

Prevalence of adverse psychological impact among front line Corona Warriors at tertiary centre in Meerut, U.P.

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Abstract

Aims & Objectives: To find the prevalence of depression/anxiety & sleep disorder among front line corona warriors in government medical college, Meerut, U.P

Methodology: 50 doctors & nurses who were posted in Covid isolation ward /ICU enrolled in the study. A two-part questionnaire was distributed among participants, the first part of which include PHQ-9 questionnaire to rule out mental health disorder and the second part consisted of ESS scale for sleep disturbance. Both parts also consist of few questions regarding basic socio demographic details of participants.

Results: The evidence showed that the majority of the subjects affected psychologically were below the age of 30 years, males and were married. Bases on PHQ-9 questionnaire and ESS scale 34.0% subjected were having psychological symptoms and 6.0% were having insomnia. There was no statistically significant association between male and female while there was a significant association between married and unmarried subjects with regards to PHQ-9 questionnaire because married were found to be more prone to the adverse psychological symptoms.

Conclusion: The findings showed that being a healthcare worker, a frontline health worker, a young person ,female ,resident doctors is related to more adverse psychological symptoms.This study shows similar results as demonstrated by other comparable studies.

Keywords: Stress, Doctors, Nurses, Frontline Warriors, Covid 19

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I. Introduction

The COVID-19 crisis has put severe pressure on health systems around the world. Understandably, there has been much emphasis on the effect of the pandemic on the health of the population, as well as the consequences of the potential loss of life from overwhelmed public health systems.

The effects on frontline medical warriors have also been severe. Healthcare workers are one of the most vulnerable groups and the negative psychological effects of working on the frontline of the pandemic have also been significant. Doctors and nursing staff must be equipped with full-body protective equipment including double-layer protective equipment, double-face masks, double-layer gloves, isolation caps, foot covers, and protective glasses. When on duty while wearing protective equipment, healthcare workers cannot eat, drink, or even use washroom. It will also lead to excessive sweating which leads to dehydration or even suffocation & breathing difficulty sometimes .Medical staff working in the covid area must always maintain close contact with suspects and positive patients. Sometime due to these conditions they become mentally and physically exhausted and experience an increased risk of adverse psychological outcome. This psychological outcome occurs as symptoms of depression, anxiety, inability to make decisions and sleep disturbances.

The psychological health of medical staff was influenced by many factors. Previous studies reported that personal factors such as gender, age, educational level, marital status, having children may influence the status of mental or physical health.¹ With this background, the present study was carried out with an aim to study the mental health disorder & sleep disturbances among front line doctors/nurses during covid crisis.

II. Aim Of The Study:

To find the prevalence of adverse psychological outcome among frontline corona warriors who were posted in covid ward or ICU duty during study.

Inclusion criteria-

- 1- Willingness to participate in study
- 2- Participants who are posted or completed their covid ward or ICU duties.

Exclusion criteria-

- 1- Participants suffering from psychiatric/medical/surgical disorder or any other cognitive dysfunction.

PATIENTS AND METHODOLOGY

This is a cross sectional study conducted on 50 participants including doctors and nurses who were posted in COVID ward and COVID ICU in LLRM Medical College Meerut, during study. A self-reporting questionnaire was distributed among participants. The questionnaire was divided into two parts. The first part consisted of basic socio-demographic details of the participants including name, age, sex, marital status, designation along with PHQ-9 Questionnaire.

Patient health questionnaire-9 (PHQ-9)

This was a most widely used instrument for screening depression in primary health care.² PHQ-9 is a self-measure questionnaire, Each of the 9 items was divided into a four-point degrees of the scale (0=not at all; 1=some of the time; 2=more than half the time; 3=nearly every day) in the past two weeks.). The total score ranged from 0 to 27.³

The second part consists of ESS scale along with similar basic socio-demographic details of the participants. The Epworth Sleepiness Scale (ESS) is a scale intended to measure daytime sleepiness that is measured by use of a very short questionnaire. This can be helpful in diagnosing sleep disorders. The ESS asks people to rate their usual chances of dozing off or falling asleep in 8 different situations or activities that most people engage in as part of their daily lives, although not necessarily every day. ESS score (the sum of 8 items score, (0-3) range from 0-24.⁴

All analyses were conducted using STATA 23.0 software and descriptive statistics in the form of mean and standard deviation, frequency (chi square test), and percentages were calculated.

III. Results

The characteristics of the participants

Of the 50 participants, 27 (54.0%) were male and the majority ($n = 74.0%$) were between the 20-30 years of age. The most common designation of corona warriors participate in study was PG residents ($n = 36%$) & marital status of the majority ($n = 32%$) was single or unmarried.

Table-1-Socio-demographic characteristics of the frontline corona warriors

Variable	Category	Frequency	Percent
Age group	20-30	37	74.0
	31-40	8	16.0
	41-60	5	10.0
Sex	Female	23	46.0
	Male	27	54.0
Marital	Unmarried	32	64.0
	Married	18	36.0
designation	Consultant	4	8.0
	non PG junior resident	12	24.0
	Nursing staff	13	26.0
	PG junior resident	18	36.0
	senior resident	3	6.0
	Total	50	100.0

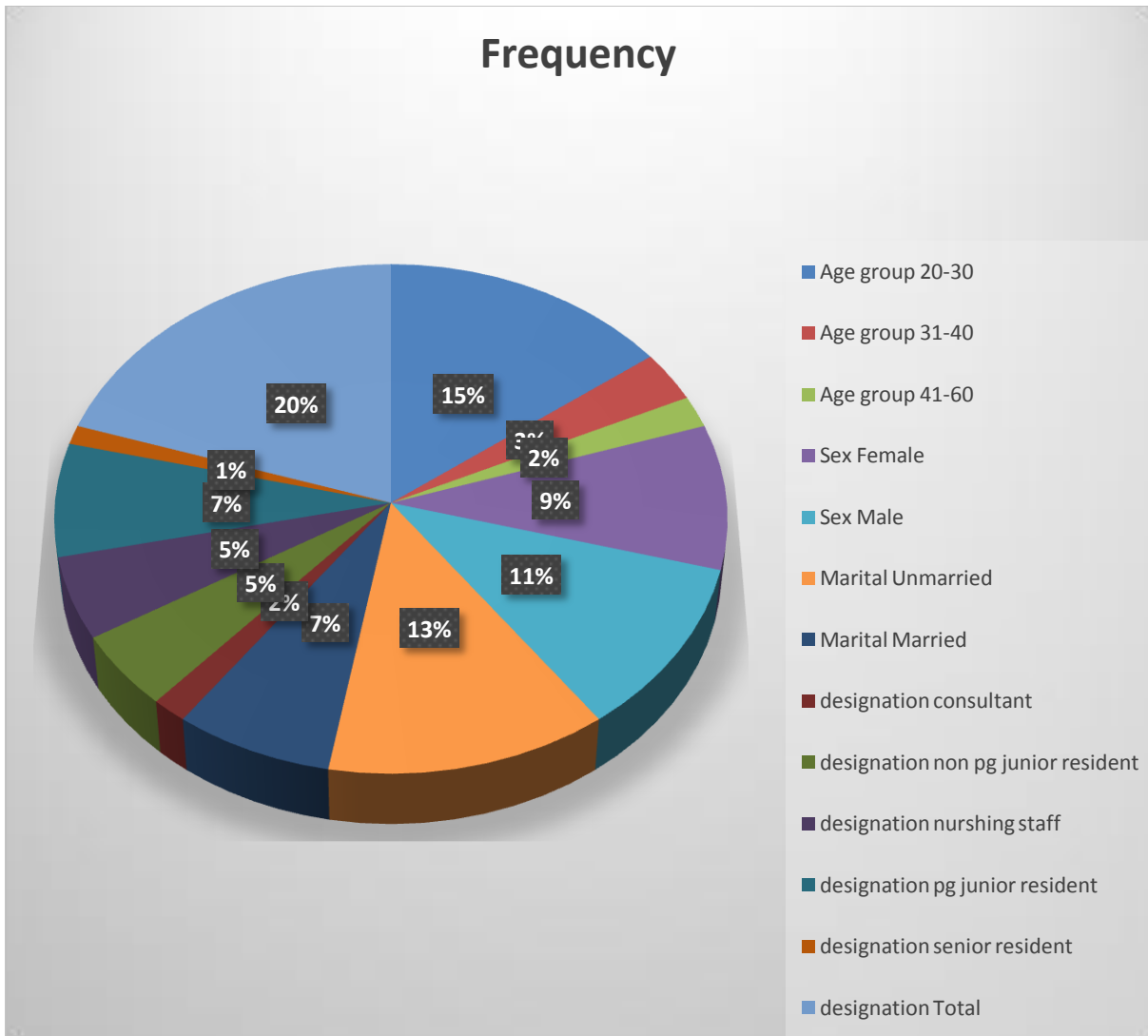


Table 2,3,4 -psychological outcome of corona frontline warriors- mental health outcome of frontline corona warriors were described in table 2 and 3, in table 2, the percentage for normal range for depression in PHQ-9 scale was 66.0%, mild was 24.00, moderate was 10.0% in sample & percentage for normal range in sleepiness in ESS scale was 94.00%, mild was 4%, moderate was 2%.

Table-2

	Scale	Female	Male	Total	%	Chi-square	df	p-value
PHQ	None	14	19	33	66.00	.642	2	0.726
	Mild	6	6	12	24.00			
	Moderate	3	2	5	10.00			
ESS	None	22	25	47	94.00	.877	2	0.645
	Mild	1	1	2	4.00			
	Moderate	0	1	1	2.00			

Table3-

	Scale	Unmarried	Married	Total	%	Chi-square	df	p-value
PHQ	None	29	4	33	66.00	24.037	2	<0.001
	Mild	2	10	12	24.00			
	Moderate	1	4	5	10.00			
ESS	None	31	16	47	94.00	2.026	2	0.363
	Mild	1	1	2	4.00			
	Moderate	0	1	1	2.00			

TABLE-4

Status	Category	N	Mean	SD	T	df	p-value
Age	Female	23	31.48	8.78	-.038	48	.970
	Male	27	31.56	5.60			
	Unmarried	32	28.69	2.56	-4.364	48	<0.001
	Married	18	36.56	9.68			
PHQ	Unmarried	32	3.03	1.892	-5.137	48	<0.001
	Married	18	6.67	3.125			
	Female	23	4.57	2.744	.493	48	.624
	Male	27	4.15	3.171			
ESS	Unmarried	32	4.13	3.462	-.880	48	.383
	Married	18	5.06	3.811			
	Female	23	4.35	3.228	-.202	48	.840
	Male	27	4.56	3.916			

IV. Discussion

In context of the COVID-19 pandemic, this timely study is both relevant and urgent. It is very important that those working at front-line with the infected patients and in affected regions have necessary strategies and the resources to bear various challenges. There is a lack of studies published particularly on mental health implications faced by the frontline healthcare workers during an epidemic. There is also the paucity of data around how to prevent psychological distress, and which steps are required to mitigate harm to the healthcare workers' comfort. The reason of this study is to discover the main findings from examining psychological impact on healthcare workers in times of the severe epidemics, and to identify the strategies to tackle this.

Early evidences has shown that the health workers involved directly in treatment, diagnosis, and care of the patients with COVID 19 are at the risk of developing the mental health symptoms. Similar psychological reactions were depicted among healthcare workers in the previous studies during 2003 Severe Acute Respiratory Syndrome (SARS) outbreak.^{5,6} The rising of the confirmed cases, work burden, and deaths, insufficient personal protective equipment (PPE), lack of the specific treatment, media coverage, susceptibility to infection and to stay in quarantine, in addition to feelings of being insufficiently supported in workplace, can contribute to mental burden of the health workers.⁷

This unprecedented experience of 'home quarantine' under lockdown with the uncertainty of academic and professional career has multifaceted impacts on mental health of students. For example, a study in Canada focusing on effects of quarantine after severe acute respiratory syndrome (SARS) epidemic established an association between the longer duration of quarantine and high prevalence of anxiety and depression among people.⁸

Prevalence

The prevalence of adverse psychological impact among front line warriors in the present study was found as such- the percentage for normal range for depression in PHQ-9 scale was 66.0%, mild were 24.0%,

moderate was 10.0% in the sample. The percentage for normal range in sleepiness in ESS scale was 94.00%, mild was 4%, moderate was 2%.

Our study was supported by a similar study performed in Nepal which shows the occurrence of symptoms of anxiety (41.9%) & depression (37.5%) among health workers in their study which was higher than found in the recent study performed among general population during COVID-19 in Nepal, which depicted that 31.0% of respondents reported anxiety and 34.0% of respondents reported depression.⁹ This might be due to health workers have the higher risk of acquiring COVID-19 infection in comparison to the general population, and also due to the stressful and demanding nature of the job. However, the occurrence of depression, anxiety, and insomnia in present study was lower than China¹⁰ where 44.60, 50.40 and 34.0% of healthcare workers were reported to have anxiety, depression and insomnia respectively.

Increased risk of the infection and the stressful environment may have contributed to the higher mental-health impacts among the health workers in China than in Nepal and India. Mental health outcomes among the healthcare workers affect their workplace performance and to tackle this, specialized mental-health services are required.

Demographic Details

In the present study the majority of the studied subjects were of the age range from 20 to 30 years (74.0%) followed by 31 to 40 years (16.0%). Male and females were almost equal in numbers i.e. 54.0% males and 46.0% females. Majority of them were married (64.0%) and at the post of PG Junior Resident (36.0%) followed by Nursing Staff (26.0%).

Khanal P et al⁷ in their study on mental health impacts among health workers during COVID-19 in a low resource setting study reported that the majority of the studied subjects were Doctors (33.9%) and nursing staff (35.2%).

Vahedian-Azimi et al¹¹ in their study on Comparison of the severity of psychological distress found that out of 217 medical staff 111 (51.2% were male and 106 (48.8%) were females which was in accordance to the present study while out of 207 medical students 143 (69.1%) were male and 64 (30.9%) were females while 158 (72.8%) and 120 (58.0%) were married respectively. The mean age of the medical students was 27.37 ± 3.92 (20 years–38 years).

Jain A et al¹² did a study on psychological impact on anaesthesiologists and reported that the majority of the subjects were below the age of 30 years (38.8%) and were male (55.7%) and married (64.7%) and the designation was resident (68.4%). All the above details were similar to the present study.

Association of depression and anxiety by PHQ and ESS in between male and females married and unmarried

Even before the pandemic, the mental health of health workers has been a major concern. A study by **Su et al¹³** conducted in 2009 in a Taiwanese regional general hospital reported nearly half of the staff to be having either a minor psychiatric disorder or depressive disorder. Another study done by **Grover S et al¹⁴** in North India in 2018 reported that 30.1% of participants found to have depression and 13% of participants found to have a high level of stress.

In the present study out of 23 females, 9 (39.1%) were having mild to moderate psychological outcome (depression/stress/anxiety) whereas 8 (29.6%) out of 27 males were experiencing psychological outcome and the association was found to be statistically insignificant ($p=0.642$). The Epworth Sleepiness Scale (ESS) shows that only one female and 2 males were experiencing psychological disorder ($p>0.05$).

Our findings were supported by **Qaiser DH and Albanyan OA¹⁵** who reported that the Medical students actually got less sleep hours than the optimal sleep duration. However, most had normal day time sleepiness. There was no relation between the student's grades and their level of distress.

Nie A et al¹⁶ in their study on psychological impact of COVID-19 outbreak on frontline nurses reported insignificant association between male and females and married and unmarried with and without distress ($p>0.05$) which was similar to the present study.

Peng M et al¹⁷ performed a study on the prevalence, risk factors and clinical correlates of depression in quarantined population during the COVID-19 outbreak and reported no association between men and women with and without depression ($p>0.05$).

According to **Khanal P et al⁷** insomnia was not associated significantly in doctors, nurses and other health workers ($p>0.05$) which is in accordance to the present study.

Al- Hanawi MK et al¹⁸ in their study on Psychological Distress Amongst Health Workers and the General Public During the COVID-19 Pandemic in Saudi Arabia reported contrasting result that gender was the significant factor and marital status was insignificant factor associated with psychological disorder and females were affected significantly more ($p<0.05$). This may be because of higher sample size and geographical changes.

The study performed by **Naushad VA et al**¹⁹ also pointed out, that healthcare workers particularly those working in the ICUs, emergency units and infectious disease wards are at much higher risk of having adverse psychiatric impact because of the speculations of the mode of transmission, spread rapidity and lack of best treatment protocols and vaccine of COVID-19.

Female frontline workers had higher levels of stress and burnout compared to men.²⁰ This is because of the accumulation of tasks and her greater commitment to issues related to work and family where they have double or triple workload (home, work, and family).²¹ The resident doctors are more prone to mental health problems, because of the long floor duty hours and direct involvement in patient care compared to other medical staff.

In the existing current scenario, healthcare workers are prone to the physical and mental fatigue as they are caring for increasing load of the COVID-19 patients under un-physiological conditions caused because of wearing of PPEs and the other restrictions like working without food, water, and air conditions for hours, constant exposure to the contagion itself, constantly worrying about transmitting the infection to family members, friends and colleagues, living away from home and increased number of duty hours and night duties. They also have to be abreast of constantly changing treatment guidelines and government policies.

Limitations

owing to small sample size in this study, there is a further need to conduct this study on a larger sample size which should be a better representative of the entire population.

Our study design was cross-sectional which does not allow us to discern the fluctuations in depression, anxiety, and insomnia levels of the healthcare workers, hence, prospective longitudinal studies are required for this matter.

Strength

However, our findings offer valuable insight into psychological impact of COVID-19 on our healthcare workers at the forefront.

V. Recommendations

Further, there is a necessity to develop the mental health interventions which are practical, time limited, sensitive culturally, and can be trained and disseminated to healthcare workers and the general population. There is also a need for further research in India as very few studies have been conducted so far in the country.

Having rotational shifts, distribution of workload by the diversion of patients to other hospitals with facilities, and up scaling of COVID-19 treating facilities might be considered. Regular monitoring of psychological status should be included in the routine health check-ups, and psychological therapy sessions by psychiatrists should be made accessible to all the health workers.

VI. Conclusion

Though there are only a few studies existing in this field till date, it is evident that the COVID-19 epidemic has led to the vigorous and multi-faceted response from various researchers across the world. This study pointed out that majority of medical staff on COVID-19 duty suffer from some degree of anxiety, depressive symptoms and insomnia. Addressing risk factors identified during this study with targeted interventions and providing them with required support can help in mitigating it. The findings also showed that being a healthcare worker, a frontline health worker, a young person, a female and a resident doctor are related to adverse psychological symptoms.

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CONFLICT OF INTERESTS

none

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