

Original article

Agreement Between Nurses' Anxiety And Depression Levels And Their Compliance With Isolation Measures During The Covid 19 Pandemic: An Online Cross-Sectional Study

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Abstract

Aims: The purpose of this study was to determine the relationship between nurses' anxiety and depression levels and their compliance with isolation measures during the COVID-19 pandemic.

Background: The global COVID-19 pandemic has had severe psychological impacts on nurses.

Methods: Following receipt of the requisite approvals, data were collected actively from 289 nurses consenting to participate in the study through an online questionnaire using the internet/social media. **Results:** Mean stress, anxiety, and depression scores were higher among carers for COVID-19 patients than in non-Covid carers. Analysis revealed significant positive correlation between Isolation Precautions Compliance Scale scores and stress, anxiety, depression, and burnout. **Conclusion:** Burnout increased while compliance with isolation precautions decreased in this study as stress, anxiety, and depression increased.

Keywords: COVID-19, Nurse, Stress, Anxiety, Depression, Compliance with Isolation

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Introduction

The global Corona virus 2019 disease (COVID-19) pandemic first appeared in the Chinese city of Wuhan, the capital of Hubei province, in December 2019, after which it was given the name SARS-CoV-2.^{1,2} The prevalence of COVID-19 in the general populations of many countries, its novel, unpredictable and highly infectious nature, the need for distancing and isolation, and its associated high morbidity and mortality rates, rendered the familiar coping mechanisms inadequate.^{3,4,5}

Not only sick individuals and the general community, but also healthcare professionals are physically and psychosocially affected by the pandemic, both as members of society and due to working under serious risk.^{6,7,8}

COVID-19 represents a hitherto unequalled burden on health workers across the world.^{3,4,5} This has a particular impact on nurses, especially in psychosocial terms, due to their heavy and challenging working conditions, working with protective equipment that makes it difficult to function effectively, being away from family and sources of social support, the risk of disease transmission, witnessing the death of caregivers / teammates, and being unable to perform the usual funeral and mourning rituals in case of death.^{6,9,10,11,12}

The global COVID-19 pandemic has had severe psychological impacts on nurses. A significant proportion of nurses in the Chinese city of Wuhan are reported to have experienced psychological problems associated with the pandemic.¹³ Studies

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have noted that nurses and physicians working in COVID-19 clinics experience greater anxiety than those in other clinics¹⁴ and that nurses are at greater risk of anxiety disorder and depression.¹⁵ Particularly higher depressive symptoms have been reported in nurses and physicians working in intensive care.¹⁶

In the light of the foregoing, the purpose of the present study was to determine the relationship between anxiety, stress, and depression levels in nurses and their compliance with isolation procedures during the Covid 19 pandemic.

2 Materials and Methods

2.1 Setting and participants

This study was intended to determine nurses' anxiety, stress, and depression levels and their compliance with isolation procedures in the Covid 19 pandemic. Following receipt of the requisite approvals, data were collected from 289 nurses consenting to participate in the study and actively using social media (e-mail, WhatsApp, Instagram, Facebook, etc.) by means of an online questionnaire between 1.08.2020 and 5.10.2020.

2.2 Measures and instruments

The data collection form consisted of an information form, the Depression, Anxiety, and Stress Scale (DASS), and the Isolation Precautions Compliance Scale. Burnout levels were evaluated using a VAS scale between 0 and 10.

2.2.1 The Isolation Precautions Compliance Scale:

This five-point Likert-type scale was developed in Turkey in 2010 and consists of 18 items and four domains – 'Hand Hygiene, Use of Gloves,' 'Environmental Infection Control,' 'Worker and Patient Safety,' and 'Way of Contagion'. Negative statements (items 5, 7, 12, and 17) reverse scored (from 5 to 1), while positive statements are positively scored (from 1 to 5). The total scores (lowest 18, highest 90) or mean score (lowest mean 1, highest mean 5) are used in scoring. Higher scores are regarded as indicating greater compliance.¹⁷

2.2.2 The Depression, Anxiety, and Stress Scale (DASS):

This four-point Likert-type scale consists of 21 items. The Cronbach alpha internal reliability coefficient in clinical samples is $\alpha=0.87$, with values of $\alpha=0.85$ for the anxiety subscale and $\alpha=0.81$ for the stress subscale. The test-retest correlation coefficients in a normal sample are $r=0.68$ for the depression subscale, $r=0.66$ for the anxiety subscale, and $r=0.61$ for the stress subscale. Corrected item

total coefficients in clinical samples range between 43 and 77. In a second study, DASS-21 exhibited good differentiation of patients (mean depression score=10.83; mean anxiety score=10.39; mean stress score=11.85) from normal individuals (mean depression score=5.88; mean anxiety score=5.37; mean stress score=7.90) ($U=5310.50$; 4748.50 ; 5562.50 , $p=0.00$). With its psychometric characteristics, DASS-21 is regarded as a valid and reliable indicator of depression, anxiety, and stress levels.¹⁸

2.3 Ethical considerations

The requisite permission for the study was granted by the Turkish Ministry of Health. Ethics committee approval was obtained from Gümüşhane University Scientific Research and Publication Ethics Committee (No.95674917-108.99-E.26753).

2.4 Statistical analysis

Descriptive statistics, mean, median, frequency, and percentage were used to describe the nurses' socio-demographic characteristics. Comparisons were performed using the t test, the Mann-Whitney Test, Pearson's Correlation, and Spearman's Correlation for all statistical analyses, and a two-sided p value than 0.05 was considered statistically significant.

3 RESULTS

Women represented 83.7% of the participants, 67.5% of the nurses were married, 15.6% had a chronic disease, and 95.8% reported complying with the precautions recommended by the Turkish Ministry of Health. A family history of COVID-19 infection was present in 26.6% of the participants in this study, and 80.6% of nurses reported caring for COVID-19 patients. The mean time in the profession was 64.10 ± 78.94 months (Table 1).

A significant gender difference was determined in terms of compliance with isolation measures, being greater among men than among women ($p=0.002$). A significant association was observed between marital status and stress, with unmarried participants registering higher mean stress scores than married individuals ($p=0.025$). Weekly working hours were also significantly associated with stress, individuals working more than 45 h a week having higher mean stress scores than those working less than 45 h ($p=0.027$).

Compliance with COVID-19 precautions was also significantly correlated with stress, individuals complying with COVID-19 measures having higher

mean stress scores than non-compliers ($p = 0.029$). Caring for patients with COVID-19 was also significantly related to stress, with individuals caring for a COVID-19 patients registering higher mean stress scores than non-COVID-19 carers ($p = 0.011$). Mean anxiety scores were also higher among carers for COVID-19 patients ($p = 0.012$). Mean depression scores were similarly higher among individuals caring for a COVID-19 patient ($p = 0.047$).

Anxiety levels were significantly associated with the inability to devote sufficient time to participants' own families, with individuals unable to devote sufficient time to their families registering significantly higher anxiety scores ($p < 0.001$). Inability to devote sufficient time to one's family was also significantly associated with stress levels, with individuals unable to devote sufficient time to their families registering higher mean stress scores ($p < 0.001$). Participants who were unable to devote sufficient time to their families also had significantly higher depression scores ($p < 0.001$).

Statistically significant association was also determined between fear of transmitting COVID-19 and compliance with isolation procedures. Individuals living with a fear of transmitting COVID-19 also exhibited greater compliance with isolation precautions ($p = 0.027$). Depression was significantly associated with the presence of an individual with COVID-19 infection in the family. Higher mean depression scores were determined among participants with a family member who had been infected with COVID-19 ($p = 0.045$).

Mean DASS subdimension scores were 7 ± 5.94 for stress, 7 ± 4.84 for anxiety, and 8 ± 5.51 for depression. The mean Isolation Precautions Compliance Scale score was 82 ± 8.84 . Burnout increased in line with stress, anxiety, and depression levels, while compliance with isolation precautions decreased (Table 2).

4 Discussion

Analysis of the relationships between stress, anxiety, depression and burnout levels and Isolation Precautions Compliance Scale scores in the present study revealed that burnout levels increased in line with stress, anxiety and depression, while compliance with isolation precautions decreased. Studies have emphasized the importance of COVID-19 isolation precautions, particularly wearing facemasks, hand washing, and social distancing.¹⁹ Health workers are both obliged to apply enforced isolation methods and also experience intense stress and anxiety

associated with caring for COVID-19 patients. Nurses on the frontline are one of the most severely affected groups during the difficult period resulting from the COVID-19 pandemic.^{20,21} Mental health problems deriving from the uncertainty attendant upon COVID-19 make compliance with isolation among nurses even more problematic. Studies have emphasized that compliance is rendered more difficult by stress, anxiety, and depression, that burnout increases, and that professional help should be sought on the subject.^{22,23,24,25} Our finding is compatible with the previous literature, suggesting that stress, anxiety, and depression experienced by nurses lay the foundation for burnout, while reducing compliance.

Mean stress scores in this study increased in line with time worked. In a study intended to evaluate the effects of measures aimed at supporting the resilience and mental health of health care professionals working in the front line, Pollock et al. (2020) reported that stress increased in line with the length of time worked, and that sleep and depression problems also increased²⁶. In their study titled 'Are We Coping Well with COVID-19?' Maduke et al. (2021) reported that stresses among health professionals increased in line with the length of time worked, while their coping abilities declined.²⁷ This finding, may indicate that length of working time is a risk factor for stress.

Participants with high mean stress scores and fearing transmitting the disease in this study exhibited greater compliance with COVID-19 precautions. Studies have reported that health professionals experiencing intense anxiety and stress due to COVID-19 also take many more isolation precautions in association with fear of death.²⁷ Our finding is consistent with the previous literature.

Participants caring for COVID-19 patients in this study registered higher mean stress, anxiety, and depression scores than those not caring for such patients. Previous studies have also emphasized that nurses in many countries experience intense stress and anxiety due to a lack of sufficient resources or personal protective equipment, caring for numerous patients with COVID-19, and insufficient personnel.²⁸ At the same time, cracked hands associated with frequent hand washing and disinfectant use during the care of patients with COVID-19, and isolation-related problems such as difficulties going to the bathroom have also been reported to exacerbate anxiety and stress in care provision.^{29,30} Our finding is also in agreement with the previous literature. We

essentially attribute this to inadequacy of resources and other occupational difficulties.

Participants unable to devote sufficient time to their families registered higher mean anxiety, stress, and depression scores than those able to devote time to their families. Mo et al. (2020) reported that nurses experience intense anxiety, stress, and depression due to COVID-19 and are unable to devote adequate time to their families out of fear of transmitting the disease and because of intensive working hours.³¹ At the same time, multiple regression analysis revealed that individuals with children experience greater anxiety, stress, and depression. Similarly, other studies have also reported that nurses work intensive hours due to caring for intensive patients and are unable to devote sufficient time to their families, resulting in stress and anxiety.^{28,30} Our finding is again compatible with the previous literature.

Individuals in this study with family members who had contracted COVID-19 had higher mean depression scores than those with no such relatives. COVID-19 can exhibit mild to very severe symptoms, and is a life-threatening disease.³² Studies have reported that although nurses need the support of their families at this time, their fear of spreading COVID-19 and thus of losing a relative, and the fear of being isolated from relatives, are also triggers of depression. Nurses with relatives who have contracted COVID-19 experience greater anxiety, and this is known to be capable of triggering depression.^{33,34} Participants in this study with relatives who had contracted COVID-19 may therefore have experienced greater depression due to the serious symptoms involved and to the fear of losing a family member.

4.1 Limitations of the study

The main limitation of this study is that the data were collected online and from nurses only.

5 Conclusion

Burnout increased in line with stress, anxiety, and depression in this study, while compliance with isolation precautions decreased. We suggest that future studies should investigate measures aimed at preventing or reducing anxiety, stress and depression experienced by nurses, at increasing compliance with isolation, and at proposing solutions to protect mental health.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Table 1: The study participants' sociodemographic characteristics

	n	%
Gender		
Female	242	83.7
Male	47	16.3
Marital status		
Married	94	32.5
Unmarried	195	67.5
Presence of chronic disease		
Yes	45	15.6
No	244	84.4
Have you taken protective measures against the risk of COVID-19 transmission?		
Yes	277	95.8
No	12	4.2
Has a family member been diagnosed with COVID-19? (Mother-Father-Spouse- Child-Brother-Sister)		
Yes	77	26.6
None	212	73.4
Where do you work?		
Pandemic ward	68	23.5
Emergency department	24	8.3
Intensive care	50	17.3
Pandemic intensive care	24	8.3
Surgical ward	18	6.2
Internal diseases	33	11.4
Pediatric ward	17	5.9
Infectious diseases ward	1	.3
Mixed ward	1	.3
Administration-Laboratory-etc.	43	14.9
Operating theater	10	3.5
Nature of work		
Day and night	226	78.2
Daytime only	60	20.8
Nights only	3	1.0
Weekly hours worked		
Less than 45	86	29.8
More than 45	203	70.2
Have you cared for a COVID-19 patient?		
Yes	233	80.6
No	56	19.4

Table 2: Correlations between stress, anxiety, depression, and burnout levels and mean Isolation Precautions Compliance Scale scores

	Stress		Anxiety		Depression		Compliance with isolation precautions	
	r	p	r	p	r	p	r	P
Stress	1	-	0.662	<0.001	0.774	<0.001	-0.085	0.150
Anxiety	0.662	<0.001	1	-	0.656	<0.001	-0.035	0.551
Depression	0.774	<0.001	0.656	<0.001	1	-	-0.063	0.285
Burnout level	0.370	<0.001	0.257	<0.001	0.303	<0.001	0.009	0.872

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