

# Impact of second wave of covid-19 pandemic on mental health of health care workers and general population: A comparative study

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## Abstract

With the rise of covid-19 world saw what was unprecedented, and just when we thought we got things under control second wave of covid-19 virus hit us. No one was left unaffected, either directly or indirectly covid caused disruptions in everyone's lives and thus left with psychological problems in unforeseen majority. Aim of this study was to measure the psychological impact it had on health care workers and general public. Results showed significant differences between the socio demographic profiles of the two groups. Significant difference was found in scores of stress, anxiety, insomnia and depression. This study highlights the need for specialist guided assistance and action towards betterment of mental health of health care workers as well as general public in post covid era.

**Keywords:** Insomnia, Depression, Covid-19, Stress, Anxiety, Healthcare worker

## Introduction

The novel coronavirus-19 (COVID-19) started from Wuhan in mainland China. Since then it has affected most of the nations and continents because of its rapid spread. This disease was declared a public health-related emergency situation by the World Health Organization followed by declaration of a pandemic status in March, 2020. Most commonly affected are the healthcare professionals who are working on the frontline. They suffer from severe psychological side-effects which may be attributed to extremely long working hours, heavy work load, and inadequate supply of personal protective equipments (PPE) supplies, over-reporting by audiovisual and social media, and various news channels and high rate of infection among the handling staff<sup>[1]</sup>.

In India, cases of covid-19 began to increase again in second week of February 2021 followed by a exponential rise and by 1<sup>st</sup> may 2021 total cases in India rose to near about 19 million. This rapid emergence was not entirely unexpected given that India let its guard down when daily infections in January fell to lower than 20,000. Big religious assemblies, reopening of most public places and crowded election rallies are being blamed for the upsurge.

As per WHO, mental health disorders constitute one of the main reason for the disability around the world. Stress is a process wherein external or environmental demands exceed the adaptation capability of any organism which results in biological along with psychological alterations which at large may place those people at risk of disease. Anxiety can be defined as "a physiological and psychological state which is characterized by various somatic, cognitive, behavioral, as well as emotional components". All of these components when combined together may lead to the creation of an unpleasant feeling which has been associated with fear,

worry, and feeling of uneasiness. It is a generalized mental condition occurring without any trigger or stimulus. Various symptoms of depression are: anxious, sad and empty feelings, hopelessness, guilt and may be sense of helplessness, restless attitude, irritation, and lack of interest in various hobbies and activities and were once considered relaxable and which are used to provide pleasure<sup>[2]</sup>.

The continuing coronavirus (COVID-19) pandemic has massive impact on psychological health of healthcare as well non-healthcare professionals. There is an increasingly pressing requirement to address these impacts on an individual's mental state by protection as well as promotion of overall well-being during as well as after the outbreak is over<sup>[3]</sup>.

While lockdown can be a significant and effective strategy of social distancing to tackle the increasing spread of the highly infectious COVID-19 virus, at the same time, it can have some degree of psychological impact on the public. It is well known that quarantine/isolation for any cause and in the context of a pandemic (severe acute respiratory distress syndrome/SARS, 2003) had been reported to be associated with significant mental health problems ranging from anxiety, fear, depressive symptoms, sense of loneliness, sleep disturbances, anger, etc., in the immediate few days of isolation and later had symptoms of post-traumatic stress disorder and depression even after 3-4 weeks of discharge<sup>[4]</sup>. Lockdown can have different psychological impact in different age groups as well: children may feel restless as they may run out of the options to keep themselves engaged; elderly may feel that their movement has been restricted and adults may feel burdened with household chores in the absence of housemaids/servants.

### **Aim of the study**

To evaluate and compare the psychological impact of second wave of COVID-19 pandemic on the health care workers and general public.

### **Materials and Methods**

This observational cross-section study was conducted during the second wave lockdown period at our tertiary care hospital in Rajasthan. For this purpose, a structured questionnaire was distributed among 40 health care workers and 40 members of general population who came for vaccination purpose.

The questionnaire comprised of following study variables-

- a) Gender
- b) Age
- c) Education
- d) Occupation

They were then further subjected to following scales

- 1) Perceived Stress Scale-10.
- 2) Insomnia Severity Index-7.
- 3) Patient Health Questionnaire-9.
- 4) Generalized Anxiety Disorder-7.

The study was conducted in compliance with the protocol; ethical approval was obtained from the institutional ethical committee. The subjects participating in the present study provided their informed written consent before taking the survey by signing the consent form. Participation was on a voluntary basis, and there were no incentives. Data protection and anonymity were guaranteed. The collected data was analyzed using the appropriate statistics.

## Results

On analyzing the demographic characteristics, age in years (mean  $\pm$  SD) values were found to be  $29.12 \pm 2.77$  years and  $52.4 \pm 8.35$  years for health care professionals and general public respectively. On comparing the gender distribution, the percentages of male study participants was found to be 45% and 60% while percentages of female study participants was 55% and 40% for the healthcare workers and general population, respectively. 22.5% of general population was educated upto 12<sup>th</sup> standard, 12.5% and 42.5% of medical professionals and general public were educated up to undergraduate level while 87.5% and 35% of those who participated were with postgraduate educational qualification respectively. Evaluating perceived stress scores showed 97.5% of health workers reported moderate levels of stress while in general public 62.5% reported low stress. Scores of Insomnia severity index revealed that 70% of HC workers and 87% of general population had subthreshold insomnia while 30% of health care workers had moderate insomnia.

PHQ-9 scores revealed that 10% of HC workers had mild depression and 67.5% had moderate while 22.5% had moderately severe depression. In case of general public, 62.5% had PHQ-9 scores in mild range while 35% were moderately depressed. GAD-7 scores revealed 55% health care workers were moderately affected and 40% were in severe range. While 70% of general public was in moderate range, 20% in mild and only 10% was severely anxious.

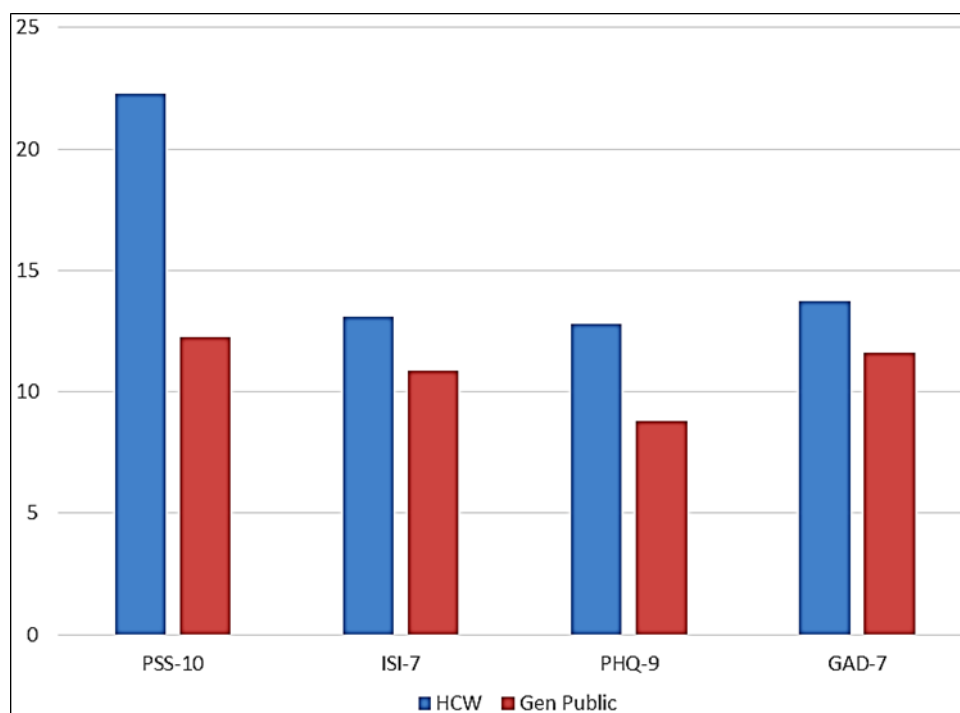
**Table 1:** Socio demographic profile of the respondents

Variable	Health care professional	General public
Mean age (years)	$29.12 \pm 2.77$	$52.4 \pm 8.35$
<b>Gender</b>		
Male	45%	60%
Female	55%	40%
<b>Education</b>		
12 <sup>th</sup> pass	-	22.5%
Under Graduation	12.5%	42.5 %
Post-Graduation	87.5 %	35 %
<b>Occupation</b>		
Health care worker	100%	-
Homemaker	-	32.5%
Other professions	-	67.5%

**Table 2:** Psychological parameter studied in both groups

S. No.	Parameter Studied	Health Care Professional (n%)	General Public (n%)
1.	Perceived Stress Scale-10		
	A) Low (0-13)	2.5%	62.5%
	B) Moderate (14-26)	97.5 %	37.5 %
2.	Insomnia Severity Index -7		
	A) None (0-7)	-	12.5 %
	B) Subthreshold (8-14)	70 %	82.5 %
	C) Moderate (15-21)	30 %	5 %
3.	Patient Health Questionnaire-9		
	A) None (0-4)	-	2.5%
	B) Mild (5-9)	10%	62.5 %
	C) Moderate (10-14)	67.5 %	35 %
	D) Mod. severe (15-19)	22.5 %	-

4.	Generalized Anxiety Disorder-7		
	A) Mild (5-9)	5%	20 %
	B) Moderate (10-14)	55 %	70 %
	C) Severe (15-21)	40 %	10 %



**Chart 1:** Comparison of mean scores of psychological parameters between health care workers and general public

## Discussion

One of the main reasons for development of anxious behavior during this isolation period is unfamiliarity with this type of restriction of a personal and social freedom. This coupled with massive financial losses and conflicted guidelines from various health agencies and governmental resources <sup>[5]</sup>. In current study, the presence of generalized anxiety was observed in 55%, whereas moderate depression was reported from 67.5% of physicians, nursing staff, technicians, and other healthcare study population. The 70% of studied health care worker sample reported insomnia whereas moderate stress issues were found to affect 97.5% of healthcare population. Our study is supported by a number of investigators as described below- Similar results were observed in study by Que *et al.* (2020) who conducted a cross-sectional online survey among healthcare professionals during COVID-19 pandemic.

The parameters used for assessing psychological stressors which were tested using following scales-

- 1) The Generalized Anxiety Disorder scale.
- 2) The Questionnaire for public health and index for assessment of severity of insomnia.

According to this study, the symptom prevalence of anxiety, depression, insomnia, and other psychological problems was found to be 46.04%, 44.37%, 28.75% and 56.87%, respectively among the healthcare professionals. The frontline workers were found to demonstrate high risk of developing anxiety, insomnia along with various other psychological problems. It was found that when compared to the general public, workers in the healthcare field who are at constant risk of COVID-19 infection are particularly stressed because of their relatively direct exposure, inadequate protective facilities, excessive work, perceived opinions in form of

stigmatization, necessary quarantine, and sometimes inadequate support of the family<sup>[6]</sup>.

Similarly, Barzelay *et al.* (2020) in their study pointed out that the healthcare people worried more than the non-healthcare workers regarding contracting the COVID-19 infection. They reported greater levels of anxiety (22.7%) and depression (16%) among healthcare related professionals. In this study, there was a gender predilection toward female subjects mostly because of convenient sampling.

Likewise, Luo *et al.* (2020) in their systematic review and meta-analysis reported similar prevalence of anxiety and depression as 56% (39-73%) and 55% (48-62%), respectively, in both healthcare workers and general population<sup>[7]</sup>. Huang and Zhao (2020) had reported the presence of psychological symptoms of anxiety, insomnia, and depression<sup>[13]</sup>. Lai *et al.* (2020) also reported incidence of stress in addition to anxiety, depression and insomnia<sup>[8]</sup>.

Tan *et al.* (2020) performed a study for examining psychological stress, anxiety, and depression during COVID-19 outbreak on both medical and non-medical professionals using a questionnaire. This questionnaire comprised of the depression, anxiety, and stress scale and impact of event scale revised (IESR) tool. The study presented with primary result outcome based on stress, anxiety, depression along with post-traumatic stress disorder. In this study, 14.5% study participants showed anxiety, 8/9% demonstrated depression, 6.6% showed signs of stress and 7.7% suffered from post-traumatic stress disorder. The COVID-19 pandemic is continuing abated. In this scenario, there is requirement of both political and clinical strategies which can help healthcare workers, specially medical professionals while educational support systems should be made available to non-medical professionals<sup>[9]</sup>.

## Conclusion

The control of COVID19 disease is also greatly influenced by the intervention of psychological problems faced by both medical and non-healthcare individuals. India has been heavily affected by the Coronavirus19 pandemic (COVID19). As a result of the associated uncertainty, both the general public and healthcare professionals have increasingly been tested psychologically. While the main focus is concentrated on laboratory testing, finding the cure of the disease and preventing transmission, all individuals are undergoing a plethora of psychological problems while adjusting to current lifestyles and disease fear. This study attempts to determine the psychological impact of this pandemic situation on healthcare workers and non-healthcare workers. Our study has reported identical findings to those reported by numerous investigators working across the globe.

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