Original Research Article

Assessment of the psychological impact of vaccination on COVID-19 pandemic stress among B. Sc nursing students

Vir Vikram Sahdev Singh1*, Javaid Ahmad Bahar2, Komal Sharma3, Tanveer Ahmad Bahar1

1College of Nursing, LLRM Medical College, Meerut, Uttar Pradesh, India
2College of Medical Sciences, IIMT University, Meerut, Uttar Pradesh, India
3NCRIMS, Meerut, Meerut, Uttar Pradesh, India

Received: 09 November 2021
Revised: 20 December 2021
Accepted: 21 December 2021

*Correspondence:
Dr. Vir Vikram Sahdev Singh,
E-mail: vvssingh82@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: In January 2020 the world health organisation (WHO) declared the outbreak of a new coronavirus disease, COVID-19, to be a public health emergency of international concern. WHO stated that there is a high risk of COVID-19 spreading to other countries around the world. In March 2020, WHO made the assessment that COVID-19 can be characterized as a pandemic. WHO and public health authorities around the world are acting to contain the COVID-19 outbreak. To assess the level of COVID-19 pandemic stress before and after vaccination and to find out the association of COVID-19 pandemic stress scores with selected demographic variables of B. Sc nursing students.

Methods: A pre-experimental study was done on 150 Nursing students in selected various nursing colleges at Meerut. The convenience sampling technique was used. Nursing Students stress were assessed by using standardized Sheldon Cohen modified stress scale.

Results: The result showed that mean score before and after vaccination of stress with SD for was (0.237) nursing students was 13.20±2.202, 6.20±1.202 and correlation of patient with COVID-19 suggesting a negative significant correlation between the stress ‘r’ value was less than table value (0.273) with df 149. At (0.05) level of significance. Nursing students. It is inferred that there is moderate to severe level of stress before and moderate to mild level of stress after vaccination.

Conclusions: There was no significant association between level of stress and demographic variables among Nursing students. It is inferred that there is moderate to severe level of stress before and moderate to mild level of stress after vaccination.

Keywords: COVID-19, Stress, Vaccination

INTRODUCTION

We all live with troubles, the tension we feel when facing with a new accost or threatening situation. Nursing undergraduates are not dissimilar than anyone else, as they too, sophisticate the stresses of living in today’s world. They are repeatedly facing new challenges where the sequels are often unpredictable. COVID-19 emerged as a distressing challenge for whole world especially for medical undergraduates such as MBBS students, nursing students, pharmacy students etc during previous year.1,2 COVID-19 is the infectious disease caused by the most recently discovered corona virus. This new virus and disease were unknown before the outbreak began in Wuhan, China, in December 2019 (MoHFW).3

Review of literature

Bhowmick et al conducted study during COVID-19 lockdown among general population of West Bengal, India in order to assess stress and anxiety level. A total of 355 responses were received 15.49% responders were observed to have anxiety and 37.74% participants have low well-being. Chhetri et al conducted to explore the stress and psychological problems faced during COVID-
by Indian students. Using a snowball sampling method, the results depicted that the students were generally stressed during lockdown and the pandemic. Females (mean=3.03) were more stressed than males (mean=2.61).  

Son et al studied, a semi-structured interview survey was designed with the purpose of assessing the mental health status of college students both quantitatively and qualitatively. The result showed that out of 195 students, 138 (71%) indicated increased stress and anxiety due to COVID-19 outbreak.

Problem statement
A study to assess the psychological impact of vaccination on COVID-19 pandemic stress among B. Sc nursing students in selected nursing colleges at Meerut.

Objectives
The objectives of the study were to assess the level of COVID-19 pandemic stress before COVID-19 vaccination among BSc nursing students, to assess the level of COVID-19 pandemic stress after COVID-19 vaccination among B. Sc nursing students and to find out the association of COVID-19 pandemic stress scores with selected demographic variables of B. Sc nursing students.

Hypothesis
H₀: The mean post-test level of COVID-19 pandemic stress score will be significantly lower than the mean pre-test level of COVID-19 pandemic stress scores at 0.05 level of significance.

H₁: There will be significantly association between COVID-19 pandemic stress scores and selected demographic variables.

Operational definitions
Stress: It refers to the outcome of burden experienced by nursing students due to the outbreak of COVID-19, seeing their loved ones suffering, gap from their colleges and friends made students stressed.

Vaccination: In this study vaccination means inoculation of COVID-19 vaccines given to students that is intended to relieve their stress psychologically.

METHODS
Study type
In this study the researcher adopted pre-experimental one group pre-test and post-test research design.

Pre-experimental one group pre-test and post-test research design: O₁ ------ X ----- O₂

O₁=Pre test, O₂=Post test and X=COVID-19 vaccination

Study place
This study was conducted in various selected nursing colleges at Meerut Uttar Pradesh India.

Period of the study
The study conducted from March 2021 to October 2021.

Variables
Independent variables: COVID-19 vaccination.

Dependent variables: COVID-19 pandemic stress.

Influencing variables: Age, gender, education, locality, marital status, religion, hospital exposure.

Extraneous variables: Influences of mass media, healthcare professionals.

Population
The target population consisted of the B. Sc nursing students.

Sample
In this study the samples are the B.Sc. nursing students of various nursing colleges at Meerut.

Sample size
The sample size consists of 150 nursing students.

Selection criteria technique
In this study the non-probability convenience sampling technique was used.

Sampling procedure
Two-stage sampling technique was used to select students for the study as follows:

Stage 1: The whole data was collected in 15 days, we collected data from 15 students per day. The amount of time for data collection was 15 minutes per student. The whole data was collected in 15 days.

Stage 2: After vaccination we followed strategy of stage 1.

Ethical approval
Ethical approval with reference: CON/IEC/2021/922/6672 was obtained from the...
institutional ethical committees. A written informed consents was obtained from each of the study participants after detailed explanation of the study purpose, procedures, and voluntariness of participation.

Data for statistical analysis

Descriptive statistics

Frequency and percentage distribution was used to analyse the demographic variables students with COVID-19 pandemic stress.

Mean and standard deviation was used to assess the pre-test and Post-test score of COVID-19 pandemic stress.

Criteria for sample selection

Inclusion criteria

The students of nursing specialization, those who were not vaccinated with COVID-19 vaccine before study, both male and female students and students who are able to understand Hindi and English language were included in the study.

Exclusion criteria

The students who are pursuing other courses than nursing, those who were vaccinated with COVID-19 vaccine before study and the students who were on a psychiatric medication were excluded from the study.

Description of tools

The tool consists of 2 sections.

Section A: Demographic profile comprised of 9 variables such as age, gender, family members infected by COVID-19, any family member from medical background, current residence, marital status, religion, hospital exposure and locality.

Section B: This section deals with standardized Sheldon Cohen modified stress scale to assess the level of stress.

RESULTS

This chapter deals with the analysis and interpretation of data obtained from 150 B. Sc nursing students.

Findings of study

Frequency and percentage distribution of psychological impact of vaccination on COVID-19 pandemic stress among B. Sc nursing students in various nursing colleges at Meerut.

In Table 2 depicted that 4.6 % were having mild stress, 76% moderate stress and 19.3% having severe stress among B. Sc nursing students before COVID-19 vaccination.

| Socio-demographic variables | F   | Percentage (%) |
|-----------------------------|-----|----------------|
| Age (years)                 |     |                |
| 17-25                       | 68  | 45             |
| Above 25                    | 82  | 55             |
| Sex                         |     |                |
| Male                        | 14  | 9              |
| Female                      | 136 | 91             |
| Family member infected by COVID-19 | | |
| Yes                         | 8   | 5.33           |
| No                          | 142 | 94.6           |
| Any family member from medical background | | |
| Yes                         | 62  | 41.33          |
| No                          | 88  | 58.66          |
| Currently residing in       |     |                |
| Hostel                      | 90  | 60             |
| Home                        | 60  | 40             |
| Marital status              |     |                |
| Married                     | 2   | 1              |
| Unmarried                   | 148 | 99             |
| Religion                    |     |                |
| Hindu                       | 123 | 82             |
| Muslim                      | 17  | 11.33          |
| Christian                   | 10  | 6.66           |
| Others                      | 0   | 0              |
| Sikh                        | 0   | 0              |
| Hospital exposure (Clinical duties) | | |
| Yes                         | 8   | 5              |
| No                          | 142 | 95             |
| Locality                    |     |                |
| Urban                       | 97  | 64             |
| Rural                       | 53  | 36             |

Table 2: Pre-test COVID-19 pandemic stress score, mean and standard deviation, (n=150).

| Level of stress | F   | Percentage (%) | Mean ± SD  |
|-----------------|-----|----------------|------------|
| Mild            | 7   | 4.6            |            |
| Moderate        | 114 | 76             | 13.20±2.202|
| Severe          | 29  | 19.3           |            |

Data presented in Table 3 depicted that 50.66% of mild level of stress, 45.3% moderate and 4% of severe level was present after COVID-19 vaccination among B. Sc nursing students.

| Level of stress | F   | Percentage (%) | Mean ± SD  |
|-----------------|-----|----------------|------------|
| Mild            | 76  | 50.66          |            |
| Moderate        | 68  | 45.33          | 6.20±1.202 |
| Severe          | 6   | 4              |            |
| Demographic variables                      | Level of stress | \( \chi^2 \) | Df | P value |
|-------------------------------------------|-----------------|--------------|----|---------|
| **Age (years)**                           |                 |              |    |         |
| 17-25                                     | 4               | 90           | 20 | 2.213   |
| Above 25                                  | 3               | 24           | 9  | 1.976 NS|
| **Sex**                                   |                 |              |    |         |
| Male                                      | 2               | 12           | 21 | 3.0009  |
| Female                                    | 5               | 102          | 8  | 1.107   |
| **Family member infected by COVID-19**    |                 |              |    |         |
| Yes                                       | 3               | 45           | 21 | 0.237   |
| No                                        | 4               | 69           | 8  | 1.976 NS|
| **Any family member from medical background** |           |              |    |         |
| Yes                                       | 2               | 91           | 4  | 3.876   |
| No                                        | 5               | 23           | 25 | 1.976 NS|
| **Currently residing in**                 |                 |              |    |         |
| Hostel                                    | 3               | 76           | 13 | 2.786   |
| Home                                      | 4               | 47           | 7  | 1.976 NS|
| **Marital status**                        |                 |              |    |         |
| Married                                   | 0               | 98           | 11 | 1.987   |
| Unmarried                                 | 7               | 16           | 18 | 1.976 NS|
| **Religion**                              |                 |              |    |         |
| Hindu                                     | 5               | 90           | 21 | 1.976 NS|
| Muslim                                    | 1               | 10           | 3  | 1.976 NS|
| Christian                                 | 1               | 14           | 5  | 1.976 NS|
| Others                                    | 0               | 0            | 0  | 4.40    |
| Sikh                                      | 0               | 0            | 0  | 1.976 NS|
| **Hospital exposure (Clinical duties)**   |                 |              |    |         |
| Yes                                       | 6               | 105          | 21 | 3.442   |
| No                                        | 1               | 9            | 8  | 1.976 NS|
| **Locality**                              |                 |              |    |         |
| Urban                                     | 5               | 90           | 19 | 4.008   |
| Rural                                     | 2               | 24           | 10 | 1.976 NS|

NB: \( \chi^2 \)=Chi-square, df= degree of freedom, NS=non-significant at 0.05. The data presented in Table shows that it is evident there was only one significant association between level of stress and demographic variables vaccination of COVID 19. Hence the research hypothesis has accepted.

**DISCUSSION**

Our study revealed that majority of the females were having moderate stress and previous study Chhetri et al revealed the same results.\(^4\) Son et al study showed that out of 195 students 71% showed increased stress while as our study also depicted that out of 150 students 76% showed moderate stress.\(^3\)

**CONCLUSION**

The study is an attempt to understand the level of COVID-19 pandemic stress among B. Sc nursing students at various nursing colleges at Meerut. All the nursing students experienced mild to moderate stress, and moderate to severe stress. There was no significant association between level of stress and coping strategies among B. Sc nursing students. The above findings would help in planning interventions for B. Sc Nursing students with pandemic stress, which would in turn reduce burden, stress and improve coping skills.

**ACKNOWLEDGEMENTS**

Authors would like to thank all the samples, friends and colleagues, without whom we would not have been able to complete this research.

**Funding:** No funding sources

**Conflict of interest:** None declared

**Ethical approval:** The study was approved by the Institutional Ethics Committee with reference number CON/IEC/2021/922/6672

**REFERENCES**

1. Bhowmick S, Parolia S, Jana S, Kundu D, Chaudhary D, Das N et al. A study on the anxiety level and stress during COVID-19 lockdown among...
the general population of West Bengal, India—A must know for primary care physicians. J Family Med prim care. 2021;10:978-84.

2. Hamaideh SH, Al-Modallal H, Tanash M, Hamdan-Mansour A. Depression, anxiety and stress among undergraduate students during COVID-19 outbreak and “home-quarantine”: Nurs Open. 2021;10.1002/nop2.918.

3. Son C, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on College Students’ Mental Health in the United States: Interview Survey Study. J Med Internet Res. 2020;22(9):e21279.

4. Chhetri B, Goyal LM, Mittal M, Battineni G. Estimating the prevalence of stress among Indian students during COVID-19 Pandemic: A cross-sectional study from India. J Taibah Univ Med Sci. 2021;16(2):260-7.

Cite this article as: Singh VVS, Bahar JA, Sharma K, Bahar TA. Assessment of the psychological impact of vaccination on COVID-19 pandemic stress among B. Sc nursing students. Int J Community Med Public Health 2022;9:209-13.