05 ± 6.39	7.77 ± 6.37	5.43 ± 4.53	21.2 ± 15.6
Yes	474	90	5.43 ± 8.17	15.7 ± 5.33	6.99 ± 8.17	5.00 ± 4.89	6.00 ± 4.86	3.87 ± 3.98	14.8 ± 12.3
Com- parison			t: 3.33 df: 58.97 p: 0.001	t: 2.75 df: 525 p: 0.006	t: 3.08 df: 525 p: 0.002	t: 3.37 df: 59.00 p: 0.001	t: 1.95 df: 58.96 p: 0.055	t: 2.66 df: 525 p: 0.008	t: 2.87 df: 59.52 p: 0.006
<b>Do you think you need psychological support due to the pandemic?</b>									
No	406	77	4.28 ± 7.23	14.7 ± 4.80	5.64 ± 6.81	4.75 ± 4.88	5.54 ± 4.56	3.68 ± 3.88	13.9 ± 11.8
Yes	121	23	11.4 ± 10.2	20.1 ± 5.52	13.1 ± 10.0	7.16 ± 5.55	8.33 ± 5.98	5.20 ± 4.44	20.7 ± 14.6
Com- parison			t: -7.18 df: 156.94 p: <0.001	t: -10.4 df: 525 p: <0.001	t: -7.67 df: 154.09 p: <0.001	t: -4.30 df: 178.79 p: <0.001	t: -4.73 df: 163.76 p: <0.001	t: -3.40 df: 178.15 p: 0.001	t: -4.62 df: 170.13 p: <0.001
<b>Have you experienced a negative economic impact due to the pandemic?</b>									
No	279	53	4.89 ± 8.05	14.9 ± 5.01	6.14 ± 7.50	4.79 ± 4.96	5.64 ± 4.92	3.66 ± 3.97	14.1 ± 12.4
Yes	248	47	7.12 ± 9.02	17.1 ± 5.71	8.73 ± 8.94	5.85 ± 5.27	6.75 ± 5.12	4.44 ± 4.14	17.0 ± 13.1
Com- parison			t: -2.97 df: 496.66 p: 0.003	t: -4.77 df: 524 p: <0.001	t: -3.56 df: 482.13 p: <0.001	t: -2.37 df: 524 p: 0.018	t: -2.52 df: 510.62 p: 0.012	t: -2.20 df: 524 p: 0.028	t: -2.64 df: 524 p: 0.008
<b>Is there an increase in your frequency of handwashing due to the pandemic?</b>									
No	35	6.6	1.82 ± 3.22	11.9 ± 4.78	5.20 ± 6.19	2.65 ± 3.67	4.37 ± 5.18	2.45 ± 3.50	9.48 ± 11.7
Yes	492	93.4	6.23 ± 8.77	16.3 ± 5.40	7.52 ± 8.41	5.49 ± 5.18	6.31 ± 5.02	4.14 ± 4.08	15.9 ± 12.8
Com- parison			t: -6.54 df: 77.79 p: <0.001	t: -4.60 df: 525 p: <0.001	t: -1.60 df: 525 p: 0.110	t: -4.27 df: 44.21 p: <0.001	t: -2.20 df: 525 p: 0.028	t: -2.38 df: 525 p: 0.018	t: -2.89 df: 525 p: 0.004

Note: Independent samples t-test.

Abbreviations: ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; ASI-3T, Anxiety Sensitivity Index-3 Total; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019; df, degree of freedom; FC-19, fear of COVID-19; SD, standard deviation; t, test value.

BAI, FCV-19S, BDI, ASI-3P, ASI-3C, ASI-3S, and ASI-3T scale scores of women were higher than men. It is presented in Table 3b.

Nurses' BAI, FCV-19S, BDI, ASI-3P, ASI-3C, ASI-3S, and ASI-3T scale scores were higher than physicians (p < 0.01). It is presented in Table 3c.

**TABLE 3a** Average scores of participants' scales

	N	Mean ± SD
BAI	527	5.93 ± 8.58
FC-19S	527	16.0 ± 5.47
BDI	527	7.36 ± 8.29
ASI-3P	527	5.30 ± 5.14
ASI-3C	527	6.18 ± 5.05
ASI-3S	527	4.03 ± 4.06
ASI-3T	527	15.5 ± 12.8

Note: One variable analysis.

Abbreviations: ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; ASI-3T, Anxiety Sensitivity Index-3 Total; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019; FC-19S, fear of COVID-19 Scale; SD, standard deviation.

**TABLE 3b** Scale average scores by gender

Variables	n	%	BAI Mean ± SD	FC-19S Mean ± SD	BDI Mean ± SD	ASI-3P Mean ± SD	ASI-3C Mean ± SD	ASI-3S Mean ± SD	ASI-3T Mean ± SD
Gender									
Male	237	45	3.88 ± 6.39	14.3 ± 5.16	5.55 ± 7.28	4.50 ± 4.50	5.54 ± 4.60	3.48 ± 3.81	13.5 ± 11.64
Female	289	55	7.64 ± 9.72	17.3 ± 5.35	8.87 ± 8.77	5.98 ± 5.52	6.72 ± 5.34	4.49 ± 4.22	17.2 ± 13.58
Comparison			t: -5.32	t: -6.42	t: -0.74	t: -3.37	t: -2.73	t: -2.85	t: -3.33

Note: Independent samples t-test.

Abbreviations: ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; ASI-3T, Anxiety Sensitivity Index-3 Total; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019; FC-19S, fear of COVID-19 Scale; SD, standard deviation; t, test value.

We examined the association between FCV-19S score and psychiatric variables. Pearson's correlation analysis showed that the FCV-19S score was positively correlated with the BAI score ( $r = 0.389, p < 0.01$ ), BDI score ( $r = 0.368, p = 0.01$ ), ASI-3P score ( $r = 0.405, p = 0.01$ ), ASI-3C score ( $r = 0.357, p = 0.01$ ), and ASI-3S score ( $r = 0.297, p = 0.015$ ). These data are presented in Table 4.

As a result of the linear regression analysis with the FCV-19S score as the dependent variable and BAI, BDI, and ASI-3 as the predictor variables; BAI ( $p < 0.001; \beta = 0.172; t: 3.50$ ), BDI ( $p = 0.001; \beta = 0.171, t: 3.53$ ) and the ASI-3P ( $p < 0.001; \beta = 0.286; t: 4.92$ ) subscale were found to be the strongest predictors of FCV-19S. These variables explained 23% of the fear of COVID-19. The data are presented in Table 5.

## 4 | DISCUSSION

Increasing depression/depressive symptoms and anxiety levels were mentioned in most of the studies examining HCWs during the pandemic (Lai et al., 2020; Pappa et al., 2020; Spoorthy, 2020; Vindegaard & Benros, 2020; Zhang et al., 2020). In our study, COVID-19 fear levels and related factors were discussed, taking into account the

**TABLE 3c** Scale average scores of occupational groups

Variables	BAI	FC-19S	BDI	ASI-3P	ASI-3C	ASI-3S	ASI-3T
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Career							
Doctor (1)	4.10 ± 5.91	14.43 ± 4.88	5.94 ± 7.40	3.45 ± 3.90	5.23 ± 4.65	3.27 ± 3.75	11.9 ± 10.7
Nurse (2)	8.50 ± 9.57	18.4 ± 5.53	10.2 ± 9.15	6.48 ± 5.66	7.58 ± 5.66	5.00 ± 4.41	19.0 ± 14.7
Healthcare professional (3)	5.31 ± 7.70	17.1 ± 6.55	5.59 ± 7.16	5.68 ± 6.63	5.04 ± 5.32	3.50 ± 4.95	14.2 ± 15.9
Other (4)	6.92 ± 10.2	16.5 ± 5.37	7.81 ± 8.59	6.93 ± 5.26	6.77 ± 4.91	4.53 ± 3.98	18.2 ± 12.6
Comparison	F: 7.41	F: 14.84	F: 6.92	F: 19.32	F: 6.55	F: 5.64	F: 11.66
	p: 0.42	p: <0.001	p: <0.001	p: <0.001	p: <0.001	p: 0.001	p: <0.001
	Post hoc: 2 > 1	Post hoc: 2 > 1 4 > 1	Post hoc: 2 > 1	Post hoc: 2 > 1	Post hoc: 2 > 1	Post hoc: 2 > 1	Post hoc: 2 > 1
	4 > 1	2 > 4	4 > 1	4 > 1	4 > 1	4 > 1	4 > 1

Abbreviations: ANOVA test, one-way analysis of variance; ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; ASI-3T, Anxiety Sensitivity Index-3 Total; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019; df, degree of freedom; FC-19S, fear of COVID-19 Scale; F, test value; SD, standard deviation.

**TABLE 4** The relationship between Fear of COVID-19 Scale scores and BAI, BDI, ASI-3P, ASI-3C, and ASI-3S subscale scores

	FC-19S	BAI	BDI	ASI-3P	ASI-3C	ASI-3S	
FC-19S	<i>r</i>	1.000					
	<i>p</i>	-					
BAI	<i>r</i>	0.389	1.000				
	<i>p</i>	<0.01	-				
BDI	<i>r</i>	0.368	0.583	1.000			
	<i>p</i>	<0.01	<0.01	-			
ASI-3P	<i>r</i>	0.405	0.405	0.349	1.000		
	<i>p</i>	<0.01	<0.01	<0.01	-		
ASI-3C	<i>r</i>	0.357	0.436	0.421	0.698	1.000	
	<i>p</i>	<0.01	<0.01	<0.01	<0.01	-	
ASI-3S	<i>r</i>	0.297	0.360	0.396	0.707	0.755	1.000
	<i>p</i>	<0.01	<0.01	<0.01	<0.01	<0.01	-

Note: Pearson correlation analysis.

Abbreviations: ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; ASI-3T, Anxiety Sensitivity Index-3 Total; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019; FC-19S, fear of COVID-19 Scale.

**TABLE 5** Linear regression analysis between BDI, BAI, and ASI subscales affecting the Fear of COVID-19 Scale

Model	Non-standardized coefficients		Standardized coefficients		
	$\beta$	SD	$\beta$	<i>t</i>	<i>p</i>
BAI	0.109	0.031	0.172	3.50	<0.001
BDI	0.113	0.032	0.171	3.53	<0.001
ASI-3P	0.305	0.062	0.286	4.92	<0.001
ASI-3C	0.091	0.069	0.084	1.32	0.186
ASI-3S	-0.132	0.085	-0.098	-1.55	0.121

Note: Dependent variable: Fear of COVID-19 Scale, *p* < 0.001, *f*: 34.089, *df*: 5, adjusted *r*<sup>2</sup>: 0.239.

Abbreviations: ASI-3C, Anxiety Sensitivity Index-3 Cognitive; ASI-3P, Anxiety Sensitivity Index-3 Physical; ASI-3S, Anxiety Sensitivity Index-3 Social; BAI, Beck Anxiety Inventory; BDI, Beck Depression Inventory; COVID-19, coronavirus disease 2019.

healthcare professionals' anxiety sensitivities along with their depression and anxiety levels. In addition, workers were considered separately based on their occupation groups.

In our study, being a woman, being a nurse, needing psychological support, increased frequency of hand-washing, bad economic impact, and low level of knowledge about COVID-19 were the risk factors we determined.



According to the results of the regression analysis, the predictors of the fear of COVID-19 were determined as BAI, BDI, and ASI-3P.

In a study in China comparing healthcare workers both within themselves and with hospital workers, it was reported that medical healthcare workers had higher rates of anxiety and depression symptoms (Zhang et al., 2020). It was reported that the level of anxiety was higher in the healthcare personnel who are in direct contact with patients, and the frequency of anxiety among nurses was higher than that of physicians. This was attributed to the fact that the treatments were performed by nurses, nurses worked longer in isolated rooms compared with physicians, and were in closer contact with patients (Huang et al., 2020). In another study conducted with 1257 healthcare workers in 34 hospitals in China, it was stated that 50.4% of all participants had depression symptoms, 44.6% anxiety symptoms, and 71.5% anxiety disorders. It has been noted that being a nurse and being a front-line worker is an independent risk factor for poor mental health outcomes (Lai et al., 2020). It was reported that Health Anxiety and BDI scores were higher in those who were in close contact with patients (Talo Yildirim et al., 2020). In another study comparing health workers and non-health workers, it was shown that the anxiety levels of physicians and nurses were significantly lower than that of administrative, logistics, and other personnel (Xia et al., 2021).

In our study, the participants were also divided into four groups as physicians, nurses, assistant health personnel, and hospital workers (such as medical secretaries, security guards, cooks, drivers, and officers). Consistent with the literature, nurses' all scale scores as BAI, FCV-19S, BDI, ASI-3P, ASI-3C, ASI-3S, and ASI-3T were statistically significantly higher than physicians. Hospital workers without health education had higher scores in BAI, FCV-19S, and ASI-3 scales compared with physicians. Although the assistant personnel who have not received health education are not in close contact with patients as much as nurses and physicians, the fact that their scale scores were higher than physicians and lower than nurses make us think that medical knowledge about COVID-19 disease may be a factor as important as a close contact. Moreover, another data in our study showing that the participants who have insufficient knowledge about COVID-19 according to their self-evaluation, regardless of their occupation, had higher scores in the BAI, BDI, FCV-19S, and ASI-3T scales than those with sufficient knowledge suggests that having sufficient knowledge may be protective against the risk of contact. As a matter of fact, in a study conducted on healthcare workers in the literature, it was found that individuals with a higher level of knowledge about COVID-19 had lower Health Anxiety and BDI scale scores, those who had more information about COVID-19 were more conscious to protect themselves, were more defensive against unnecessary worries, they knew more about how the disease is transmitted (Talo Yildirim et al., 2020) and also people with sufficient knowledge about COVID-19 had more positive attitudes (Zhong et al., 2020). In this context, our study and the results of Xia et al.'s (2021) study are compatible with the literature. However, in some studies, it has been stated that the fear of COVID-19 is not related to the level of knowledge (Ali et al., 2020; Fernández et al., 2021); and the fear of disease increases as the amount of information about COVID-19 increases (Caycho-Rodríguez et al., 2021).

Participants who reported that their economic conditions were adversely affected due to the pandemic had higher BAI, BDI, FCV-19S, and ASI-3T scale scores. In the literature, it was indicated that the financial difficulties caused by COVID-19 are one of the causes of psychological stress due to the pandemic (Islam et al., 2020). A study examining the anxiety caused by health, economy, daily routine change, and social isolation in the USA, UK, and Israel concluded that the levels of economic anxiety and health anxiety in all three countries were basically equal and both were higher than the anxiety of routine change and isolation. It was stated that economic anxiety causes serious physical and mental health problems and should be examined. It is thought that people's economic anxieties may have an impact on their mental state (Bareket-Bojmel et al., 2020).

Approximately 93% of the participants in our study reported an increase in the frequency of handwashing. There was an increase in BAI, FCV-19S, ASI-3T, and ASI-3 subscale scores of those who reported an increase in handwashing frequency. It can be said that the increase in handwashing frequency is related to anxiety and the fear of COVID-19. Indeed, although the main measures to be taken during the pandemic are social distance and handwashing (Casella et al., 2020), a study conducted in Australia stated that higher participation in hygiene

behaviors such as handwashing, using hand sanitizer, avoiding social events was associated with higher stress and anxiety (Newby et al., 2020).

In our study, those who think they need psychological support due to the pandemic were one-third of all participants. Those who stated that they needed psychological support had higher BAI, BDI, ASI-3T, and FCV-19S scores. It was mentioned that the teams formed for psychological intervention during the pandemic in China had a positive contribution to healthcare workers and this situation reflected positively in the fight against the pandemic (Kang et al., 2020). It was stated that timely and appropriate mental interventions will increase the mental health of hospital personnel during the COVID-19 pandemic and this is important for the fight against the pandemic (Chung & Yeung, 2020). It can be said that taking into account the requests of healthcare workers for mental support, identifying the factors that cause anxiety and taking precautions may be important in combating the pandemic.

People with high anxiety sensitivity perceive harmless bodily stimuli as “dangerous,” therefore anxiety sensitivity was determined as a predictor of the fear of COVID-19 (Taylor et al., 2007; Waqas et al., 2020). As far as we could detect, analysis of the relationship between anxiety sensitivity and fear of COVID-19 is limited to a total of seven studies (Baiano et al., 2020; Malesza & Kaczmarek, 2021; Manning et al., 2021; Rogers et al., 2021; Sadeghzadeh et al., 2021; Waqas et al., 2020; Xia et al., 2021). Of these, three were performed on university students (Baiano et al., 2020; Sadeghzadeh et al., 2021; Waqas et al., 2020), three on the general population (Malesza & Kaczmarek, 2021; Manning et al., 2021; Rogers et al., 2021), and one on healthcare workers (Xia et al., 2021). Anxiety sensitivity in the physical field was declared as an important predictor of the fear of COVID-19 (Waqas et al., 2020). COVID-19 is a disease with symptoms such as myalgia, cough, fever, and fatigue (Zu et al., 2020). Therefore, it was stated that anxiety sensitivity in the physical area is an important predictor of the fear of COVID-19 (Waqas et al., 2020). Healthcare workers and nonhealthcare workers were compared based on their anxiety sensitivity and the anxiety levels of physicians and nurses were determined to be significantly lower than administrative, logistics, and other personnel (Xia et al., 2021). A study was also conducted on university students in Pakistan, reporting that anxiety sensitivity is an indicator of the fear of COVID-19, and it was stated that the fear of COVID-19 is associated with anxiety sensitivity (Waqas et al., 2020).

In our study, according to the results of the regression analysis performed to determine the factors affecting the fear of COVID-19, predictors of the fear of COVID-19 were determined as BAI, BDI, and ASI-3P subscales. Indeed in the literature, similar to our study, a review by Muller et al. (2021) reported that higher anxiety and depression in FCV-19S were associated with higher fear. Tzur Bitan et al. (2020) stated that fear of COVID-19 is associated with depression and anxiety. A study conducted in Bangladesh reported that participants with depressive symptoms, both in the general population and among healthcare workers, experienced a significant fear of COVID-19 (Sakib et al., 2021). A study conducted in the Malaysian population stated that fear of COVID-19 is associated with symptoms of anxiety, depression, and stress (Kassim et al., 2021). Likewise, a study conducted in our country indicated that participants who reported higher fear of COVID-19 were noted to have higher anxiety and depression (Belen, 2021). However, as mentioned, studies examining the relationship between fear of COVID-19 and anxiety sensitivity are limited in the literature. The relationship between the fear of COVID-19 and the ASI-3 P subscale we reached in our study is the strength of our study. However, further studies are needed on this subject. Nevertheless, the limitations of our study are that our study was limited to a single center and that the plan of working again with the same people in the later stages of the pandemic could not be achieved.

## 5 | CONCLUSION

The data we obtained show that; being a woman, being a nurse, insufficient knowledge of COVID-19, bad economic impact, feeling the need for mental support, and an increase in the frequency of handwashing may be associated with the fear of COVID-19. There is a positive correlation between FCV-19S and BAI, BDI, and ASI-3T and ASI-3

subscales. BAI, BDI, and the ASI-3P subscale are predictors of the fear of COVID-19. We believe that addressing healthcare workers' fears and related factors in the fight against COVID-19 can strengthen the fight against the pandemic.

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## CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

## PEER REVIEW

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## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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