RESEARCH ARTICLE

PSYCHOLOGICAL IMPACT OF COVID 19 PANDEMIC ON FRONTLINE NURSES: A SURVEY AMOUNG NURSES IN A TERTIARY CARE HOSPITAL, CENTRAL INDIA

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ARTICLE INFO

ABSTRACT

Background of the study: As the world is battling the COVID-19 pandemic, frontline health care workers (HCWs) are among the most vulnerable groups at risk of mental health problems. Understanding the extend of mental health issues and psychological impact they go through during this pandemic time related to continuous routine Covid duties, working at the frontline with infected patients and related issues are essential in planning necessary strategies and resources to endure various challenges faced by the health care providers ,especially the frontline nurses who are there with the Covid 19 positive patients through out during their hospitalization. *Aim of the study:* This study attempts to understand the psychological impact of Covid 19 pandemic on frontline nurses from a tertiary care hospital. *Methodology:* Descriptive survey design was adopted and data was collected from 92 frontline nurses from a selected tertiary hospital. The data collection was done through online survey using Google form platform. .The data collection tools used were sociodemographic proforma, and a Impact of Event scale–revised (IES-R) to measure the psychological impact of nurses. *Results:* The psychological impact of COVID-19 outbreak, as measured by IES-R scale, revealed a mean score of Mean ($\pm$SD) is 36.39 ± 20.07. 30 (33 %) had minimal psychological impact due to COVID-19 outbreak. Around 13 (14.0%) had mild psychological impact (IES-R score of 24–32) and 23 (25%) had moderate psychological impact (IES-R score of 33–36). However, 26 (28%) reported severe psychological impact (IES-R score of >36). Regression indicated that nurses who stayed with family during covid duty days had more psychological distress as measured by IES-R scores (B = -.250, p<.05) compared to nurses who stayed single or without family at workplace. For all other socio demographic variables no significant association with psychological impact of nurses was noted. *Conclusion:* Understanding the psychological impact of front line covid nurses will help the administration to implement measures to create a working situation which will strengthen the health man power resources. The findings of this study can be used to frame appropriate psychological interventions for health care providers to avert occurrence of mental health problems preventing psychological crises.

INTRODUCTION

The World Health Organization has announced COVID-19 a s a Global Public Health Crisis. COVID-19 pandemic created a public health crisis in India, which had a tremendous influence on the personal and professional lives of healthcare professionals. Coping with the coronavirus disease (COVID-19) pandemic has been a challenge for healthcare systems and especially healthcare workers (HCWs) worldwide. HCWs are confronted with a demanding work environment that impacts on their physical and mental health. Nurses who are considered as the frontliners for dealing with this pandemic are the most vulnerable to develop mental health concerns .The nurses in the frontline are working non-stop to contain the outbreak and are vulnerable for burn out both physically and mentally (https://www.mygov.in/covid-19 [Last accessed on 2021 May 4th][Google Scholar] "https://www.mygov.in/covid-19; Selvaraj Jose et al. 2020). Innumerable factors directly and indirectly affect the psychological

health of front line nurses including the stigma the medical staff faces, social ostracism faced by some, juggling between personal and professional lives, overburdening of work, and experiencing burnout due to increased pressure, lack of safety equipment such as PPE and masks, and trauma of watching large number of patients dying alone in the isolation ward, among other factors. Notably, working exhaustively may not imply that these health-care staff is immune to psychological effects. They may have similar level of vicarious traumatization as that of general public [Li, 2020]. Healthcare workers in India are mostly affected by internal and external stigma related to the COVID-19 virus and its impacts (Salvagioni, 2017; US Department of Veterans Affairs, 2020; Menon, 2020) Battling COVID-19 on the frontline makes nurses vulnerable to much psychological distress. Hence, the present study focused on the psychological impacts of the COVID-19 pandemic on frontline nurses in a tertiary care center in Central India.

METHODOLOGY

The study has adopted a descriptive survey design. The subjects under study were 92 frontline nurses who worked/working in different

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Covid wards of a selected tertiary hospital and provided/ providing nursing care to the covid-19 patients. The research proposal was approved by the institutional ethics committee (IEC) for human studies. Data collection was done from October 2020 to December 2020. The data collection was done through online survey using Google form platform. Once the user clicked on the link they were given information about the nature and purpose of survey on the first page. Subsequently, if they consented to participate, they were taken to the next page (first section) of the survey. The first part of the study questionnaire collected sociodemographic information. The second part of the survey was adopted from Impact of Event scale–revised (IES-R). Impact of Event Scale–Revised assesses psychological distress caused by a traumatic life event in terms of three symptomatic responses (avoidance, intrusion, and hyperarousal). The instructions and items of the scale were adapted to refer to the current COVID-19crisis. The IES-R scores have been shown to be reliable and valid in previous studies in global & indian population (Beck, 2008; Malinauskienė, 2016; Weiss, 1996; Rodríguez-Rey, 2020; Varshney, 2020). This tool comprised of 22-items questionnaire which measure the effect of routine life stress, everyday traumas and acute stress. For all questions, scores could range from 0 through 4. Categorization of the score ranges from 24 to 32, 33 to 36 and more than 37 which signify mild, moderate and severe psychological impact respectively. Among this scale, the Intrusion subscale is mean item response of items 1, 2, 3, 6, 9, 14, 16, 20. The Avoidance subscale is the mean item response of items 5, 7, 8, 11, 12, 13, 17, 22. The Hyperarousal subscale is theme an item response of items 4, 10, 15, 18, 19, 21. Descriptive statistics were conducted for the socio-demographic variables .The scores of the IES-R and subscales were expressed as mean and standard deviation. We used linear regression to calculate the univariate associations between socio demographic characteristics, and IES-R score. All tests were two-tailed, with a significance level of p < 0.05. Statistical analysis was performed using SPSS Statistic 22.0 (IBM SPSS Statistics, New York, United States)

RESULTS

SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDY RESPONDENTS: Analysis of the socio demographic details of the subjects (n=92) tells that Mean (±SD) age of the participants were 26.16 ±3.86. Majority of the participants were females (69, 75%). majority of the subjects were unmarried (66, 72%) and only 21 samples were staying with their family. 50% of the samples have undergone Covid testing after their Covid duties and 13 reported that they were tested positive and undergone treatment. Majority of the subjects reported that they have collected information from their colleagues regarding duties before leaving for their Covid 19 postings.

PSYCHOLOGICAL IMPACT MEASURED BY IES-R SCALE: The psychological impact of COVID-19 outbreak, as measured by IES-R scale, revealed a mean score of Mean (±SD) is 36.39 ± 20.07 As it can be seen from the Table 1, 30 (33 %) had minimal psychological impact due to COVID-19 outbreak. Around 13 (14.0%) had mild psychological impact (IES-R score of 24–32) and 23 (25%) had moderate psychological impact (IES-R score of 33–36). However, 26 (28%) reported severe psychological impact (IES-R score of >36). (Table 1)

ASSOCIATION BETWEEN SOCIO DEMOGRAPHIC CHARACTERISTICS & IES-R SCORES: A multiple regression was carried out to investigate whether socio demographic characteristics significantly predict participants' psychological impact related to covid 19 as measured by IES-R scores. The results of the regression indicated that staying with family during covid duty days had a significant association to IES-R scores (B = -.250, p <.05), whereas for all other socio demographic variables no significant association with psychological impact of nurses was noted.

Table 1. Frequency and percentage distribution of psychological impact of Covid-19 pandemic on frontline nurses:

S. No:	Total Score as measured by IES-R Scale (n =92)	Frequency	Percentage
1.	Minimal (0–23)	30	33
	Mild (24–32)	13	14
	Moderate (33–36)	23	25
	Severe (>36)	26	28
2.	**Sub scale Scores as measured by IES-R Scale (n =92)**	**Mean**	**SD**
	Intrusivity subscale (0–32) Q 1,2,3,6,9,14,16,20	13.56	7.68
	Avoidance subscale (0–32) Q 5,7,8,11,12,13,17,22	12.98	7.76
	Hyper-arousal subscale (0–24) Q 4,10,15,18,19,21	9.83	6.35
	Total Score (0-88) Q 1-22	36.39	20.07

(SD = Standard deviation; Q = Question number from IES-R scale)

Table 2. Multiple Linear Regression to find out the association of psychological impact measured by IES-R Scores with Socio demographic variables

Socio demographic features	N (%)	Standardized beta	CL (Lower bound –Upper Bound)		P value
Age in years		-.048	-1.794	1.298	.751
21-30	77 (84%)				
31-40	16 (27%)				
Gender		-.294	-16.763	7.950	.480
Male	69 (75%)				
Female	23 (25%)				
Marital status		.001	-25.989	3.783	.142
Married	26 (28%)				
Single	66 (72%)				
Staying with family during covid duty days		-.250	-26.860	-1.132	.033*
Yes	21 (23%)				
No	71 (77%)				
Undergone Covid testing after Covid duties		-.092	-13.758	3.750	.259
Yes	50 (54%)				
No	42 (46%)				
Have you become Covid positive at any time and taken treatment?		-.096	-17.707	7.145	.400
Yes	13 (14%)				
No	79 (86%)				
Collected information from colleagues about Covid-19 duty before your duty		-.125	-13.262	13.380	.993
Yes	82 (89%)				
No	10 (11%)				

Mean (±SD) scores of nurses who stayed with families during covid duty time was 38.90 ± 20.95, whereas Mean (±SD) scores of nurses who stayed single or without family was 36.64 ±19.89.Staying with family during covid duty time increased psychological distress of nurses.

DISCUSSION

Healthcare workers are among the high-risk group to be infected by COVID-19. COVID-19 pandemic created a public health crisis in India, which had a tremendous influence on the personal and professional lives of healthcare professionals. Coronavirus disease-2019 (COVID-19) pandemic has exposed healthcare workers (HCWs) to a unique set of challenges and stressors. Frontline nurses are under tremendous psychological pressure because of the ever-rising crisis. To assess the magnitude of the psychological impact of the COVID-19 pandemic on HCWs various studies had been conducted in different parts of the world. A cross-sectional study of 1257 health care workers in 34 hospitals equipped with fever clinics or wards for patients with COVID-19 in multiple regions of China, a considerable proportion of health care workers reported experiencing symptoms of depression, anxiety, insomnia, and distress, especially women, nurses, those inWuhan, and front-line health care workers directly engaged in diagnosing, treating, or providing nursing care to patients with suspected or confirmed COVID-19 (Lai, 2019)

Another cross sectional study done in Cyprus, a country with a rather low spread of the COVID-19, HCWs reported a substantial mental health burden, with nurses reporting increased depressive and PTSD symptoms compared to other HCWs. A total of 79 (18.6%) and 62 HCWs (14.6%) reported clinically significant depressive (PHQ-9> 10) and post-traumatic stress (IES-R> 33) symptoms respectively. Nurses were more likely than physicians to suffer from depression (adjusted prevalence ratio 1.7 (1.06–2.73); p = 0.035) and PTSD (adjusted prevalence ratio 2.51 (1.49–4.23); p = 0.001). [14] An online survey study conducted in Italy, among 330 HCWs in Italy, found that female sex, nursing profession and employment in COVID-19 units were associated with increased risk for emotional exhaustion (Giusti, 2020). To find out the Impact of the COVID-19 Pandemic on the Mental Health of Healthcare Workers several studies were conducted in different states of India mainly through on line platform. Study results demonstrated a high prevalence of symptoms of depression and anxiety and low Quality of Living among Indian HCPs during the COVID-19 pandemic, suggesting an urgent need to prevent and treat mental health symptoms among frontline HCPs.

An online survey was conducted in India in May 2020 , in which 197 HCPs were selected using snowball sampling from different states of the country. Eighty-seven percent provided direct COVID-19 care with 43% caring for >10 patients/day. A large proportion reported symptoms of depression (92, 47%), anxiety (98, 50%), and low QoL (89, 45%). Odds of combined depression and anxiety were 2.37 times higher among single HCPs compared to married (95% CI: 1.03–4.96). Work environment stressors were associated with 46% increased risk of combined depression and anxiety (95% CI: 1.15–1.85). Moderate to severe depression and anxiety were independently associated with increased risk of low QoL [OR: 3.19 (95% CI: 1.30–7.84), OR: 2.84 (95% CI: 1.29–6.29) (Suryavanshi, 2020)· A web-based (FRONT-LINE COVID) survey was conducted from 25th May to 10th June 2020 to evaluate mental health outcome and professional quality of life among healthcare worker during COVID-19 pandemic. Impact of event revised (IES-R), Connor-Davidson Resilience scale (CD-RISC) and Professional Quality of life (ProQOL) and Feeling related questions were administered among Healthcare workers from different departments of a hospital in Rajasthan. Female nurses (P=>0.001), those were working in an emergency uni were at greater risk of psychological distress. Working in COVID-19 unit was associated with a lower scale of resilience (p=0.009) (Nathiya, 2021) A questionnaire based cross-sectional online survey was conducted across india from June 1, 2020, to July 4, 2020. A total of 313 clinical and nonclinical HCWs, who were directly or indirectly involved in patient care, participated in the study.

Severe anxiety and depression were found in 6.7% of respondents. 8.0 and 32.3% of the respondents had moderate and mild anxiety–depression, respectively. 6.4% had high perceived stress. 47.6 and 46.0% of the respondents had moderate and low stress, respectively (Sunil, 2021).

CONCLUSION

In conclusion, these findings contribute to the growing literature on the psychological impact related to COVID-19 pandemic to health care workers especially frontline nurses who are routinely involved in the care of covid patients. The current study demonstrated that a considerable number of nurses reported moderate to severe psychological distress revealing the necessity for preventive and supportive measures for HCWs involved in covid care. The findings of this study can be used to frame appropriate psychological interventions for health care providers to avert occurrence of mental health problems preventing psychological crises.

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