

Nurses' Journey in the Pandemic: Fear of COVID-19 and Work Stress

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ABSTRACT

Purpose: During the pandemic, nurses have played an important role in the treatment and care of individuals with COVID-19. Fear of COVID-19 was added to the work stress experienced by nurses for various reasons before the pandemic. Revealing the processes that affect nurses' mental health during the pandemic is an important public health priority in terms of evaluating nurses' health and managing the effective delivery of nursing services. The aim of this study is to investigate the relationship between fear of COVID-19 and work stress in nurses working in hospitals.

Material and Methods: This descriptive-correlational study was conducted between February and April 2022 with 270 volunteer nurses in a university hospital located in the Eastern Anatolia Region of Turkey. Data were collected using a Socio-demographic Characteristics Form, the Fear of COVID-19 Scale, and the Nurse Stress Scale by the face-to-face interview method. Descriptive statistical methods (counts, percentages, min-max, mean, and standard deviation values) and Pearson correlation analysis were employed to analyze the data.

Results: Participants' mean scores were 14.59±6.23 on the Fear of COVID-19 Scale and 62.46±11.44 on the Nurse Stress Scale. A statistically significant, positive, and low-level correlation was found between fear of COVID-19 and work stress ($r=0.145$, $p<0.017$).

Conclusion: Nurses' fear of COVID-19 and work stress was below a moderate level. As their fear of COVID-19 increased, their work stress increased, as well. Measures to be taken to reduce nurses' fear of COVID-19 can contribute positively to the reduction of their work stress and therefore to their health.

Keywords: COVID-19; fear, hospitals, nurses; stress.

Pandemide Hemşirelerin Yolculuğu: COVID-19 Korkusu ve İş Stresi

ÖZET

Amaç: Pandemi sürecinde hemşireler, COVID-19 tanısı almış bireylerin tedavi ve bakımında önemli bir rol oynamıştır. Pandemi öncesinde hemşirelerin çeşitli nedenlerle yaşadığı iş stresine COVID-19 korkusu eklenmiştir. Bu süreçte hemşirelerin ruh sağlığını etkileyen faktörlerin belirlenmesi, hemşirelerin sağlığının değerlendirilmesi ve hemşirelik hizmetlerinin etkin sunumunun yönetilmesi açısından önemli bir halk sağlığı önceliğidir. Bu çalışmanın amacı; hastanede çalışan hemşirelerde COVID-19 korkusu ve iş stresi ilişkisini incelemektir.

Gereç ve Yöntemler: Tanımlayıcı-ilişki arayıcı tipte planlanan çalışma Şubat-Nisan 2022 tarihleri arasında Türkiye'nin Doğu Anadolu Bölgesi'nde bulunan bir üniversite hastanesinde çalışan gönüllü 270 hemşire ile yürütülmüştür. Veri; Sosyo-demografik Özellikler Formu, COVID-19 Korkusu Ölçeği ve Hemşire Stres Ölçeği kullanılarak yüz yüze görüşme yöntemiyle toplanmıştır. Tanımlayıcı istatistiksel metotlar (sayı, yüzde, min-maks değerleri, ortalama ve standart sapma) ve Pearson korelasyon analizi aracılığıyla veri değerlendirilmiştir.

Bulgular: Katılımcıların COVID-19 Korkusu Ölçeği puan ortalaması 14.59±6.23, Hemşire Stres Ölçeği puan ortalaması 62.46±11.44'tür. COVID-19 korkusu ve iş stresi arasında istatistiksel olarak anlamlı, pozitif yönlü ve düşük düzeyli bir ilişki saptanmıştır ($r=0.145$, $p<0,017$).

Sonuç: Hemşirelerin COVID-19 korkusu ve iş stresi orta düzeyin altındadır. Hemşirelerde COVID-19 korkusu arttıkça iş stresi artmaktadır. Hemşirelerin COVID-19 korkusunu azaltmaya yönelik alınacak önlemler iş stresinin azalmasına, dolayısıyla hemşirelerin sağlığına pozitif katkı sağlayabilir.

Anahtar kelimeler: COVID-19; Hastane, Hemşire; Korku; Stres.

The human population has had to fight epidemics, such as Severe Acute Respiratory Syndrome, Middle East Respiratory Syndrome, from past to present, and the impact of these diseases on the human population has been devastating (1,2). The recent pandemic that humanity has to fight has been COVID-19 (3). Although three years have passed since the first cases were detected and two years since the development of an effective vaccine, COVID-19 still affects people's health and well-being (4). More than 762 million confirmed cases and 6.5 million deaths in the world and more than 17 million confirmed cases and one hundred thousand deaths in Turkey have been reported (3). COVID-19 disease has not only caused the risk of death after transmission but also created significant psychological problems (5). Both as members of society and professionals who play important roles in the treatment and care of individuals diagnosed with COVID-19, nurses have faced these problems, too (6).

The International Council of Nurses has reported that the COVID-19 pandemic exacerbates stress and anxiety in nurses and noted that approximately 80% of nurses who have been in close contact with COVID-19 patients have had mental health problems (7). Problems, such as uncertainty brought about by the COVID-19 disease, inadequate number of experienced personnel who can provide care for critical patients, and difficulty in the supply of personal protective equipment, have increased nurses' stress levels (8). The fact that nurses are in direct contact with a deadly and highly contagious virus has also become a source of stress and fear for the health of their families (9). During the pandemic process, one of the important sources of stress for nurses (10), who already had work stress for various reasons before the pandemic, has been the fear of COVID-19 (11).

Fear of the pandemic may cause psychological problems due to an increase in anxiety and stress levels in healthy individuals and an increase in the severity of existing symptoms in individuals who already have mental disorders (12,13). The fear experienced by nurses due to the pandemic may result in an increase in psychological distress and intention to quit and deterioration in health perceptions (14,15). Determination of nurses' fear of COVID-19 and stress levels can guide mental health protection studies and the design of psychological support programs. Therefore, this study was planned based on the following question: "What is the relationship between fear of COVID-19 and work stress in nurses working in hospitals?"

MATERIAL AND METHODS

Design and Sample

The population of this descriptive-correlational study consisted of nurses working in a university hospital located in the Eastern Anatolia Region of Turkey. The inclusion criteria of the study were working as a nurse in the hospital where the research was conducted and volunteering to participate in the research. The simple random sampling method, which is accepted as one of the probability sampling methods, was used for sample selection. The following formula was employed for calculating the sample: $n = N \times t^2 \times p \times q / d^2 (N-1) + t^2 \times p \times q$. The calculation was based on a theoretical t-value of 1.96, a confidence interval of 95%, and a sampling error of 0.05 (16). When the research data were formulated based on these values and using the formula mentioned above, the sample size representing a population of 800 individuals was found to be at least 259 subjects. The study was completed with 270 nurses.

Data Collection Tools

The Socio-Demographic Characteristics Form: This form was prepared by the researcher following a review of the literature. It includes questions about nurses, such as age, marital status, gender, level of education, department, and status of working shifts.

The Fear of COVID-19 Scale: This scale was developed by Ahorsu et al. (12) and adapted into Turkish by Bakioğlu, Korkmaz, and Ercan (17). The scale is uni-dimensional and its items (e.g., "I am most afraid of coronavirus-19") are responded to on a five-point Likert type scale from 1 (strongly disagree) to 5 (strongly agree). It has seven items. There is no reverse and cut-off point in the scale. The total score obtained from all items of the scale shows the COVID-19 fear level experienced by the individual. The lowest score that can be obtained from the scale is 7, and the highest is 35. A high score on the scale indicates a high level of fear of COVID-19. Cronbach's α reliability coefficient of the scale is 0.84. In the present study, this value was calculated as 0.906.

Nurse Stress Scale (NSS): This scale was developed by Gray-Toft and Anderson (18) and adapted into Turkish by Mert, Aydin, and Baydemir (19). The scale consists of 34 items and 7 sub-dimensions, namely "uncertainty about treatment", "workload", "death of a patient", "conflict with a physician", "conflict with other nurses", "inadequate support", and "suffering patient". Each item on the scale is scored on a four-point Likert-type scale. Total scores on

the scale vary between 34 and 136. A high score shows that nurses experience stress more frequently in relation to individual stress problems in the physical medium, psychological medium, and physical environment. The lowest and highest scores that can be obtained from the scale sub-dimensions; 8-32 for "uncertainty about treatment" sub-dimension, 6-24 for "workload" sub-dimension, 5-20 for "death of a patient" sub-dimension, 5-20 for "conflict with a physician" sub-dimension, 5-20 for "conflict" with other nurses" sub-dimension, 3-12 for the "inadequate support" sub-dimension, and 2-8 for the "suffering patient" sub-dimension. Cronbach's α reliability coefficient of the total scale is 0.89 and this value varies between 0.65 and 0.80 for the sub-dimensions. In the current study, Cronbach's α reliability coefficient of the total scale is 0.906 and this value varies between 0.683 and 0.825 for the sub-dimensions.

Data Collection Process

We visited the nurses in their clinics in the hospital where the research was planned to be conducted between February and April 2022. Data were collected by the face-to-face interview method from nurses who were informed about the study and wanted to participate voluntarily.

Data Analysis

Data were analyzed on the Statistical Package for Social Science for Windows 22.0. Descriptive statistical methods (counts, percentages, min-max, mean, and standard deviation values) were used. The conformity of the variables to the normal distribution was examined using visual (histogram and probability graphs) and analytical methods (skewness and kurtosis values). Pearson correlation analysis was employed to examine the relationship between the two scales. The statistical significance level was accepted as $p < 0.05$.

RESULTS

The mean age of the nurses of the participants in the study was 30.51 ± 7.50 years, the mean work experience was 9.19 ± 7.90 years, 82.2% of the nurses were female, 46.3% worked in inpatient services, 44.1% gave care to patients diagnosed with COVID-19, and the workplace of 35.9% had changed during the pandemic process. Also, 77% of the nurses stated that their stress levels increased and 37.4% stated that their sleep patterns were badly affected during the pandemic (Table 1).

Participants' mean scores were 14.59 ± 6.23 on the Fear of COVID-19 Scale and 62.46 ± 11.44 on the NSS. The lowest mean score was obtained from the suffering patient sub-dimension (4.58 ± 1.42) and the highest from the uncertainty about treatment sub-dimension of the NSS (15.64 ± 3.58) (Table 2).

A statistically significant, positive, and low-level correlation was determined between the total scores of Fear of COVID-19 Scale and the NSS ($r = 0.145$, $p = 0.017$). As the total Fear of COVID-19 Scale score increased, the total NSS score increased, as well (Table 3).

DISCUSSION

In this study, participants' mean score on the Fear of COVID-19 Scale was 14.59 ± 6.23 . Considering that the minimum score that can be obtained from the scale is 7 and the maximum score is 35, it can be said that nurses' fear of COVID-19 was below the medium level. Unlike the findings of this study, some studies have shown that the level of fear of COVID-19 is high in nurses. For example, Labrague & de Los Santos (15) determined the level of fear of COVID-19 in nurses providing care for COVID-19 patients as 19.92 ± 6.15 . Ünver and Yeniğün (20) determined it as 25.09 ± 7.29 in nurses who worked in pandemic and surgical units and provided care for suspected or infected COVID-19 cases. This difference between the findings was probably because 44.1% of the participants were involved in the care of patients diagnosed with COVID-19, the uncertainty about COVID-19 decreased in the later stages of the pandemic, the knowledge and experience of nurses about COVID-19 increased, and the hospitalization and death rates fell as a result of increased immunity thanks to the vaccination of both nurses and the community with the introduction of the COVID-19 vaccine.

Seventy-seven percent of the participants stated that their stress levels increased during the pandemic process. However, the participants' mean score on the total NSS was 62.46 ± 11.44 . Considering that the minimum score that can be obtained from the scale is 34 and the maximum score is 136, it can be said that nurses' work stress was below the medium level. Unlike the findings of this study, some studies have shown a high level of work stress among nurses (21,22). The International Council of Nurses has reported that the COVID-19 pandemic exacerbates stress and anxiety in nurses and noted that approximately 80% of nurses who have been in close contact with COVID-19 patients have had mental health problems (7).

Table 1. Descriptive characteristics of the nurses participating in the study (n=270)

Variables	n	Min.	Max.	Mean	SD
Age	270	21.00	57.00	30.51	7.50
Number of children	270	0.00	4.00	0.84	1.04
Total work experience (year)	270	1.00	40.00	9.19	7.90
Weekly working hours	270	20.00	64.00	40.12	2.68

Variables		n	%
Gender	Male	48	17.8
	Female	222	82.2
Marital status	Married	169	62.6
	Single	101	37.4
Level of education	High school	45	16.7
	Associate degree	59	21.9
	Undergraduate degree	143	53.0
	Graduate degree	23	8.5
Department	Inpatient services	125	46.3
	Outpatient services *	16	5.9
	Special services**	119	44.1
	Management units	10	3.7
Working hours	08:00-16:00	162	60.0
	16:00-08:00	21	7.8
	16:00-24:00	5	1.9
	Alternating shift	82	30.4
Level of income	Income>expenses	39	14.4
	Income=expenses	122	45.2
	Income<expenses	109	40.4
Smoking status	Yes	97	35.9
	No	173	64.1
Alcohol consumption	Yes	17	6.3
	No	253	93.7
Chronic diseases	Yes	30	11.1
	No	240	88.9
Providing care for an individual diagnosed with COVID-19	Yes	119	44.1
	No	151	55.9
Change of duty during the pandemic process	Yes	97	35.9
	No	173	64.1
Getting a diagnosis of COVID-19	Yes	195	72.2
	No	75	27.8
Family relations during the pandemic process	Good	13	4.8
	Moderate	96	35.6
	Poor	91	33.7
	No change	70	25.9

Friendship relations during the pandemic process	Good	20	7.4
	Moderate	113	41.9
	Poor	63	23.3
	No change	74	27.4
Stress level during the pandemic process	Increased	208	77.0
	Decreased	10	3.7
	No change	52	19.3
Sleep habits during the pandemic	Good	6	2.2
	Moderate	91	33.7
	Poor	101	37.4
	No change	72	26.7
Total		270	100.0
* Outpatient clinics, endoscopy unit, etc.			
** Intensive care, emergency room, etc.			

Table 2. Distribution of the participants' scores on the Fear of COVID-19 Scale and the NSS and its sub-dimensions (n=270)

Scales and sub-dimensions	Min.	Max.	Mean	SD
Fear of COVID-19 Scale	7,00	35.00	14.59	6.23
NSS	30	103	62.46	11.44
Uncertainty about treatment	8	28	15.64	3.58
Workload	6	24	15.39	3.68
Death of a patient	5	20	10.44	2.70
Conflict with a physician	5	20	10.44	2.90
Conflict with other nurses	5	20	10,19	2.99
Inadequate support	3	12	6.23	1.95
Suffering patient	2	8	4.58	1.42

Problems, such as uncertainty brought about by the COVID-19 disease, inadequate number of experienced personnel who can provide care for critical patients, and difficulty in the supply of personal protective equipment, have increased nurses' stress levels (8). This difference between the findings was probably because when the study was conducted, restrictions such as quarantine measures against the pandemic had been lifted and a significant part of the society had been vaccinated against COVID-19. In addition, the rate of participants involved in the care of patients diagnosed with COVID-19 was 44.1%.

Table 3. The correlation between participants' scores on the Fear of COVID-19 Scale and NSS		
Scales and sub-dimensions		Fear of COVID-19 Scale
NSS	r	0.145
	p	0.017*
	n	270
Uncertainty about treatment	r	0.189
	p	0.002*
	n	270
Workload	r	0.109
	p	0.074
	n	270
Death of a patient	r	0.022
	p	0.718
	n	270
Conflict with a physician	r	0,145
	p	0.017*
	n	270
Conflict with other nurses	r	0.064
	p	0.293
	n	270
Inadequate support	r	0.142
	p	0.020*
	n	270
Suffering patient	r	0.037
	p	0.541
	n	270
* $p < 0.05$		

There was a statistically significant, positive, and low-level relationship between the participants' mean scores on the total Fear of COVID-19 Scale and NSS ($r=0.145$, $p<0.017$). This finding was important in that it indicated that as nurses' fear of COVID-19 increased, their work stress increased, as well. Similar to the findings of this study, some studies have revealed that the fear of COVID-19 is a psychological factor that increases stress levels in nurses (11, 23). Fear of the pandemic may cause psychological problems due to an increase in anxiety and stress levels in healthy individuals and the severity of existing symptoms in individuals with mental disorders (12,13). The fear experienced by nurses due to the pandemic may result in an increase in psychological distress, deterioration in health perceptions, and an increase in intention to quit (14,15). As in the COVID-19 pandemic, nurses will continue to fulfill their responsibilities for patients in pandemics that are

likely to occur in the future. In this context, to reduce the negative psychological effects of the pandemic process, nurses' health can be protected through mental health protection activities to be organized in the hospital environment, thereby increasing their work efficiency.

CONCLUSION

In this study, conducted to determine the relationship between fear of COVID-19 and work stress in nurses working in hospitals, participants' fear of COVID-19 and work stress were below the moderate level and these two characteristics showed a statistically significant, positive, and low-level correlation. The increase in nurses' fear of COVID-19 increased their work stress. Understanding the fear of COVID-19 in nurses is important to minimize their exposure to work-related stress and to develop approaches to protect their mental health. Measures to be taken to reduce nurses' fear of COVID-19 can contribute positively to the reduction of work stress and therefore to their health.

DECLARATIONS

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None.

Conflict of interest

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

Ethical considerations

At the outset, the approval of the ethics committee of a university in Turkey (Date: 07.02.2022, No: 24), the COVID-19 research permission of the Ministry of Health (date: 07.02.2022), and the institutional permission of the hospital management where the research was conducted were obtained. The permission of the authors of the scales to be used in the study was obtained via e-mail. Verbal and written consent was obtained from nurses who volunteered to participate in the study. A copy of the written consent form was given to the participants.

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Authors contributions

Conception: SG, SA. Design: SG, SA. Supervision: SA. Materials: SG, SA. Data collection: SG. Analysis: SG, SA. Literature review: SG, SA. Writing: SG, SA. Critical review: SG, SA.

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