



# Determination of Mental Health Status of Nurses Caring for Patients With COVID-19

COVID-19'lu Hastalara Bakım Veren Hemşirelerin Ruhsal Etkilenme Durumlarının Belirlenmesi

Hanımgül Dokumacı, Olcay Cam

Department of Psychiatric and Mental Health Nursing, Ege University Faculty of Nursing, İzmir, Türkiye

## ABSTRACT

**Aim:** The present study aims to determine the effects of COVID-19 on the psychological well-being of nurses caring for diagnosed or suspected cases of COVID-19.

**Material and Method:** The population of the descriptive study consists of nurses (n: 149) working at the Ege University Hospital COVID-19 Units who voluntarily agreed to participate in the study. Data were collected through Socio-demographic questionnaire form, Fear of Coronavirus Scale, and Brief Symptom Inventory (BSI) from nurses who voluntarily agreed to participate in the study.

**Results:** Nurses caring for patients with COVID-19; Gender, weekly working hours, previous psychiatric diagnosis history, being educated about COVID-19 and needing personal and professional help during the pandemic were found to be statistically significant with the somatization sub-dimension of BSI. It was seen that the nurses who lived with BSI were statistically significant with the depression sub-dimension. The state of being educated about COVID-19 and needing personal and professional help during the pandemic were found to be related to the anxiety and depression sub-dimensions of BSI. Among nurses caring for patients with COVID-19, gender, marital status, number of children, household members, household members over 65 years of age, receiving education about COVID-19, frequency of following the news about COVID-19, and need for personal and professional help during the pandemic were found to be statistically significantly correlated with the Fear of Coronavirus Scale.

**Conclusion:** The study's results exhibit consistency with the literature and demonstrate that nurses are psychologically affected during this pandemic. Repetitive studies are required in larger hospital patient groups to organize necessary interventions with the Consultation-Liaison Psychiatry Nursing.

**Key words:** COVID-19; nursing; pandemic; mental health; mental trauma

## ÖZET

**Amaç:** Çalışmada COVID-19 tanısı alan ya da şüpheli olan vakaların bakımını üstlenen hemşirelerin ruhsal yönden etkilenme durumlarını belirlemek amaçlanmıştır.

**Materyal ve Metot:** Tanımlayıcı tipte olan araştırmanın evreni, Ege Üniversitesi Hastanesi COVID-19 Birimlerinde görev yapan ve çalışmaya gönüllü olarak katılan hemşireler (n: 149) oluşturmaktadır. Araştırmanın yapılması için gönüllü olarak çalışmaya katılmayı kabul eden, hemşirelere Sosyodemografik anket formu, Koronavirüs (COVID-19) Korkusu Ölçeği ve Kısa Semptom Envanteri (KSE) veri toplama araçları olarak kullanılmıştır.

**Bulgular:** Covid-19'lu hastaları bakan hemşirelerin; cinsiyeti, haftalık çalışma saatleri, daha önceden konulmuş psikiyatrik tanı öyküsü, COVID-19 ile ilgili eğitim alma durumu ve pandemi döneminde kişisel ve mesleki yardıma ihtiyaç duyma halleri, KSE'nin somatizasyon alt boyutuyla istatistiksel olarak anlamlı bulunmuştur. Hemşirelerde birlikte yaşadıkları kişiler KSE'nin depresyon alt boyutuyla istatistiksel olarak anlamlı olduğu görülmüştür. COVID-19 ile ilgili eğitim alma durumu ile pandemi döneminde kişisel ve mesleki yardıma ihtiyaç duyma halleri ise KSE'nin anksiyete ve depresyon alt boyutlarıyla ilişkili bulunmuştur. COVID-19'lu hastalara bakan hemşirelerin; cinsiyet, medeni durumu, çocuk sayısı, birlikte yaşadıkları kişiler, birlikte yaşadığı kişilerde 65 yaş üstü birey olması, COVID-19 ile ilgili eğitim alma durumu, COVID-19 ile ilgili haberleri takip etme sıklıkları ve pandemi döneminde kişisel ve mesleki yardıma ihtiyaç duyma hali Koronavirüs Korkusu Ölçeği ile istatistiksel olarak anlamlı düzeyde ilişkili bulunmuştur. Yaş, Kısa Semptom Envanterinin alt boyutları ve Koronavirüs Korkusu Ölçeği ile istatistiksel olarak anlamlı bulunmamıştır.

**Sonuç:** Çalışma sonuçları, genel anlamda literatür ile uyumlu olup, hemşirelerin bu pandemi döneminde psikolojik olarak etkilendiğini göstermektedir. Araştırmanın daha büyük gruplarda ve farklı hastanelerde de tekrarlanması ve sonuçlara göre, Konsültasyon Liyezon Psikiyatrisi Hemşireliği ile birlikte uygun girişimler planlanması önerilir.

**Anahtar kelimeler:** COVID-19; hemşirelik; pandemi süreci; ruh sağlığı; ruhsal travma

**İletişim/Contact:** Hanımgül Dokumacı, Department of Psychiatric and Mental Health Nursing, Ege University Faculty of Nursing, İzmir, Türkiye  
• Tel: 0533 978 02 12 • E-mail: 1425hanim@gmail.com • Geliş/Received: 13.05.2022 • Kabul/Accepted: 05.07.2023

**ORCID:** Hanımgül Dokumacı, 0000-0002-0596-2263 • Olcay Cam, 0000-0002-6115-7306

## Introduction

The COVID-19 pandemic, with the first cases emerging on December 1, 2019 in Wuhan, China, was reported to be the first “Wuhan pneumonia”<sup>1</sup>. On January 12, 2020, the World Health Organization described the virus as a new Coronavirus (2019-nCoV) named “SARS-CoV-2” on February 11, 2020<sup>2-4</sup>. COVID-19, or 2019-nCoV, is a new type of contagious viral disease caused by severe acute respiratory syndrome (SARS) coronavirus-2 (SARS CoV-2)<sup>5-7</sup>. The pandemic, starting in the Asian countries followed by China, has affected many countries and spread around the World<sup>8</sup>. COVID-19, which emerged in Wuhan, China at the end of 2019, affected 13 countries by January 24, 2020, and 118.000 people in 114 countries by March 11, 2020, becoming an epidemic. World Health Organization declared the COVID-19 epidemic on January 30, 2020, as “a public health emergency of international concern (PHEIC)”, and with the number of cases doubling by 13 and countries affected by the virus tripling within 15 days, the World Health Organization declared it as a “pandemic” on March 11, 2020<sup>3,9,10</sup>.

In Türkiye, the first COVID-19 case was detected on March 11, 2020<sup>11-13</sup>, while the first COVID-19-related death occurred on March 17<sup>5</sup>. Initially, the strategies of neighboring countries were monitored to delay the entry of the infection into Türkiye and measures were taken accordingly<sup>14</sup>. In January, the Science Committee and COVID-19 Guidelines were established to fight the COVID-19 outbreak<sup>11</sup>.

During a pandemic, healthcare workers are among the occupational group with the highest risk<sup>15</sup>. Nurses, who constitute the majority of healthcare workers, are most at risk of COVID-19 infection as they provide one-on-one nursing care to patients diagnosed with COVID-19 or suspected cases at a distance of less than one meter<sup>13</sup>. The International Union of Nurses (ICN) reported that thousands of nurses were infected with the virus, and many died due to COVID-19<sup>16</sup>. According to the data obtained from the National Nursing Association, a member of the International Union of Nurses (ICN), more than 90.000 healthcare workers worldwide have been infected with the virus and, at least 260 nurses died due to COVID-19<sup>17</sup>.

Infectious diseases have a deep and wide range of psychosocial effects at the individual, social, and international level<sup>18</sup>. Pandemics create fear and anxiety both

in society and among healthcare professionals due to the infectious nature of the disease and its danger, invisibility, and gradually narrowing areas of influence<sup>19</sup>. Healthcare workers are exposed to social shifts and psychological stress at a higher level than the general population<sup>20</sup>. In China, a study conducted on 1257 healthcare workers during the COVID-19 pandemic reported distress among more than 70% of the participants, depression among 50%, and insomnia at 34%<sup>21</sup>. In Singapore, the study of Tan et al.<sup>22</sup> reported higher levels of psychological distress among non-physician healthcare workers during the COVID-19 pandemic. A study conducted on 325 nurses in the Philippines reported that 123 nurses (37.8%) had dysfunctional levels of anxiety<sup>23</sup>. In Türkiye, a study conducted by Hacimusalar et al.<sup>24</sup> showed that healthcare workers’ hopelessness and anxiety levels were higher than those who were not healthcare workers while reporting higher hopelessness and anxiety levels among nurses compared to doctors and other healthcare professionals. On the other hand, in Türkiye, the study of Kilincel et al.<sup>25</sup> found that 48.5% of healthcare workers experienced increased health-related anxiety and 54.3% experienced decreased desire to work.

## Material and Method

### Study Type

The study was designed as a cross-sectional, descriptive study.

### Ethical Permissions

Ethical approval was obtained from T. C. Ege University Medical Research Ethics Committee (TAEK) (number E-99166796-050.06.04-43828) and the Ministry of Health. In addition, separate institutional permissions were obtained from the heads of departments of these units to carry out the study in the COVID-19 Units of the Ege University Medical Faculty Hospital. Permission was obtained from Prof. Dr. Nesrin Hisli Sahin, developer of the scale, for the “Brief Symptom Inventory (BSI)” scale to be used in the study via e-mail. For the “Fear of Coronavirus (COVID-19) Scale”, permission was obtained from Ozan Korkmaz, one of the colleagues of Bakioglu who translated the scale into Turkish, via e-mail.

### Research Questions

How are the mental effects of nurses who care for patients with COVID-19?

Nurses who care for patients with COVID-19 have an effect on their psychological impact.

What are the factors?

### *Research Hypothesis*

Hypothesis of the Study: Nurses who care for patients with COVID-19 are affected.

### *Sampling and Sampling Method*

The population of this study consists of nurses (n: 223) working in the COVID-19 units of Ege University Medical Faculty Hospital, with the sample consisting of 149 nurses, 118 (79.2) women and 31 (20.8) men, who agreed to participate in the study voluntarily. In this study, 69% of the population were reached.

### *Data Collection Tools*

Research data were collected using the following tools:

- 1) Socio-demographic Questionnaire prepared by the researchers
- 2) Brief Symptom Inventory (BSI)
- 3) Fear of Coronavirus (COVID-19) Scale

### *Socio-demographic Questionnaire Form*

The researchers prepared the form to investigate participants' sosyodemographic characteristics. These are; age, gender, marital status, number of children, whom they live with, number of years in the profession, work schedule, weekly work hours, past psychiatric history, presence of chronic disease posing a risk in case of infection with COVID-19, presence of chronic disease in household members posing a risk in case of infection with COVID-19, presence of a household member over 65 years of age, whether they care for patients diagnosed with COVID-19, training by the relevant institution about COVID-19, the frequency of following the news about COVID-19, need any professional help, and whether they knew where they could get this help.

### *Brief Symptom Inventory (BSI)*

Brief Symptom Inventory (BSI) was developed by Derogatis in 1992. The BSI is the short form of the 90-item Symptom Checklist known as the SCL-90, which can be completed in approximately 5–10 minutes. Brief Symptom Inventory is a Likert-type scale consisting of

53 items in which items are scored from 0 to 4, corresponding to the statements "Not at all", "Somewhat", "Moderately", "Quite a Lot", and "Extremely". The scale consists of depression (14 questions), anxiety (17 questions), negative self-perception (9 questions), somatization (7 questions), hostility (4 questions) subscales, and two questions (32nd and 15th) as additional items. Each subscale was studied separately in the reliability study conducted by Şahin et al.<sup>26</sup> in 2002 where the Cronbach's Alpha coefficient was calculated as 0.88 for depression, 0.84 for anxiety, 0.74 for negative self-perception, 0.70 for somatization, and 0.73 for hostility. The reliability of the scale was calculated as a Cronbach's Alpha coefficient of 0.94 for the sum of all items. In our study, the Cronbach Alpha coefficient, the reliability of which was obtained from the sum of all items, was 0.96.

### *Fear of Coronavirus (COVID-19) Scale*

The scale was developed by Ahorsu et al.<sup>27</sup> and translated into Turkish by Bakioglu et al.<sup>28</sup>. The Turkish reliability and validity study of the scale was carried out by Ladikli et al.<sup>29</sup>. The Cronbach's alpha internal consistency coefficient was found as 0.86 for the reliability of the scale<sup>29</sup>. The scale consists of one subscale and seven items, with no reverse items, in which items are scored from 0 to 4, corresponding to the statements "strongly disagree", "disagree", "neither agree nor disagree", "agree" and "strongly agree", with the total scale score indicating the level of fear of Coronavirus (COVID-19) experienced by the individual. The scores that can be obtained from the scale range between 7 and 35, with higher scores indicating a high level of fear of Coronavirus<sup>28</sup>. In our study, the reliability of the scale's Cronbach's alpha coefficient was 0.88.

### *Research Process*

Research data were collected between 01.04.2021 and 15.05.2021 in the burn unit, emergency service, infectious diseases service, chest diseases service, and dialysis unit of Ege University Medical Faculty Hospital where COVID-19 patients received care. The COVID-19 units were visited during working hours to meet the nurses working therein. Detailed information was conveyed about the study. Nurses who agreed to participate in the study were asked to complete the Socio-demographic questionnaire form, Brief Symptom Inventory (BSI) and Fear of Coronavirus (COVID-19) Scale.

**Table 1.** Distribution of the participants by socio-demographic characteristics

Socio-demographic features	n	%
<b>Age group</b>		
23–30 years old	101	67.8
31–40 years old	35	23.5
41–50 years old	13	8.7
<b>Gender</b>		
Woman	118	79.2
Man	31	20.8
<b>Marital status</b>		
Married	51	34.2
Single	98	65.8
<b>How many children do you have?</b>		
0	115	77.2
1	17	11.4
2 + 3	17	11.4
<b>Whom do you live with in your house?</b>		
Family	77	51.7
Friends	21	14.1
Alone	51	34.2
<b>What year are you in the profession?</b>		
1–5 years	83	55.7
6–10 years	36	24.2
11–15 years	18	12.0
16- >16 years	12	8.1
<b>How long do you work a day?</b>		
8-hour shift	9	6.0
12-hour shift	15	10.1
16-hour shift	48	32.2
8–16 hour shift	77	51.7
<b>How many hours a week do you work?</b>		
Less than 40 hours	6	4.0
40–48 moments	126	84.6
More than 48 hours	17	11.4
<b>Do you have any previous diagnosed history of psychiatric disorders?</b>		
Yes	9	6.0
No	140	94.0
<b>Does anyone have a chronic disease that can be considered risky in case of covid-19 infection?</b>		
Yes	16	10.7
No	133	89.3
<b>Does anyone you live with have a chronic disease that can be considered risky in case of covid-19 infection?</b>		
Yes	36	24.2
No	113	75.8
<b>Are there any individuals over 65 whom you live with?</b>		
Yes	17	11.4
No	132	88.6
<b>Have you been trained by your agency on how to protect yourself from COVID-19 infection?</b>		
Yes	122	81.9
No	27	18.1
<b>How often do you keep track of news about COVID-19?</b>		
Every day	77	51.7
Weekly	38	25.5
Rarely	24	16.1
Never	10	6.7
<b>Do you need help for your personal and professional needs during the pandemic period?</b>		
Yes	78	52.3
No	71	47.7
<b>From whom they get help when they need?</b>		
– Family	12	8.1
– Friends	25	16.8
– Family and Friends	13	8.7
– Needs help but cannot ask	19	12.8
– Infection committee	2	1.3
– Psychologist	3	2.0
– Not needed	75	50.3
Total	149	100.0

n=149

### Data Analysis

Obtained data were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows (SPSS Inc., Chicago, IL) program version 25.0. Data were analyzed using descriptive statistics (number, percentage, mean, standard deviation). The distribution of the groups was assessed by the Kolmogorov-Smirnov test. The Mann-Whitney U test and ANOVA test were used to compare data, and  $p < 0.05$  was considered statistically significant.

### Results

A total of 149 nurses working in COVID-19 units were recruited for the study. Evaluation of the socio-demographic data in Table 1 shows that 67.8% of the participants were between the ages of 23–30 and 79.2% were women. According to Table 1, 55.7% of the participants have been in the profession for 1–5 years, 51.7% worked in 8–16 hour shifts and 84.6% worked 40–48 hours a week. While 75.8% of the participants reported no household member with a history of chronic disease that could pose a risk in case of infection with COVID-19, 88.6% reported no household member over 65 years of age. According to Table 1, 81.9% of the participants received training on protection against COVID-19 by their institution. It was found that 51.7% of the participants follow the news about COVID-19 daily, and 52.3% need help for their personal and professional needs during the COVID-19 pandemic.

Table 2a and Table 2b shows a statistically significant difference between gender and somatization ( $p=0.001$ ) and fear of coronavirus ( $p=0.002$ ). The level of somatization ( $X=0.69$ ) and fear of coronavirus ( $X=2.32$ ) were higher among female nurses than the level of somatization ( $X=0.44$ ) and fear of coronavirus ( $X=1.80$ ) among male nurses. It was determined that gender differences affected the extent of somatization and the level of fear of coronavirus. A statistically significant difference was observed between the nurses' marital status ( $p=0.008$ ), number of children ( $p=0.012$ ) and fear of coronavirus. Married nurses had higher fear of coronavirus ( $X=2.48$ ), whereas single nurses had less fear of coronavirus ( $X=2.07$ ). While the fear of coronavirus ( $X=2.79$ ) was higher in nurses with two or more children, those with a single child exhibited less fear of coronavirus ( $X=2.14$ ). Whether the nurses lived with their families, friends, or alone caused a statistically significant difference in their

levels of depression ( $p=0.046$ ) and fear of coronavirus ( $p=0.031$ ). A statistically significant difference was detected between the number of years in the profession and negative self-perception among the nurses ( $p=0.037$ ). A statistically significant difference was observed between weekly working hours ( $p=0.014$ ), psychiatric history ( $p=0.011$ ), and somatization. The nurses with a past psychiatric history had higher somatization ( $X=1.14$ ), while those with a past psychiatric history had lower somatization ( $X=0.62$ ). A statistically significant difference was found between the nurses living with individuals over 65 years of age ( $p=0.010$ ) and the fear of coronavirus. Higher fear of coronavirus ( $X=2.76$ ) was found among the nurses who lived with individuals over 65 years of age than those who did not live with any individuals over 65 years of age ( $X=2.15$ ).

A statistically significant difference was observed between a previous training on COVID-19 provided by the institution they work, and the subscales of anxiety ( $p=0.011$ ), depression ( $p=0.004$ ), negative self-perception ( $p=0.006$ ), somatization ( $p=0.022$ ) and fear of coronavirus ( $p=0.026$ ), revealing that previous training on COVID-19 affected anxiety, depression, negative self-perception, somatization, and fear of coronavirus. It is found that the fear of coronavirus was higher ( $X=2.29$ ) among nurses who received training on COVID-19 from the institution they worked in. In contrast, the fear of coronavirus was lower among nurses who did not receive any training ( $X=1.88$ ). Nurses who did not receive training on COVID-19 from the institution they worked in had higher levels of anxiety ( $X=0.96$ ), depression ( $X=1.28$ ), negative self-perception ( $X=1.08$ ), and somatization ( $X=0.86$ ). In comparison, the levels of anxiety ( $X=0.61$ ), depression ( $X=0.79$ ), negative self-perception ( $X=0.59$ ), and somatization ( $X=0.60$ ) were lower among nurses who received training.

It was determined that the frequency of nurses following the news about COVID-19 affected the scores obtained from the subscales of depression ( $p=0.001$ ), negative self-perception ( $p=0.002$ ), and fear of coronavirus ( $p=0.001$ ), with a statistically significant difference between them. The levels of depression ( $X=1.55$ ) and negative self-perception ( $X=1.20$ ) were higher among the nurses who never followed the news about COVID-19 compared to the levels of depression ( $X=0.73$ ) and negative self-perception ( $X=0.52$ ) of nurses who followed the news every day. Evaluation of the frequency of following the news about COVID-19

**Table 2a.** Distribution of the correlations between socio-demographic characteristics, BSI subscales, and mean scores of the fear of coronavirus (COVID-19) scale

Socio-demographic features	The extent of anxiety X ± SD	The extent of depression X ± SD	Negative self size X ± SD	The size of the somatization X ± SD	Hostility size X ± SD	Coronavirus fear scale X ± SD
<b>Age</b>	P: 0.729	P: 0.237	P: 0.158	P: 0.790	P: 0.566	P: 0.093
23–30 years old	0.70±0.61	0.94±0.69	0.74±0.66	0.65±0.55	0.94±0.62	2.11±0.84
31–40 years old	0.62±0.56	0.75±0.60	0.58±0.52	0.62±0.53	0.96±0.48	2.45±0.94
41–50 years old	0.60±0.47	0.75±0.56	0.46±0.43	0.74±0.57	0.77±0.61	2.40±0.73
<b>Gender</b>	P: 0.08	P: 0.71	P: 0.488	<b>P: 0.001</b>	P: 0.387	P: 0.002
Woman	0.69±0.56	0.92±0.66	0.70±0.64	<b>0.70±0.54</b>	0.93±0.55	<b>2.32±0.86</b>
Man	0.69±0.70	0.71±0.68	0.58±0.51	<b>0.44±0.56</b>	0.92±0.75	1.80±0.76
<b>Marital status</b>	P: 0.544	P: 0.055	P: 0.589	P: 0.625	P: 0.646	P: 0.008
Married	0.64±0.59	0.75±0.65	0.64±0.60	0.62±0.55	0.89±0.55	2.48±0.92
Single	0.69±0.59	0.95±0.67	0.69±0.63	0.66±0.56	0.95±0.61	2.07±0.80
<b>Number of children</b>	P: 0.291	P: 0.302	P: 0.619	P: 0.307	P: 0.229	P: 0.012
0	0.69±0.60	0.91±0.67	0.69±0.64	0.66±0.55	0.93±0.61	2.15±0.85
1	0.48±0.38	0.66±0.60	0.54±0.52	0.49±0.44	0.75±0.43	2.14±0.78
2+3	0.74±0.68	0.88±0.68	0.69±0.59	0.76±0.64	1.09±0.59	2.79±0.87
<b>Cohabited person</b>	P: 0.355	<b>P: 0.046</b>	P: 0.371	P: 0.675	P: 0.380	P: 0.031
Family	0.63±0.58	<b>0.77±0.64</b>	0.61±0.57	0.65±0.56	0.88±0.55	2.39±0.90
Friends	0.84±0.70	<b>1.14±0.78</b>	0.81±0.79	0.74±0.60	1.08±0.75	1.94±0.71
Alone	0.67±0.54	<b>0.95±0.62</b>	0.72±0.62	0.61±0.52	0.94±0.59	2.06±0.82
<b>The year in the profession?</b>	P: 0.127	P: 0.066	<b>P: 0.037</b>	P: 0.295	P: 0.182	P: 0.204
1–5 years	0.70±0.64	0.97±0.73	<b>0.76±0.68</b>	0.65±0.58	0.94±0.65	2.14±0.85
6–10 years	0.77±0.58	0.91±0.63	<b>0.73±0.59</b>	0.74±0.57	1.06±0.47	2.17±0.92
11–15 years	0.39±0.32	0.53±0.36	<b>0.35±0.38</b>	0.43±0.31	0.69±0.35	2.40±0.86
16- >16 years	0.59±0.46	0.72±0.49	<b>0.46±0.37</b>	0.66±0.57	0.84±0.66	2.61±0.72

**Table 2b.** Distribution of the correlations between socio-demographic characteristics, BSI subscales, and mean scores of the fear of coronavirus (COVID-19) scale

Socio-demographic Features	The extent of anxiety X ± SD	The extent of depression X ± SD	Negative Self size X ± SD	The size of the somatization X ± SD	Hostility size X ± SD	Coronavirus Fear Scale X ± SD
<b>Weekly working hours</b>	P: 0.303	P: 0.644	P: 0.647	P: 0.014	P: 0.303	P: 0.166
Less than 40 hours	0.92±0.53	0.94±0.68	0.81±0.56	1.19±0.84	1.27±0.76	2.80±0.92
40–48 hour	0.64±0.53	0.86±0.62	0.66±0.60	0.60±0.49	0.91±0.58	2.21±0.82
More than 48 hours	0.80±0.92	1.01±0.94	0.77±0.81	0.78±0.73	0.92±0.56	2.08±1.07
<b>Psychiatric diagnosis</b>	P: 0.150	P: 0.069	P: 0.281	P: 0.011	P: 0.218	P: 0.619
Yes	0.84±0.49	1.18±0.50	0.81±0.50	1.14±0.64	1.19±0.70	2.34±0.90
No	0.66±0.59	0.86±0.67	0.67±0.63	0.62±0.53	0.91±0.58	2.21±0.86
<b>With people over 65</b>	P: 0.887	P: 0.926	P: 0.856	P: 0.654	P: 0.371	P: 0.010
Yes	0.66±0.58	0.89±0.67	0.64±0.60	0.70±0.57	1.02±0.61	2.76±0.80
No	0.67±0.59	0.88±0.67	0.68±0.62	0.64±0.55	0.91±0.59	2.15±0.85
<b>Training status</b>	P: 0.011	P: 0.004	P: 0.006	P: 0.022	P: 0.094	P: 0.026
Yes	0.61±0.55	0.79±0.59	0.59±0.53	0.60±0.54	0.88±0.56	2.29±0.87
No	0.96±0.68	1.28±0.82	1.08±0.84	0.86±0.58	1.13±0.67	1.88±0.77
<b>Frequency of following news</b>	P: 0.065	P: 0.001	P: 0.002	P: 0.741	P: 0.517	P: 0.001
Every day	0.62±0.51	0.74±0.53	0.52±0.48	0.65±0.54	0.88±0.54	2.47±0.80
Weekly	0.65±0.56	1.01±0.70	0.84±0.63	0.66±0.58	1.00±0.62	1.89±0.75
Rarely	0.71±0.67	0.87±0.77	0.72±0.73	0.56±0.51	0.89±0.66	1.92±0.87
Never	1.14±0.88	1.55±0.78	1.21±0.90	0.78±0.66	1.13±0.22	2.19±1.16
<b>Needing help</b>	P: 0.002	P: 0.000	P: 0.001	P: 0.020	P: 0.007	P: 0.002
Yes	0.79±0.60	1.08±0.66	0.84±0.66	0.74±0.57	1.03±0.59	2.42±0.83
No	0.54±0.55	0.66±0.60	0.50±0.52	0.55±0.51	0.81±0.57	2.00±0.85
<b>Source of Help</b>	P: 0.188	P: 0.000	P: 0.000	P: 0.180	P: 0.012	P: 0.146
– Family	0.70±0.45	0.85±0.52	0.69±0.57	0.66±0.30	0.90±0.46	2.46±0.85
– Friends	0.69±0.60	0.92±0.57	0.60±0.50	0.64±0.51	0.89±0.56	2.54±0.71
– Family and Friends	0.82±0.44	1.21±0.49	0.92±0.54	0.84±0.47	1.10±0.34	2.26±0.60
– Infection committee	0.41±0.52	0.53±0.50	0.36±0.55	0.74±1018	0.76±0.97	2.76±1.09
– Psychologist	1.08±0.58	1.58±0.87	1.17±0.96	1.30±0.61	1.95±0.50	2.71±0.89
– Needs help but cannot ask	0.93±0.74	1.40±0.81	1.20±0.81	0.78±0.73	1.17±0.63	2.11±1.04
– Not needed	0.57±0.57	0.68±0.60	0.53±0.54	0.56±0.52	0.82±0.59	2.06±0.87

n=149.

showed that the nurses who followed the news daily had a higher fear of coronavirus ( $X=2.47$ ) than those who followed the news once a week ( $X=1.89$ ).

A statistically significant difference was observed between whether the nurses needed personal or professional help during the COVID-19 pandemic and the subscales of anxiety ( $p=0.002$ ), depression ( $p=0.000$ ), negative self-perception ( $p=0.001$ ), somatization ( $p=0.020$ ), hostility ( $p=0.007$ ), and fear of coronavirus ( $p=0.002$ ), revealing that nurses' need for help was associated with anxiety, depression, negative self-perception, somatization, hostility, and fear of coronavirus. Among the nurses involved in the care of patients with COVID-19, the levels of anxiety ( $X=0.79$ ), depression ( $X=1.08$ ), negative self-perception ( $X=0.84$ ), somatization ( $X=0.74$ ), hostility ( $X=1.03$ ), and fear of coronavirus ( $X=2.42$ ) were found to be higher than nurses who did not need help.

Comparison of the correlation results of the Fear of Coronavirus (COVID-19) Scale with the subscales of the Brief Symptom Inventory revealed a statistically significant positive correlation between fear of coronavirus and anxiety subscale ( $r=0.188$ ,  $p<0.05$ ). On the other hand, no statistically significant positive correlation was found between the subscales of depression ( $r=0.092$ ,  $p>0.05$ ), somatization ( $r=0.153$ ,  $p>0.05$ ), negative self-perception ( $r=0.063$ ,  $p>0.05$ ), and hostility ( $r=0.087$ ,  $p>0.05$ ) in fear of coronavirus scale (Table 3).

Evaluation of the correlation results between the subscales of the Brief Symptom Inventory Scale revealed a statistically significant positive correlation between anxiety subscale and depression ( $r=0.816$ ,  $p<0.05$ ), somatization ( $r=0.718$ ,  $p<0.05$ ), negative self-perception ( $r=0.777$ ,  $p<0.05$ ), and hostility subscales ( $r=0.777$ ,  $p<0.05$ ). A statistically significant positive difference was found between the subscale of depression and somatization ( $r=0.683$ ,  $p<0.05$ ), negative self-perception ( $r=0.843$ ,  $p<0.05$ ), and hostility subscales ( $r=0.675$ ,  $p<0.05$ ). A statistically significant and positive correlation was found between the subscale of somatization and negative self-perception ( $r=0.571$ ,  $p<0.05$ ) and hostility subscales ( $r=0.641$ ,  $p<0.05$ ). A statistically significant positive correlation was found between the negative self-perception and hostility subscales ( $r=0.664$ ,  $p<0.05$ ) (Table 3).

## Discussion

Healthcare workers are among the occupational groups with the highest risk during the COVID-19 pandemic which threatens everyone worldwide. While preventing the spread of infection and treating patients, it is also vital for healthcare professionals to protect their physical and psychological well-being<sup>30</sup>.

Therefore, this study aimed to determine the effects of COVID-19 on the mental health of nurses caring for diagnosed or suspected cases of COVID-19. Thus, it aims to take precautions to protect nurses' mental

**Table 3.** Results of correlation analysis between brief symptom inventory and fear of coronavirus (COVID-19) scores in nurses caring for COVID-19 patients

		Covid score	Anxiety score	Depression score	Somatization score	Negative self score	Hostility score
Covid score	Pearson correlation	1	0.188*	0.092	0.153	0.063	0.087
	Sig. (2-tailed)	149	0.019	0.258	0.059	0.435	0.284
	n		149	149	149	149	149
Anxiety score	Pearson correlation		1	0.816**	0.718**	0.777**	0.710**
	Sig. (2-tailed)		149	0.000	0.000	0.000	0.000
	n		149	149	149	149	149
Depression score	Pearson correlation			1	0.683**	0.843**	0.675**
	Sig. (2-tailed)			149	0.000	0.000	0.000
	n			149	149	149	149
Somatization score	Pearson correlation				1	0.571**	0.641**
	Sig. (2-tailed)				149	0.000	0.000
	n				149	149	149
Negative self score	Pearson correlation					1	0.664**
	Sig. (2-tailed)					149	0.000
	n					149	149
Hostility score	Pearson correlation						1
	Sig. (2-tailed)						149
	n						149

\*:  $p<0.05$

\*\*: $p<0.01$

n=149.

health, apply necessary therapeutic strategies, and provide guidance for possible similar situations in the future.

A total of 149 nurses voluntarily participated in the study. Most participating nurses were women, more than half were in the 23–30 age group and single; most did not live with their families. In their study, Leodoro et al.<sup>23</sup> also found that 74.8% of the nurses were women and 66.8% were single. In the study of Sert et al.<sup>31</sup>, 70.3% of the nurses were men, 64.5% were married, 59.4% had children, and 73.2% lived with their families. In the study of Karadem<sup>32</sup>, 54.8% of the nurses were women, 60.7% were married, and 55.4% had children. Evaluation of these results demonstrates that most health workers consist of women, which is in parallel with the findings of our study. In the present study, most participants were single and did not have children, which is not in line with the findings of Sert et al.<sup>31</sup> and Karadem<sup>32</sup>. This difference may be because most participants were younger in our study.

In this study, which was conducted to assess the mental well-being of nurses caring for COVID-19 patients, a statistically significant difference was found between gender and fear of COVID-19, and the fear of coronavirus among female nurses was higher than among male nurses. The study of Karadem<sup>32</sup> determined a statistically significant difference between fear of COVID-19 and gender, reporting higher levels of fear of COVID-19 among women compared to men, which was consistent with the results of our study. The fact that women make up most of the nursing field and experience motherhood and maternal instincts may result in higher levels of fear of COVID-19 among female nurses.

In this study about marital status, the fear of Coronavirus was higher in married people. And there was a statistically significant difference between the number of children and their fear of COVID-19; the mean fear of COVID-19 score was higher among nurses with two or more children. In other words, the fear of coronavirus increased as the number of children increased in our study. However, the study of Karadem<sup>32</sup> reported no statistically significant difference between marital status and having a child and fear of COVID-19, which is not in compliance with the results of our study.

According to the study conducted by Karadem<sup>32</sup> on healthcare professionals, 452 participants reported not

having a past psychiatric history, while 74 reported a past psychiatric history. Among those with a past psychiatric history, the mean scores of anxiety, depression, and fear of COVID-19 were higher. At the same time, a statistically significant difference was observed between anxiety, depression, and fear of COVID-19. Our study found that 94% of the participants did not have a past psychiatric history, while 6% had a previous psychiatric history. The results of our study revealed a statistically significant difference between prior psychiatric diagnosis and somatization, while there was no statistically significant difference between depression and fear of COVID-19. Although most of our study and Karadem's participants did not have a previously diagnosed psychiatric disorder, they exhibit differences based on depression and fear of COVID-19. In addition, the study conducted by Yas<sup>30</sup> on hospital workers reported that depression was statistically significantly higher in those with previously known psychiatric disorders. Thus, our study differs from the study conducted by Yas<sup>30</sup> based on a previous history of psychiatric diagnosis.

The study of Hacimusalar et al.<sup>24</sup> reported significantly higher rates of anxiety (92.2%) among those living together with high-risk individuals than those who do not (87.9%). The study conducted by Yas<sup>30</sup> reported that 45.1% of the participants lived together with individuals over 65 years of age or with high-risk diseases, while 52.8% of the participants with high levels of depression reported living together with individuals over 65 years of age or with high-risk diseases, with a statistically significant difference. On the other hand, 53.8% of the participants with high anxiety levels reported living together with individuals over 65 years of age or with a high-risk disease, with a statistically significant difference. In our study, 11.4% of the participants reported living with individuals over 65 years of age and 24.2% reported living with individuals with high-risk chronic diseases. In our study, no statistically significant difference was found between the depression and anxiety scores of the nurses living with individuals over 65 years of age. Again, in our study, no statistically significant difference was found between depression and anxiety in nurses living with individuals with high-risk chronic diseases. This may be because we had fewer participants with household members over 65 years of age or with high-risk chronic diseases. While the study of Karadem<sup>32</sup> reported no statistically significant difference between the levels of depression ( $p=0.056$ ) and anxiety ( $p=0.086$ ) among the participants with



household members over 65 years of age, the fear of COVID-19 ( $p=0.011$ ) was statistically significant. Our study observed a statistically significant difference in the fear of COVID-19 scores of nurses with household members over 65 years of age. In our study, the scores of healthcare with household members over 65 years of age were not consistent with the study of Yas<sup>30</sup> and Hacimusalar et al.<sup>24</sup> while exhibiting consistency with the study of Karadem<sup>32</sup>.

In our study, 81.9% of the nurses reported receiving training from the institution on protection against COVID-19, while 18.1% did not receive training. In our study, the anxiety, depression, negative self-perception, and somatization scores of the untrained nurses were higher than the trained ones. In contrast, the trained nurses had higher levels of fear of COVID-19. The study conducted by Karadem<sup>32</sup> showed that 53 participants reported having sufficient knowledge of COVID-19. At the same time, 474 stated that their knowledge was insufficient, in which a statistically significant difference was observed in the mean scores of anxiety ( $p=0.001$ ), depression ( $p=0.002$ ), and fear of COVID-19 ( $p=0.006$ ) among the nurses who reported having sufficient knowledge and those who reported not having sufficient knowledge. Although training is thought to be a factor in alleviating psychological effects, our study and Karadem's<sup>32</sup> study similarly show that sometimes further knowledge of a subject may lead to negative psychological outcomes.

In the study of Karadem<sup>32</sup> on healthcare workers, 12 participants reported not following the news about the epidemic, while 515 did. However, there was no statistically significant difference between following the news about the pandemic and depression, anxiety and fear of COVID-19. In our study, 10 participants reported not following the news about the pandemic, while 139 reported following the news. In both studies, most participants followed the news about the pandemic. However, in our study, those who reported not following any news had higher depression and negative self-perception scores.

In contrast, those who reported following the news every day had higher fear of COVID-19 scores. In line with these results, high depression and negative self-perception scores among those who did not watch any news can be interpreted as these individuals trying to stay away from the facts by not watching the news in the sense of self-protection. In this regard, the study conducted by Karadem and ours differ from one

another in terms of the psychological effects of this factor on the participants. Display of the increasing number of cases in the media, the uncertainty of how long the pandemic will last, the news about the death rates of frontline healthcare workers, and the attitudes of the general population towards healthcare workers may aggravate the fear of COVID-19 in nurses who follow the news every day<sup>33</sup>. The media's misrepresentation of the situation has caused the general population to easily marginalize healthcare workers returning from work, especially since they think that healthcare personnel are particularly susceptible to transmitting the virus on the way home<sup>34</sup>. As a result, some members of the society have stigmatized and excluded nurses, considering their potential to transmit the virus<sup>35</sup>. This has caused individuals to distance themselves from their colleagues and neighbors in their immediate surroundings<sup>36</sup>. Thus, the nurses feel lonely<sup>35</sup>. This situation can cause nurses to get depressed easily and create a negative self-image.

The study of Kackin et al.<sup>35</sup> determined that the nurses caring for COVID-19 patients in Türkiye were adversely affected by the pandemic both psychologically and socially, revealing that they needed psychosocial support and resource management although they used short-term coping strategies. They also faced stigmatizing attitudes and burnout and were at high risk for secondary traumas, as they witnessed illness and death. In our study, 52.3% of the participants needed personal and professional help during the pandemic. In our study, the nurses who reported needing help had significantly higher scores of anxiety, depression, negative self-perception, somatization, hostility, and fear of COVID-19 than those who did not need help. In the study of Karadem<sup>32</sup>, a statistically significant difference between the scores of anxiety, depression, and fear of COVID-19 were of the nurses who did or did not need help. In the study of Yas<sup>30</sup>, 17 (1.5%) participants received psychological support during the pandemic. Of the participants, 316 (28%) reported needing psychological help while 796 (70.5%) did not need help. 56.3% of those with depression reported needing help during the pandemic, which was statistically significant. 56% of those with anxiety reported needing psychological help during the pandemic, which was statistically significant. 57.6% of those with stress reported needing psychological help during the pandemic, which was statistically significant. Nurses who need personal and professional help are expected to experience more psychological problems, as shown by

the similar results in our study and those of Karadem<sup>32</sup> and Yas<sup>30</sup>.

The results of our study are generally compatible with the literature and show that nurses are psychologically affected during the pandemic. Negative psychological outcomes among nurses may affect their personal lives and their role as caregivers, resulting in professional burnout shortly, which may further lead to resignation. The following recommendations should be taken into consideration to reduce the psychological effects and fear of COVID-19 in nurses;

- The psychological effects of the COVID-19 pandemic should be investigated in nurses working in other hospitals and clinics,
- A safe work environment should be provided by improving the working conditions of nurses,
- Regular training should be provided to nurses about COVID-19,
- Reliable sources and news programs that provide scientific data should be followed to access accurate information about COVID-19 in Türkiye and the World,
- Psychological counselling and support should be provided to nurses working in COVID-19 units, as the protection of the psychological well-being and mental health of nurses during the pandemic bears importance for the functioning of healthcare services. The hospital management and health managers should handle this issue carefully, and the necessary psychological support should be provided free of charge to minimize the possible negative effects. It is recommended to assign Clinical Ladder Program (CLP) nurses to these clinics and provide supervision in line with the needs of nurses who need support.

### *Statement of Ethics*

Ethical approval was obtained from T. C. Ege University Medical Research Ethics Committee (TAEK) (number E-99166796-050.06.04-43828) and the Ministry of Health.

### *Conflict of Interest Statement*

All the authors declare no conflict of interest.

### *Acknowledgment*

This study was taken from the master thesis study approved by Ege University Institute of Health Sciences, Department of Mental Health and Diseases Nursing 16.07.2021.

### **References**

1. Park SC, Park YC. Mental health care measures in response to the 2019 novel coronavirus outbreak in Korea. *Psychiatry Investig.* 2020;17(2):85.
2. Aylaz R, Yıldız E. Yeni koronavirus hastalığının toplum üzerine etkileri ve hemşirelik yaklaşımları. Bölüm: Uyumlu AB. *Koronavirüslerin Yapısı ve Özellikleri.* Malatya: İnönü Üniversitesi Yayınevi; 2020. ss. 1–13.
3. Kavas B, Develi A. The effect of COVID-19 Pandemia on Women's healthcare employees in the context of problems. In: *Working Life. Int Anatolian Soc Sci J.* 2020;4(2):84–112.
4. Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, et al. Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. *J Nurs Manag.* 2020;28(5):1002–9.
5. Demirağ H, Hintistan S. Clinical Management and Nursing of COVID-19. *Gumushane Univ J Health Sci.* 2020;9(2):222–31.
6. Kliger AS, Silberzweig J. Mitigating risk of COVID-19 in dialysis facilities. *Clin J Am Soc Nephrol.* 2020;15(5):707–9.
7. Ünüvar A. (2020). COVID-19 ve Koagülopati. *İstanbul Üniversitesi Sağlık Bilimleri Enstitüsü Sağlık Bilimlerinde İleri Araştırmalar Derg.* 2020;3(EK-1).
8. Leblebicioğlu H, Aktaş NF. Fighting with the Covid-19 Outbreak: Intensive Care Nursing Professional and Personal Ethics Perspective. *Yoğun Bakım Hemşireliği Derg.* 2020;24(EK-1):73–80.
9. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun.* 2020 Aug;88:901–7.
10. Zaka A, Shamloo SE, Fiorente P, Tafuri A. COVID-19 pandemic as a watershed moment: A call for systematic psychological health care for frontline medical staff. *J Health Psychol.* 2020;25(7):883–7.
11. Aylaz R, Yıldız E. (2020). Yeni koronavirus hastalığının toplum üzerine etkileri ve hemşirelik yaklaşımları. Bölüm: Güneş G. *Yeni koronavirus (COVID-19) hastalığı: küresel durum.* Malatya: İnönü Üniversitesi Yayınevi; 2020. ss. 14–26.
12. Polat Ö, Coşkun F. Determining the relationship between personal protective equipment uses of medical healthcare workers and depression, anxiety and stress levels in the COVID-19 pandemic. *Med J West Black Sea.* 2020;4(2):51–8.

13. Sarmasoglu Ş, Tarakcioğlu G, Çelik H, Korkmaz F. Review: personal protective equipment usage for COVID-19 disease protection. *J Hacettepe University Faculty of Nursing*. 2020;7(Özel sayı), 47–65.
14. İşsever H, İşsever T, Öztan G. Epidemiology of COVID-19. *Istanbul University Institute of Health Sciences Journal of Advanced Research in Health Sciences*. 2020;3(1):1–13.
15. Pala SÇ, Metintaş S. Healthcare Professionals in The Covid-19 Pandemic. *ESTUDAM Public Health Journal*. 2020;5(COVID-19 Special issue):156–68.
16. International Council of Nurses (ICN). ICN calls for data on healthcare worker infection rates and deaths International Council of Nurses; 2020. [Accessed: 10/05/2020]. <https://www.icn.ch/news/icn-calls-data-healthcare-worker-infection-rates-and-deaths>
17. International Council of Nurses (ICN). ICN calls for data on healthcare worker infection rates and deaths; 2020. [Accessed: 26/05/2020]. <https://www.icn.ch/news/icn-calls-data-healthcare-worker-infection-rates-and-deaths>
18. Emiral E, Çevik ZA, Gülümser Ş. Covid-19 pandemic and suicide. *ESTUDAM Public Health J*. 2020;5(COVID-19 Special Issue):138–47.
19. Tükel R. (2020). COVID-19 pandemi sürecinde ruh sağlığı. *Türk Tabipler Birliği - COVID-19 Pandemisi Altıncı Ay Değerlendirme Raporu*; 2020. ss. 617–28.
20. Aylaz R, Yıldız E. Yeni koronavirus hastalığının toplum üzerine etkileri ve hemşirelik yaklaşımları. Bölüm: Cengiz Z. Salgınun sağlık personeli üzerindeki etkileri. *Malatya: İnönü Üniversitesi Yayınevi*; 2020. ss. 206–15.
21. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Netw Open*. 2020;3(3):e203976.
22. Tan BY, Chew NW, Lee GK, Jing M, Goh Y, Yeo LL, et al. Psychological impact of the COVID-19 pandemic on health care workers in Singapore. *Ann Intern Med*. 2020;173(4):317–20.
23. Labrague LJ, De los Santos JAA. COVID-19 anxiety among front-line nurses: predictive role of organisational support, personal resilience and social support. *J Nurs Manag*. 2020;28(7):1653–61.
24. Hacimusalar Y, Kahve AC, Yasar AB, Aydin MS. Anxiety and hopelessness levels in COVID-19 pandemic: a comparative study of healthcare professionals and other community sample in Turkey. *J Psychiatr Res*. 2020;129:181–8.
25. Kılınçel Ş, Tuncer IZ, Kılınçel O, Akpınar AE, Ay R, Erzin G, et al. Effects of coronavirus (COVID-19) pandemic on health anxiety levels of healthcare professionals. *J Contemp Med*. 2020;10(3):312–8.
26. Şahin NH, Durak BA, Uğurtaş S. Kısa semptom envanteri (KSE): Ergenler için kullanımının geçerlik, güvenilirlik ve faktör yapısı. *Türk Psikiyatri Derg*. 2002;13(2):125–35.
27. Ahorsu DK, Lin CY, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: development and initial validation. *Int J Ment Health Addict*. 2020;27:1–9.
28. Bakioğlu F, Korkmaz O, Ercan H. Fear of COVID-19 and positivity: mediating role of intolerance of uncertainty, depression, anxiety, and stress. *Int J Ment Health Addict*. 2021;19:2369–82.
29. Ladikli N, Bahadır E, Yumuşak FN, Akkuzu H, Karaman G, Türkkan Z. (2020). KOVID-19 Korkusu Ölçeği'nin Türkçe güvenilirlik ve geçerlik çalışması. *Uluslararası Sosyal Bilimler Derg*. 2020;3(2):71–80.
30. Yaş SC. Covid-19 pandemisinin hastane çalışanlarının psikolojik durumuna etkisi. T. C. Gazi Üniversitesi Tıp Fakültesi Acil Tıp Anabilim Dalı Uzmanlık Tezi. Tez Danışmanı: Bildik F. 2020; Ankara.
31. Sert ET, Mutlu H, Kokulu K, Sarıtış A. Anxiety levels and associated factors among emergency department personnel fighting COVID-19. *J Contemp Med*. 2020;10(4):556–61.
32. Karadem FB. Sağlık çalışanlarında covid korkusunu belirleyen psikiyatrik değişkenlerin incelenmesi. T. C. Süleyman Demirel Üniversitesi Tıp Fakültesi Ruh Hastalığı ve Hastalıkları Anabilim Dalı Uzmanlık Tezi. Tez Danışmanı: Demirbaş A. Isparta; 2020.
33. Maunder RG, Lancee WJ, Balderson KE, Bennett JP, Borgundvaag B, Evans S, et al. Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. *Emerg Infect Dis*. 2006;12(12):1924–32.
34. Zhang WR, Wang K, Yin L, Zhao WF, Xue Q, Peng M, et al. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychother Psychosom*. 2020;9:1–9.
35. Kaçkın Ö, Ciydem E, Acı Ö. Türkiye'de COVID-19 tanısı alan hastalara bakan hemşirelerin deneyimleri ve psikososyal sorunları. *Uluslararası Sosyal Psikiyatri Derg*. 2020;168(10):1245–51.
36. Bana P. Evaluation of the social implication perception of healthcare employees in the Covid-19 outbreak process. *Press Academia Procedia*. 2020;7–8:115–20.