Original Article

The Effect of Using Personal Protective Equipment on the Comfort and Anxiety of Nurses During the Covid-19 Pandemic

Eda Ergin
Izmir Bakircay University Faculty of Health Sciences, Department of Fundamentals Nursing, Izmir, Turkey

Sebnem Cinar Yucel
Ege University, Nursing Faculty, Department of Nursing, Izmir, Turkey

Emre Yesil
Izmir Bakircay University, PhD Student, Izmir, Turkey

Correspondence: Eda Ergin, Izmir Bakircay University Faculty of Health Sciences, Department of Fundamentals Nursing, Izmir, Turkey. E-mail: eda.ergin@bakircay.edu.tr

Abstract

Objective: This study aimed to determine the relationship between the comfort and anxiety levels of nurses who use personal protective equipment.

Methods: This descriptive study was conducted with 223 nurses in Turkey between February and April 2021 to determine the effect of using personal protective equipment on the comfort and anxiety levels of nurses working during the second peak of the pandemic. The data in the study were collected through the "Individual Information Form", "Corona virus Anxiety Scale" and "Nurse Comfort Scale" with the help of Google Forms (online surveys). Data obtained from the study were evaluated with SPSS 21.0. Program.

Results: No significant difference was found between nurses' total anxiety scores and their use of gloves, medical masks, face shields / goggles, disposable gowns and coveralls ($p > 0.05$). A significant difference was found between the use of N95 masks and total anxiety scores ($p < 0.05$). A significant difference was found between the use of gloves and nursing comfort scale total scores in regards to Psycho-spiritual Comfort sub-scale and the Physical Comfort sub-scale ($p < 0.05$).

Conclusion: Nurses' anxiety levels were found to be low while their comfort levels were moderate. It was concluded that using N95 masks as personal protective equipment increased nurses' anxiety.

Keywords: Pandemic, Healthcare Personnel, Personal Protective Equipment, Comfort, Anxiety

Introduction

The virus identified as COVID-19, which develops due to the novel corona virus, currently designated as the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) causing pneumonia , was first identified in Wuhan, China in December 2019 and spread all over the world. The World Health Organization (WHO) declared a pandemic in early 2020. Since the declaration of the COVID-19 pandemic, a total of 43 million COVID-19 cases have been reported worldwide, including nearly one million deaths. According to the latest data of the Ministry of Health in Turkey, a total of 4,929,118 COVID-19 cases were identified including 41,527 COVID-19 related deaths. The countries with the highest number of COVID-19 cases in the world are listed as America, India, Brazil and France. Turkey ranks fifth among other countries based on the number of COVID-19 cases (WHOb, 2021). Nurses in Turkey are successfully handling the pandemic although the number of

nurses in Turkey (27.000 nurses per 10,000 people) is much lower compared to the number of nurses in these countries (America - 145.000 nurses per 10,000 people; Brazil – 101.000 nurses per 10,000 people; France – 114.000 nurses per 10,000 people)(WHOa, 2021).

Nurses' role in "preventing and controlling infections" is critical in controlling the COVID-19 disease where hand hygiene, social distancing and surface disinfection are important (WHOb, 2021). Nurses are working with great devotion in the delivery of health care services during the COVID-19 pandemic (Jackson *et al.*, 2020). Many studies in the literature have presented that nurses work with a great sense of duty (Fernandez *et al.*, 2020; Liu *et al.*, 2020) and self-sacrifice by dedicating themselves to patient care(Fernandez *et al.*, 2020) although they are aware of the occupational risks they may encounter in the pandemic and are concerned about the safety of themselves and their families. The COVID-19 Current Situation Analysis Report, published by the Turkish Nurses Association on April 27, 2020, reveals the difficulties experienced by nurses caring for patients diagnosed with COVID-19. The Report presents the results of the survey in which 520 nurses from 61 provinces participated in the report and concludes the problems experienced the most by the nurses are as follows: Insufficient information about the precautions to be taken to protect themselves while caring for a patient diagnosed/suspected with COVID-19, lack of personal protective equipment, long working hours, insufficient breaks, problems experienced by nurses whose spouses are healthcare workers or soldiers in obtaining permission to care for their children (TNA, 2021).

The World Health Organization published guidelines on the use of personal protective equipment, one of the COVID-19 protection methods, under the name of the Rational Use of Personal Protective Equipment for the New Corona virus Disease (COVID-19). Based on this guideline, health workers had to use personal protective equipment for long hours in order to reduce the risk of transmission to themselves, the patients they care for and their family members (WHOb, 2021). Personal protective equipments include face shields/visors, N95 masks, aprons, gowns, overalls and gloves. The combination of personal protective equipments causes increased respiratory work, decreased field of vision, decreased sense of touch and heat stress (Visentin *et al.*, 2009; Loibner *et al.*, 2019). In addition, N95 face masks make communication difficult or impossible by hindering speech (Palmiero *et al.*, 2016). The use of protective equipment is believed to affect nurses' psycho-spiritual, socio-cultural and physical comforts. According to Kolcaba, comfort is defined as an expected result that has a complex structure within the physical, psycho-spiritual, social and environmental integrity that provides help and relief in order to meet the individual's needs and overcome the problems (Kolcaba, 1992, 1994, 2003).

Information on the effects of long-term use of personal protective equipment necessary for the care of COVID-19 patients is insufficient, but at least one study has concluded that personal protective equipment has adverse effects on both the physical and mental health of healthcare workers(Loibner *et al.*, 2019). Nurses who play an active role in this process are worried about being infected with the disease and infecting others (family, friends and other employees) due to their direct contact with COVID-19 patients. Exposure to traumatic events such as the suffering and death of patients increases nurses' fear and anxiety(De los Santos and Labrague, 2020; Cinar Yucel *et al.*, 2019, Kotrotsiou et al., 2021).

This study aimed to determine the relationship between the comfort and anxiety levels of nurses who use personal protective equipment since their experiences about using personal protective equipment are important due to high risk of contamination for healthcare professionals during the pandemic process which include psychological and spiritual risks. This research is the first and original study conducted with nurses at the stage of the second wave of the pandemic in Turkey and will contribute to future studies.

Methods

Design and Samples: This study was conducted with a cross-sectional descriptive design. The data of the study were collected between February and April 2021 in Turkey during the second peak period of the pandemic. The universe of the research was composed of 204.969 nurses based on the TSI (Turkish Statistical Institute) data announced by the Ministry of Health for the number of actively

employed nurses (TSI, 2021). The number of participants to be included in the sample was calculated using the Epi Info Statcalc program. The number of nurses to be sampled was calculated as 270 at the 90% confidence interval. The sample of this study consisted of 223 nurses who worked in the Aegean region, who filled out the questionnaire completely and returned them.

Data Collection: This study was conducted online to avoid cross-infection. Secure online survey creation links were reviewed by the researchers and it was decided to create the questionnaire sent to the nurses via the 'Google Questionnaire' URL to protect the confidentiality of the data. The data were collected by sharing the online survey link created by the researchers using the 'Google Survey' URL address with the nursing departments in the Aegean region hospitals. "Personal Information Form", "Coronavirus Anxiety Scale "and "Nurse Comfort Questionnaire" were used to collect data.

Personal Information Form: The form includes 10 items aiming to evaluate the socio-demographic characteristics of the nurses included in the study and the frequency of their personal protective equipment use. Socio-demographic characteristics include age, gender, marital status, clinic/unit/service and seniority. In regards to the use of personal protective equipment; the items in the form ask about the frequency of using gloves, masks (medical masks), N95/FFP2, visors or goggles/safety glasses and disposable gowns/overalls etc. (I used them when necessary, I I often used them, I sometimes used them, I rarely used them, I never used them).

Coronavirus Anxiety Scale: The scale developed by Lee (2020) was adapted to Turkish by Akkuzu et al. (2020). the scale consists of one dimension and 7 items (Akkuzu *et al.*, 2020; Lee, 2020). Coronavirus Anxiety Scale was designed as 5-point Likert type scale with 5 items. As a result of the analyses, accuracy of measurement was calculated to be 90% and a diagnostic specificity was 85%. The scale can be used as a highly reliable and thematically and psychometrically consistent measurement tool with a Cronbach-Alpha value of 0.93 for internal consistency (Akkuzu *et al.*, 2020). The Cronbach-Alpha value of the scale was found to be 0.92 in this study. Scale items are scored between 0-4. There is no reverse item. The scale has a single factor structure. A high score indicates high anxiety.

Nurse Comfort Questionnaire: Nurse Comfort Questionnaire (NCQ) was developed by Ferrandiz and Martin-Baena in 2015(Ferrandiz and Martín-Baena, 2015). The Turkish validity and reliability of the scale was conducted by Yücel et al in 2019. Nurse Comfort Questionnaire has a total of 39 items scored on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree). The response patterns of the scale, which consists of positive and negative items, are presented in a mixed order. 24 of the expressions are positive and 15 are negative, and negative items are reversed in scoring. Accordingly, a high score (4) indicates high comfort and a low score (1) indicates low comfort in positive statements while a low score (1) indicates high comfort and a high score (4) indicates low comfort in negative statements. The Cronbach alpha coefficient was found to be 0.915 (Cinar Yucel *et al.*, 2019). The Cronbach-Alpha value of the scale was found to be 0.94 in the present study. The Cronbach's alpha coefficient of the three sub-dimensions of the scale was found to be 0.859 for the Psycho-spiritual dimension, 0.846 for the Socio-cultural dimension and 0.818 for the Physical dimension. Comfort increases when the scale score increases; it decreases when the score decreases. A minimum of 39 and a maximum of 156 points can be obtained from the scale.

Ethical Dimension of the Research: The study was approved by the Ethics Committee of Non-Invasive Clinical Research at a university in Turkey (approval no: 2021/150) and was conducted in accordance with the Helsinki Declaration principles. Participants first read the informed consent text explaining the purpose and rationale of the study in the link posted online. After getting information about the study, the participating nurses responded with a "yes" or "no" to the following question: "Would you like to participate in the study voluntarily?" The participating nurses who volunteered and provided a positive answer to the question completed the questionnaire. They were informed that they could withdraw from the study without providing any reason.

Statistical Analysis of Data: Data obtained from the research was analyzed with the SPSS 21.0 program. Frequency distribution was used for categorical variables and descriptive statistics (mean±standard deviation) were used for numerical

variables while evaluating the research data. The Kolmogorov-Smirnov test was used to test whether the continuous data conformed to normal distribution. Since the data did not conform to normal distribution, Mann Whitney U test was used to compare paired groups, Kruskal Wallis test was used to compare three or more groups and Spearman correlation test was used to determine the relationships between variables. In addition, Cronbach's alpha values were used to calculate the reliability of the scale. $p<0.05$ was accepted for statistical significance.

Results

According to Table 1, out of 223 participants, 78.9% were women, 55.6% were single, 48.9% worked at a university hospital, 27.8% were assigned to the intensive care units of the services they worked in, % 73.1% had undergraduate education, 84.8% enjoyed their professions, 43.5% had a seniority of 0-5 years and 77.1% cared for a patient diagnosed with COVID-19.There was no significant difference between nurses' total anxiety scores and their gender, marital status, place of employment, clinic/unit/service, seniority, whether they liked their jobs and whether they cared for COVID-19 patients ($p>0.05$). There was no significant difference between nurses' total comfort scores and gender, marital status, seniority, and whether they cared for COVID-19 patients ($p>0.05$). A significant difference was found between place of employment, clinic/unit/service, clinic and whether they liked their jobs ($p<0.05$). Table 2 presents nurses' anxiety and comfort scale mean scores. Nurses' mean anxiety score was found to be 1.00 (3.00). Nurses comfort scale total mean score was 100.00 -(24.00) which was higher than the total mean scores for the sub-dimensions: Socio-cultural 29.00(11.00), Psycho-spiritual 43.00(8.00) and Physical comfort 26.00(10.00).

Table 1 Evaluation of Anxiety and Comfort Scale Scores according to Descriptive Characteristics (n=223)

			Total Anxiety Score		**Nurse Comfort Questionnaire (NCQ) Total Score**	
	n	%	Median (IQR)	Test and p value	Median (IQR)	Test and p value
Gender						
Female	176	78.9	1.00(3.75)	Z=-1.274	100 (23.00)	Z=-.939
Male	47	21.1	.00 (2.00)	p=.203	99 (27.00)	p=.348
Marital Status						
Married	99	44.4	.00(4.00)	Z=-1.114	100 (24.00)	Z=-.655
Single	124	55.6	1.00(3.00)	P=.265	100 (23.50)	P=.512
Place of Employment						
Ministry of Health Hospital	83	37.1	1.00(5.00)	KW=3.667	97.00(19.00)	KW=10.545 **P=.005**
University Hospital	109	48.9	1.00(3.00)	p=.160	103(27.50)	
Private Hospital	31	14.	1.00(4.00)		105(41.00)	
Clinic/Unit/service						
Emergency Department	23	10.3	1.00(6.00)	KW=6.833	91.00(23.00)	KW= 23.563 **p= .001**
Inpatient Service	52	23.3	1.00(5.00)	p=.337	93.50(29.00)	
Intensive Care Unit	62	27.8	1.00(3.00)		105(19.25)	

Outpatient Treatment	10	4.5	1.50(4.25)		94(21.25)	
Surgery	10	4.5	1.00(3.25)		94.50(19.25)	
COVID-19 Inpatient Service	26	11.7	.00(2.00)		105(37.50)	
COVID-19 Intensive Care Unit	40	17.9	1.00(2.75)		103(42.25)	
Seniority						
0-5 years	97	43.5	.00(2.50)	KW= 1.943 p=.584	100(22.00)	KW= 3.844 p= .279
6-10 years	54	24.2	.00(4.00)		100.50(23.50)	
11-20 years	53	23.8	.00(4.50)		97(35.50)	
21 years or more	19	8.5	.00(4.00)		107(40.00)	
Embracing the Profession						
Yes	172	84.8	1.00(3.00)	Z= -.314 p= .754	103(23.50)	Z= -5.768 **p=.000**
No	51	15.2	1.00(4.00)		82.50(26.25)	
Caring for patients diagnosed with COVID-19						
Yes	172	77.1	1.00(3.00)	Z= -1.710 p= .087	102(24.00)	Z= -1.193 p= .233
No	51	22.9	1.00(4.00)		103(21.00)	

Note: IQR Interquartile Range. Z; Mann Whitney U; KW= Kruskal Wallis test

Table 2 Evaluation of Nurses' Anxiety and Comfort Scale Scores (n=223)

	n	Median (IQR)	Min-Max
Anxiety Total Score	223	1.00(3.00)	0-20
Nurse Comfort Questionnaire Total Score	223	100.00(24.00)	52-152
Socio-cultural Comfort Scale Total Score	223	29.00(11.00)	14-56
Psycho-spiritual Comfort Scale Total Score	223	43.00(8.00)	14-53
Physical Comfort Scale Total Score	223	26.00(10.00)	13-44

Note: IQR Interquartile Range

Table 3 Evaluation of the Anxiety and Comfort Scale along with its Sub-Dimension Scores in regards to Using Personal Protective Equipment during the COVID-19 Pandemic (n=223)

			Anxiety Total Score		**Nurse Comfort Questionnaire Total Score**		**Socio-cultural Comfort Scale Total Score**		**Psycho-spiritual Comfort Scale Total Score**		**Physical Comfort Scale Total Score**	
	n	%	Median (IQR)	Test and p Value	Median (IQR)	Test and p Value	Median (IQR)	Test and p Value	Median (IQR)	Test and p Value	Median (IQR)	Test and p Value
Gloves												
I rarely used them	1	.4	-	KW= 7.118 p= .068	-	KW= 8.536 **p= .036**	-	KW= 6.147 p= .105	-	KW= 8.747 **p= .033**	-	KW= 8.552 **p= .036**
I sometimes used them	5	2.2	.00 (8.00)		84.00 (21.50)		25.00 (10.00)		36.00 (12.00)		24.00 (6.00)	
I often used them	151	67.7	1.00 (4.00)		101 (23.00)		29.00 (11.00)		43.00 (9.00)		27.00 (10.00)	
I used them when necessary	66	29.6	.00 (2.50)		99 (21.50)		29.00 (12.00)		42.00 (10.00)		27.00 (10.25)	
Mask(Medical Mask)												
I rarely used them	1	.4	-	KW= 5.397 p= .067	-	KW= 1.843 p= .398	-	KW= 2.275 p= .321	-	KW= 4.885 p= .087	-	*KW= 2.621 p= .270*
I sometimes used them	0	.0	-		-		-		-		-	
I often used them	158	70.9	1.00 (4.00)		100.50 (23.00)		29.00 (9.00)		43.00 (9.00)		26.00 (10.00)	

I used them when necessary	64	28.7	.00 (2.00)		99 (22.75)		28.00 (14.00)		41.00 (9.00)		26.50 (9.75)	
N95 / FFP2												
I rarely used them	19	8.5	1.00 (6.00)	KW= 11.293	97 (23.00)	KW= 1.770	28.00 (10.00)	KW= 3.199	42.00 (7.00)	KW= .194	25.00 (11.00)	KW= 3.596
I sometimes used them	22	9.9	2.00 (4.50)	p= **.010**	97 (20.00)	p= .621	28.00 (8.25)	p= .362	42.50 (11.25)	p= .979	25.00 (7.00)	p= .309
I often used them	97	43.5	1.00 (4.00)		97 (28.50)		29.00 (11.50)		43.00 (8.50)		26.00 (11.50)	
I used them when necessary	85	38.1	.00 (2.00)		102 (22.00)		30.00 (11.00)		43.00 (8.00)		28.00 (10.50)	
Visor or goggles / protective glasses												
I rarely used them	21	9.4	1.00 (6.00)	KW= 6.391	93 (25.50)	KW= 5.672	28.00 (10.00)	KW= 6.342	41.00 (12.00)	KW= 1.641	25.00 (8.50)	KW= 7.378
I sometimes used them	36	16.1	1.00 (7.00)	p= .094	94 (19.75)	p= .129	28.00 (7.00)	p= .096	42.00 (6.00)	p= .650	25.00 (8.50)	p= .061
I often used them	86	38.6	1.50 (4.00)		99 (25.50)		29.50 (11.25)		43.00 (9.00)		26.00 (12.00)	
I used them when necessary	80	35.9	.00 (3.00)		104.50 (22.75)		30.00 (12.50)		44.00 (9.50)		28.00 (11.00)	
Disposable gown/overalls etc.												
I rarely used them	16	7.2	1.00 (4.75)	KW= 6.416	91.50 (33.25)	KW= 6.657	26.50 (11.00)	KW= 8.969	41.00 (11.75)	KW= 2.098	24.00 (9.75)	KW= 6.821
I sometimes used them	18	8.1	2.00 (6.25)	p= .093	95 (22.50)	p= .084	28.00 (6.75)	**p= .030**	41.00 (7.50)	p= .552	25.00 (7.75)	p= .078
I often used them	103	46.2	1.00 (4.00)		98 (23.00)		28.00 (11.00)		43.00 (8.00)		26.00 (10.00)	
I used them when necessary	86	38.6	.00 (3.00)		98 (23.00)		31.00 (13.00)		43.00 (8.25)		28.00 (11.00)	

Note: IQR Interquartile Range. Z; Mann Whitney U; KW= Kruskal Wallis test

Table 4 The relationship between the mean scores of Anxiety and Comfort Scale and Its Sub-Dimensions (n=223)

	Anxiety Total Score	Nurse Comfort Questionnaire Total Score	Socio-cultural Comfort Scale Total Score	Psycho-spiritual Comfort Scale Total Score	Physical Comfort Scale Total Score
Anxiety Total Score	-				
Nurse Comfort Questionnaire Total Score	**-.186**	-			
Socio-cultural Comfort Scale Total Score	**-.100**	**.878****	-		
Psycho-spiritual Comfort Scale Total Score	**-.199**	**.807****	**.541**	-	
Physical Comfort Scale Total Score	**-.172**	**.902****	**.776****	**.597**	-

Note: $^{***}p<0.001$

Table 3 presents the results of evaluation based on the scores of the anxiety scale and comfort questionnaire and its sub-dimensions based on nurses' use of personal protective equipment during the COVID-19 pandemic. It was found that 67.7% of nurses reported using gloves, A 70.9% reported using medical masks, 43.5% reported using N95 masks, 38.6% reported using visors and goggles and 46.2% reported using disposable gowns and overalls. There was no significant difference between the use of gloves, medical masks, visors/glasses and disposable gowns, overalls and nurses' total anxiety scores ($p>0.05$). A significant difference was found between the use of N95 masks and total anxiety scores ($p<0.05$). There was no significant difference between the use of medical masks, N95, visor/glasses and disposable gowns, overalls and nursing comfort scores ($p>0.05$). A significant difference was found between the use of gloves and the total nursing comfort scale score ($p<0.05$). There was no significant difference between the socio-cultural comfort scale, which is one of the sub-dimensions of the nursing comfort scale, and the use of gloves, medical masks, N95 and visor/glasses ($p>0.05$). There was no significant difference between the Psycho-spiritual Comfort

Scale and the use of medical masks, N95, visors/glasses and disposable gowns and overalls ($p>0.05$). A significant difference was found between the use of gloves and the psycho-spiritual comfort scale total scores ($p<0.05$). There was no significant difference between the Physical Comfort Scale and the use of medical masks, N95, visors/glasses and disposable gowns and overalls ($p>0.05$). A significant difference was found between the use of gloves and the Physical comfort scale total score ($p<0.05$). There was no significant difference between the Physical Comfort Scale and the use of medical masks, N95, visors/glasses and disposable gowns and overalls ($p>0.05$). A significant difference was found between the use of gloves and the Physical comfort scale total score ($p<0.05$).

Table 4 examines the relationship between anxiety scale and comfort scale sub-dimensions. A negative and weak significant correlation was found between nurses' anxiety scores and the comfort scale ($p<0.005$). A highly significant correlation was found between the nurses' comfort scale and its sub-dimensions ($p<0.001$).

Discussion

Prolonged use of personal protective equipment cause discomfort due to their weight, increased heat and restricted movement and can increase anxiety and stress while decreasing tolerance to pain and discomfort (Wang, Jackson and Cai, 2016; Chen and Jackson, 2019). This study concluded that nurses' Corona virus Anxiety Scale mean scores were low and the use of N95 masks increased nurses' anxiety. When the results obtained in this study were correlated with the pandemic period, it can be stated that healthcare professionals were not psychologically affected by the COVID-19 virus and therefore this process did not reflect on their professional performance negatively. In this context, it is possible to argue that the results of the current study are noteworthy, especially in terms of COVID -19 anxiety.

The results reported in the national and international literature generally demonstrate that health professionals are psychologically, mentally and physically affected from the pandemic at very high levels. Many studies on this subject determined that the anxiety level of nurses working during the COVID-19 period was moderate or high (Aksoy and Koçak, 2020; Lai *et al.*, 2020; Li *et al.*, 2020; Sakaoğlu *et al.*, 2020; Saricam, 2020). Similar to this study, Hosgor et al. (2020) who conducted a study with the participation of 102 healthcare personnel working in 112 ASHİ reported that participants had a low level of anxiety in regards to COVID -19(Hoşgör, Dörttepe and Sağcan, 2020). In their study, Arnetz et al. (2020) determined that caring for COVID-19 patients and the inadequacy of personal protective equipment caused anxiety, depression and post-traumatic stress disorder in nurses (Arnetz *et al.*, 2020). Polat and Coşkun (2020) identified a statistically significant difference between the anxiety scores of hospital workers based on their use of visors or goggles / protective glasses during the COVID -19 epidemic ($p=0.033$; $p<0.05$) (Polat and Coskun, 2020).

Protective equipment makes it difficult for nurses to breathe, hear and communicate. In addition, it is reported that protective equipment limits nurses' mobility, increases their body temperature and sweating and causes a feeling of suffocation. Nurses report that it is very difficult to work under these conditions. Also, due to the possibility of infection during sleep while wearing protective clothing, most nurses developed sleep disturbances and bad resting habits (Galehdar *et al.*, 2021).

Due to these negative circumstances, nurses who care for COVID-19 patients work in more difficult conditions compared to nurses working in other units, therefore, their physical comfort level is reduced(Jiang, Broome and Ning, 2020; Karasu, Öztürk Çopur and Ayar, 2021). This study concluded that nurses used gloves the most as personal protective equipment and their use affected their physical and psycho-spiritual comfort negatively, while the use of aprons and overalls affected their socio-cultural comfort negatively.

Since COVID-19 is transmitted by indirect contact, hand hygiene and full protection with double gloves are mandatory when caring for COVID-19 patients. In their study, Jose et al. (2021) found that the most common adverse reactions experienced by nurses were sweat, cracks on the skin, dry skin, and itching or redness and the humid atmosphere and tight double gloves caused excessive sweating and caused cracks (Jose, Cyriac and Dhandapani, 2021). Another study in China reported that the majority of healthcare workers experienced dry skin, itching and redness as side effects of using latex gloves (Foo *et al.*, 2006). Perhaps, the importance of using

personal protective equipment (PPE) has not been discussed so much in previous epidemics as it is discussed during the COVID-19 pandemic. This may be related to the fact COVID-19 pandemic is more severe and spreads faster than previous ones (Korkmaz *et al.*, 2021). Poor hospital equipment, insufficient equipment, lack of security measures, improper application of the aseptic technique, nosocomial infections are factors that increase nurses' distrust. Insecurity is one of the factors that reduce socio-cultural comfort (Acar *et al.*, 2016). The lack of personal protective equipment, insufficient number of nurses and the increase of COVID-19 cases during the pandemic are among the factors that affect nurses' comfort levels. In this study, nurses' comfort levels were found to be moderate while their socio-cultural comfort levels were low. Supporting the results of this study, İsmailoğlu et al. (2021) found that the comfort level of nurses caring for COVID-19 patients was moderate and their psycho-spiritual comfort level was even lower. They also reported that nurses' psycho-spiritual comfort was negatively affected due to being exposed to problems such as the need to avoid their family and friends, risk of contamination etc. in addition to losing their colleagues or patients due to the epidemic (İsmailoğlu *et al.*, 2021). Çınar et al. (2021) stated that the stress levels of emergency nurses who could not reach personal protective equipment were high (Çınar *et al.*, 2021).

Limitations: There are some limitations in this study that needs to be taken into consideration. First of all, this study was conducted with the nurses working in the Aegean region of Turkey during the pandemic. Therefore, the results of this study cannot be generalized to all nurses. Secondly, data collection forms were filled online and it was not possible to control the data collection process. Thirdly, nurses' anxiety and comfort levels were only assessed for a single period during the pandemic. Therefore, the effects of the pandemic on nurses' long-term anxiety and comfort were investigated in this study.

Conclusions: In the light of the data collected during the second wave of the pandemic in Turkey, it was found that nurses' corona virus anxiety scale score was low and their comfort scale score was moderate. It was found that the use of N95 masks as personal protective equipment increased nurses' anxiety. It was concluded that the use of gloves negatively affected nurses' physical and psycho-spiritual comfort, while the use of gowns and overalls negatively affected their socio-cultural comfort.

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