A cross-sectional study to assess anxiety and depression in frontline healthcare workers of Covid-19 in a tertiary care hospital

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Abstract
Background: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of Covid-19 emerged in Wuhan city of China in 2019 and spread all over the globe eventually. It was declared as a pandemic in March 2020. The pandemic posed a challenge for the entire population in terms of physical health, as well as, mental health. It had a huge impact especially among the Health Care Workers. Anxiety and depression were prevalent among them. The present study aims to assess anxiety and depression in frontline healthcare workers of Covid-19 in a tertiary care hospital in Indore city. **Methodology:** A cross-sectional study among 150 healthcare workers was carried out Index Medical College, Hospital and Research Center, in Indore city using a pre-designed semi-structured questionnaire over a period of one year. Anxiety was assessed using HAM-A scale whereas depression was assessed using HAM-D scale. Data was entered in Microsoft Excel and analyzed using appropriate statistical software. **Results:** Mean age of study participants was 27.9 ± 3.72 years. Majority of participants were males (71.3%). About 65.3% participants were doctors whereas 13.3% and 5.3% participants were interns and nurses respectively. Only 22% participants were married. Mean HAM- D score was 6.72 ± 8.7 whereas mean HAM-A score was 5.73 ± 7.88. According to these scales, prevalence of depression and anxiety was observed in 28.7% and 100% health care workers in our study respectively. Mean depression and anxiety scores were significantly higher among females as compared to males ($p < 0.05$). **Conclusion:** Anxiety and depression have been taking a toll on the mental health of these workers owing to the working hours and conditions they are exposed to.
Key words: Covid-19, anxiety, depression, healthcare workers, mental health

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Access this article online	
Quick Response Code:	Website: www.medpulse.in
	Accessed Date: 02 June 2021

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of Covid-19 emerged in Wuhan city of China in 2019 and spread all over the globe eventually. It was declared as a pandemic in March 2020. The pandemic posed a challenge for the entire population in terms of physical health, as well as, mental health. The psychological impacts were huge among the Health Care Workers (HCWs), which was mainly due to the nature of their jobs, which involved increased patient load, increased working hours, direct contact with the infected patients, rise in number of deaths, risk of transmitting virus to their families and sometimes exhaustion of personal protective equipment's (PPE).[1,2] It was reported in studies that 10% of HCWs had anxiety, felt depressed and had somatization as a result of working during such outbreaks. [2] The present study aims to assess anxiety and depression in frontline healthcare workers of Covid-19 in a tertiary care hospital in Indore city.

METHODOLOGY

A cross-sectional study was carried out among 150 healthcare workers involved in treatment and management of COVID-19 patients including doctors, nurses, lab-workers and other (directly involved in management of COVID-19 patients), in Index Medical College, Hospital and Research Center, in Indore city over a period of one year. Consent was obtained from all participants. A pre-designed semi-structured questionnaire was administered. Anxiety was assessed using HAM-A scale whereas depression was assessed using HAM-D scale. Data was entered in Microsoft Excel and analyzed using appropriate statistical software.

RESULTS

Table 1: shows distribution of the socio-demographic factors.

Sociodemographic variables		Frequency (n=150)	Percent
Gender	Male	107	71.3
	Female	43	28.7
Occupation	Doctor	98	65.3
	Intern	20	13.3
	Nurse	8	5.3
	Other	21	14.0
	Student	3	2.0
Marital status	Married	33	22.0
	Single	117	78.0

Mean age of study participants was 27.9±3.72 years. Majority of participants were males (71.3%). About 65.3% participants were doctors whereas 13.3% and 5.3% participants were interns and nurses respectively. Only 22% participants were married and 78% participants were single.

Table 2: shows prevalence of depression and anxiety among study participants

		Frequency	Percent
Depression	Absent	107	71.3
	Mild	12	8.0
	Mild to moderate	12	8.0
	Moderate to severe	19	12.7
Anxiety	Mild	134	89.3
	Mild to moderate	10	6.7
	Moderate to severe	6	4.0

In present study, prevalence of anxiety was assessed using HAM-A scale whereas that of depression was assessed using HAM-D scale. Mean HAM-D score was 6.72±8.7 whereas mean HAM-A score was 5.73±7.88. According to these scales, prevalence of depression and anxiety was observed in 28.7% and 100% health care workers in our study respectively.

Table 3: shows association of depression and anxiety scores with socio-demographic variables

Sociodemographic variables		Depression		Anxiety	
		Mean±SD	P value	Mean±SD	P value
Gender	Male	5.95±8.5	0.03	4.69±6.68	0.001
	Female	8.63±8.9		8.33±9.9	
Occupation	Doctor	5.83±8.5	0.001	4.72±7.4	0.001
	Intern/ student	6.96±10.3		5.35±8.7	
	Nurse	18.50±1.3		17.00±7.2	
	Other	6.14±6.1		6.57±6.2	
Marital status	Married	13.64±10.6	0.002	11.91±8.5	0.035
	Single	4.77±6.9		3.99±6.8	

Above table reveal that mean depression and anxiety scores were significantly higher among females as compared to males (p<0.05). However, mean depression and anxiety score among nurse were 18.50±1.3 and 17.00±7.2 respectively which were significantly higher as compared to doctors and other participants (p<0.01). Mean depression and anxiety scores were significantly higher in married health care workers as compared to unmarried health care workers (p<0.05).

DISCUSSION

The present study was thus conducted on frontline health care workers engaged in management of COVID-19 patients to assess their mental health using HAM-A and HAM-D scales. Only few studies have been conducted to determine mental health symptoms among frontline health care providers working in COVID wards.[3,4] The study was conducted on 150 health care workers with mean age of 27.9±3.72 years. Majority of health care workers were males. Among various frontline workers, about 65.3% were doctors whereas 5.3% were nurses. Similarly, mean age of frontline workers engaged in management of COVID patients was 30.21 (SD-5.22) years and about 53.4% participants were males in a study by Wilson et al.[5] However, mean age of participants in a study by Ahmed et al. was 25.40 ± 1.61 years and almost equal proportions of males and females were included in the study.[6] Our study used two scales i.e. HAM-A for anxiety and HAM-D for depression assessment. Mean HAM D and HAM A scores were 6.72±8.7 and 5.73±7.88 respectively. The prevalence of anxiety was observed in 100% frontline workers in our study, of them, 89.3% cases had mild anxiety. However, Depression was observed in 28.7% healthcare workers, of them, 12.7% cases had moderate to severe depression. Arshad et al. documented prevalence of depressive symptoms in 10.1% health care workers and anxiety symptoms were documented in 25.4% health care workers.[7] The depression and anxiety among health care workers could be attributed to profession itself, long working hours, fear of getting infected and affecting the family. Wilson et al. reported high-level stress in 3.7% cases whereas rates for depressive and anxiety symptoms requiring treatment were reported in 11.4% and 17.7%, respectively.[5] Our study finding were also supported by findings of Zhu et al. in which about 78.9% health care workers had moderately-high stress, and the prevalence of depression, and anxiety were 13.5%, and 24.1%, respectively.[8] In another study by Lai J et al., the prevalence rates of depressive symptoms requiring treatment, and anxiety symptoms requiring further evaluation were 14.8% and 13.3% respectively.[4] Our study also aimed to assess the association of various socio-demographic variables with depression and anxiety. Mean depression score in males were 5.95±8.5 whereas that among females were 8.63±8.9 whereas mean anxiety scores in male and females were 4.69±6.68 and 8.33±9.9 respectively. The observed difference in anxiety and depression scores between males and females were statistically significant. Wilson et al. also documented higher odds of psychiatric morbidities among women and concluded female gender (odds ratio [OR] = 2.008, P value = 0.019) to be the only significant predictor among all the hypothesized factors.[5] Similarly, Ahmed et al. also observed significantly higher anxiety in females as compared to males whereas mean depression scores were statistically similar between males and females.[6] However Mushtaq et al. also documented female gender as significant risk factor for the development of psychiatric symptoms during loneliness.[9] Even in general population, the prevalence of depression and anxiety have been documented to be higher in females as compared to males as females are more vulnerable to anxiety and posting in COVID wards was significantly associated higher risk of anxiety and depression. Our study also documented significantly higher depression and anxiety scores among nurses as compared to other health care workers including doctors and interns. Nurses had a crucial role in providing intensive care and assisting with activities of daily living of patients. Also, in case with severely ill patients who are unable to take care of themselves, nurses assist them in their activities of daily living, including offering nutrition and fluids, and providing oral hygiene and skin care.[10] However, doctors assess the patients during rounds and decide line of treatment. The findings of present study were contrasting to findings of Wilson et al. in which the authors documented no statistically significant risk of anxiety and depression between nurses and doctors (p>0.05).[5] This could be explained as nurses in India are already overburdened and COVID pandemic had further added to the burden especially among nurses. Our study findings were supported by findings of Arshad et al. in which odds of depression was significantly higher among nurses as compared to health workers engaged in other professions.[7] In present study, mean anxiety and depression scores were significantly higher in married health care workers as compared to unmarried health care workers (p<0.05). Marital status was not a significant predictor of anxiety and depression in a study by Arshad et al.[7] Higher anxiety and depression among married participants could be attributed to stress of getting infection and infecting spouse and children. Also, during the quarantine period, the health workers have to stay away from family and this could increase the level of anxiety and depression among them.

CONCLUSION

With the emergence and rapid spread of COVID 19 infection, the health care system has been drained all over the world. Various studies have been conducted on physical as well as mental health status of an affected individual. However, health of treating doctors and frontline workers who put their health at stake for care of the infected individuals have always been neglected. Anxiety and depression have been taking a toll on the mental health of these workers owing to the working hours and conditions they are exposed to.

REFERENCES

1. Iftekhar Ahmed, Muhammad Sohaib Asghar, Sadia Iqbal, Salma Salman, Maira Hassan, Uzma Rasheed, Mohammed Akram, Muhammad Saleem, Ibraj Fatima, Marium Batool Abbas. Levels of Anxiety and Depression amongst the Frontline Healthcare Workers of COVID-19: A Cross-Sectional Survey with Follow-Up. Journal of Psychiatry and Psychiatric Disorders 4 (2020): 270-284.
2. Elbay RY, Kurtulmuş A, Arpacıoğlu S, *et al.* Depression, anxiety, stress levels of physicians and associated factors in COVID-19 pandemics [published online ahead of print, 2020 May 27]. Psychiatry Res 290 (2020): 113130.
3. Liu CY, Yang YZ, Zhang XM, Xu X, Dou QL, Zhang WW, Cheng AS. The prevalence and influencing factors in anxiety in medical workers fighting COVID-19 in China: a cross-sectional survey. Epidemiology and Infection. 2020 Jan 1:1-7.
4. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, Wu J, Du H, Chen T, Li R, Tan H. Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA network open. 2020 Mar 2;3(3):e203976-.
5. Wilson W, Raj JP, Rao S, Ghiya M, Nedungalaparambil NM, Mundra H, Mathew R. Prevalence and predictors of stress, anxiety, and depression among healthcare workers managing COVID-19 pandemic in India: a nationwide observational study. Indian Journal of Psychological Medicine. 2020 Jul;42(4):353-8.
6. Ahmed I, Asghar MS, Iqbal S, Salman S, Hassan M, Rasheed U, Akram M, Saleem M, Fatima I, Abbas MB. Levels of Anxiety and Depression amongst the Frontline Healthcare Workers of COVID-19: A Cross-Sectional Survey with Follow-Up. J Psychiatry Psychiatric Disord 2020; 4 (4): 270-84
7. Arshad MS, Hussain I, Nafees M, Majeed A, Imran I, Saeed H, Hashmi FK, Akbar M, Abrar MA, Ramzan B, Chaudhry MO. Assessing the Impact of COVID-19 on the Mental Health of Healthcare Workers in Three Metropolitan Cities of Pakistan. Psychology research and behavior management. 2020;13:1047.
8. Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, Miao J, Zhang C, Yang Y, Sun W, Zhu S. COVID-19 in Wuhan: Immediate Psychological Impact on 5062 Health Workers. MedRxiv. 2020 Jan 1.
9. Mushtaq R, Shoib S, Shah T. *et al.* Relationship between loneliness, psychiatric disorders and physical health? A review on the psychological aspects of loneliness. J Clin Diagn Res; 2014; 8(9): WE01–WE4.
10. Liu Q, Luo D, Haase JE, Guo Q, Wang XQ, Liu S, Xia L, Liu Z, Yang J, Yang BX. The experiences of health-care providers during the COVID-19 crisis in China: a qualitative study. The Lancet Global Health. 2020 Apr 29.