Nurses Psychological Well-Being During Covid19 Outbreak in Saudi Arabia

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Abstract

Background: The global coronavirus disease pandemic of 2019 (COVID-19) has caused health care provider to experience extraordinary psychological stress. **Objective:** This study assessed the psychological well-being of nurses during the COVID-19 outbreak and factors associated with it. **Methods:** An online survey was sent to all nurses working at the Ministry of Health Hospitals and living in Tabuk city, Saudi Arabia. A total of 219 nurses were completed the survey. The Depression, Anxiety and Stress Scale – 21 items (DASS-21) assessed the psychological well-being of respondents in the previous week. **Results:** One -quarter of nurses (24.7%) reported extremely severe symptoms of anxiety, more than one third (37%) reported extremely sever symptoms of stress, less than one quarter (14.1%) reported extremely sever symptoms of depression. Higher anxiety scores were significantly associated with direct contact with confirmed COVID 19 cases (p= 0.08), general health status (p= 0.001) and marital status (p= 0.042). Higher DASS-21 Stress scores were significantly associated with working more than eight hours per shift (p=0.024), marital status(P=0.036) and general health status (p <0.001). Higher DASS-21 Depression scores was significantly associated general health status (p <0.001).

Conclusions & implication for practice: The COVID-19 outbreak has had a significant effect on the psychological well-being of Saudis nurses, particularly nurses who were married, had contact with COVID 19 cases, had working more than eight hours per shift, and had poor general health status. Protecting the psychological health of nursing staff is essential, nursing leaders are in charge of providing social support for nurses so that they will be able to cope with their anxiety, stress, and depression.

***Key Words**: COVID19, Psychological wellbeing, Saudi Arabia, Nurses.*

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Introduction

Coronaviruses are a large family of viruses that cause common cold, pneumonia, and severe acute respiratory syndrome (SARS). Coronavirus (COVID-19) was first identified in China in December 2019. The outbreak of a new coronavirus disease (COVID-19) was declared as Public Health

Emergency by WHO January 2020, which is labeled as a pandemic in March 2020 [1]. In Saudi Arabia, there are 503,734 confirmed cases of COVID-19 with 8,006 deaths according to WHO Health Emergency Dashboard from January,3, 2020 to July14, 2021. In order to slow the spread of the COVID 19 virus several measures were implemented in Saudi Arabia, including social and physical distancing and the closure of non-essential services and schools. Ministry of health in Saudi Arabia implemented several measures to protect employees while providing best care for patients, including infection control measures, such as the use of personal protective equipment (PPE).

The demands on healthcare staff during a pandemic are extraordinary and long lasting. The success of public health outcomes is highly dependent on the skills and determination of the healthcare workforce. Ideally, a full complement of staff is with no infection-related absenteeism and working to their maximum potential with no burnout. Staff psychological wellbeing is of critical importance [2] . Covid-19, the result of multiple causes of unimaginable tragedy and death, exposes healthcare workers to unprecedented challenges, including rationing personal protective equipment (PPE) and ethical dilemmas surrounding access to ventilators and other essential medical supplies [3].

In addition, studies have found that medical staff are also experiencing depression and anxiety due to the COVID-19 outbreak because of an increase in patient volume. Medical professionals who are not specialized in infectious disease may be faced with greater pressure when dealing with infected patients. Burnout is becoming increasingly recognized as a serious problem among medical professionals [4].

Since the outbreak of the COVID 19, some studies have examined the psychological problems among healthcare workers (HCW). For example, a cross sectional study reported that the prevalence of depression, anxiety, and stress was 42.5%,42.7%,30.7%, respectively among medical resident working in front and second line [5]. Moreover, frontline HCW from four hospitals in Wuhan city were surveyed during the COVID-19 outbreak and reported elevated depression (12.7%) and anxiety (20.1%). Symptoms associated with greater perceived stress, poor sleep quality, and absence of perceived psychological preparedness were linked to higher risk for depression and anxiety [6]. Another cross-sectional study conducted in china reported that the overall prevalence of depression among Emergency room (ED) nurses was 43.61% [7].

The few studies to date that have examined the impact of a coronavirus outbreak on the psychological well-being of nurses in Saudi Arabia, for example, a cross-sectional study reported that the prevalence of generalized anxiety disorder was of and 51.4% among 502 healthcare providers in Saudi Arabia ,and nurses had higher anxiety scores than other health care workers [8]. A descriptive study conducted in Saudi Arabia showed that one third of health care workers experienced anxiety disorder, and the study determined that living with family members, being female, and having a family history of anxiety disorder increased anxiety disorder risk [9]. Furthermore, our study findings will be a great assistance to nurses because if they can control their anxiety and stress, they will be more productive in their lives and work, and they will be able to provide safe and high-quality care to their patients. On the other hand, hospital administration will be aware of the nurses' stress and psychological well-being, allowing them to devise

strategies on how to help their staff get through this pandemic period successfully. The aim of this study was to assess psychological well-being of nurses during COVID 19 outbreak in Saudi Arabia, the specific objectives of the study were to assess: (1) level of depression, anxiety, and stress among nurses. (2) Assess factors significantly associated with higher levels of depression, anxiety and stress among nurses.

Methods

Design& participants

Data for this study were collected via a cross-sectional survey during the COVID-19 outbreak on June 2021 to August 2021. The aims of the study were explained and the participants gave their informed consent to participate in the study. This study included both male and female nurses working in the ministry of health hospital at Tabuk city, Saudi Arabia at the time of the study.

Recruitment

Convenience sampling technique were used to collect responses. An online survey was sent to all nurses who were working at the Ministry of Health Hospital and living in Tabuk city, Saudi Arabia. They received the online survey through emails and phone messages, which was arranged by collaborators in the internal communication channels at the nursing administrators in each hospital. A total of 219 nurses completed the online survey.

Data collection

Data were collected for this study by online survey contained two parts. Part1, socio-demographic characteristics and work condition, including age, gender, marital status, level of education, working hours, years of experience, general health status, working with COVID 19 cases, and live with children. Second, Depression Anxiety Stress Scales DASS-21 [10], which is a widely used and valid tool for assessing depression, anxiety and stress symptoms during the past weeks, and has 21 items with Likert scale answers rated from 0 (no distress) to 21 (most distress). The total mean score for depression was categorized as (mild, 10–13; moderate, 14–20; severe, 21-27; extremely severe, more than 28), and for anxiety was categorized as (mild, 8–9; moderate, 14–20; severe, 21–27; extremely severe, more than 20) and for stress was categorized as (mild, 15–18; moderate, 19–25; severe, 26–33; extremely severe, more than (34) [10]. In our study Cronbach's a was 0.96 for depression, anxiety and Stress subscales. Arabic version of (DASS-21) is valid and reliable for screening for depression, anxiety and stress.

Statistical Analysis

Data collected were coded, entered and analyzed using Statistical Package for the Social Sciences (SPSS version 21). Descriptive statistics, such as mean, standard deviation (SD), frequency, and percentage were used to report demographic data. DASS-21 subscale scores and the proportion of respondents scoring in clinical ranges were calculated as outlined by the instrument's authors [10], in order to determine the clinical staff who have experienced 'normal', 'mild', 'moderate', 'severe' or 'extremely severe' depression, anxiety or stress. These labels assist in characterizing the degree of distress severity relative to the general population. Cohen's d is reported, along with qualitative descriptors: small (0.20), medium (0.5), large (0.8) and very large (1.3). Logistic regression using enter default method was used for regression analysis for relationship between demographic characteristics and DASS-21 Depression, Anxiety and Stress subscale scores as

outcome variables. P value was significant <.05, 95 % CI was used with regression analysis.

Ethics approval

This study was approved by the Institutional Review Board (IRB), General Directorate of Health Affairs, Tabuk, Saudi Arabia (Reference no. H-07-TU-077, 24 May 2021).

Results

Sociodemographic characteristics

A total number of 219 respondents from governmental hospital & primary health care center in Tabuk city, Saudi Arabia completed the electronic survey (Table 1); their ages ranged from 20 to 60 years, with (56.6%) aged from 20 to less than 30 years of age. The majority were female (84.9%), had diploma in nursing (61.2%), and single (50.7%) (Table 1).

Table (2) shows that more than half of nurses working less than eight hours (58%), (29.2%) of them had less than five years of experience, (58.9%) live with children, (42.9) had excellent health status had Covid 19 vaccine (88.6%). Finally, more than half of the studied worked with COVID19 cases (71.8%),

Psychological well-being

Table (3) shows the scores for symptoms of anxiety, stress and depression among studied sample. The mean scores on the DASS-21 for anxiety, stress and depression for all respondents were 1.78±1.55, 2.39±1.77 and 1.99±1.63, respectively. Mean scores for studied sample in Stress and Depression subscales were statistically significantly higher than normative data; effect size was medium for the Stress subscale, and very large for the Depression subscales. The prevalence of anxiety among nurses was (61.2%), almost one quarter of nurses (24.7%) reported extremely severe symptoms of anxiety compared to (10.5%) reported sever symptoms of anxiety. However, mild to moderate levels of anxiety were reported by (26%) of nurses.

Moreover, the prevalence of stress among nurses in our study was (74.4%). Approximately, more than one third of nurses (37%) reported extremely sever symptoms of stress compared to (37.4%) of nurses reported mild to severe symptoms of stress. In addition, the prevalence of depression among studied sample was (57.9%). Almost one quarter of nurses (22.4%) reported moderate symptoms of depression compared to (11.4%) of nurses reported mild symptoms of depression. However, severe to extremely sever symptoms of depression were reported by (21.4%) of nurses (Table3)

Factors associated with anxiety, stress and depression in the participants

Regression analysis demonstrated that the most significant risk factors for anxiety among studied sample were marital status, direct contact with COVID 19 cases, and general health status.

Higher DASS-21 anxiety scores were significantly associated with marital status (p= 0.042), direct contact with confirmed COVID 19 cases (p,0.08), and general health status (p=0.001) (Table 4). Significant risk factors for stress were marital status, working hours, and general health status. Higher DASS-21 stress scores were significantly associated with marital status (P=0.036), working hours (p=0.024), and general health status (p<0.001) (Table 4). The observed significant risk factor for depression was general health status of the participants. Higher depression scores were significantly associated with general health status of nurses (P,0.001) (Table 4).

Table (1): Percentage distribution of the studied nurses according to their demographic characteristics (n=219)

Variables	Total Sample (n=219)	
	N	%
Age (Years)		
20:<30	124	56.6
30:<40	65	29.7
40:<50	25	11.4
50:<60	5	2.3
Gender		
Female	186	84.9
Male	33	15.1
Level of Education		
Diploma	134	61.2
Bachelor	68	31.1
Postgraduate	17	7.8
Marital status		
Single	111	50.7
Married	101	46.1
Divorced	7	3.2

Table (2): Percentage distribution of the studied nurses according to their work condition (n=219)

Variables	Total Sample (n=219)	
	Number	%
Working hours		
≤8	127	58.0
>8	92	42.0
Years of Experience (years)		
<1	53	24.2
1:<5	64	29.2
5:<10	42	19.2
≥10	60	27.4
General health status		
Poor	5	2.3
Good	92	42.0
Fair	28	12.8
Excellent	94	42.9
Working with COVID19 cases		
Yes	61	71.8
No	24	28.2
Live with children		
Yes	129	58.9
No	90	41.1

Table (3): Respondents' scores on the Depression, Anxiety and Stress Scale – 21 items (DASS-21) subscales

DASS-21 subscale	Nurses (219)	Score ranges for clinical cut-off points B	Nurses (219)	
			N	%
Anxiety				
Mean (s.d.) score	1.78±1.55	Normal (0-3)	85	38.8
P-value (vs 2.57A)	NS	Mild (4-5)	25	11.4
Cohen's d		Moderate (6-7)	32	14.6
		Severe (8-9)	23	10.5
		Extremely severe (≥10)	54	24.7
Stress				
Mean (s.d.) score	2.39±1.77	Normal (0-3)	56	25.6
P-value (vs 1.74A)	<.001*	Mild (4-5)	22	10.0
Cohen's d	.36 (medium)	Moderate (6-7)	33	15.1
		Severe (8-9)	27	12.3
		Extremely severe (≥10)	81	37.0
Depression				
Mean (s.d.) score	1.99±1.63	Normal (0-4)	91	41.6
P-value (vs 3.99A)	<.001*	Mild (5-6)	25	11.4
Cohen's d	1.22 (Very Large)	Moderate (7-10)	49	22.4
		Severe (11-13)	22	10.0
		Extremely severe (≥14)	32	14.6

Table (4): Regression analysis of the relationship between demographic variables and anxiety, stress and depression of studied nurses (n=219).

Dependent variable	Independent variables (Predictors)	Unstandardized coefficients		Beta	P value	95% CI
		B	Std.Err			
Anxiety	Gender (1 female, 2 male)	.293	.292	.068	.317	-.316-,.842
	Marital status (1 single,2 married,3 divorced)	.449	.219	.163	.042*	-.030-,835
	Education (1dipoma,2 bachelor,3 post graduate)	.097	.219	.041	.659	-.372-,453
	Live with children (1yes, 0 No)	-.299-	.243	-.095-	.220	-.778-,.180
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	-.113-	.091	-.083-	.214	-.292-,.066
	Working hours(<8hrs,>8hrs)	.096	.061	.105	.114	-.023-,.216
	Work with COVID19 cases (1yes, 0 No)	.653	.242	.176	.008*	.175,1.130
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.346-	.106	-.217-	.001*	-.555-,-.137-
Stress	Gender (1 female, 2 male)	.138	.338	.028	.684	-.529-,.804
	Marital status (1 single,2 married,3 divorced)	.537	.254	.170	.036*	.036,1.037
	Education (1dipoma,2 bachelor,3 post graduate)	.056	.253	.021	.826	-.443-,555
	Live with children (1yes, 0 No)	-.236-	.279	-.066-	.399	-.786-,314
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	.017	.215	.011	.939	-.408-,441
	Working hours(<8hrs,>8hrs)	.167	.074	.159	.024*	.022,312
	Working with COVID19 cases (1yes, 0 No)	.390	.287	.092	.176	-.176,.955
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.438-	.122	-.240-	<.001*	-.679-,-.198-

Cont... **Table (4): Regression analysis of the relationship between demographic variables and anxiety, stress and depression of studied nurses (n=219).**

Depression	Gender (1 female, 2 male)	.136	.154	.060	.377	-.167-,439
	Marital status (1 single,2 married,3 divorced)	.169	.115	.117	.145	-.058-,.396
	Education (1dipoma,2 bachelor,3 post graduate)	.035	.113	.028	.758	-.188-,.257
	Live with children (1yes, 0 No)	-.151-	.127	-.092-	.234	-.401-,099
	Years of Experience (1 <1,2 1:<5),3 5:<10,4 ≥10)	-.074-	.073	-.103-	.316	-.219-,.071
	Working hours(<8hrs,>8hrs)	.064	.033	.132	.057	-.002-,129
	Work with COVID19 cases (1yes, 0 No)	.440	.263	.113	.095	-.078,957
	General health status (1poor, 2 good, 3fair, 4 excellent)	-.198-	.056	-.237-	<.001*	-.309-

Discussion

It is important to investigate Psychological well-being among nurses due to the possible impacts of such conditions on their health and on the quality of patient care [11]. This study aimed to investigate the effects of the COVID-19 outbreak on the psychological wellbeing of nurses in Saudi Arabia. We also assessed factors associated with higher levels of depression, anxiety and stress among nurses. In this study, the prevalence of anxiety among nurses was 61.2%, this includes mild (11.4%), moderate (14.6), severe (24.7), and extremely sever symptoms of anxiety (10.5%). Moreover, our study indicated that the prevalence of stress among nurses was 74.4%, this includes mild (10%), moderate (15.1%), sever (12.3%), and extremely sever symptoms of stress (37%). In addition, the findings of the current study found that the prevalence of depression among studied sample was 57.9%, which includes mild (11.4%), moderate (22.4%), sever (10%), and extremely severe symptoms of depression (14.1%). The higher prevalence of anxiety, stress and depression among nurses in our study may be related to that the majority of them were female, married, live with their children, more than one third of them worked more than 8 hours per day, and more than two thirds of the studied sample had direct contact with COVID 19 cases. Furthermore, the current study results revealed that nurses who were married, provide care for COVID 19 patients and had poor health status reported higher symptoms of anxiety. Also, results indicated that married nurses who work more than eight hours per day, and had poor health status reported higher symptoms of stress. The current study results showed that depression symptoms were higher among nurses who had poor health status.

During the COVID-19 outbreak, Australian study similarly reported that among 668 health care workers, 29% of nurses had mild to extremely severe anxiety symptoms, a greater percentage than other

health care workers, 24.5% of them had mild to moderate symptoms of stress, and 17% experienced extremely severe symptoms of depression, also results showed that nurses who had poor general health and had contact with confirmed COVID-19 cases were significantly reported higher levels of depression, anxiety and stress than those were in better health and had no COVID-19 contact [12]. Furthermore, a Chinese study similarly reported a high prevalence of psychiatric symptoms among 1257 health- care providers, mainly depression, anxiety and distress (50.4%, 44.6% and 71.5% respectively), nurses reported more severe degrees of all measurements of mental health symptoms than other health care workers [13]. However, the prevalence of depression and anxiety symptoms among nurses in the current study was much higher compared to Egypt (32% and 20.5%, respectively), and marital status were significantly associated with increase prevalence of depression and anxiety among health care workers [14] . Another study from Saudi Arabia reveled that the prevalence of anxiety among 441 healthcare workers during the COVID-19 pandemic (33%) ,which is lower than the prevalence in our study [9] .

A similar depression and anxiety prevalence were found among 502 healthcare providers in Saudi Arabia (55.2% and 51.4%, respectively), nurses had higher scores in anxiety than other health care worker, depression and anxiety among nurses may be explained by work-related stress and high job demands [14]. On the other hand, it has been reported that nurses exhibit higher levels of anxiety and depression than doctors [15]. Another similar finding was found in an Egyptian study recently, which showed that stress symptoms were present in (33.3%) of health care workers [16].

Similarly, a study conducted in Ethiopia revealed that anxiety, depression, and stress are common among nurses, with prevalence levels of 69.6%, 55.3%, and 20.5%, respectively, working in the night shift & lack of training were associated with increased the risk of developing psychiatric symptoms among nurses [17]. A health service's nurses have direct, intense, and sustained contact with patients and are particularly vulnerable to infection, so providing them with psychological support during outbreaks and assessing their levels of anxiety, depression, and stress should be taken into consideration by health authorities [15]

Moreover, a study from China revealed that anxiety and depression symptoms were prevalent among 223 nurses. However, the prevalence of depression and anxiety symptoms among nurses in our study was higher compared to china 40.8% and 26.4%, respectively [19]. Other study revealed that nurses who directly involved with COVID-19 patients reported higher rates of mental health symptoms especially frontline nurses who experiencing more moderate to severe symptoms of depression, distress and burnout [19]. Another study indicates that COVID-19 has a considerable impact on the psychological wellbeing of front-line hospital staff, nurses may be at higher risk of adverse mental health outcomes during this pandemic [20]. It is not surprising that nurses reported significantly higher prevalence of anxiety, stress and depression, the current COVID-19 pandemic is affecting nurses' mental wellbeing, according to the literature, nurses are confronted with additional sources of stress as health-care workers cope with the novel coronavirus, nurses are now worried about a lack of supplies; insufficient staffing and long working hours; isolation from family and friends; discrimination and negative treatment from community members concerned about nurses spreading the virus; managing family responsibilities; concern for ill patients; and a significant risk of contracting the virus [21]. Indeed,

increasing awareness, utilizing appropriate protective equipment or reducing work hours are suggested as practical approaches to improve nurses mental health circumstances [11]. In conclusion , creating community awareness, training of nurses, and providing special attention for nurses with chronic disease will help to minimize the psychological impact of the COVID-19 pandemic on nurses and protect their mental health [22]. Finally, more attention should be paid to the mental health of the married nurses, had poor health status, direct contact with COVID 19 cases, and working more than eight hours per shift. In addition, awareness of stressors and an understanding of what has helped and what has impacted well-being are important in guiding future workplace support systems for nurses.

Limitations

The sample was limited to Tabuk city; thus, it may not represent all nurses in KSA. Although similar populations and health systems, however, there still be some differences like availability of resources, number of COVID 19 cases and training courses. To improve statistical significance and the generalizability of the results, future studies on this subject should use all nurses in KSA with larger sample size.

Conclusion

This study describes the psychological wellbeing of nurses during the COVID 19 outbreak and factors associated with it. The COVID-19 outbreak has had a significant effect on the psychological well-being of Saudis nurses, particularly nurses who were married, had contact with COVID 19 cases, had working more than eight hours per shift, and had poor general health status. Our findings conclude that nurses would benefit from further targeted supportive interventions during the current and future outbreaks of infectious diseases

Implication for practice:

Based on the findings of this study, it appears that it is important to investigate psychological well-being among nurses due to the impacts such conditions may have on their health and patient care. Protecting the psychological health of nursing staff is essential. Therefore, nursing leaders are in charge of providing social support for nurses so that they will be able to cope with their anxiety, stress, and depression.

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