DOI: 10.55522/jmpas.V12I1.4507 ISSN NO. 2320–7418

International peer reviewed open access journal

Journal of Medical Pharmaceutical and Allied Sciences

Journal homepage: www.jmpas.com CODEN: JMPACO

Research article

Impact of Covid-19 Pandemic on Emergency Nurses' Stress at King Salman Hospital in Hail, KSA

Bahia Glalal Abd El-Razik Siam*[1], Jawzaa Ali Alshammary[2], Soha Kamel Mosbah Mahmoud[3]

[1a] Medical Surgical Nursing Department, Faculty of Nursing, Port Said University, Egypt

[1b] Medical Surgical Nursing Department, College of Nursing, Hail University, Saudi Arabia

[2] Intensive Care Unit, King Salman Specialist Hospital, Hail, Saudi Arabia

[3a] Community Health Nursing Department, Faculty of Nursing, Benha University, Egypt

[3b] Community Health Nursing Department, College of Nursing, Hail University, Saudi Arabia

ABSTRACT

During the COVID-19 pandemic, nurses working in the clinical sector encountered a variety of challenges related to increased stress, which had an influence on the nurses' ability to provide care for patients. The Aim of study was to determine the impact of COVID-19 pandemic on emergency nurses' stress at the emergency department of King Salman Specialist Hospital in Hail, Saudi Arabia. A descriptive research design was utilized. Subjects included all available nurses who were working in the previous setting. The Instruments used in data collection consisted of the socio demographic data sheet of the studied nurses, the Perceived stress scale (PSS), and the nurses' pandemic-related experiences questionnaire (PREQ). The results revealed that, the studied nurses had experienced moderate stress regarding the PSS with total mean scores around "2" out of "4". There was a significant statistical difference in the total mean scores of nurses' PREQ as regards to work status. The study concluded that, the COVID-19 Pandemic had increased the level of stress of the studied emergency nurses regardless their sociodemographic characteristics.

Key words: COVID-19, Pandemic, Emergency nurses, Stress

Received - 30-10-2022, Accepted- 06-01-2023

Correspondence: Bahia Galal Abd El-Razik Siam ✉ bahia_galal@yahoo.com, **Orcid Id**: 0000-0003-2530-7458

Assistant Professor of Medical-Surgical Nursing, Faculty of Nursing, Port Said University, Egypt- College of Nursing, Hail University, Saudi Arabia.

INTRODUCTION

The first confirmed COVID-19 case was found in the Wuhan area of China in December 2019, and the disease was declared a global emergency on January 30, 2020 [1,2]. It is caused by infection with sever acute respiratory syndrome coronavirus 2 (SARS-CoV-2), it has quickly evolved into a worldwide pandemic. The rapid increase in incidence of emerging infectious diseases is a common characteristic, which places strain on and may go beyond the capacity of health care services. It imposed a significant physical and mental impact on patients and health-care workers [3].

During the Covid-19 pandemic, nursing faces situations that influence their psychosocial well-being on a daily basis. The mental health of nurses is threatened by the proliferation of negative thoughts and feelings [4]. Stress is a feeling of emotional or physical tension. It can be triggered by any event or idea that causes a person to feel upset, angry, or anxious. People are affected by stress in both positive and negative ways. While a low level of stress is motivating for the person, excessive stress can cause people to be unable to work or result in a major physiological problem [5]. As a result of the COVID-19 pandemic, the health care workers (HCWs) are experiencing psychological stress including anxiety, worry, post-traumatic stress symptoms, mental problems, stigma, avoidance of contact, depressive tendencies, sleep disturbances, helplessness, interpersonal isolation from family and social support, as well as worries about their friends and family becoming infected [6].

A cross-sectional survey of 1257 healthcare professionals in 34 hospitals in China found that those who work directly with COVID-19 patients are more likely to experience psychological discomfort and have reported symptoms of sadness, anxiety, insomnia, and distress, particularly women and nurses [7]. In addition, one third of nurses working during the COVID-19 outbreak had psychological problems [8].

Aim of the Study

This study aims to determine the impact of COVID-19 pandemic on Emergency Nurses' stress.

Research Questions

Q1. What is the level of stress among nurses working at emergency department at King Salman Hospital?

Q2. What is the pandemic-related factors among nurses working at emergency department at King Salman Hospital?

SUBJECTS AND METHODS

Design

A descriptive research design was utilized to conduct the study.

Setting

The study was conducted at the King Salman Specialist Hospital at Hail city, Saudi Arabia.

Subjects

All available nurses working at the emergency department (n=58), who agreed to participate, both genders, and any nationalities were included.

Tool for data collection

A self-administered electronic questionnaire (Google Form Survey)

Consisted of three parts

Part I – Nurses' *sociodemographic data sheet*

The sociodemographic data sheet of the studied nurses including, age, gender, nationality, years of experience, shift worked, and work duration.

Part II- The Perceived Stress Scale (PSS)

Developed by Cohen, 1994 [9]. It consists of 10 questions designed to measure the perception of stress.

Scoring system, A 5-point Likert scale, responses ranged from zero (never), one (Almost Never), two (Sometimes), three (Fairly Often), and four (Very Often). Items (1, 2, 3, 6, 9, & 10) are negatively worded that has been revised before data analysis. Total scores on the PSS ranged from (0 to 40), higher scores indicating higher perceived stress. Total score of PSS was then classified as the followings:

- Low stress: If score ranged from 0-13.
- Moderate stress: If score ranged from 14-26.
- High stress: If score ranged from 27-40.

Part III: Nurses' Pandemic-Related Experiences Questionnaire (PREQ)

Adopted from Doli´c, 2021 [10], consisting of 10 statements representing three subscales, that examine the different experiences of nurses working in COVID-19 departments. The responses ranged from 1 (does not apply at all) to 5 (fully applies). The total score is the final sum of responses to each statement. The first subscale (Stigmatization and misunderstanding), four items reflecting the feel of stigma that nurses experienced while working with COVID-19 patients. The second subscale (Social distancing), four items describing the actual or planned distancing/avoidant behaviors of nurses in order to protect significant others. The third subscale (Fear of infection), two items describing nurses' fears of infecting oneself or loved ones.

Reliability of the tools was assessed through Cronbach's alpha

Value was 0.836, which indicate an adequate internal consistency.

Pilot study

A pilot study was carried out on a sample of (6) nurses and then excluded from the study sample. The aim of the pilot was to test the feasibility and clarity of the study tools.

Ethical consideration

Ethical approval was obtained from the Ethics Committee for Bioethics Research in Hail Health, as well as KSSH hospital. Additionally, the electronic questionnaire started with a statement to obtain nurses' agreement without force after providing a full explanation of the study's purpose. The protection of the privacy and confidentiality of the research participants was assured.

Field work

The study was conducted over six months (from the beginning of November 2021 to the end of April, 2022). To achieve the aim, the following management plan applied: The first month spent on conducting a thorough literature review and developing research instruments, second month for obtaining ethical approval, two months spent on data collection and data analysis, two months for finalizing the study.

Statistical analysis

SPSS version 28.0 software was used for statistical analyses. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, means and standard deviations for quantitative variables. t-test & one way anova were used to determine the significant difference between the groups. The results were considered statistically significant at $P \leq 0.05$ while highly significant at $P < 0.01$.

RESULTS

Figure 1: The Total Overall Rate of the Perceived Stress Scores of the Studied Nurses

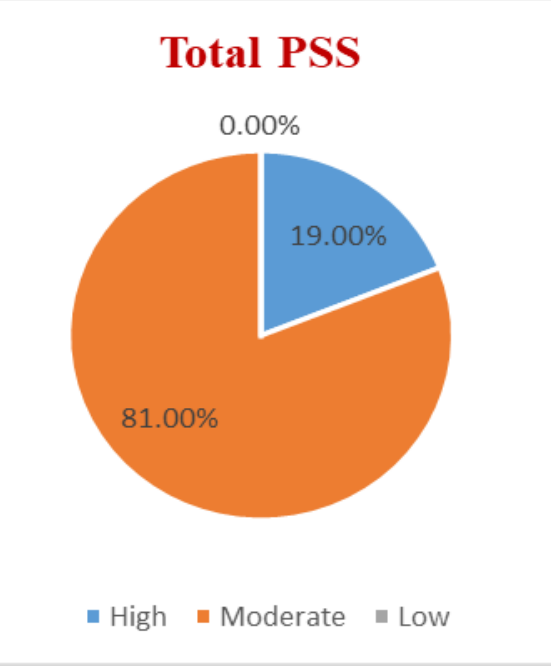

Table 1 reveals that 62.1 % of the studied nurses were in age group from 20 to less than 35 years old, 75.9 of them were females, and 56.9 of them were Saudi nurses. As regards to work status, 75.9 of nurses worked day shift, 91.4 & 82.8 of them covered 8 hours duration and full time respectively. 58.6 % of the nurses had more than 6 years of experience.

Table 2 shows that the highest scores of all items of the perceived stress scale of the studied nurses were for the middle response (sometimes), with mean scores more than 2 out of 4. The overall total mean score is (22.31 ± 4.37).

Table 3 shows that mean scores of the pandemic-related experiences questionnaire of the studied nurses ranges from 2.1 to 2.9 out of 5, the highest was for the last item "I was afraid I would pass the infection on to my family". The total overall mean is (27. 41 ± 9.54).

Table 4 reflects that there was a significant statistical difference in the total mean scores of nurses' pandemic-related experiences questionnaire (PREQ) as regards to their work experience.

Table 1: Sociodemographic Characteristics of the Studied Nurses (n = 58).

Variables	Frequency	Percent (%)
Age		
20-	36	62.1
35-	19	32.8
≥ 50	3	5.2
Gender		
Male	14	24.1
Female	44	75.9
Nationality		
Saudi	33	56.9
Non-Saudi	25	43.1
Shift worked		
Day shift	44	75.9
Night shift	14	24.1
Hours/shift		
8 hours	53	91.4
10 hours	4	6.9
12 hours	1	1.7
Work duration		
Part-time	10	17.2
Full-time	48	82.8
Years of Experience		
< 3 years	12	20.7
3-< 6 years	12	20.7
≥ 6 years	34	58.6

Table (2): Mean Scores of Perceived Stress Scale of the Studied Nurses (n=58).

	Perceived Stress Scale	Frequency/ Percentage of PSS					Mean Scores
		Never	Almost Never	Some-Times	Fairly often	Very often	
1	In the last month, how often have you been upset because of something that happened unexpectedly?	3 (5.2)	9 (15.5)	20 (34.5)	14 (24.1)	12 (20.7)	2.4
2	In the last month, how often have you felt that you were unable to control the important things in your life?	1 (1.7)	9 (15.5)	27 (46.6)	6 (10.3)	15 (25.9)	2.4
3	In the last month, how often have you felt nervous and stressed?	3 (5.2)	11 (19.0)	33 (56.9)	5 (8.6)	6 (10.3)	2.0
4	In the last month, how often have you felt confident about your ability to handle your personal problems?	9 (15.5)	16 (27.6)	20 (34.5)	8 (13.8)	5 (8.6)	2.3
5	In the last month, how often have you felt that things were going your way?	4 (6.9)	11 (19.0)	29 (50.0)	6 (10.3)	8 (13.8)	2.1
6	In the last month, how often have you found that you could not cope with all the things that you had to do?	2 (3.4)	2 (3.4)	29 (50.0)	15 (25.9)	10 (17.2)	2.5
7	In the last month, how often have you been able to control irritations in your life?	5 (8.6)	15 (25.9)	26 (44.8)	9 (15.5)	3 (5.2)	2.2
8	In the last month, how often have you felt that you were on top of things?	4 (6.9)	10 (17.2)	30 (51.7)	13 (22.4)	1 (1.7)	2.1
9	In the last month, how often have you been angered because of things that happened that were outside of your control?	3 (5.2)	10 (17.2)	30 (51.7)	11 (19.0)	7 (12.1)	2.2
10	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2 (3.4)	6 (10.3)	30 (51.7)	11 (19.0)	9 (15.5)	2.3
Overall PSS: Mean ± SD= 22.31 ± 4.37							

Figure 1 reveals that 81.0% of the studied nurses experienced moderate stress based on the PSS.

Table 3: Mean Scores of the Nurses' Pandemic-Related Experiences Questionnaire of the Studied Nurses (n=58).

Pandemic-Related Factors		Frequency/ Percentage of NPRE			Mean Scores
		Never	Sometimes	Often	
Factor I: Stigmatization and misunderstanding					
1	I felt that my neighbors avoided me when we met in a building, on the street, or in a store because of my work in the hospital.	23 (39.7)	29 (50.0)	6 (10.3)	2.4
2	People close to me avoided me because of fear of exposing them to a possible infection.	25 (43.1)	28 (48.3)	5 (8.6)	2.3
3	I felt that I could not talk to close people about my work because they would not understand me.	28 (48.3)	29 (50.0)	1 (1.7)	2.1
4	I preferred spending free time with my colleagues because we were at the same risk of infection, so I didn't feel afraid that I would infect them	22 (37.9)	27 (46.6)	9 (15.5)	2.6
Factor II: Social distancing					
1	I avoided intimacy with my partner because of the possibility to exposing him/her to a possible infection.	22 (37.9)	26 (44.8)	10 (17.2)	2.6
2	I spent less time with my family because of the possibility to exposing them to a possible infection.	25 (43.1)	20 (34.5)	13 (22.4)	2.6
3	I considered having physical separation from my family while working in a department with infected patients.	27 (46.6)	23 (39.7)	8 (13.8)	2.3
4	When we were on shift, we had problems with food delivery because the restaurant staff didn't want to deliver food to a department with infected persons	29 (50.0)	25 (43.1)	4 (6.9)	2.1
Factor III: Fear of infection					
1	I was afraid I would get a COVID-19 infection.	20 (34.5)	28 (48.3)	10 (17.2)	2.7
2	I was afraid I would pass the infection on to my family.	22 (37.9)	18 (31)	18 (31)	2.9
Overall NPRE: Mean ± SD: 24. 51 ± 8.84					

Table 4: Relation between the Sociodemographic Characteristics of the Studied Nurses and the Mean Scores of Total PSS & Total PREQ.

Sociodemographic variables	Total PSS			Total PREQ			
	Moderate	High	p-Value	Never	Sometimes	Often	p-Value
Age							
20-	29	7	0.19	2	21	13	0.55
35-	17	2		1	15	3	
≥ 50	1	2		0	2	1	
Gender							
Male	11	3	0.91	1	20	12	0.57
Female	36	8		2	18	5	
Nationality							
Saudi	27	6	0.99	0	8	6	0.11
Non-Saudi	20	5		3	30	11	
Shift Worked							
Day shift	37	7	0.69	3	9	12	0.76
Night shift	10	4		0	9	5	
Hours/shift							
8 hours	43	10	0.95	3	34	16	0.23
10 hours	3	1		0	4	0	
12 hours	1	0		0	0	1	
Work Status							
Part-time	9	1	0.58	0	8	2	0.85
Full-time	38	10		3	30	15	
Years of Experience							
< 3 years	10	2	0.94	0	7	5	0.01*
3- < 6 years	10	2		0	7	5	
≥ 6 years	27	7		3	24	7	

*Statistically Significant

DISCUSSION

Since nurses are the frontline of care, the coronavirus illness 2019 (COVID-19) is spreading quickly, placing pressure on them and creating obstacles. The aim of the present study was to assess the impact of COVID-19 pandemic on Emergency Nurses' stress at King Salman Hospital. According to Socio-demographic characteristics of the studied sample (table 1), the present study results showed that, three fifths of studied nurses were in age group ranged from 30 to less

than 35 years, this might be due to older nurses have more administrative responsibilities. This finding is congruent with a study that found less than two-thirds of the studied samples were between the ages of 26 and 40 [7].

The current study revealed that, about three quarters of the studied nurses were females. This was because of nursing is a female-dominated profession and male gender preferred not to work in the nursing field. These findings are supported by other studies who stated that the majority of the studied nurses were females [11,12]. Regarding years of experience, less than three fifth of the studied nurses had more than 6 years of experience. This finding is in the same line with similar study that reported; there were eighteen nurses out of twenty-four nurses with five to ten years of nursing experience and more [13].

Concerning perceived stress scale, the present study revealed that the studied nurses were experiencing moderate stress regarding the PSS with total mean scores around "2" out of "4" with mean scores around 2 out of 4 (Table 2). The overall total mean score 18.58, answering research question (1). This could be as a result of they are at risk of infection and worried about spreading infection to their family. These results are supported by similar studies measuring the level of stress among nurses reflecting moderate stress scores [14-16].

The nurses' pandemic-related factors was assessed by the pandemic-related experiences questionnaire (Table 3), the current study showed that mean scores of nurses' pandemic-related experiences questionnaire ranges from 2.1 to 2.9 out of 5, the highest was for the last item "I was afraid I would pass the infection on to my family". The total overall mean was 27.41. These findings are congruent with Almegewly et al [17]. who assessed the level of stress reported by the specific domains of COVID-19 related stress and found that, the moderate stress experienced by the participating nurses was attributed to their incapacity to handle what needs to be done to control potential infections (mean score: 2.91)? In addition, Galehdar et al [18] reported that one of the job stressors mentioned by the participants was the worry of contracting an infection, or the possibility that it would spread to their homes and contaminate their families. Rathnayake et al [19] also stated that participants expressed worry about being a possible source of infection for family members and society, their friends, and their coworkers had rejected them.

The current study reflects that there was a significant statistical difference in the total mean scores of nurses' pandemic-related experiences questionnaire (PREQ) as regards to work experience (Table 4). This finding contradicts with Tsubono and Ikeda [20] who reported that, the length of time spent as a nurse does not help to reduce COVID-19-related stress. However, the present study revealed that there was none significant statistical difference in the total mean scores of nurses' pandemic-related experiences questionnaire (PREQ) as regards to the other sociodemographic variables. This finding goes in the same line with a previous study which concluded that there was no statistical relation between the demographic characteristics of the respondents and levels of COVID-19 related stress [17].

CONCLUSION

Based on the findings of this study, it can be concluded that, the studied nurses experienced moderate level of stress as regards to the PSS during the COVID-19 Pandemic. The mean scores of the pandemic-related experiences questionnaire scores ranged from 2.1 to 2.9 out of 5. The total overall mean was (27. 41 ± 9.54).

REFERENCE

1. He X, Lau E, Wu P, et al, 2020. Temporal dynamics in viral shedding and transmissibility of COVID-19. Nat Med; 26:672–675, DOI: 10.1038/s41591-020-0869-5.

2. Sheraton M, Deo N, Dutt T, et al, 2020. Psychological effects of the COVID 19 pandemic on healthcare workers globally: A systematic review. Psychiatry Research. Volume 292, 113360, DOI: 10.1016/j.psychres.2020.113360.

3. De Brier N, Stroobants S, Vandekerckhove, P, et al, 2020. Factors affecting mental health of health care workers during coronavirus disease outbreaks (SARS, MERS & COVID-19): A rapid systematic review. PLoS One, 15(12), e0244052, DOI: 10.1371/journal.pone.0244052.

4. Obando Zegarra R, Arévalo-Ipanaqué J M, Aliaga Sánchez RA, et al, 2020. Anxiety, stress and depression in emergency nurses covid-19. Index de Enfermeria; 29(4), Artigo em Espanhol | Scopus. ID: covidwho-1212257.

5. Aly H, Nemr N, Kishk R, Elsaid N, et al, 2021. Stress, anxiety and depression among healthcare workers facing COVID-19 pandemic in Egypt: a cross-sectional online-based study. BMJ Open; 11: e045281, DOI: 10.1136/bmjopen-2020-045281.

6. Lai J, Ma S, Wang Y, et al, 2020. Factors Associated with Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Network Open;3(3): e203976, DOI: 10.1001/jamanetworkopen.2020.3976.

7. Al Maqbali M, Al Sinani M, Al-Lenjawi B, et al, 2021. Prevalence of stress, depression, anxiety and sleep disturbance among nurses during the COVID-19 pandemic: A systematic review and meta-analysis. J Psychosomatic Research.;141:110343, DOI: 10.1016/j.jpsychores.2020.110343.

8. Doli´c M, Anticevi´c, V, Doli´c, K, et al, 2021. Questionnaire for Assessing Social Contacts of Nurses Who Worked with Coronavirus Patients during the FirstWave of the COVID-19 Pandemic. Healthcare, 9, 930, DOI: 10.3390/healthcare9080930.

9. Hendy A, Abozeid A, Sallam G, et al, 2020. Predictive factors affecting stress among nurses providing care at COVID-19 isolation hospitals at Egypt. Open access, DOI: 10.1002/nop2.652.

10. Sun, N, Wei L, Shi S, et al, 2020. A Qualitative Study on the Psychological Experience of Caregivers of COVID-19 Patients. American Journal of Infection Control.48, 592−598.

11. Sarabia-Cobo C, Pérez V, Lorena, P, et al, 2021. Experiences of geriatric nurses in nursing home settings across four countries in the face of the COVID-19 pandemic J Adv Nurs; 77: Pages-869–878, DOI: 10.1111/jan.14626.

12. Ibrahim A, Osman O, Ahmed F, et al, 2022. Effect of COVID-19 on Psychological Status among Nurses Working at Isolation Hospital. Journal of Nursing Science - Benha University ISSN 2682 – 3934 Vol. (3) No. (1).

13. Kang L Ma S, Chen, M, et al, 2020. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study. Brain, Behavior, and Immunity. Volume 87, Pages- 11-17 DOI: 10.1016/j.bbi.2020.03.028.

14. Çınar D, Akça N, Bahçeli P, et al, 2021. Perceived stress and affecting factors related to COVID-19 pandemic of emergency nurses in Turkey. J Nurs Manag. 29(7): Pages- 1916–1923, DOI: 10.1111/ jonm.13329.

15. Almegewly W, Alhejji A, Alotaibi L, et al, 2022. Perceived stress and resilience levels during the COVID-19 pandemic a PeerJ; 10: e13164, DOI:10.7717/peerj.13164.

16. Galehdar N, Toulabi T, Kamran A, et al, 2020. Exploring nurses' perception of taking care of patients with coronavirus disease (COVID-19): A qualitative study. Nursing Open. 8: Pages-171–179.

17. Rathnayake S, Dasanayake D, Maithreepala S, et al, 2021. Nurses' perspectives of taking care of patients with Coronavirus disease 2019: A phenomenological study. PLOS ONE. DOI: 10. 1371/journal.pone.0257064.

18. Tsubono K, Ikeda C, 2022. Depressive symptoms and stress among nurses in the COVID unit: A 7-month cohort study. Japan Journal of Nursing Science, e12477, DOI:10.1111/jjns.12477.

How to cite this article

Bahia Glalal Abd El-Razik Siam, Jawzaa Ali Alshammary, Soha Kamel Mosbah Mahmoud, 2023. Impact of covid-19 pandemic on emergency nurses' stress at king salman hospital in hail, KSA. Journal of medical pharmaceutical and allied sciences, V 12 - I 1, Pages - 5518 – 5523. DOI: 10.55522/jmpas.V12I1.4507.