Physical and Psychosocial Impact on Staff Nurses during COVID-19 Duties at Rajdhani Corona Hospital, SGPGIMS, Lucknow, UP, India

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Abstract: *Introduction: According to WHO, the Coronavirus disease (COVID-19) is an infectious disease caused by the SARS-CoV-2 virus. COVID-19 has had adverse physical and psychological impacts on the health care workers especially the staff nurses who were directly providing care to the patient. So, the study aimed to assess the physical and psychosocial impact on staff nurses during COVID-19 duties. Method: This cross-sectional study was carried out in a tertiary care hospital in northern India. A total of 165 staff nurses were selected using a purposive sampling technique after fulfilling sample criteria. Data were collected through demographic information tools and interview questionnaires related to physical and psychosocial issues during COVID-19 duties. Result: On assessment, the majority of nursing staff aged between 31-40 years (37.5%), were female (62.22%) staying alone (86.66%). One third of participants had 6-10 years of clinical experience (33.83%). Most of the nursing staff had more than two children (40.60%) and underwent a training program (97.57%) before assigning COVID-19 duties. In addition to this, 8.4% of participants reported health issues such as hypertension, (4.84%) diabetes, and (1.81%) heart disease, respectively. Similarly, the majority of staff nurse reported moderate (72.72%), mild (23.63%) and severe (3.63%) physical and psychosocial discomfort during their clinical duties during the COVID -19 pandemic. However, there was no significant association between the demographic variable with physical and psychosocial complaints. Conclusion: The work environment and availability of resources are major issues of physical and psychosocial discomfort of nursing staff. Hence, healthcare authorities provide adequate resources and a safe working environment to the nursing staff.*

Keywords: COVID-19, Impact, Physical and Psychosocial, Staff nursing

1. Introduction

The COVID-19 pandemic is a healthcare crisis that has led to an unprecedented impact on healthcare services. At the heart of the unparalleled crisis, healthcare workers face several challenges in treating patients with COVID-19. Throughout the COVID-19 pandemic, nurses are experiencing fear, pressure, tiredness, ongoing emotional trauma, and isolation. (2)

This ongoing trauma and stress impact nurses' mental health, feeling safe and providing the finest possible care. As per experience during the COVID-19 the staff nurses faced various challenges like donning and doffing of PPE kits, availability of supplies like quality and quality of masks and goggles, risk of getting infections, separation from family members during quarantine and isolation, etc. So, the researcher is interested in conducting a study on staff nurses to know how the nurses were affected in terms of their physical and psychosocial health during COVID-19 duties. (3)

Anxiety and stress were significantly increased, leading to negative impacts on both self-efficacy and sleep. Stress is an important factor in drug use. Efforts should be made to explore the factors that are associated with psychological distress, which may lead to symptoms of anxiety, depression, or provoke suicidal ideation, and efforts should be made to control the modifiable factors. (4)

The study aimed to assess the physical and psychosocial impact among staff nurses during COVID-19 duties and to find out the relationship between physical and psychosocial impact with selected demographic variables.

2. Method

This cross-sectional study was conducted at Rajdhani COVID Center Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India among nursing staff from September 2021 and October 2021. Samples were selected through a purposive sampling technique after fulfilling sample criteria: Nurses who did not have previous experience with COVID-19 and got infected with COVID-19 during a pandemic.

Data collection tools and procedure
The instruments used for data collection were developed by investigators and validated by experts like Neurology consultant, psychiatric doctor, and nursing faculty. After validation investigator checked the reliability and pilot study of data collection instruments. We used two tools for data collection demographic variables and structured knowledge questionnaires. Demographic characters included baseline data of staff nurses. A structured knowledge question comprises information on COVID-19-related knowledge and work-related stress.

Sample size

The sample size was calculated based on the formula $2xZ2xpxq/d2$. At 95% Confidence Interval, the prevalence of physical and psychosocial impact among staff nurses, and the maximum allowed error of 15%, the sample size was calculated to be 150. Taking a 10% non-response rate, the sample size was finalized to be 165.

Data analysis

The information collected from participants was coded and transferred into Microsoft Excel. During data analysis we used descriptive statistics for frequencies and percentages and inferential statistics calculated the chi-square, mean and standard deviation.

Statement of ethics

This study was approved by the Institutional Ethical Committee (IEC), Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India Ref. IEC code-2021-14-IP-B.Sc NU-3 dated 11th August 2021, The data collection was started after obtaining permission from the head of department and IEC. Before data collection participant information sheets, were handed to subjects and explained the data anonymity and confidentiality.

3. Result

On assessment, the majority of nursing staff aged between 31-40 years (37.5%), were female (62.22%) staying alone (86.66%). One-third of participants had 6-10 years of clinical experience (33.83%). Most of the nursing staff had more than two children (40.60%) and underwent a training program (97.57%) before assigning COVID-19 duties. In addition to this, 8.4% of participants reported health issues such as hypertension, (4.84%) diabetes, and (1.81%) heart disease, respectively. However, there was no significant association between the demographic variable with physical and psychosocial complaints. [Tabel-1]

Approximately two-thirds of participants had mild 72.72% (120), moderate 23.63% (39) and severe 3.63% (6) physical and psychological symptoms among staff nurses working during the COVID pandemic. The mean was 43.00 and the standard deviation was 18.71 respectively. [Table 1]

Table 1: Frequency and percentage including association between physical and psychosocial complaints with demographic variables of staff nurses, N=165

S. No.	Demographic profile	Frequency	Percentage	Chi-square value	P Value
1	**Age group**			4.2401	0.119
	a) 20– 30yrs	52	31.50%		
	b) 31– 40yrs	62	37.50%		
	c) 41– 50yrs	31	18.78%		
	d) 51– 60yrs	20	12.12%		
2	**Gender**			2.5312	0.28
	a) Male	64	38.78%		
	b) Female	101	62.22%		
3	**Marital status**			2.6278	0.126
	a. Unmarried/Single	143	86.66		
	b. Married	22	13.33		
4	**Number of children**			10.4129	0.238
	a. No child	42	25.45		
	b. 1	41	24.84		
	c. 2	67	40.6		
	d. 3	15	9.09		
5	**Year of experience**			3.2317	0.779
	a) 1-5	47	28.48		
	b) 6-10	56	33.93		
	c) 11-20	31	18.78		
	d) 20 above	31	18.78		
6	**Training programme for Covid-19 before duties**			1.6291	0.443
	a) Yes	161	97.57		
	b) No	4	2.43		
7	**History Of Co- Morbidity**			1.7314	0.943
	a) Diabetes	8	4.84		
	b) Hypertension	14	8.48		
	c) Heart disease	3	1.81		
	d) None	I40	84.84		
8	**Corona infection in family.**			2.5353	0.281
	a) Yes	26			
	b) No	139			

Table 2: Frequency, percentage mean and standard deviation distribution of physical and psychosocial impact on staff nurses during COVID-19 duties, N=165

Physical and Psychosocial impact on staff nurses	Score	Frequency	Percentage	Mean and SD
Mild	0-30	39	23.63%	
Moderate	31-70	120	72.72%	43.00±18.71
Severe	71-100	06	3.63%	

4. Discussion

The general findings of our study result showed that the nurses had mild to moderate physical and physical and psychosocial impact. There are many factors namely including heavy workloads, long shifts, donning and doffing of PPE kits, lack of physical or psychological safety, chronicity of care and lack of social support. These factors influence the physical and psychosocial strains in healthcare workers especially in nurses. In addition, challenging working conditions highlight the importance of prioritizing and protecting the mental health and well-being of the healthcare workforce, particularly in the context of the COVID-19 pandemic. (5, 6)

A similar study Natasha Shaukat, daniyal, Manshoorali, and Junaid, et al., (2020) reported the physical and mental health impacts of COVID-19 on healthcare workers. It is a systemic literature search having 154 samples identified the following risk factors: working in a high-risk department, diagnosed family members, inadequate hand hygiene, suboptimal hand hygiene before and after contact with the patient, proper PPE use, close contact with the patient($>= 12$ times per day), long daily contact hours($>= 15$ hours), and unprotected exposure. The most common symptoms identified among HCWs were breathlessness (85%, cough (70%) and physical exertion (70%). (1)

The researcher revealed that 78.18%(129) participants suspected COVID-19 symptoms like increased body temperature, cold, and cough, 75.15 % had physical exertion, and 75.15 had breathlessness and suffocation.

A similar study reported that factors affecting the psychological well-being of HCWs during an epidemic outbreak are primarily poor social support, stressful work environments, greater patient contact, inadequate training, quarantine, history of physical or mental health issues, poor coping mechanisms, high perceived risk, stigma, social isolation, and a lack of resilience. Mental health professionals have an important role to play in mitigating the impact of these factors by extending the necessary support and professional expertise to HCWs in need. (7, 8)

In a similar study prolonged PPE usage led to cutaneous manifestation and skin damage (97%) with facial skin irritation being most common. HCWs experience high levels of depression, anxiety, insomnia, and distress. In the present study due to donning 75.15% reported itching of the skin due to PPE.

Organizational dimensions of workplace safety, the highest scores were found in the dimensions of organizational communication, organizational decision-making, situational awareness related to infection risks and personal contribution to workplace safety related to COVID-19. Fatigue management was the most impaired aspect in terms of organizational management of contagion risk. In other words, educators were quite satisfied with the efficiency and effectiveness of organizational communication about COVID-19, the speed, foresight and diligence of the organizational decision-making process related to COVID-19 and situational awareness related to contagion risks and workplace trends. (10,11)

5. Conclusion

Staff nurses played an important role in taking care of patients suffering from COVID-19 infection. The further recommendations to implement the few interventional studies, for implementation of strategies to reduce the chances of infections, shorter shift lengths, and mechanisms for mental health support could reduce the physical and psychological impact among the health care workers.

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