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Anxiety levels of university hospital nurses during the Covid-19 pandemic

Şeyma Yurtseven RN[1] 🟢 | Sevban Arslan RN[2]

[1]Faculty of Medicine, Balcalı Hospital, Çukurova University, Adana, Turkey

[2]Surgical Nursing Department, Faculty of Health Sciences, Cukurova University, Adana, Turkey

Correspondence
Şeyma Yurtseven RN, Faculty of Medicine, Balcalı Hospital, Çukurova University, Balcalı Hospital, Adana 01110, Turkey.
Email: ssumer01@hotmail.com

Abstract

Purpose: The aim of this study was to determine the anxiety levels of nurses caused by the changes experienced during the Covid-19 pandemic.

Design and Methods: The sample of the study consisted of 270 nurses. The data were collected using a questionnaire and the State Anxiety Inventory. The data were analyzed using descriptive statistics, t test, analysis of variance, Kruskal–Wallis and Tukey's test.

Findings: It was found that of the total number of nurses, 85.6% had high anxiety levels.

Practical Implications: Early intervention of indirect traumatization might facilitate controlling anxiety resulting from the Covid-19 outbreak. Conducting further supportive administrative studies to reduce anxiety levels is recommended.

KEYWORDS
coronavirus, mental health, nursing

1 | INTRODUCTION

On December 31, 2019, The World Health Organization's (WHO) China office reported pneumonia cases from an unknown etiology in the city of Wuhan in Hubei province, China. On January 7, 2020, a new coronavirus (2019-nCoV), previously undetected in humans, was discovered for the first time in China, from where it started to spread to other countries, creating a global health problem affecting everyone.[1,2] On August 31, 2020, the number of cases globally was close to 26 million,[3] and during the pandemic, which has affected every country where this virus has been detected, a total of 270,133 Covid-19 cases were reported in Turkey, with 6370 individuals losing their lives.[4] Turkey has taken active and effective precautions to provide medical support to help control Covid-19 outbreak across the country, and it has been quite successful. The rate of new cases has decreased, and the recovery rate has been increasing consistently. Although the situation appears to be good as compared with many other countries, the spread of the virus has not yet been prevented, and the transition back to normal life has not been ensured.[4]

Nurses, who spend a considerable amount of time with patients and are on the frontline during this process, are at high risk due to their central position in the Covid-19 prevention and intervention efforts, such as in preventing, controlling, and isolating the infection.[5,6] Nurses not only experience physiological, but also an unbearable amount of psychological issues, which result in high anxiety levels.[2,6,7] One of the most important factors for increased stress among nurses is vulnerability in the face of the possibility of not only being infected themselves but also infecting their families and the people around them, while working in demanding conditions under significant psychological stress.[7,8] Exposure to this traumatic situation increases the risk of mortality and may result in serious physical and mental health problems, as well as in behavioral disorders.[9,10,11] This uncertain situation in which fear and anxiety are dominant affects work efficiency and the lives of the nurses negatively. Many negative factors associated with the workplace, such as the risk of Covid-19 infection, not having a cure for the disease yet, and social isolation, increase anxiety levels and decrease welfare levels of nurses gradually.[2,12] Studies conducted have indicated that healthcare professionals are experiencing stress and anxiety due to the Covid-19 outbreak.[13–15] Assessment and intervention of anxiety of nurses, who are experiencing significant anxiety in the face of the unambiguity and the Covid-19 outbreak that has changed the world,

is important during and after the control of the pandemic, which is expected to increase social healing (Li et al., 2020). The aim of this study was to determine the anxiety levels of nurses caused by the changes experienced during the Covid-19 pandemic.

2 | METHODS

2.1 | Design and sample

This descriptive study was conducted (using a survey platform) during the Covid-19 pandemic to assess the anxiety levels of nurses working in a university hospital operating as a pandemic hospital, in accordance with the Helsinki Declaration principles.

The population of the sample consisted of 500 nurses working in the university hospital where the study was conducted during the Covid-19 pandemic. Of the nurses invited to take part in the study, 54% volunteered to participate. The sample consisted of 270 nurses, who agreed to participate in the study, who were actively working between May 13 and 20, 2020, and who completed their surveys.

The data of the study were collected with an online survey to reduce face-to-face interaction due to the current isolation policy. The study was conducted online by sending an invitation containing information about the purpose of the study to the participants. Participants completed the surveys with a computer or a smartphone by connecting to the website.

2.2 | Knowledge

The data were collected using a "Personal Information Form" prepared by the researchers in light of the literature and the "State Anxiety Inventory (SAI)."

2.2.1 | Personal Information Form

The form contains 21 questions regarding sociodemographic (age, gender, education level, etc.), occupational (working years, working pattern, duties, etc.), and mental characteristics (coping mechanisms while under stress, receiving support during a mental problem, etc.).[7,12]

2.2.2 | SAI

SAI is a part of the State–Trait Anxiety Inventory. It was developed by Spielberger and associates in 1970 in the United States. The inventory, which was translated to Turkish by Öner and Le Compte, was tested for reliability in 1976, and for validity in 1977. The internal consistency and reliability of the Turkish version of the SAI were between 0.94 and 0.96, respectively. The Cronbach's alpha value of the SAI was 0.93 in our study, which indicates that the reliability of the study is high. It consists of 20 items in total, and it

demonstrates how a person feels in certain situations and circumstances. SAI is scored according to the intensity of emotions or behaviors stated in the items with the following options: (1) *not at all*, (2) *somewhat*, (3), *moderately so*, and (4) *very much so*. There are 10 reversed items in the inventory, which are 1, 2, 5, 8, 10, 11, 15, 16, 19, and 20. The state anxiety score is calculated by adding 50 points to the difference between total weighted scores of normal and reversed items. Scores obtained from SAI theoretically range from 20 to 80 points. A score below 36 indicates no anxiety, scores between 37 and 42 indicate moderate anxiety, and a score above 42 indicates high anxiety. Higher total scores obtained from the inventory indicate higher anxiety levels.[16]

An ethical board approval from the Nonclinical Research Board of Medical Faculty of Cukurova University (Decision no: 35, Date: April 10, 2020) and necessary institution approvals from the hospital where the study was conducted were obtained to conduct the study. A voluntary consent form containing information was sent to the participants who had received the questionnaire, and the participants who accepted to take part in the study answered the questions of the inventory.

2.3 | Data analysis

The data were analyzed using the IBM SPSS Statistics 24 program by using descriptive statistics (frequency, percentage, and mean) and frequency tables. The data were considered statistically significant at $p < 0.05$ level.

Parametric methods were used for normally distributed data. As parametric methods, an independent samples t test (t table value) for comparing means of two independent groups and an analysis of variance test (F table value) for comparing means of three or more independent groups were employed. A Tukey's test was conducted for three or more groups with statistically significantly different variables for dual comparison according to the homogeneity of variances.

Nonparametric methods were used for data that were not normally distributed. In accordance with the nonparametric methods, a Mann–Whitney U test (Z table value) was used for comparing means of two independent groups and a Kruskal–Wallis H (χ^2 table value) test to compare means of three or more independent groups. The Bonferroni correction was made for statistically significantly different variables for a dual comparison of three or more groups.

3 | RESULTS

Of the nurses participating in the study, 32.2% were under the age of 30 and their mean age was 36.83 ± 9.23 (years). Of the total number of nurses, 87.8% were women, 71.5% had someone they took care of, 90.4% were living with someone, 58.5% went to work using their own car, 80.0% were not working in Covid units, and 56.7% had received education regarding the Covid-19 (Table 1).

TABLE 1 Comparison of mean scores of the State Anxiety Inventory according to descriptive characteristics of nurses

Variable (N = 270)	n (%)	State Anxiety Inventory $\bar{X} \pm SD$	Median [IQR]	Statistical analysis; probability
Age				
30 or under	87 (32.22)	51.29 ± 10.26	50.0 [15.0]	
31–40	84 (31.11)	51.56 ± 8.96	52.0 [12.0]	χ^2 = 1.630;
41–50	82 (30.37)	49.32 ± 9.32	51.0 [14.0]	p = 0.653
51 or over	17 (6.29)	50.83 ± 5.20	50.0 [10.0]	
Gender				
Female	237 (87.77)	50.85 ± 9.47	51.0 [13.0]	Z = −0.461;
Male	33 (12.22)	49.97 ± 8.41	51.0 [12.5]	p = 0.645
Education				
High school	39 (14.44)	52.33 ± 10.35	52.0 [13.0]	
Associate degree	35 (12.96)	52.71 ± 9.15	56.0 [10.0]	χ^2 = 6.989;
Undergraduate	162 (60.00)	50.56 ± 8.63	51.0 [13.0]	p = 0.072
Postgraduate	34 (12.59)	47.76 ± 10.99	47.5 [14.3]	
Marital status				
Single	77 (28.51)	50.46 ± 11.05	49.0 [15.5]	Z = −0.470;
Married	193 (71.48)	50.85 ± 8.59	52.0 [12.0]	p = 0.638
Chronic disease				
Yes	70 (25.92)	52.33 ± 8.35	53.0 [12.3]	t = 1.655;
No	200 (74.07)	50.19 ± 9.61	51.0 [13.8]	p = 0.099
Smoking				
Yes	198 (73.33)	50.10 ± 8.88	51.0 [13.0]	t = −1.902;
No	72 (26.66)	52.53 ± 10.34	54.5 [13.0]	p = 0.058
Income				
Insufficient[1]	28 (10.37)	56.46 ± 8.86	56.0 [10.8]	f = 8.226;
Partially sufficient[2]	189 (70.00)	50.71 ± 9.00	51.0 [11.5]	**p = 0.000**
Sufficient[3]	53 (19.62)	47.85 ± 9.53	47.0 [14.5]	**[1–2.3]**
Having someone they took care of				
Yes	193 (71.48)	51.36 ± 8.94	52.0 [11.0]	Z = −1.934;
No	77 (78.51)	49.21 ± 10.17	48.0 [14.0]	p = 0.053
Living with someone				
Yes	244 (90.37)	50.85 ± 9.44	51.0 [12.0]	t = 0.560;
No	26 (9.62)	49.77 ± 8.38	50.5 [14.0]	p = 0.576

Note: Bold values are statistically significant. Superscript numerals in parenthesis indicate the chi-square (χ^2) test is used in a number of different problems in statistics, some of them nonparametric and others parametric testing.

Of the total number of nurses, 40.4% had worked for 18 or more years, 59.6% were staff nurses, 55.9% worked during the day, and 77.8% worked between 32 and 40 h a week. Also, 59.3% of the nurses were assigned to their units, 83.0% considered the occupation as suitable for themselves, 61.5% had not experienced a significant, stressful event during the previous year, and 45.2% had not experienced a stressful event in the past.

The mean scores of the SAI of individuals demonstrated that 7.6% scored 36 or lower, indicating no anxiety, 6.8% scored between 37 and 42, indicating moderate anxiety, and 85.6% scored 42 or higher, indicating high anxiety.

There was no statistically significant difference between age groups, gender, education level, marital status, having a chronic disease, smoking, having someone they took care of, and living with someone, and the scores of the SAI (p > 0.05; Table 1).

There was a statistically significant difference between income levels and the scores of the SAI (F = 8.226; p = 0.000). The SAI scores of the individuals with insufficient income were statistically significantly higher than that of partially sufficient and sufficient income levels (Table 1).

There was a moderate difference between anxiety levels and transportation to the workplace, receiving education regarding

| Variable (N = 270) | n (%) | State Anxiety Inventory | | Statistical analysis; probability |
		$\bar{X} \pm SD$	Median [IQR]	
Transportation to the workplace				
Public transport	87 (32.22)	51.24 ± 8.96	50.0 [13.0]	χ^2 = 0.136;
Shuttle	23 (8.51)	50.78 ± 6.64	53.0 [9.0]	p = 0.934
Own car	158 (58.51)	50.57 ± 9.87	51.0 [13.0]	
Unit of work				
Emergency[1]	10 (3.70)	47.00 ± 10.74	47.5 [18.3]	χ^2 = 9.988;
Primary Covid ICU[2]	22 (8.14)	56.36 ± 9.82	57.0 [16.0]	**p = 0.019**
Primary Covid unit[3]	22 (8.14)	46.54 ± 14.14	44.0 [25.0]	**[2-1,3,4]**
Other[4]	216 (80.00)	50.77 ± 8.34	51.0 [12.0]	
Receiving education regarding Covid-19				
Yes	153 (56.66)	50.49 ± 9.26	51.0 [14.0]	Z = −0.236;
No	117 (43.33)	51.08 ± 9.46	51.0 [11.5]	p = 0.813
Working time (years)				
5 or less	61 (22.59)	51.20 ± 8.38	51.0 [11.0]	
6–11	61 (22.59)	50.21 ± 10.12	50.0 [13.5]	χ^2 = 0.997;
12–17	39 (14.44)	50.18 ± 11.57	52.0 [14.0]	p = 0.802
18 and more	109 (40.37)	50.99 ± 8.58	52.0 [12.0]	
Duty				
Staff nurse[1]	161 (59.62)	51.56 ± 9.81	51.0 [13.5]	χ^2 = 7.305;
Outpatient clinic/special services[2]	70 (25.92)	50.84 ± 8.35	53.5 [10.0]	**p = 0.026 [1,2-3]**
Charge nurse[3]	36 (13.33)	46.89 ± 8.37	46.5 [11.0]	
Working pattern				
During the day	151 (55.92)	50.08 ± 8.26	51.0 [13.0]	χ^2 = 0.957;
Shift work	93 (34.44)	51.63 ± 10.86	51.0 [15.0]	p = 0.620
Permanent night shifts	26 (9.62)	51.42 ± 9.36	51.0 [11.5]	
Weekly working hours				
40 or less	212 (78.51)	50.14 ± 9.18	51.0 [13.0]	Z = −1.558;
Over 40	58 (21.48)	52.96 ± 9.64	52.0 [13.0]	p = 0.119
Choice of unit of work				
Personal choice	110 (40.74)	49.36 ± 8.35	50.0 [12.5]	t = −2.027;
Assignment	160 (59.25)	51.69 ± 9.87	52.0 [12.8]	**p = 0.044**
Regarding the occupation as suitable				
Yes	224 (82.96)	50.06 ± 9.02	51.0 [13.0]	Z = −2.638;
No	46 (17.03)	54.11 ± 10.21	57.0 [13.3]	**p = 0.008**
Experiencing significant stress during previous year				
Yes	104 (38.51)	51.74 ± 8.57	52.0 [13.0]	Z = −1.716;
No	166 (61.48)	50.12 ± 9.76	51.0 [14.0]	p = 0.086

Note: Bold values are statistically significant. Superscript numerals in parenthesis indicate the chi-square (χ^2) test is used in a number of different problems in statistics, some of them nonparametric and others parametric testing.

Covid-19, working years in the occupation, type of work, weekly working hours, and experiencing important stress during the previous year, which was not statistically significant ($p > 0.05$; Table 2).

When comparing the SAI scores of nurses according to their wards, there was a relative statistically significant difference between anxiety levels of nurses who were in direct contact with patients diagnosed with Covid-19 and the nurses who were not in direct contact with the patients ($\chi^2 = 9.988$; $p = 0.019$). There was a statistically significant difference between nurses working in primary Covid intensive care units and nurses working in emergency units, primary Covid units, or in other outpatient clinics. The SAI scores of nurses working in primary Covid intensive care were statistically significantly higher (Table 2).

A statistically significant difference was found in the SAI scores according to the occupational duties of nurses ($\chi^2 = 7.305$; $p = 0.026$). There was a statistically significant difference between staff and outpatient clinic/special service nurses and charge/head nurse. Scores of the SAI of staff and policlinic/special service nurses were statistically significantly higher (Table 2).

A statistically significant difference was found in the SAI scores according to the ward preference ($t = -2.027$; $p = 0.044$). Scores of the SAI of nurses who were assigned to their units were statistically significantly higher than nurses who chose their units themselves (Table 2).

There was a statistically significant difference between considering the occupation as suitable for themselves and the scores of the SAI ($Z = -2.638$; $p = 0.008$). Scores of the SAI of nurses who did not consider the occupation as suitable for themselves were higher than of those who regarded it as suitable (Table 2).

4 | DISCUSSION

Although the entire world is confronted with the heavy burden of the Covid-19, nurses, who constitute the most extensive group in the health sector, are the ones being the most affected. Nurses are in close contact with the patients constantly, and they are unable to prevent emotional responses during the period, experiencing intense fear, anger, disappointment, concern, and anxiety, which all reduce their quality of life.[17] Studies suggest that even after these difficult times, psychological symptoms resulting from the pandemic will continue for a long time.[18–20] This study was conducted in a university hospital operating as a pandemic hospital. Thus, it was possible to reach the nurses who were in the center of this challenging period.

Wang et al.[21,22] reported medium and severe psychological symptoms during the Covid-19 in two different studies. In addition, Roy et al.,[23] who conducted a study in India, found that over 80% of the participants needed professional help from mental health professionals during the pandemic, to cope with emotional problems and other psychological issues. Similarly, 85.6% of the nurses participating in our study experienced severe anxiety. This situation creates

an important problem, which cannot be underestimated. Nurses, who continue to work irrespective of the circumstances, seem to suffer from anxiety disorders in this uncertain situation. Nurses may not have sufficient psychological readiness, and sufficient education regarding the issue has not been provided. In a study by Mo et al.[5] conducted with Chinese nurses battling against the Covid-19 outbreak, total scores of stress load and anxiety of nurses were statistically significantly higher than of the national score ($p < 0.001$), supporting the results of our study. In studies conducted during the previous pandemic of severe acute respiratory syndrome (SARS), healthcare personnel working in units and hospitals where SARS and Middle East respiratory syndrome were identified also experienced depression, anxiety, fear, and disappointment.[24–26] Literature suggests that anxiety levels of nurses who provide direct care to patients are similar regardless of national politics and individual differences.[5,7,27]

Ahmed et al.[28] found in their study investigating anxiety levels that young adults experienced higher anxiety as compared with other groups. In our study, conducted with a relatively young group with a mean age of 36.83 ± 9.23, a statistically significant difference was not found between age and the SAI scores ($p > 0.05$; Table 1).

In addition, no statistically significant difference was found between gender and anxiety levels. In another study, women were estimated to be more affected during pandemics.[29] Some studies conducted on the topic indicate that women have higher anxiety levels.[21,30,31] Unlike these studies, in another study, investigating anxiety and depression symptoms of healthcare personnel working during the Covid-19 outbreak, the male gender experienced an increase in anxiety, whereas the female gender experienced a decrease in anxiety.[32] Qiu et al.[33] also found in a study conducted in China that women had significantly higher levels of psychological problems as compared with men. It is possible that no statistically significant difference was found in our study, as most of our participants were females (87.8%).

Although there was no statistically significant difference between the education level of nurses and their state anxiety, there was a relative difference, and as education levels increased, anxiety levels decreased (Table 1). In another study related to the subject, participants with lower education levels were more anxious, parallel to our findings.[34] Although the results of this study indicate that receiving education regarding Covid-19 does not affect anxiety levels, Tan et al.[35] found that psychological effects (especially anxiety) of Covid-19 were more common with personnel who did not receive medical education, compared with those who did.

There was no statistically significant difference between having a chronic disease and anxiety scores of nurses, who are, in fact, regarded as suspects. This might be a result of the administrative leaves the nurses were on, in accordance with the country policy; therefore, they were not fully represented in the sample (25.9%). Wei et al.[34] found in their study that having a chronic disease was a factor for having increased anxiety in nurses.

In addition, living with someone or alone did not cause a statistically significant difference in anxiety levels ($p > 0.05$; Table 1).

However, the literature suggests that psychological distress levels might increase with the fear of having the virus, and the fear of being infected and infecting others might affect their anxieties due to the possibility of infecting other healthcare personnel, as well as their own families, while they continue to work.[36]

There was a statistically significant difference between income levels and anxiety scores ($F = 8.226$; $p < 0.001$). State anxiety scores of those with insufficient income were higher than those with partially sufficient and sufficient income levels (Table 1). Simultaneously, economical stressors have increased anxiety levels in everyday life.[20] High anxiety levels might result from financial concerns, which may have increased with the effects of the pandemic on the economy of the individuals and of the country.

There was also a moderate but statistically insignificant difference between weekly working hours and anxiety scores, which indicates that having flexible, adjustable policies and protocols might decrease anxiety levels and play a vital role in decreasing hospital infections. When comparing the state anxiety scores of nurses according to their units of work, there was a statistically significant difference between anxiety levels of nurses who were in direct contact with patients diagnosed with Covid-19, or working in intensive care units with patients with serious general conditions, and with nurses who had no direct contact with the patients ($p = 0.019$; Table 2). Contrary to our findings, Wu et al.[2] found in their study investigating fatigue of healthcare personnel that personnel working with Covid-19 patients had lower levels of fatigue as compared with personnel working in other units. As a result of compulsory quarantine and social isolation due to the pandemic, and limitations or complete disappearance of face-to-face interactions, providing mental health services to nurses with the help of phones and the internet is of utmost importance.[37]

A statistically significant difference was found in units of working, between working as a staff nurse and as a charge nurse (Table 2). This might be related to having a direct contact with patients and spending more time with them. There was a statistically significant difference between choosing the ward in the battle against the Covid-19 outbreak and the SAI scores ($t = -2.027$; $p = 0.044$). Scores of nurses who were assigned to their units had higher SAI scores as compared with those who chose the unit themselves, indicating that individuals' choices might affect their state anxiety scores. The state anxiety scores of nurses who did not regard the occupation as suitable for themselves were statistically significantly higher than of those who regarded it as suitable ($Z = -2.638$; $p = 0.008$; Table 2). Yeniyol[38] investigated the relationship, and it was observed that trait anxiety was positively correlated with emotional exhaustion and depersonalization, whereas it was negatively correlated with personal accomplishment. In addition, the level of job satisfaction was negatively correlated with trait anxiety, emotional exhaustion, depersonalization, and personal accomplishment in healthcare workers.[38] In a study by Çağan,[39] where the relationship between job satisfaction and anxiety was investigated, the type of assignation of healthcare personnel, perception of economic status, and satisfaction of ward affected anxiety levels.[39]

A comparison of a study conducted in Singapore during the SARS pandemic with a study conducted during the Covid-19 outbreak demonstrated that anxiety levels were three times higher in the past.[35] This suggests that readiness for new living conditions, with precautions made after previous experiences, has decreased anxiety scores, and high scores obtained in our study might be related to the fact that no similar experiences have previously been encountered in Turkey. It should not be forgotten that concepts such as uncertainty and obscurity may increase anxiety levels.[40]

5 | CONCLUSIONS

This study defines anxiety levels of nurses working during the ongoing Covid-19 pandemic in a broad context. The negative effects of severe anxiety on patient care and the well-being of healthcare professionals traumatized by the pandemic should be considered.[35] Nurses, who are on the frontline in the COVID-19 pandemic and provide 24-h continuous care to patients, are at a risk physically as well as mentally, as they are also being affected psychologically. Therefore, taking precautions to support psychosocial health of nurses is urgent and of vital importance, to maintain the health of the whole society. By creating liaison psychiatry in the hospitals, it is possible to provide professional guidance for patients, relatives of the patients, and the healthcare personnel in terms of effective coping with experienced problems and providing psychosocial support. Hospital administrators should rearrange working hours, provide supportive administrative work for reducing stress and anxiety levels, and create working and resting conditions where not only the risk of infection but other risk factors caused by sleeplessness and fatigue are also controlled by planning the resting needs of the nurses. In addition, as there is a need for additional findings to develop evidence-based strategies, conducting further studies to reduce psychological effects during the pandemic is recommended.

5.1 | Limitations of the study

The study has some limitations that need consideration. The responses of the participants are limited to the items of the inventory, and the obtained data are generalized to the hospital where the study was conducted. However, by reviewing the previous literature and the concepts thoroughly, obtaining informed consent and ethical approvals, and analyzing the data in detail, these limitations were reduced to a minimum.

5.2 | Implications for nursing practice

The results of the study demonstrated that the anxiety levels of the nurses providing care to patients were high. It is important to identify those with high anxiety levels and provide administrative support for effective care. Problems related to equipment,

consumable materials, and foundational issues, which help provide quality care to patients, should be sufficiently addressed. There should be a focus on reducing anxiety levels of nurses with different activities and trainings on the subject. Providing emotional and informational support might contribute to reduce the difficulties in care duties and enhance the quality of care.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

AUTHOR CONTRIBUTIONS

Study conception and design: Sevban Arslan and Şeyma Yurtseven. *Data collection*: Şeyma Yurtseven. *Data analysis and interpretation*: Şeyma Yurtseven. *Drafting and critical revision of the article*: Sevban Arslan, Şeyma Yurtseven, and Sevban Arslan.

DATA AVAILABILITY STATEMENT

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

ORCID

Şeyma Yurtseven https://orcid.org/0000-0003-2378-682X

REFERENCES

1. T.C. Ministry of Health. The current situation in Turkey [in Turkish]. https://covid19.saglik.gov.tr/. Accessed September 01, 2020.
2. Wu Y, Wang J, Luo C, et al. A comparison of burnout frequency among oncology physicians and nurses working on the front lines and usual wards during the COVID-19 epidemic in Wuhan, China. *J Pain Symptom Manage*. 2020;1(1):1-6. https://doi.org/10.1016/j.jpainsymman.2020.04.008
3. WHO. https://www.who.int/emergencies/diseases/novel-coronavirus-2019. Accessed September 01, 2020.
4. T.C. Ministry of Health. (2020). General Directorate of Public Health, Covid 19 Guide (Science Board Study).
5. Mo Y, Deng L, Zhang L, et al. Work stress among Chinese nurses to support Wuhan for fighting against the COVID-19 epidemic. *J Nurs Manag*. 2020;00:1-8. https://doi.org/10.1111/jonm.13014
6. Choi KR, Jeffers KS, Logsdon MC. Nursing and the novel coronavirus: risks and responsibilities in a global outbreak. *J Adv Nurs*. 2020;76:1486-1487. https://doi.org/10.1111/jan.14369
7. Huang L, Rong Liu H. Emotional responses and coping strategies of nurses and nursing college students during COVID-19 outbreak. *medRxiv*. 2020. https://doi.org/10.1101/2020.03.05.200318981-17.
8. Millar R,C. Nursing a patient with Covid-19 infection. *Tasman Med J*. 2020;1(1):4-8.
9. Burgdorf KS, Trabjerg BB, Pedersen MG, et al. Large-scale study of toxoplasma and cytomegalovirus shows an association between infection and serious psychiatric disorders. *Brain Behav Immun*. 2019; 79:152-158. https://doi.org/10.1016/j.bbi.2019.01.026
10. Xiao H, Zhang Y, Kong D, Li S, Yang N. Social capital and sleep quality in individuals who self-isolated for 14 days during the coronavirus disease 2019 (COVID-19) outbreak in January 2020 in China. *Med Sci Monit*. 2020;26:e923921. https://doi.org/10.12659/MSM.923921
11. Li Z, Ge J, Yang M, et al. Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain, behavior, and immunity 2020*. Retrieved from https://doi.org/10.1016/j.bbi.2020.03.007

12. Atmaca ÇT. *Anxiety Levels of Nurses and Doctors Working in the Emergency Room before and after Seizure [in Turkish]* [master thesis]. Samsun, Turkey: Ondokuz Mayıs University Institute of Health Sciences; 2016.
13. Koh D. Occupational risks for COVID-19 infection. *Occup Med (Lond)*. 2020;70:3-5. https://doi.org/10.1093/occmed/kqaa036
14. Rimmer A. Covid-19: give NHS staff rest spaces and free parking not thank yous, says doctor. *BMJ*. 2020;368:1171. https://doi.org/10.1136/bmj.m1171
15. Chen Q, Liang M, Li Y, et al. Mental health care for medical staff in China during the COVID-19 outbreak. *Lancet Psychiatry*. 2020;7: 15-16. https://doi.org/10.1016/S2215-0366(20)30078-X
16. Biçersoy G. *Preoperative Anxiety Levels of Day Surgery Patients* [master thesis]. University Institute of Health Sciences; 2015.
17. Maben J, Bridges J. Covid-19: supporting nurses' psychological and mental health. *J Clin Nurs*. 2020;00:1-9. https://doi.org/10.1111/jocn.15307
18. Doko E. The World after the coronavirus outbreak [in Turkish]. *Lacivert Journal*. 2020;00:76-80.
19. Kaya B. Effects of pandemic on mental health [in Turkish]. *Clin Psychiatry*. 2020;23:123-124.
20. Cao W, Fang Z, Hou G, et al. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res*. 2020;11:29-34. https://doi.org/10.1016/j.psychres.2020.112934
21. Wang C, Pan R, Wan X, et al. Immediate psychological responses and associated factors during the ınitial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *Int J Environ Res Public Health*. 2020;17(5):1729. https://doi.org/10.3390/ijerph17051729
22. Wang C, Pan R, Wan X, et al. A longitudinal study on the mental health of general population during the COVID-19 epidemic in China. *Brain Behav Immun*. 2020;87:40-80. https://doi.org/10.1016/j.bbi.2020.04.028
23. Roy D, Tripathy S, Kar SK, Sharma N, Verma SK, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian J Psychiatr*. 2020;51:102083. https://doi.org/10.1016/j.ajp.2020.102083
24. Park JE, Jung S, Kim A. MERS transmission and risk factors: a systematic review. *BMC Public Health*. 2018;18(1):574. https://doi.org/10.1186/s12889-018-5484-8
25. Son H, Lee WJ, Kim HS, Lee KS, You M. Examination of hospital workers' emotional responses to an infectious disease outbreak: lessons From the 2015 MERS Co-V outbreak in South Korea. *Disaster Med Public Health Prep*. 2019;13(3):504-510. https://doi.org/10.1017/dmp.2018.95
26. Brooks SK, Dunn R, Amlôt R, Rubin GJ, Greenberg N. A systematic, thematic review of social and occupational factors associated with psychological outcomes in healthcare employees during an infectious disease outbreak. *J Occup Environ Med*. 2018;60(3):248-257. https://doi.org/10.1097/JOM.0000000000001235
27. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsi 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; 88:901-907. https://doi.org/10.1016/j.bbi.2020.05.026
28. Ahmed MZ, Ahmed O, Aibao Z, Hanbin S, Siyu L, Ahmad A. Epidemic of COVID-19 in China and associated psychological problems. *Asian J Psychiatr*. 2020;51:102092.
29. Kim SJ, Han JA, Lee TY, et al. Community-based risk communication survey: risk prevention behaviors in communities during the H1N1 crisis, 2010. *Osong Public Health Res Perspect*. 2014;5(1):9-19. https://doi.org/10.1016/j.phrp.2013.12.001
30. Moghanibashi-Mansourieh A. Assessing the anxiety level of Iranian general population during COVID-19 outbreak. *Asian J Psychiatr*. 2020;51:102076. https://doi.org/10.1016/j.ajp.2020.102076

31. Özdin S, Bayrak Özdin Ş. Levels and predictors of anxiety, depression and health anxiety during COVID-19 pandemic in Turkish society: the importance of gender. *Int J Soc Psychiatry*. 2020;65: 504-511. https://doi.org/10.1177/0020764020927051

32. Zhu J, Sun L, Zhang L, et al. Prevalence and ınfluencing factors of anxiety and depression symptoms in the first-line medical staff fighting against COVID-19 in Gansu. *Front Psychiatry*. 2020;11:386. https://doi.org/10.3389/fpsyt.2020.00386

33. Qiu J, Shen B, Zhao M, Wang Z, Xie B, Xu Y. A nationwide survey of psychological distress among Chinese people in the COVID-19 epidemic: implications and policy recommendations. *Gen Psychiatr*. 2020;33(2):1-3. https://doi.org/10.1136/gpsych-2020-100213

34. Wei YL, Han B, Liu W, Liu G, Huang Y. Psychosomatic discomfort and related factors among 1,411 first-line SARS staff in Beijing. Manual of the 7th national experimental medicine symposium of Chinese Society of Integrated Traditional Chinese and Western Medicine. Beijing, China; 2004, pp. 6–12.

35. Tan BY, Chew NW, Lee GK, et al. Psychological impact of the COVID-19 pandemic on health care workers in Singapore. *Ann Intern Med*. 2020;173:317-320. https://doi.org/10.7326/M20-1083

36. Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. *JAMA*. 2020;323:1439. https://doi.org/10.1001/jama.2020.3972

37. Xiang YT, Yang Y, Li W, et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *Lancet Psychiatry*. 2020; 7(3):228-229. https://doi.org/10.1016/S2215-0366(20)30046-8

38. Yeniyol ZD. *Examination of job satisfaction, anxiety and burnout levels of healthcare professionals [in Turkish]* [master thesis]. Şile, Turkey: Işık University; 2018.

39. Çağan Ö, Gönay O. The job satisfaction and burnout levels of primary care health workers in the province of Malatya in Turkey. *Pak J Med Sci*. 2015;31(3):543-547. 10.12669/pjms.313.6795

40. Ozamiz-Etxebarria N, Dosil-Santamaria M, Picaza-Gorrochategui M, Idoiaga-Mondragon N. Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. *Cadernos de Saúde Pública*. 2020;36:1-9. https://doi.org/10.1590/0102-311X00054020