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### Mental Health Status of Frontline Healthcare Providers in Tertiary Care Settings during COVID-19 Pandemic: A study of Jaipur, India

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#### Abstract

During COVID-19 pandemic the world witnessed a never-before situation with broad implications on almost all aspects of life. The burden explicitly evident on the health care providers providing care to infected COVID-19 patients. This results into psychological consequences amongst them. The present study aims to explore the mental health status of frontline healthcare workers in tertiary care hospitals during COVID-19. In this cross-sectional study, information was gathered from 481 frontline healthcare workers. A multistage sampling procedure was adopted to select the respondents. Comprehensive mental health scale was developed. Pretested and verified GAD-7 and DASS-21 scales were used to measure the mental health status of frontline workers. The analysis indicates that 65% of respondents experienced mild mental health issues, with approximately 30% reporting moderate problems, and around 5% grappling with severe mental health challenges during the COVID-19 pandemic in their workplaces. Factors such as family structure, living arrangements, exposure to COVID-19 affected areas in the workplace, age, education level, department of work, and professional experience emerged as statistically significant predictors influencing the mental health difficulties faced by frontline healthcare workers in Rajasthan amid the COVID-19 crisis. The development of tailored therapies to safeguard frontline healthcare professionals from mental crises in similar future situations is suggested.

#### Keywords:

Mental health status,  
Frontline healthcare  
workers, COVID-19,  
Tertiary care hospital

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## Introduction

Mental health is an important element of total well-being, and its importance to frontline healthcare personnel is having immense importance. These workers perform an important part in our healthcare systems, providing key services and care to patients. Due to demanding nature of their work, they are subjected to unique challenges that may negatively impact their mental health. Frontline healthcare workers, including nurses, paramedics, technicians, and general duty attendants, deal with a range of work stresses and demands every day. They are frequently exposed to various illness including communicable diseases, suffering from stress related to work. Also, they have first-hand experience with various physical and emotional healthcare issues which may have occurred on patients and their families. Furthermore, they may witness incidences of violence or abuse from others.

In December 2019, at Wuhan city, there was a fever respiratory illness outbreak that resembled pneumonia by an unknown Coronavirus as stated by Li and others 2020. According to Y. Chen, Liu, & Guo, in 2020, this possibly originated from a wholesale seafood market. With the rapid advent of the COVID-19 situation globally, times warranted quick and early evidence concerning many domains, one of which is from the perspective of the supply side-the health care providers. Responding to this, studies have been conducted globally regarding the mental health assessment of healthcare providers who were providing necessary care round the clock. However, this arena is relatively unexplored within the Indian context, among nurses, technicians, and general duty attendants (supportive care providers).

There is a dearth of study on the mental health state of frontline healthcare workers during the COVID-19 pandemic, particularly in the particular context of India. It's possible that the constant demands made on medical staff members throughout the epidemic, in addition to resource limitations and structural difficulties, have negatively impacted their mental health. A thorough investigation into this field is necessary

to clarify the many variables impacting these frontline workers' mental health.

Comprehending the ways in which societal norms, familial expectations, and cultural dynamics connect with the mental health of healthcare practitioners is crucial in the Indian environment. Some of the factors that need to be thoroughly explored are the stigma attached to getting the virus, the worry that one may infect family members, and the pressure from society to perform their duties even in the face of difficult situations.

The outcomes of such a study could not only inform evidence-based policies but also contribute to the global understanding of the mental health challenges faced by frontline workers during a pandemic. Recognizing and addressing the mental health needs of healthcare professionals is integral to ensuring their well-being, which, in turn, is crucial for maintaining a robust healthcare system capable of effectively responding to future public health crises. In essence, this research endeavour holds the potential to drive positive change in the healthcare landscape and promote the holistic well-being of those who have been at the forefront of battling the COVID-19 pandemic in India.

A thorough examination of the mental health dynamics of frontline healthcare workers in tertiary care setting in Rajasthan will not only contribute to the state level understanding of the issue but also pave the way for tailored interventions and policies to safeguard the well-being of these vital contributors to public health. This research emphasised on utilizing primary data through surveys, interviews, and direct assessments reflects the need to capture the nuanced experiences of these essential workers within the specific socio-cultural and professional landscape of Rajasthan. While global studies have predominantly relied on secondary data, the contextual intricacies of the state specific scenario necessitate a dedicated and focused investigation, contributing first hand insights to inform targeted interventions and support systems for the well-being of frontline healthcare workers.

The present study aims to explore the mental health status of frontline healthcare workers defined as nurses, technicians, and general duty attendants in tertiary care hospitals during COVID-19 pandemic. In other words, an attempt is made to quantify the severity of symptoms of anxiety and depression among front-line healthcare workers to determine the mental health condition of healthcare professionals treating COVID-19 patients.

However, the specific objectives of this study are to

1. Find out the status of mental health amongst the frontline health care workers in tertiary health care settings in Rajasthan.
2. Determine the factors affecting mental health status of the frontline health care workers in the same settings.

Mukhtar and others in Lahore (June 2020), stated "Devastating health concerns such as sleep irregularity, stress, distress, fear, anxiety, depressive symptoms, denial, anger, frustration, and mistrust in the population due to COVID pandemic."

According to the previous research, during outbreaks like SARS, MERS, and Swine flu, HIV, mental health concerns were evident amongst the population and healthcare professionals. Both the population and hospital staff displayed avoidance behaviours, high anxiety level, and worries over the illness during the H1N1 influenza outbreak, also known as the "swine flu." (Jones JH, 2009; Goulia P, 2010; Goodwin R, 2011). Mc Mohan SA and others (2016) while doing a qualitative investigation of the social and emotional impact on health care workers during Sierra Ebola epidemic, reported feelings of stigmatization, pain, loneliness, isolation, and depression among the frontline health care workers. A study carried out in Sierra Leone during the 2014 Ebola outbreak by Jalloh et al. (July 2015) discovered that anxiety-depressive symptoms and Post-Traumatic Stress Disorder (PTSD) persisted even a year after the outbreak. This suggests that the epidemic's psychological effects lingered on people.

In a study by Wang Y et al (2020), when compared the psychological impact of quarantine amongst the population and healthcare workers. They found that "The healthcare workers experienced more severe post-traumatic stress symptoms, felt more stigmatized, exhibited more avoidance behaviours, reported more income loss, and were consistently more psychologically affected. Healthcare workers were also more likely to believe they had the disease and worry about spreading it to others".

A study conducted by Jose, S. et al (2020) on the mental health of frontline ICU nurses of tertiary care settings in Chandigarh India, found sizable portion of participants reported experiencing feelings of anxiety (54.7%), fear (44%), sleeplessness (31%), and distress (68.5%). Kar, S.K. et al (2020) in a study found that "The front-line health workers who were playing a crucial role in curing infected patients in such an unpredictable situation, with a high risk of exposure, limited knowledge about the disease and with limited resources, were at higher risk of mental health problems."

Arnetz et al (2020) found significant association between lack of adequate PPE and depression and anxiety. They also found nurses younger than 45 years and working in in-patient departments were more prone to poor mental health. According to Hacimusalar Y and others (2020), levels of anxiety in COVID-19 pandemic in Turkey were comparatively found to be more in healthcare workers than non-healthcare workers. Nurses were found to be more hopeless and evident more anxiety levels in comparison to the doctors and other healthcare worker.

Labrague LJ et al (2020) Philippines, reported 38% nurses with dysfunctional anxiety levels. Nurses who were flexible and are more social and those who feel getting more organisational support reported lower level of anxiety related to COVID-19. Zolnikov TR, Furio F (2020) found social distancing as a major contributing factor to the poor mental health outcomes among front liners during the COVID-19 pandemic.

**Materials and Methods**

**Research design**

A cross-sectional study design is adopted to accomplish the objectives of the current research. All data collected for the study was primary in nature. The study followed a mixed-method approach consisting of quantitative and qualitative techniques of data collection.

**Study area**

The proposed study was conducted in three tertiary care hospitals in Jaipur, Rajasthan

**Sampling Technique**

**Multistage sampling technique**

A multistage sampling procedure was adopted to select the respondents for this research.

**Selection of the Facilities**

At the first stage the health facilities were selected. Three tertiary care hospital treating COVID-19 were considered for this study. Hospitals who treated COVID-19 as well as non-COVID-19 patients during the pandemic in Jaipur, Rajasthan were selected. It is worth mentioning that all the selected hospitals were having more than 200 beds.

**Selection of the Respondents**

In the second stage the respondents for this survey were selected from the available list of the front-line health workers working in the COVID-19 facilities, more specifically working directly with COVID-19 patients as exposed groups and unexposed groups comprising of frontline health care workers who didn't work with COVID-19 patient areas within the same facility. Further, the

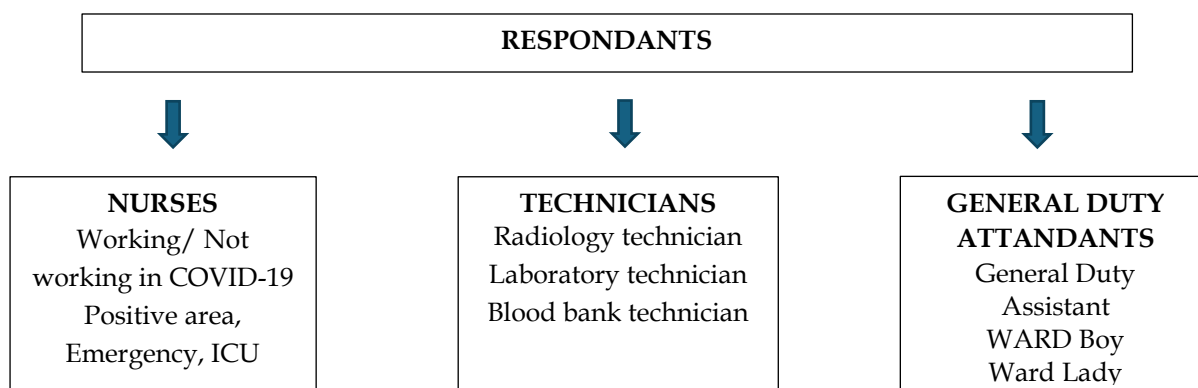
necessary data was collected from specific categories of healthcare providers who closely worked in COVID-19 patient areas such as ICU, wards, and emergency departments in the selected private tertiary care hospitals in Jaipur, Rajasthan. Other set of respondents selected were those who didn't work in COVID-19 patient area. The respondent's category included nurses, technicians, and general duty attendants.

From the available list of front-line health workers in each facility, a systematic sampling method was employed to select respondents from both the exposed and unexposed groups.

The study intends to record the opinions and experiences of frontline healthcare providers who were directly involved in COVID-19 care as well as those who were not exposed to COVID-19 positive areas by employing this multistage sampling technique.

**Sample Size**

Based on the Daniels sample size calculation formula, the desired sample size was calculated. Using a prevalence rate of 50% reported by previous researchers, indicating that 50% of healthcare workers working in COVID-19 areas experienced anxiety (Lai et al., 2020), with a margin of error of 5% and at confidence interval of 95%, a sample size of 385 was initially calculated. However, considering the ongoing pandemic situation and the workload of healthcare workers, a non-response rate of 25% was factored in. Therefore, the final sample size was adjusted to 481.



### **Tools and Techniques of Data Collection**

As mentioned earlier, the information for the study was collected from nurses, technicians, and general duty attendants. Both quantitative as well as qualitative techniques were used to collect the information.

Quantitative techniques comprised of a semi structured interview schedule based on General Anxiety Disorder (GAD-7) scale and Depression Anxiety Stress Scale (DASS-21) was administered by the researcher and investigators. The schedules included open and close-ended questions. Pretesting was done to ensure clarity, relevance, and appropriateness of interview questions and identify potential issues or areas of improvement in the interview schedule.

#### ***General Anxiety Disorder scale (GAD-7)***

Anxiety symptom severity and presentation are evaluated using the GAD-7 scale. Higher scores on the GAD-7 indicate higher levels of anxiety. The scores range from 0 to 21. The Chinese population proved the validity and reliability of the scale. (Tong, 2016; Laun R., 2020; Gebre Eyesus, F,2021)

#### ***Depression Anxiety Stress Scale (DASS-21)***

The Depression, Anxiety, and Stress Scale – 21 Items (DASS-21) was used to measure the perceived stress, anxiety, and depression symptoms during the COVID-19 outbreak. The DASS-21 has been previously validated in Vietnamese populations and showed good sensitivity and reliability to detect mental health disorders. (Le, 2017; Kapetanos,2021; Nadeem,2023).

To achieve the second objective of the present research, a binary logit regression was carried out. The outcome variables were categorised into two groups, namely good mental health status and poor mental health status. It is worth noting that the poor mental health status included moderate and severe mental health problems, whereas good mental health status was having mild mental health problem amongst the respondents.

### **Ethical Consideration**

The requisite ethical approval for the present research was obtained from the Institutional Review Board of the EHCC (Eternal Heart Care

Centre) of Jaipur. These ethics cover the respondents' consent, privacy, anonymity, and secrecy, as well as the researchers' relationship ethics with the respondents, which was strictly adhered during data collection.

#### ***Pretesting of the Schedule***

Pretesting of the schedule was conducted to ensure the clarity, relevance, and appropriateness of the questions through interviews. During the pretesting process, the schedule was administered to a small group of participants from a non-selected hospital. This allowed the researchers to assess the feasibility of the questions and identify any potential issues or areas of improvement.

#### ***Inclusion criterion***

Those who were working in either of the selected facility for at least 6 months, working during COVID- 19 pandemic time, was free from any major severe chronic diseases that that systematically alters his or her behaviour and working in frontline force were included in the study. Frontline health care workers include nurses, technicians (Laboratory, Blood Bank, Radiology, Operation theatre) and General duty assistants (GDA).

#### ***Duration of the Survey***

Two phases of data collection were conducted for this study. The quantitative data was collected from October 2022 to June 2023, whereas the qualitative information was collected during March to May of 2023.

### **Results**

An analysis was carried out to observe the characteristics of the respondents. Results of the same are being presented in Table 1. It is observed from the analysis that almost half of the respondents (49%) are in the age group 26-34 years. Nearly two third of them (68 %) are male. 75% of them are having the degree of either GNM or BSc nursing or above. Further, the analysis reveals that 61% of the respondents are having joint family, and two third (65%) reported not living alone. Besides, it is found that 41% of them are never married. Around 19% respondents are having one child, whereas 21 reported having more than one child. Additionally, the results suggest that 27 of the respondents reported the

**Table 1** Characteristics of the Respondents (N =481)

Characteristics of the Respondents	Percent (%)	
Age	18-25	32.0
	26 To 34	49.1
	35 And above	18.9
Sex	Male	67.6
	Female	32.4
Educational Qualification	Non-Technical Staff	11.4
	GNM	31.0
	BSc Nursing or Above	43.9
	Technician	13.7
Type of Family	Nuclear	39.3
	Joint	60.7
Living Status	Living Alone	35.1
	Not Living Alone	64.9
Marital Status	Never Married	41.0
	Ever Married	59.0
No. of Children	No Child	60.0
	One Child	18.7
	More Than One Child	21.3
Age of the Youngest Child	0-6 Month	27.1
	7 Months or More	12.9
	No Child	60.0
Name of the Department	Ward	46.1
	ICU	23.1
	Other (Lab, Isolation, Emergency, OT)	30.8
Work Experience	0-5 Years	56.3
	6 & Above Years	43.7
Experience in Current Organisation	New/Fresher	22.9
	1-5 Years	52.2
	6 and more years	24.9
Total Annual Family Income	Up to 2 Lakhs	26.2
	2 - 4 Lakhs	34.7
	4-6 Lakhs	24.3
	Above 6 Lakhs	14.8
Total No of Dependants	No dependent	16.7
	1-2 dependent	32.2
	3 or more	51.1
Was Social Distancing Maintained at Workplace	Never	2.3
	Always	7.7
	Sometimes	90
Felt Loneliness from Family and Friends Due to Social Distancing	Always	39.9
	Sometimes	49.9
	Never	10.2
Proper COVID-19 Safety Training Received		91.1
Proper Communication with Top Management		81.9
Problem Faced in Getting PPE In Hospital	Yes	22.5
	No	65.9
	Not Applicable	11.6
Work overload during COVID-19 pandemic		61.3
Concern for transmitting infection to family		84.4
Recognition/ Appreciation received for working in COVID-19 area		37.8
Received Incentive for Working in COVID-19 Area		49.3
Got Infected by COVID-19		32.0

age of the youngest child as 06 months, whereas 13% reported the same as seven months or more. Analysis pertaining to work experience reveals that more than half (56%) of the respondents working in the range of 0-5 years. Around 46% found working in wards during the pandemic, whereas 23% worked in ICU. Almost half of the respondents (52%) mentioned that they are working in the present organization for 1-5 years. One fourth of the respondents mentioned working for less than a year (22%) and six years or more (26%) in the present organization respectively.

Further, the analysis pertaining to the respondents' profile suggests that their annual family income in the range of 2-4 lakh (35%), up to 2 lakhs (26%), and 4-6 lakh (24%). Half (51%) are having three or more number of dependants. Besides, the majority (90%) of the respondents mentioned that social distancing was maintained at workplace sometimes. Similarly, 90% of them felt lonely from family and friends due to social distancing during COVID-19. Contrary to that, 91% respondents mentioned that they receive proper COVID-19 safety training. Also, 82% respondents are having proper communication with the management of the hospitals during COVID-19.

Two third (66%) of the respondents do not have any problem to obtain PPE in hospitals. However, 61% of them are mentioning about the issue of

work overload during the pandemic. A majority of them (84%) are concerned that the disease might transmit to family members. A little more than one third (38%) of the respondents mentioned that they receive recognition for working in COVID-19 area. Almost half of them received incentives. However, one third of them are got infected by the COVID-19 while working (Table 1).

### Comprehensive Mental Health Scale

This scale is calculated for each participant by assigning scores to the following mental health aspects related to general anxiety, and depression, anxiety and stress. (Table 2.1 and 2.2). The score of Comprehensive Mental Health (CMH) Scale was calculated for all participants. The scale has the lowest possible value of 0 (zero) and the highest possible value of 84.

The pooled score of respondents was observed in the same range, touching the extreme values, i.e. 0 (zero) and 84. The arithmetic mean was found to be 21.2 (SD = 19.9). Based on total scores, the respondents were categorized into three groups referring to three levels of mental health status:

- Mild mental health problems (MHP)= score 0 to 28
- Moderate MHP = score 29 to 56
- High MHP = score 57 to 84

After conducting an internal consistency test, the scale's Cronbach's Alpha was found 0.974.

**Table 2.1** Scoring criteria for selected mental health aspects related to general anxiety

S. No.	Variables	Scoring Criteria
1.	Feeling nervous or anxious	0=Never, 1=few days, 2=more than half days, 3= everyday
2.	Not being able to stop or control worrying	0=Never, 1=few days, 2=more than half days, 3= everyday
3.	Worrying too much about different things	0=Never, 1=few days, 2=more than half days, 3= everyday
4.	Trouble relaxing	0=Never, 1=few days, 2=more than half days, 3= everyday
5.	Being so restless (hard to sit still)	0=Never, 1=few days, 2=more than half days, 3= everyday
6.	Becoming easily annoyed or irritable	0=Never, 1=few days, 2=more than half days, 3= everyday
7.	Felt afraid as if something awful might happen	0=Never, 1=few days, 2=more than half days, 3= everyday

**Table 2.2** Scoring criteria for selected mental health aspects related to Depression Anxiety and Stress

S. No	Variables	Scoring Criteria
1.	Felt hard to wind down/relax	0=Never, 1=Sometimes, 2=Many times, 3=Always
2.	Felt dryness of my mouth	0=Never, 1=Sometimes, 2=Many times, 3=Always
3.	Difficulty in experiencing any positive feeling	0=Never, 1=Sometimes, 2=Many times, 3=Always
4.	Experienced breathing difficulty	0=Never, 1=Sometimes, 2=Many times, 3=Always
5.	Difficulty to take initiative to do things	0=Never, 1=Sometimes, 2=Many times, 3=Always
6.	Over-react to situations	0=Never, 1=Sometimes, 2=Many times, 3=Always
7.	Experienced trembling	0=Never, 1=Sometimes, 2=Many times, 3=Always
8.	Experienced nervous energy	0=Never, 1=Sometimes, 2=Many times, 3=Always
9.	Had panic attack	0=Never, 1=Sometimes, 2=Many times, 3=Always
10.	Felt unable to be enthusiastic about work	0=Never, 1=Sometimes, 2=Many times, 3=Always
11.	Felt agitated	0=Never, 1=Sometimes, 2=Many times, 3=Always
12.	Felt restless	0=Never, 1=Sometimes, 2=Many times, 3=Always
13.	Felt downhearted and sad	0=Never, 1=Sometimes, 2=Many times, 3=Always
14.	Intolerant of anything that kept respondents from getting on with job tasks	0=Never, 1=Sometimes, 2=Many times, 3=Always
15.	Felt close to panic	0=Never, 1=Sometimes, 2=Many times, 3=Always
16.	Unable to become enthusiastic about anything	0=Never, 1=Sometimes, 2=Many times, 3=Always
17.	Felt low self-esteem	0=Never, 1=Sometimes, 2=Many times, 3=Always
18.	Felt touchy/sensitive	0=Never, 1=Sometimes, 2=Many times, 3=Always
19.	Felt palpitation (increase in heartrate)	0=Never, 1=Sometimes, 2=Many times, 3=Always
20.	Felt cared without any reason	0=Never, 1=Sometimes, 2=Many times, 3=Always
21.	Felt that life was meaningless	0=Never, 1=Sometimes, 2=Many times, 3=Always

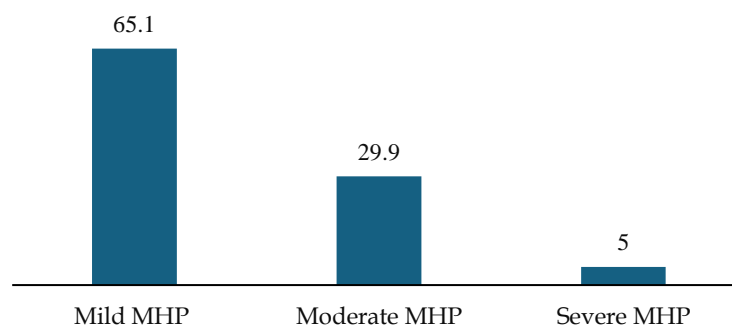
### Mental health status of the respondents during COVID-19 pandemic

As per the CMH scale, respondents were categorized according to their score. The categories were developed based on the range of the maximum and minimum possible scores. The univariate analysis suggests that slightly less than two thirds of the respondents (65%) are having mild mental health problem. About 30% of the respondents are with a moderate level of mental health problems. It is noteworthy to mention that about 5% of the respondents struggled with severe mental health issues during COVID-19 at workplace.

To find out the predictors for the mental health status amongst the frontline healthcare workers, a

regression was done. The results of the same are being presented in Table 3.

The analysis suggests that type of family, living arrangement, working in COVID-19 area during the pandemic, age, and education of the respondents, working department, work experience, received training for safety protocol, worried that infecting his/her own family, presence of elderly sick person in the family, availability of PPE kit was an issue or not, and received support from the superior during pandemic have emerged as statistically significant predictors to determine the mental health problems for the frontline health workers in Rajasthan during COVID-19 (Table 3).



**Figure 1** Respondents' mental health Status (N=481)



**Table 3** Factors determining mental health status of frontline healthcare providers during COVID-19 pandemic

Characteristics of the respondents		Sig.	Exp(B)	95% C.I. for EXP(B)	
				Lower	Upper
Sex of the respondents	Male <sup>@</sup>				
	Female	0.258	1.330	0.812	2.179
Type of Family**	Nuclear <sup>@</sup>				
	Joint	0.044	0.618	0.387	0.988
Living Arrangement**	Alone <sup>@</sup>				
	With Others	0.038	1.664	1.028	2.692
Exposure to COVID area**	Exposed <sup>@</sup>				
	Not Exposed	0.025	0.548	0.324	0.928
Age of the Respondents**	18-25 <sup>@</sup>				
	26-34	0.015	2.997	1.240	7.247
	35 and above	0.048	1.820	0.893	3.709
Education of the Respondents**	Non-Technical <sup>@</sup>	0.001	4.446	1.802	10.969
	GNM	0.026	0.614	0.278	1.353
	BSc Nursing and above Technicians	0.024	0.401	0.182	0.885
Marital Status	Never Married <sup>@</sup>				
	Ever Married	0.569	0.826	0.428	1.594
Number of Children	No child <sup>@</sup>				
	One Child	0.092	1.962	0.895	4.300
	More than One Child	0.209	1.574	0.776	3.190
Working Department**	Ward <sup>@</sup>				
	ICU	0.049	1.755	0.976	3.155
	Other	0.045	2.056	1.016	4.164
Work Experience*	0-5 Years <sup>@</sup>				
	6 Years and above	0.003	0.399	0.215	0.738
Total Annual Family Income	<=200,000 <sup>@</sup>	0.156	1.727	0.813	3.671
	200,001-400,000	0.689	1.155	0.570	2.342
	400,001-600,000	0.364	0.700	0.325	1.511
	600,001 and above				
Number of Children	No Child <sup>@</sup>	0.063	2.331	0.954	5.698
	One Child	0.575	1.248	0.575	2.705
	Two and above				
Social Distance Maintained	Always <sup>@</sup>				
	Sometimes/Never	0.250	0.623	0.279	1.394
Received Training for Safety Protocol**	Received <sup>@</sup>	0.023	0.269	0.087	0.833
	Not Received				
Worried about Exposed to Asymptotic Cases	Worried <sup>@</sup>	0.151	0.674	0.393	1.155
	Not Worried				
Felt at Higher Risk of Exposure	Felt <sup>@</sup>	0.158	0.650	0.358	1.182
	Not Felt				
Worried about Infecting Your Family**	Not Worried <sup>@</sup>	0.050	2.101	1.001	4.406
	Worried				
Presence of Elderly Sick Person in Family*	Present <sup>@</sup>	0.008	0.484	0.283	0.827
	Not Present				
Availability of PPE Kit an Issue**	An Issue <sup>@</sup>				
	Not an Issue	0.025	0.289	0.098	0.855
Usage of PPE Gave You Stress	Gave Stress <sup>@</sup>	0.090	0.622	0.359	1.077
	Did Not Give Stress				
Felt Ignored in Society as Worked in Hospital	Felt Ignored <sup>@</sup>	0.102	0.630	0.362	1.096
	Not Felt Ignored				
Received Recognition from Hospital Authority	Received <sup>@</sup>	0.273	.733	0.421	1.277
	Not Received				
Incentivized for Working in Isolation Ward	Not Incentivized <sup>@</sup>	0.609	1.162	0.654	2.063
	Incentivized				
Received Support from Superior during Pandemic*	Received Always <sup>@</sup>	0.002	0.226	0.088	0.581
	Received Sometimes	0.002	0.224	0.086	0.586
	Not Received				

Note: <sup>@</sup> reference category; \*- $p < 0.01$ ; \*\*- $p < 0.05$

## Discussion

The present study attempted to find the mental health problems amongst the frontline health

workers during COVID-19 in Jaipur, Rajasthan, India. The results showed that about 35% of the respondents found having moderate to severe

mental health issues due to pandemic. A multistate study conducted in India reported that the proportion of the healthcare worker having moderate to severe MHP was about 22% (Suryavanshi et al., 2020). Another study conducted outside India reported that about 46% of the health care workers faced mental health problem (Gbereeyesus et al 2020).

In this study, all the factors considered, and a Comprehensive Mental Health scale was developed and tested. The present study identifies a few significant determinants of mental health status. However, few studies identify different set of variables as predictors. For instance, a study conducted by Elkholy H. et al in Egypt (2020) analysed the potential risk factors of exposed healthcare workers and found females and those healthcare workers working in ICU show significantly poor mental health status. In the current study, no significant association was found regarding the gender effecting mental status of healthcare worker. But alike stated in above study the healthcare workers working in ICU show significantly poor mental health status in current study also. The possible reason behind the difference in the findings is that the respondents included in the study and the environment in which study conducted were inherently different. Wilson W and Rao S (2020) also found female frontline workers approximately two times increased odd of developing moderate to severe mental health problems.

The one of the key findings in the current research indicates a disparity in the mental well-being of frontline healthcare workers who were exposed to COVID-19 patients compared to those who were not exposed. This distinction was evident both in the bivariate analysis and the t-test. A similar analytical approach was employed in a study conducted in Oman by Abdallah Badahdah et al (2020) revealing elevated level of anxiety, stress and poor psychological wellbeing. Author found the health care workers who worked closely with COVID-19 patients had a detrimental effect on their mental health.

Alike a study by Parthasarathy R et al (2021), the current study also finds poor mental health status of those participants who worked in covid patient area or had frontline responsibilities with prime concern or fear of infecting family and loved ones. Both studies find age as significant factor, older age staff showing poor mental health.

A study by Gebre Eyesus, FA et al (2021) indicated that stress and anxiety were statistically significantly predicted by low monthly income, however the current study found no relationship between income and mental health issues. In both researches, it was discovered that additional variables such as living arrangements, degree holder or educational status were important predictors of mental health problems.

According to Lai J. And others (2020), there was a higher risk of poor mental health status among frontline healthcare personnel who were directly involved in diagnosis, treatment, and care of COVID-19 patients. The current study also discovered that the mental health of healthcare personnel who handled COVID-19 patients was subpar.

Similar to the findings of the current study, Oteri A and colleagues in Jordan (2022) discovered no differences in the mental health condition of frontline workers depending on gender, marital status, and having children. Contrary to current study, the author did not find any association between education level and mental health of frontline healthcare workers.

### **Conclusion**

The current study explored the status of mental health amongst the frontline health care workers in tertiary health care settings in Rajasthan along with factors affecting mental health status of the frontline health care workers in the same settings. The study suggests that type of family, living arrangement, working in COVID-19 area during the pandemic, age, and education of the respondents, working department, and work experience have emerged as statistically significant predictors determining the mental health problems for the frontline health workers in Rajasthan during COVID-19 pandemic. Similar type of research in a large scale may be conducted

in other parts of the state as well as in country to generalize the findings of the study.

Study suggested special interventions need to be implemented, to promote mental well-being in healthcare workers exposed to COVID-19 and to mitigate the effects of the pandemic on their current mental health. The development of tailored therapies to safeguard frontline healthcare professionals from mental crises in similar future situations is suggested. These measures may include individual coping methods such as acceptance, behavioural activation, and mindfulness, as well as early detection and intervention strategies. Boosting resilience and supporting recovery may entails increasing tolerance for distress and fostering stronger connections with others and promoting behaviours guided by personal goals and values. Additionally, incorporating peer support programs could help healthcare workers adapt their psychological responses to stressful circumstances.

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