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Original Research Article

The Impact of COVID-19 Vaccination on Stress Level among Nurses in A Tertiary Care Hospital – A Cross Sectional Study

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Abstract

Background: Increased workload and safety concerns have major psychological effects on healthcare personnel. Since the introduction of vaccination, there is some improvement in transmission and severity of Covid-19 symptoms. ***Methods***: This was a cross-sectional study which was done at Security Forces Hospital, Riyadh, and Kingdom of Saudi Arabia. The objective of this study was to examine the effect of vaccination or being vaccinated on stress among nurses working in a tertiary care hospital. We calculated the sample size as 68. We used the Perceived stress scale (PSS) in our study. We gave the questionnaire comprising PSS questions to nurses from different wards. We calculated the mean, standard deviation, frequency count, and percentages for the perceived stress. ***Results***: The mean PSS-10 score was 17.52 (SD: 6.40) with a range between 0 and 31. Thirteen (19.4 %) nurses had low stress and 51 (76.11 %) nurses had moderate stress while 3 (4.4 %) nurses had high stress. ***Conclusion:*** Vaccination against Covid-19 has made significant improvement in stress level among nurses during current pandemic.

Keywords: Covid vaccine, stress, Nurses, Stress scale.

INTRODUCTION

The SARS-CoV-2 virus continues to drive a pandemic and now with new mutations causing even faster transmission of disease and more pressure on healthcare services [1]. As of 20th August 2021, there have been 209,876,613 confirmed CVID-19 cases, including 4,400,284 deaths globally as reported by WHO [2]. Preventive measures to control spread of virus with personal actions and national initiatives have worked to some extent. Throughout this pandemic, healthcare personnel have been at very high risk of the disease in addition to enhanced workload. These increased physical and psychological pressures have been associated with significant psychological disturbances among healthcare personnel [3]. We conducted a study previously during this pandemic which reported that mean PSS-10 score among nurses was 20.8 and 86.7 % of all nurses reported moderate level of stress [4]. Since then, there has been massive campaign nationally and internationally regarding Covid-19 vaccination. We, therefore, conducted this study to find out the impact of vaccination on stress level among nurses.

MATERIAL AND METHODS

This was a cross-sectional study conducted in Security Forces Hospital, Riyadh, Kingdom of Saudi Arabia during July - August 2021. We included the nurses from different wards of our hospital including medical, surgical, anesthesia, ER, and critical care units. The sample size was calculated using the online calculator [5] and came out as 68. We used convenience sampling to select study respondents. Ethical approval was taken from the institutional ethical review committee. The nurses were informed about the purpose and significance of this study. We used the Perceived Stress Scale (PSS) for assessing the stress levels among nurses. PSS is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items are designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. Each item was answered by the nurses on a five-point scale ranging from never (0) to very often [4, 6]. The scale has been used in Saudi healthcare workers in one previous study by Alharbi *et al*. [7]. Nurses were requested to fill the questionnaire either online on survey monkey or in paper form. All data were entered and analyzed using SPSS version 26.

We calculated Mean, standard deviation, frequency count, and percentages for the perceived stress.

RESULTS

A total of 68 nurses were included in this study. Fourteen nurses filled the questionnaire using the survey monkey link while 54 nurses filled the paper questionnaire. The Mean PSS-10 score was 17.52 (SD: 6.40) with a range between 0 and 31. 13 (19.4%) nurses had low stress, 51 (76.11 %) nurses had moderate stress while 3 nurses (4.4 %) had high stress as shown in graph 1.

DISCUSSION

Scientific literature from previous epidemics has shown significant individual and social psychosocial impact following epidemics and outbreaks in the past [8, 9]. An online survey in China reported that the prevalence of clinically significant anxiety, depression and poor sleep quality among general population were 35 %, 20 and 18 % respectively [10]. In USA, data suggests that the likelihood of having either depressive disorder, anxiety disorder or both in April and May 2020 was three times more than in early 2019 [11].

Until now, vaccination has played quite a significant role in controlling the transmission and severity of disease. A wide range of Covid-19 vaccines are available worldwide. Data from clinical trial estimated vaccine efficacy of mRNA vaccine in preventing COVID-19 of 52.4 % before dose two, and 90.5% on days 2-7 after dose 2 [12]. Benenson S *et al*. in a study in Israel showed that the vaccination of HCP with mRNA vaccines resulted in a significant reduction of new cases of Covid-19 among those who received two doses of vaccine [13]. Based on a study, CDC also concluded that risk of infection was decreased by 90 % two or more weeks after 2nd dose of vaccine [14].

All these data related to vaccination is quite reassuring. This can be reflected in our current study as well. Our results showed that mean PSS-10 score changed from 20.8 before vaccination to 17.52 after vaccination. In previous study (4), only 3.3 % patients had low stress levels while in current study 19.4 % of nurses reported low level stress. Also 10 % had high stress level in previous study which has reduced to 4.4 % in current study. There are few limitations in our study. Firstly, nurses included in our study were not the same as our previous study as it was convenient sampling. We did not include the level and ward location of nurses in our study. It is a single centre study so it can not be generalized.

CONCLUSION

Vaccination against Covid-19 has made significant improvement in stress level among healthcare personnel during current pandemic.

REFERENCES

1. Cook, T. M., & Roberts, J. V. (2021). Impact of vaccination by priority group on UK deaths, hospital admissions and intensive care admissions from COVID-19. *Anaesthesia*, *76*(5), 608–616. https://doi.org/10.1111/anae.15442
2. World Health Organization. (2021, August 20). WHO characterizes COVID-19 as a pandemic. Retrieve from https://www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen
3. Hughes, M. M., Groenewold, M. R., Lessem, S. (2020). Update: Characteristics of Health Care Personnel with COVID-19 - United States, February 12-July 16, 2020. *MMWR. Morbidity and mortality weekly report*, *69*(38), 1364–1368. https://doi.org/10.15585/mmwr.mm6938a3
4. Huda, A., Yasir, M., Saulat, S.R., Alshaqha, M.W. (2021). Assessment of Perceived Stress among Nurses of Tertiary Care Hospital during COVID Pandemic – A Cross-Sectional Study. *Saudi J Nurs Health Care*, *4*(3); 45-4. 10.36348/sjnhc.2021.v04i03.001
5. Dhand, N. K., & Khatkar, M. S. (2014). Statulator: An online statistical calculator. Sample Size Calculator for Estimating a Single Mean. Accessed 16 June 2020 at http://statulator.com/SampleSize/ss1M.html
6. Cohen, S., & Williamson, G. (1988). Perceived Stress in a Probability Sample of the United States. Spacapan, S. and Oskamp, S. (Eds.) The Social Psychology of Health. Newbury Park, CA: Sage.
7. Alharbi, H., & Alshehry, A. (2019). Perceived stress and coping strategies among ICU nurses in government tertiary hospitals in Saudi Arabia: a cross-sectional study. *Annals of Saudi medicine*, *39*(1), 48–55. https://doi.org/10.5144/0256-4947.2019.48
8. Li, Z., Ge, J., Yang, M., Feng, J. (2020). Vicarious traumatization in the general public, members, and non-members of medical teams aiding in COVID-19 control. *Brain, behavior, and immunity*, *88*, 916–919. https://doi.org/10.1016/j.bbi.2020.03.007
9. Ornell, F., Schuch, J. B., Sordi, A. O., & Kessler, F. (2020). "Pandemic fear" and COVID-19: mental health burden and strategies. *Revista brasileira de psiquiatria (Sao Paulo, Brazil : 1999)*, *42*(3), 232–235. https://doi.org/10.1590/1516-4446-2020-0008
10. Huang, Y., & Zhao, N. (2020). Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: a web-based cross-sectional survey. *Psychiatry research*, *288*, 112954. https://doi.org/10.1016/j.psychres.2020.112954
11. Twenge, J. M., & Joiner, T. E. (2020). U.S. Census Bureau-assessed prevalence of anxiety and depressive symptoms in 2019 and during the 2020 COVID-19 pandemic. *Depression and anxiety*, *37*(10), 954–956. https://doi.org/10.1002/da.23077

12. Polack, F. P., Thomas, S. J., Kitchin, N. (2020). Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. *The New England journal of medicine*, *383*(27), 2603–2615. https://doi.org/10.1056/NEJMoa2034577
13. Benenson, S., Oster, Y., Cohen, M. J., & Nir-Paz, R. (2021). BNT162b2 mRNA Covid-19 Vaccine Effectiveness among Health Care Workers. *The New England journal of medicine*, *384*(18), 1775–1777. https://doi.org/10.1056/NEJMc2101951
14. CDC. (2021). CDC Real-World Study Confirms Protective Benefits of mRNA COVID-19 Vaccines. Available on: https://www.cdc.gov/media/releases/2021/p0329-COVID19-Vaccines.html. Last accessed on 15 August, 2021.