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Anxiety, Depression and Burnout Levels of Nurses Working in COVID-19 Intensive Care Units

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Abstract

This descriptive and correlation-seeking study was planned to determine the depression, anxiety, and burnout levels experienced by nurses working in COVID intensive care units. The survey consisted of three instruments: Nurse Identification Form, Hospital Anxiety and Depression Scale (HADS), and Burnout Measure Short Form (BMS). It was determined that the mean anxiety score of the nurses was 11.31 ± 4.41, the mean depression score was 10.03 ± 3.54, and the mean of burnout was 3.92 ± 1.75. In addition, it was determined that 53.3% of the nurses experienced burnout and 27.0% were so exhausted that they needed professional help. Also, it was determined that there was a moderately significant positive relationship between anxiety and burnout and depression and burnout ($p < 0.001$). Protecting the mental health of nurses is very important in terms of both improving the quality of care and increasing the productivity of nurses.

Keywords

COVID-19, Anxiety, Burnout, Depression, Nurses, Intensive care unit

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Introduction

The COVID-19 pandemic first emerged in Wuhan, China in December 2019 and affected the whole world (Chan et al., 2020). The fact that the virus causes acute respiratory distress syndrome (ARDS) and multi-organ failure makes it difficult to control the disease and makes it necessary to treat patients in intensive care (Fernandez et al., 2020). Intensive care units, unlike other parts of the hospital, are areas where complex and state-of-the-art devices are used and special treatment and care is provided (Tokur et al., 2018). Nurses working in intensive care units play a critical role in the 24-hour follow-up and treatment of patients (Lakanmaa et al., 2015).

Due to the pandemic, patients diagnosed with COVID-19 with severe clinical pictures in intensive care units are constantly followed up and treated, and nurses stay in contact with these patients for a long time (Shen X. Z. et al., 2020; Moradi et al., 2021). The difficult working conditions due to the pandemic have led to a psychological burden on nurses (Gomez et al., 2020; Sharma et al., 2020). During this process, intensive care nurses faced numerous challenges, including a high risk of infection, being separated from family and social support, working with protective equipment, long working hours, uncertainty about the course of the epidemic, and a shortage of nurses (Shen X. Z. et al., 2020; Moradi et al., 2021). This situation adversely affects the physical and mental health of nurses. Among the mental health problems experienced by nurses are fear, hopelessness, insomnia, post-traumatic stress disorder, burnout, anxiety, and depression (El-Hage et al., 2020; Lai et al., 2020). Studies have shown that nurses who are in constant contact with patients during the pandemic process feel under pressure due to stress and anxiety (Galanis et al., 2021; Stocchetti et al., 2021). In the meta-analysis study by Al Maqbali et al., it was reported that the pandemic caused high stress, anxiety, and depression in intensive care nurses (Al Maqbali et al., 2021). In a systematic review by Galanis et al. with 18.935 healthcare professionals, it was found that 34.1% of nurses experienced high levels of burnout (Galanis et al., 2021).

Burnout is one of the most common problems among nurses working in intensive care units during the pandemic (Bruyneel et al., 2021). Anxiety and depression were emphasized as main risk factors for burnout in a systematic review study (Lluch et al., 2022).

These problems experienced by nurses negatively affect the quality of care and health outcomes they give to patients with COVID-19 in intensive care (Murthy et al. 2020; Ross et al., 2017). For this reason, it is necessary to determine the depression, anxiety, and burnout levels experienced by intensive care nurses during the pandemic process and to plan interventions to solve these problems.

Aim of the Study

Limited number of studies on the subject in the literature. There is a limited number of studies on anxiety, depression and burnout among nurses working in COVID 19 intensive care units (Hu et al., 2020; Zakeri et al., 2021). No such study was found

involving nurses working in Intensive care units in Turkey. This study was planned to determine the depression, anxiety, and burnout levels experienced by nurses working in COVID-19 intensive care units.

This study set out to answer the following questions as related to nurses working in intensive care units in Turkey:

(1) What is the anxiety level of the nurses working in the COVID-19 intensive care unit?
(2) What is the depression level of the nurses working in the COVID-19 intensive care unit?
(3) What is the burnout level of nurses working in the COVID-19 intensive care unit?
(4) Is there a relationship between the anxiety, depression, and burnout levels of nurses working in the COVID-19 intensive care unit?

Materials and Methods

Study Design and Setting

It is a descriptive and correlation-seeking study using online methods. This study was conducted with nurses working in COVID-19 intensive care units in different provinces of Turkey between December 25th, 2020 and March 25th, 2021.

Participants

Nurses in COVID-19 intensive care units in different provinces of Turkey were invited to take part in the study via social media (Whatsapp, Instagram and Facebook) with an explanation of the purpose of the study. The nurses were also asked to forward the invitation to other ICU nurses creating a snowball effect. 304 nurses agreed to participate by signing the Informed Consent Form.

Data Collection Tools

The data for the study were collected using "Google Forms". Tools used included The Nurse Identification Form, Hospital Anxiety and Depression Scale (HADS), and Burnout Measure Short Form (BMS).

Nurse Identification Form. The Nurse Identification Form was prepared by the researchers by scanning the literature (Al Maqbali et al., 2021; Galanis et al., 2021) and consisted of 24 questions regarding the sociodemographic characteristics of the nurses, such as age, marital status, and income status, as well as the working year, the number of patients they care for, and the working hours.

Hospital Anxiety and Depression Scale (HADS). The Hospital Anxiety and Depression Scale was developed by Zigmond and Snaith (1983) to determine the risk of anxiety and depression in patients and to measure its level and change in severity (Zigmond & Snaith, 1983). A validity and reliability study of the scale in Turkey was carried out by Aydemir et al. (Aydemir et al., 1997). Seven of the 14 questions on the scale (odd numbers) measure anxiety and seven (even numbers) measure depression. The answers are in the form of a 4-point Likert scale and are scored between 0 and 3.

The scoring of each item on the scale is different. Items 1, 3, 5, 6, 8, 10, 11, and 13 show decreasing severity and score 3, 2, 1, 0. While items 2, 4, 7, 9, 12, and 14 are scored as 0, 1, 2, and 3 (Aydemir et al., 1997).

For the anxiety subscale, the 1st, 3rd, 5th, 7th, 9th, 11th, and 13th items were summed while the scores of the 2nd, 4th, 6th, 8th, 10th, 12th, and 14th items were summed for the depression subscale. The lowest score that patients can get from both subscales is 0, and the highest is 21. The cut-off points of HADS are 10 for the anxiety subscale and 7 for the depression subscale. Some items for the anxiety sub-dimension; "I feel like I'm going to "explode" nervously","I have a fear that something bad is going to happen", "I feel uneasy as if I always have to do something." Some items for the depression sub-dimension; "I still enjoy the things I used to enjoy", "I feel like I've stagnated","I lost interest in my appearance." In the study of Aydemir et al., the Cronbach's alpha of the anxiety scale was 0.852 and the Cronbach's alpha of the depression subscale was 0.778 (Aydemir et al., 1997). In our study, the Cronbach's alpha of the anxiety scale was 0.860, and the Cronbach's alpha of the depression scale was 0.636. The scale was applied by Aydemir et al. on medical school students and it was stated that it is a scale that can be used outside of patients in terms of validity and reliability. Also Işık et al. (2021) used the HADS for physicians and nurses in their study evaluating the mental health of healthcare professionals in the COVID-19 Pandemic. Yeşil Bayülgen et al. 2021 used the HADS for nurses in their study, too.

Burnout Measure Short Form (BMS) This form developed by Malach-Pines (2005), is a 7-point Likert-type 1 *(Never)* and 7 *(Always)* scale that evaluates the physical, emotional, and mental fatigue levels of the individual (Malach-Pines, 2005). The Turkish validity and reliability study of the scale was carried out by Tümkaya et al. (Tümkaya S et al., 2009).

The burnout score is obtained by summing the answers given to 10 items and dividing by 10. If the score obtained is 2.4 or less, the degree of burnout is low, between 2.5 and 3.4 indicates that there is a risk of burnout, between 3.5 and 4.4 indicates that there is a burnout, between 4.5 and 5.4 there is a serious burnout problem, and a score of 5.5 and above indicates that professional help should be sought as soon as possible. In the study of Tümkaya et al., the internal consistency reliability of the scale was reported as 0.91 (Tümkaya S et al., 2009). In this study, the Cronbach's alpha of the scale was found to be 0.970.

Data Analysis

IBM SPSS Statistics 25.0 package program (IBM Corp, Armonk, New York, USA, 2009) was used to evaluate the data obtained from the research. In the evaluation of the data, the number of units (*N*), percentage (%), mean ± standard deviation (x ± SD) and median (M) values were given for descriptive statistics. The normal distribution of the data belonging to the numerical variables was evaluated with the Shapiro-Wilk test for normality and the homogeneity of the variances was evaluated with the Levene test. (Shapiro &Wilk, 1965; Levene, 1960). The t-test was used for the findings that showed normal distribution and were categorized in pairs, and the ANOVA test was used for the findings that showed normal distribution and were categorized in three or more groups. Spearman's correlation analysis was used to determine the relationship between variables. The $p < 0.05$ value was considered statistically significant in the study.

Findings

The mean age of the nurses participating in the study was 30.57 ± 6.88. It was determined that 80.6% of the nurses were women, 53.0% were single, 73.4% had a bachelor's degree, and 88.8% had no chronic disease. Nurses stated that they experienced fatigue and fear of contagion with COVID-19 in 93.8%, insomnia in 84.5%, hopelessness in 80.6%, and fear of death in 50.0% due to the pandemic (Table 1).

In the study, it was determined that 70.7% of the nurses worked in a state hospital, 38.5% worked in 1–5 years, and 38.2% worked in intensive care for 1–5 years. It was determined that 46.4% of the nurses worked 40–48 hours per week, 56.3% gave care for 2 patients, 68.1% were satisfied with working in the intensive care unit, and 64.5% were willing to continue working in the intensive care unit (Table 2).

It was determined that the mean anxiety score of the nurses was 11.31 ± 4.41, the mean depression score was 10.03 ± 3.54, and the mean of burnout was 3.92 ± 1.75. It was determined that 53.0% of the nurses scored above the threshold (11–21 points) on the anxiety subscale, and 76.6% got above the threshold (8–21 points) on the depression subscale. In addition, it was determined that 53.3% of the nurses experienced burnout and 27.0% were so exhausted that they needed professional help (Table 3).

In the study, it was determined that those who did not have a college degree, were not satisfied with working in the intensive care unit, did not want to continue working in the intensive care unit, and were infected with COVID-19 while working in the intensive care unit had higher levels of anxiety and depression ($p < 0.05$). In addition, it was reported that depression was higher in nurses with chronic diseases ($p < 0.05$). (Table 4).

When the burnout levels were examined according to some characteristics of the nurses, it was found that the burnout levels were higher for those in the 45–55 age group, those who were high school graduates, those who have worked in the profession for 16 years or more, those who have worked in the intensive care unit for less than

Table 1. Descriptive Characteristics of the Nurses (N = 304).

Characteristics	*n*	%
Age (year)	30.57 ± 6.88	
Age group		
18–29 years	168	55.3
30–44 years	123	40.5
45–55 years	13	4.2
Gender		
Male	59	19.4
Female	245	80.6
Mariatal status		
Maried	143	47.0
Single	161	53.0
Education		
High school	35	11.5
University	223	73.4
Graduate	46	15.1
Presence of chronic disease		
Yes	34	11.2
No	270	88.8
Status of being COVID-19 while working in intensive care		
Yes	107	35.2
No	197	64.8
The status of someone close to you having COVID-19		
Yes	294	96.7
No	10	3.3
Having experienced a distressing event in the last 6 Months		
Yes	92	30.3
No	212	69.7
Problems faced during the pandemic[a]		
Insomnia	257	84.5
Fatigue	285	93.8
Desperation	245	80.6
Fear of contracting COVID-19	285	93.8
The fear of death	152	50.0
Other (stress, worthlessness, thoughts of quitting)	17	5.6
Total	**304**	**100.0**

[a]More than one answer was given.

1 year, those who are not satisfied with working in the intensive care unit, and those who do not want to work in the intensive care unit ($p < 0.05$).

In the study, it was determined that there was a moderately significant positive relationship between hospital anxiety and burnout scale (r = 0.512, p<0.001) and

Table 2. Work-Related Characteristics of the Nurses.

Characteristics	*n*	%
Institution of employment		
State hospital	215	70.7
Universtiy hospital	83	27.3
Private hospital	6	2.0
Working duration (year)		
1–5 years	117	38.5
6–10 years	104	34.2
11–15 years	34	11.2
16 years and above	49	16.1
Working duration of intensive care unit		
1 year and belove	70	23.0
1–5 years	116	38.2
6–10 years	86	28.3
11 years and above	32	10.5
Role in intensive care		
Clinical nurse	287	94.4
Service manager	17	5.6
Working style		
Daytime	34	11.2
Night	12	3.9
Rotative	258	84.9
Weekly working hours		
40 hours	65	21.4
41–48 hours	141	46.4
49 hours and above	98	32.2
Number of patients cared for in intensive care		
1 patient	5	1.6
2 patients	171	56.3
3 patients	89	29.3
4 patients	39	12.8
Satisfaction with working in intensive care unit		
Yes	207	68.1
No	97	31.9
The state of wanting to continue working in the intensive care unit		
Yes	196	64.5
No	108	35.5
Total	**304**	**100.0**

Table 3. Anxiety, Depression and Burnout Scale Scores of the Nurses.

Scales	*n* (%)	Mean ± SS
HAD-A		
Below threshold (0–10 points)	143 (47.0)	11.31 ± 4.41
Above threshold (11–21 points)	161 (53.0)	
HAD-D		
Below threshold (0–7 points)	71 (23.4)	10.03 ± 3.54
Above threshold (8–21 points)	233 (76.6)	
Burnout scale		
Very low (2.4 points or less)	75 (24.7)	3.92 ± 1.75
There is danger (2.4–3.4 points)	67 (22.0)	
Experiencing burnout (3.5–4.4 points)	42 (13.8)	
Severe burnout (4.5–5.4 points)	38 (12.5)	
Should get professional help (5.5 and above)	82 (27.0)	

hospital depression and burnout scale ($r = 0.519$, $p<0.001$). In addition, it was found that there was a highly significant positive correlation between hospital anxiety and depression ($r = 0.654$, $p<0.001$) (Table 5).

Discussion

Nurses working in the COVID-19 intensive care units during the pandemic period experience many problems, such as stress, sleep problems, anxiety, depression, and burnout (Kandemir et al., 2022; Azoulay et al., 2020). According to the results obtained in our study, 53.0% of the nurses were found to have anxiety and 76.6% to have depression. In the study of Kandemir et al. with nurses working in intensive care units, it was shown that the depression and anxiety rates of nurses were 65.5% and 58.3%, respectively (Kandemir et al., 2022). In the study conducted by Azoulay et al., it was determined that 50.4% of the nurses experienced anxiety and 30.4% had depression (Azoulay et al., 2020). Our study results are similar to those in the literature. The reason for the high rate of depression and anxiety in nurses may be due to the fear of contracting COVID-19, the fear of infecting their relatives, the fear of death and being away from their loved ones.

In our study, it was determined that the anxiety and depression levels of nurses who did not want to continue working in intensive care units and were not satisfied with working in intensive care units were higher. Similar results were obtained in the study of Caillet and Allaouchiche (Caillet et al., 2020). It was thought that the reason for this was the working conditions of the intensive care units, being intensive and complex units, and the nurses working there, struggling with both the difficulties brought by the pandemic and the many problems arising from the patients.

Nurses working in intensive care units are in close contact with patients, so they are afraid of contracting COVID-19. In our study, it was determined that the anxiety and

Table 4. Anxiety, Depression and Burnout Scale Scores According to Some Characteristics of Nurses.

Characteristics	HAD-A Mean ± SS	HAD-D Mean ± SS	BS Mean ± SS
Age group			
18–29 years	11.48 ± 4.54	10.11 ± 3.52	4.12 ± 1.72
30–44 years	11.18 ± 4.40	9.98 ± 3.64	3.76 ± 1.80
45–55 years	10.31 ± 2.68	9.46 ± 3.09	2.76 ± 1.07
	F = 0.506	F = 0.216	F = 4.459
	p = 0.603	*p* = 0.806	**p = 0.012**
Gender			
Male	10.61 ± 5.20	10.64 ± 4.08	2.85 ± 1.69
Female	11.47 ± 4.20	9.88 ± 3.39	2.98 ± 1.52
	t = 1.186	t = 1.145	t = 0.56
	p = 0.239	*p* = 0.138	*p* = 0.571
Education			
Highschool	13.43 ± 4.04	12.09 ± 3.18	5.18 ± 1.37
University	11.27 ± 4.30	9.99 ± 3.41	3.73 ± 1.73
Graduate	9.87 ± 4.67	8.67 ± 3.77	3.83 ± 1.78
	F = 6.728	F = 9.798	F = 10.974
	p = 0.001	p<0.001	p<0.001
Presence of chronic disease			
Yes	10.35 ± 3.91	8.41 ± 2.43	2.53 ± 1.58
No	11.43 ± 4.46	10.23 ± 3.61	3.00 ± 1.54
	t = 1.337	t = 3.855	t = 1.68
	p = 0.182	p<0.001	*p* = 0.94
Duration of working (year)			
1–5 years	11.20 ± 4.54	9.69 ± 3.46	4.07 ± 1.75
6–10 years	11.59 ± 4.43	10.55 ± 3.28	4.11 ± 1.74
11–15 years	10.65 ± 4.42	9.97 ± 4.56	3.85 ± 1.86
16 years and above	11.43 ± 4.12	9.78 ± 3.46	3.18 ± 1.56
	F = 0.426	F = 1.183	F = 3.666
	p = 0.734	*p* = 0.316	**p = 0.013**
Working duration of intensive care unit (year)			
1 year and belove	10.87 ± 4.32	9.66 ± 3.47	3.55 ± 1.59
1–5 years	11.97 ± 4.50	10.49 ± 3.54	4.25 ± 1.87
6–10 years	10.60 ± 4.31	9.60 ± 3.31	3.70 ± 1.64
11 years and above	11.72 ± 4.37	10.31 ± 4.18	4.09 ± 1.79
	F = 1.945	F = 1.398	F = 2.960
	p = 0.122	*p* = 0.244	**p = 0.033**
Satisfaction with working in intensive care unit			
Yes	10.50 ± 4.08	9.68 ± 3.39	2.78 ± 1.49

(continued)

Table 4. (continued)

Characteristics	HAD-A Mean ± SS	HAD-D Mean ± SS	BS Mean ± SS
No	13.03 ± 4.62	10.78 ± 3.76	3.32 ± 1.63
	t = 4.830	t = 2.560	t = 2.77
	p<0.001	**p = 0.011**	**p = 0.006**
The state of wanting to continue working in the intensive care unit			
Yes	10.56 ± 4.13	9.60 ± 3.42	36.60 ± 16.24
No	12.67 ± 4.60	10.81 ± 3.64	43.93 ± 18.99
	t = 4.090	t = 2.865	t = 3.54
	p<0.001	**p = 0.004**	**p = 0.001**
Status of being COVİD-19 while working in intensive care			
Yes	12.26 ± 4.39	10.91 ± 3.56	3.11 ± 1.51
No	10.79 ± 4.35	9.55 ± 3.45	2.86 ± 1.57
	t = 2.812	t = 3.226	t = 1.33
	p = 0.005	**p = 0.001**	*p* = 0.182

Table 5. Correlation Between Hospital Anxiety Depression and Burnout Scale.

Scales	Mean ± SD	BS r	HAD-D r
HAD-A	11.31 ± 4.41	0.566*	0.654*
HAD-D	10.03 ± 3.54	0.512*	
BS	3.92 ± 1.75		

r = pearson correlation analysis test.
*$p < 0.05$.

depression levels of the nurses who contracted COVID-19 while working in the intensive care unit were higher. In a similar study, it was shown that the COVID-19 status of healthcare professionals increases the risk of anxiety and depression (Bao et al., 2020). The reason for this may be the fear of infecting the relatives with COVID-19 and the fear of death.

This study reported that one of the factors affecting anxiety and depression in nurses was education. High school graduate nurses had higher levels of anxiety and depression. There are studies in the literature that have achieved similar results to our study (Caillet et al., 2020; Zhang et al., 2021). This may be due to the fact that nurses

without a college education may not have the knowledge, skills, and critical thinking necessary.

Burnout is one of the most common problems among nurses working in intensive care units during the pandemic. In our study, it was determined that 53.3% of the nurses experienced burnout and 27.0% experienced burnout at a level that required professional help. In the study of Bruyneel et al., it was shown that 68% of nurses working in the intensive care unit experienced burnout (Bruyneel et al., 2021). In another study, it was reported that nurses working in the intensive care unit experienced burnout the most among healthcare professionals (64%) (Sharma et al., 2020). A study by Owuer et al. showed that nurses experienced moderate-to-severe burnout during the pandemic (Owuor et al., 2020).

The present study indicated that the burnout level of nurses between the 45–55 age group were higher than other groups. Similarly our results support the study of Azoulay et al. (2020) They claimed that burnout is higher in health workers in the 40–55 age group (Azoulay et al., 2020). This may be due to the fear of death of the nurses due to the pandemic and the fact that they see themselves in the risk group due to their age.

Acording to our study high school graduate nurses had a higher burnout level. It was thought that the reason for this might be that nurses who are high school graduates do not feel competent in their profession and are afraid of taking responsibility. Contrary to our study, Sayılan et al. 2021 and Hu et al. (2020) show that nurses with higher education levels experience more burnout (Sayılan et al., (2021) ; Hu et al., (2020)).

Burnout levels were found to be higher in nurses with 16 years or more of working experience in the profession. Contrary to our study, in a study by Duaerte et al., it was stated that burnout is more common in healthcare workers with less professional experience (Duarte et al., 2020). In this study, the reason why burnout was observed more in nurses with longer working years may be due to the decrease in professional satisfaction and motivation of nurses due to the increase in mortality rates in intensive care units due to COVID-19. Moreover it was determined that the burnout levels of nurses who had worked in the intensive care unit for less than 1 year were higher. Similarly, in the study conducted by Tunç and Göklü with healthcare professionals, it was shown that less working experience is a factor affecting burnout (Tunç & Göklü, 2021). The lack of professional experience of nurses working in specialized units such as intensive care may be due to their need for experience in order to improve their ability to cope with critical situations and solve problems. It was also observed that those who were not satisfied with working in the intensive care unit and those who did not want to work in the intensive care unit experienced more burnout. There are studies in the literature that have achieved similar results to our study (Hu et al., 2020; Bruyneel et al., 2021).

The study results revealed that nurses with anxiety and depression experienced more burnout. In systematic reviews, it has been stated that anxiety and depression are among the main risk factors for burnout (Lluch et al., 2022), that health professionals with anxiety and depression experience higher levels of burnout (Soares et al., 2022); and that nurses working in intensive care units have anxiety and depression. It has been

reported that those with high levels of depression experience more burnout (Ramirez-Elvira et al., 2021). Studies show that anxiety and depression are important risk factors affecting burnout for healthcare professionals. In addition, these factors that affect the psychosocial health of health workers trigger each other. Therefore, necessary precautions should be taken.

Limitations

The results of this study can only be generalized to intensive care nurses working in Turkey.

Conclusion

The anxiety, depression, and burnout levels of the nurses working in the intensive care unit were found to be high during the pandemic period. This study provided basic data for attempts to address these problems. Protecting the mental health of nurses is very important in terms of both improving the quality of care and increasing the productivity of nurses.

It is important for institutions to organize training for nurses on issues such as coping with stress, critical thinking in critical patient care, problem solving, and crisis management. Routine mental evaluations of health workers working in special units such as intensive care units should be conducted and necessary psychological support should be provided by the institution. In addition, necessary arrangements such as accommodation, transportation, mental support, and financial support should be made for nurses working in intensive care units in special cases such as pandemics.

Implications for Nursing

It is important to protect the psychosocial health of nurses working in the frontline during the Pandemic. Necessary precautions should be taken by determining the levels of anxiety, depression and burnout for nurses working in intensive care units. Thus, it is hoped, the job satisfaction and motivation of nurses will increase. This will positively affect health outcomes.

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Ethical Considerations

Approval was obtained from the Non-Invasive Clinical Research Ethics Committee of the Faculty of Medicine of an University to conduct the study (107/22.01.2021). In addition, the

nurses participating in the study were informed about the research through the Google Form, and informed consent was obtained.

Declaration of Conflicting Interests

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Data Availability Statement

This study's data and findings are available from the corresponding author upon reasonable request.

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References

Al Maqbali, M., Al Sinani, M., & Al-Lenjawi, B. (2021). Prevalence of stress, depression, anxiety and sleep disturbance among nurses during the COVID-19 pandemic: A systematic review and meta-analysis. *Journal of Psychosomatic Research*, *14*(110343), 1–18. https://doi.org/10.1016/j.jpsychores.2020.110343.

Aydemir, Ö., Guvenir, T., Kuey, L., & Kultur, S. (1997). Validity and reliability of Turkish version of hospital anxiety and depression scale. *Turk Psikiyatri Derg*, *8*(4), 280.

Azoulay, E., Cariou, A., Bruneel, F., Demoule, A., Kouatchet, A., Reuter, D., & Kentish-Barnes, N. (2020). Symptoms of anxiety, depression, and peritraumatic dissociation in critical care clinicians managing patients with COVID-19. A cross-sectional study. *American Journal of Respiratory and Critical Care Medicine*, *202*(10), 1388–1398. https://doi.org/10.1164/rccm.202006-2568OC

Bao, Y., Sun, Y., Meng, S., Shi, J., & Lu, L. (2020). 2019-nCoV epidemic: Address mental health care to empower society. *The Lancet*, *395*(10224), 37–38. https://doi.org/10.1016/S0140-6736(20)30309-3

Bruyneel, A., Smith, P., Tack, J., & Pirson, M. (2021). Prevalence of burnout risk and factors associated with burnout risk among ICU nurses during the COVID-19 outbreak in French speaking Belgium. *Intensive and Critical Care Nursing*, *65*(103059), 1–7. https://doi.org/10.1016/j.iccn.2021.103059.

Caillet, A., Coste, C., Sanchez, R., & Allaouchiche, B. (2020). Psychological impact of COVID-19 on ICU caregivers. *Anaesthesia Critical Care and Pain Medicine*, *39*(6), 717–722. https://doi.org/10.1016/j.accpm.2020.08.006

Chan, J. F. W., Yuan, S., Kok, K. H., To, K. K. W., Chu, H., Yang, J., & Yuen, K. Y. A. (2020). Familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: a study of a family cluster. *The Lancet*, *395*(10223), 514–523. https://doi.org/10.1016/S0140-6736(20)30154-9

Duarte, I., Teixeira, A., Castro, L., Marina, S., Ribeiro, C., Jácome, C., & Serrão, C. (2020). Burnout among Portuguese healthcare workers during the COVID-19 pandemic. *BMC Public Health*, H20(1), 1–10. https://doi.org/10.1186/s12889-020-09980-z.

El-Hage, W., Hingray, C., Lemogne, C., Yrondi, A., Brunault, P., Bienvenu, T., & Aouizerate, B. (2020). Health professionals facing the coronavirus disease 2019 (COVID-19) pandemic: What are the mental health risks? *Encephale*, *46*(3S), S73–S80. https://doi.org/10.1016/j.encep.2020.04.008

Fernandez, R., Lord, H., Halcomb, E., Moxham, L., Middleton, R., Alananzeh, I., & Ellwood, L. (2020). Implications for COVID-19: A systematic review of nurses' experiences of working in acute care hospital settings during a respiratory pandemic. *International Journal of Nursing Studies*, *111*(103637), 1–8. https://doi.org/10.1016/j.ijnurstu.2020.103637.

Galanis, P., Vraka, I., Fragkou, D., Bilali, A., & Kaitelidou, D. (2021). Nurses' burnout and associated risk factors during the COVID-19 pandemic: A systematic review and meta-analysis. *Journal of Advanced Nursing*, *77*(8), 3286–3302. https://doi.org/10.1111/jan.14839.

Gomez, S., Anderson, B. J., Yu, H., Gutsche, J., Jablonski, J., Martin, N., & Mikkelsen, M. E. (2020). Benchmarking critical care well-being: Before and after the coronavirus disease 2019 pandemic. *Critical Care Explorations*, *2*(10), E0233. https://doi.org/10.1097/CCE.0000000000000233

Hu, D., Kong, Y., Li, W., Han, Q., Zhang, X., Zhu, L. X., & Zhu, J. (2020). Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A large-scale cross-sectional study. *EClinicalMedicine*, *24*(100424), 1–10. https://doi.org/10.1016/j.eclinm.2020.100424.

Isık, M., Kırlı, U., & Özdemir, P. G. (2021). Mental health of healthcare professionals in the COVID-19. pandemic. *Turkish Journal of Psychiatry*, *32*(4), 225–234. https://doi.org/10.5080/u25827

Kandemir, D., Temiz, Z., Ozhanli, Y., Erdogan, H., & Kanbay, Y. (2022). Analysis of mental health symptoms and insomnia levels of intensive care nurses during the COVID-19 pandemic with a structural equation model. *Journal of Clinical Nursing*, *31*(5–6), 601–611. https://doi.org/10.1111/jocn.15918

Lai, J., Ma, S., Wang, Y., Cai, Z., Hu, J., Wei, N., & Hu, S. (2020). Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. *JAMA Network Open*, *3*(3), Article e203976–e203976.

Lakanmaa, R. L., Suominen, T., Ritmala-Castrén, M., Vahlberg, T., & Leino-Kilpi, H. (2015). Basic competence of intensive care unit nurses: Cross-sectional survey study. *Biomed Research International*, *2015*(12), 536724. https://doi.org/10.1155/2015/536724

Levene, H. (1960). Robust tests for equality of variances. In I. Olkin (Ed.). *Contributions to probability and statistics* (pp. 278–292). Stanford University Press.

Lluch, C., Galiana, L., Doménech, P., & Sansó, N. (2022). The impact of the COVID-19 pandemic on burnout, compassion fatigue, and compassion satisfaction in healthcare personnel: A systematic review of the literature published during the first year of the pandemic. *Healthcare*, *10*(2), 364. https://doi.org/10.3390/healthcare10020364

Malach-Pines, A. (2005). The burnout measure, short version. *International Journal of Stress Management*, *12*(1), 78–88. https://doi.org/10.1037/1072-5245.12.1.78

Moradi, Y., Baghaei, R., Hosseingholipour, K., & Mollazadeh, F. (2021). Challenges experienced by ICU nurses throughout the provision of care for COVID-19 patients: A qualitative study. *Journal of Nursing Management*, *29*(5), 1159–1168. https://doi.org/10.1111/jonm.13254

Murthy, S., Gomersall, C. D., & Fowler, R. A. (2020). Care for critically ill patients with COVID-19. *Jama*, *323*(15), 1499–1500. https://doi.org/10.1001/jama.2020.3633

Owuor, R. A., Mutungi, K., Anyango, R., & Mwita, C. C. (2020). Prevalence of burnout among nurses in sub-Saharan Africa: A systematic review. *JBI Evidence Synthesis*, *18*(6), 1189–1207. https://doi.org/10.1124/JBISRIR-D-19-00170.

Ramírez-Elvira, S., Romero-Béjar, J. L., Suleiman-Martos, N., Gómez-Urquiza, J. L., Monsalve-Reyes, C., Cañadas-De la Fuente, G. A., & Albendín-García, L. (2021). Prevalence, risk factors and burnout levels in intensive care unit nurses: A systematic review and meta-analysis. *International Journal of Environmental Research and Public Health*, *18*(21), 11432. https://doi.org/10.3390/ijerph182111432

Ross, A., Bevans, M., Brooks, A. T., Gibbons, S., & Wallen, G. R. (2017). Nurses and health-promoting behaviors: Knowledge may not translate into self-care. *AORN Journal*, *105*(3), 267–275. https://doi.org/10.1016/j.aorn.2016.12.018

Sayılan, A. A., Kulakac, N., & Uzun, S. (2021). Burnout levels and sleep quality of COVID-19 heroes. *Perspectives in Psychiatric Care*, *57*(3), 1231–1236. https://doi.org/10.1111/ppc.12678

Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (complete samples). *Biometrika*, *52*(3–4), 591–611. https://doi.org/10.1093/biomet/52.3-4.591

Sharma, R., Saxena, A., Magoon, R., & Jain, M. K. (2020). A cross-sectional analysis of prevalence and factors related to depression, anxiety, and stress in health care workers amidst the COVID-19 pandemic. *Indian Journal of Anaesthesia*, *64*(4), 242. https://doi.org/10.4103/ija.IJA_987_20

Shen, X., Zou, X., Zhong, X., Yan, J., & Li, L. (2020). Psychological stress of ICU nurses in the time of COVID-19. *Critical Care*, *24*(1), 1–3. https://doi.org/10.1186/s13054-020-02926-2

Soares, J. P., Oliveira, N. H. S. D., Mendes, T. D. M. C., Ribeiro, S. D. S., & Castro, J. L. D. (2022). Burnout-related factors in health professionals during the COVID-19 pandemic: An integrative review. *Saúde Em Debate*, *46*(1), 385–398. https://doi.org/10.1590/0103-11042022E126I.

Stocchetti, N., Segre, G., Zanier, E. R., Zanetti, M., Campi, R., Scarpellini, F., & Bonati, M. (2021). Burnout in intensive care unit workers during the second wave of the COVID-19 pandemic: A single center cross-sectional Italian study. *International Journal of Environmental Research and Public Health*, *18*(11), 6102. https://doi.org/10.3390/ijerph18116102

Tokur, M. E., Ergan, B., Aydın, K., Çalışkan, T., Savran, Y., Yaka, E., & Gökmen, A. N. (2018). Depression and burnout frequency in nurses working in tertiary intensive care units. *Journal of Critical and Intensive Care*, *9*(2), 25–33. https://doi.org/10.5152/dcbybd.2018.1840

Tümkaya, S., Sabahattin, Ç. A. M., & Çavuşoğlu, I. (2009). Validity and reliability study of the Turkish adaptation of the burnout scale short version. *Journal of Çukurova University Social Sciences*, *18*(1), 387–398.

Tunç, Ş., & Göklü, M. R. (2021). Burn-Out syndrome among healthcare professionals facing the novel coronavirus disease 2019 (COVID-19) Pandemic. *Journal of Harran University Medical Faculty*, *18*(3). https://doi.org/10.35440/hutfd.1012004

Yeşil Bayülgen, M., Bayülgen, A., Yeşil, F. H., & ve Akcan Türksever, H. (2021). Determining the anxiety and hopelessness levels of nurses working during the COVID-19 pandemic. *University of Health Sciences Journal of Nursing*, *3*(1), 1–6. https://doi.org/10.48071/sbuhemsirelik.839229

Zakeri, M. A., Elham Rahiminezhad, E., Salehi, F., Ganjeh, H., & Dehghan, M. (2021). Burnout, anxiety, stress, and depression among Iranian nurses: Before and during the first wave of the COVID-19 pandemic. *Frontiers in Psychology*, (789737), 1–9. https://doi.org/10.3389/fpsyg.2021.78973.

Zhang, H., Li, W., Li, H., Zhang, C., Luo, J., Zhu, Y., & Li, C. (2021). Prevalence and dynamic features of psychological issues among Chinese healthcare workers during the COVID-19 pandemic: A systematic review and cumulative meta-analysis. *General Psychiatry*, *34*(3). https://doi.org/10.1136/gpsych-2020-100344

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Wiley Online Library*, *67*(6), 361–367. https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

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