

Psychological assessment using DASS-21 and association of sociodemographic variables with mental health in health-care professionals and general population during COVID-19 pandemic



Muddasir Sharief Banday¹, Muntaha Manzoor², Sajad Ahmad Rather³, Bilal Ahmad Para⁴

¹Assistant Professor, ²Postgraduate Resident, Department of Clinical Pharmacology, ³Assistant Professor, Department of Radiological Physics and Bioengineering, Sher-i-Kashmir Institute of Medical Sciences, Soura, ⁴Assistant Professor, Department of Mathematical Sciences, Islamic University of Science and Technology, Kashmir, Jammu and Kashmir, India

Submission: 15-01-2023

Revision: 02-05-2023

Publication: 01-06-2023

ABSTRACT

Background: Millions of people have been impacted by COVID-19 pandemic globally. COVID-19 pandemic has descended people to the realms of uncertainty and isolation which surprisingly are associated with mental distress. Depression, anxiety and stress are one of the prominent psychological factors that might have been significantly impacted by the ongoing pandemic. **Aims and Objectives:** The present study was conducted predominantly with the aim of assessing psychological impact by COVID-19 in health-care professionals (HCPs) as well as in general population. **Materials and Methods:** The present study was an observational study conducted in Sher-i-Kashmir Institute of Medical Sciences, Soura, a tertiary level teaching hospital in Union territory of Jammu and Kashmir, India. A total of 250 participants comprising both HCPs and general population were included in the study. Depression, anxiety, stress-scale-21 questionnaire, a validated instrument, was used to assess the depression, anxiety, and stress levels among the participants. Informed consent was taken individually for volunteering in the study and participants were required to fill the questionnaire as per the directed instructions. **Results:** Out of 250 participants, 54.8%, 68%, and 34.4% were found to have depression, anxiety, and stress, respectively. The prevalence of severe and extremely severe depression corresponded to 9.9% and 6.8% of HCPs, respectively. Severe and extremely severe anxiety existed in 14.9% and 21.1% of HCPs, respectively, followed by 7.5% and 1.2% severe stress and extremely severe stress percentages. About 11.2% and 7.9% participants in community experienced severe and extremely severe depression, respectively. Although 19.1% and 21.3% values corresponded to severe and extremely severe anxiety in community, 5% participants were found to have severe stress, and 4% had extremely severe stress. A significant positive correlation existed between the levels of depression, anxiety, and stress. No statistically significant association was found between DAS scores and demographic variables except anxiety scores which showed a statistically significant association with HCPs especially nurses, students, and doctors. **Conclusion:** The findings from this study highlight high prevalence of depression, anxiety and stress experienced during COVID-19 pandemic by all participants. Anxiety in comparison to depression and stress was found to be experienced by majority of participants. Anxiety levels were prominent in nurses, students, and doctors among HCPs.

Key words: COVID-19; Depression anxiety stress-scale-21; Health-care professionals; Community

Access this article online

Website:

<http://nepjol.info/index.php/AJMS>

DOI: 10.3126/ajms.v14i6.51498

E-ISSN: 2091-0576

P-ISSN: 2467-9100

Copyright (c) 2023 Asian Journal of Medical Sciences



This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License.

Address for Correspondence:

Dr. Muddasir Sharief Banday, Assistant Professor, Department of Clinical Pharmacology, Sher-i-Kashmir Institute of Medical Sciences, Soura, Jammu and Kashmir, India. **Mobile:** +91-9149505159. **E-mail:** banday.muddasir@gmail.com

INTRODUCTION

On December 31, 2019, a cluster of severe pneumonia cases of unknown etiology originated in Wuhan, Hubei province, China. Chinese scientists on further investigations linked this pneumonia with a novel coronavirus which, WHO later on, named as 2019 novel coronavirus (2019-nCoV).¹ Coronaviruses (CoV) belong to the *Coronaviridae* family of order *Nidovirales*, having a total of 39 species, divided into four genera; alpha, beta, gamma, and delta. CoV is a single stranded RNA virus (+ssRNA).² On January 30, 2020, the WHO declared COVID-19 a Public Health Emergency of International Concern³ which soon evolved as a global pandemic as declared by the WHO on March 11, 2020.⁴ Stringent measures were taken by countries to tackle this rapidly spreading virus ranging from travel bans, closure of academic institutions and cancellation of social gatherings including celebration of cultural, religious or festive events, and shutdown of places for entertainment. All these sudden changes in the daily routine of people had a great psychological implication.²

Previous pandemics and infectious disease outbreaks have witnessed the substantial negative impact on peoples' mental health⁵ and COVID-19 is a no exception to this. As of January 2023, 659 million COVID-19 positive cases and 6.6 million fatalities have been reported globally.⁶ Covid-19 is anticipated to have a detrimental effect on mental health of people and in a low middle income country like India; factors like majority of population belonging to low socioeconomic status and a lack of robust healthcare system may amplify this psychological distress. Indian Psychiatry Society reported a 20% increase in mental illness since pandemic. Health-care professionals (HCPs), unemployed individuals, geriatric population, pregnant women, children, people with comorbidities, and with existing mental illness are prone to mental health disturbances.⁷ In a high militarized zone like Kashmir which has been under constant political turmoil, turbulence, and conflagration from past 32 years, COVID-19 might had a prolific impact on already aggravated mental health issues of people. A study conducted in 2015 reported high prevalence of probable depression, probable anxiety, and probable post-traumatic stress disorder (PTSD) among Kashmiri adult population.⁸

As the world grapples with this pandemic, its implications for directly affecting mental health status need to be identified in length and breadth. The present study with the primary purpose aims to assess the mental health implications due to COVID-19 in HCPs and general population. Standardized mental health measures will be used to assess depression, anxiety, and stress symptoms. We will be using depression anxiety stress-scale (DASS)-21

scale as a screening tool. Another objective of the study is to find any correlation of mental health status with demographic variables and also we will be comparing the mental health scenario in general public and HCPs.

Aims and objectives

The primary aim of the study is to assess the psychological distress in terms of depression, anxiety and stress caused by Covid-19 pandemic. In addition, correlation of demographic variables with depression, anxiety and stress will be evaluated.

MATERIALS AND METHODS

Study design and study setting

The present study is an observational and comparative study conducted for a period of 1 year between January 2022 and December 2022 in Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Soura, one of the major tertiary level care teaching hospital in union territory of Jammu and Kashmir, North India. A total of 250 participants were included in the study, 161 from HCPs and rest 89 were from community. The HCPs comprised doctors, nurses, paramedical staff, pharmacists, medical and nursing students, and administrative staff and general population from community. Participants who tested RT-PCR positive for COVID-19 were included in the study and those with <18 years of age were excluded from the study.

Data collection

After identifying the eligible participants based on inclusion criteria, participants were approached individually for volunteering in the study. The enrolled participants were required to fill a self-designed questionnaire which included comprehensive information on the sociodemographic profile and DASS-21 questionnaire. Participants were asked to read the instructions about the purpose and methods to fill out the questionnaire carefully. Those who could not read and fill the questionnaire were explained the questionnaire in their native vernacular. Participants were also informed about their anonymity in the study. All participants participated voluntarily and gave their verbal consent.

DASS-21

DASS was developed by Lovibond and Lovibond. This questionnaire is used to assess key symptoms of depression, anxiety, and stress. Although the questionnaire is not a diagnostic tool for mental disorders, it is predominantly aimed at assessing the severity of symptoms of depression, anxiety, and stress. Several studies conducted globally have provided adequate evidences on its reliability and validity as a well-established tool to measure depression, anxiety,

and stress symptoms in both clinical and non-clinical samples of adults.⁹ The DASS-21 questionnaire is based on 21 items each divided into seven parts corresponding to depression, anxiety, and stress symptoms. All the 21 items in the questionnaire are graded on Likert scale ranging from 0 to 3: 0="Did not apply to me at all," 1="Applied to me to some degree or some of the time," 2="Applied to me to considerable degree or a good part of the time," 3="Applied to me very much or most of the time." All the scores are summarized and related with the corresponding items. The results are rated and classified as "normal, mild, moderate, severe, or extremely severe."¹⁰

Statistical analysis

The data were entered in spreadsheet Excel 2016 and analyzed using the software IBM SPSS version 20. Descriptive statistics including frequency, percentage, mean, and standard deviation were used to describe the sociodemographic characteristics and depression, anxiety, and stress scores of the participants. Spearman's correlation coefficient (r) was applied to assess the association between depression, anxiety, and stress levels. Cronbach's alpha was calculated to confirm the reliability of the whole data set. The associations between sociodemographic variables and depression, anxiety, and stress scores were calculated using Fisher's Exact Test and Independent sample t-test. All tests of association were carried out at a significance level of $P < 0.05$.

Ethics statement

The study was approved by the Institutional Ethics Committee after the successful submission and presentation of the study protocol (#RP 102/2022).

RESULTS

The study sample comprises a total of 250 participants, out of which 161 (64.4%) are HCPs and rest 89 (35.6%) belong to community. The study sample predominantly is composed of females (59.6%). The mean age of the total participants is 34.28 years and most of the participants fall in the age group of 18–25 (30.8%) and 26–35 (30.4%). More than half of the study population reside in urban areas (53.6%) and are married (55.2%). Very few participants are smokers (9.2%). Among HCPs doctors and nurses together were the predominant occupation, while, in community, majority (21.6%) were unemployed. The general sociodemographic characteristics of the study sample are represented in Table 1.

The reliability of the DASS-21 questionnaire was evaluated using Cronbach's alpha, also Cronbach's alpha was calculated for both HCPs data set and community data set individually (Table 2).

Table 1: Sociodemographic profile of participants

Variables	n=250	Percent
Gender		
Male	101	40.4
Female	149	59.6
Age (years)		
18–25	77	30.8
26–35	76	30.4
36–45	52	20.8
>45	45	18.0
Residence		
Rural	116	46.4
Urban	134	53.6
Marital status		
Married	138	55.2
Un-married	112	44.8
Smoking status		
Non-smoker	217	86.8
Ex-smoker	10	4.0
Smoker	23	9.2
Occupational status HCP 161 (64.4%)		
Doctor	37	14.8
Researcher	16	6.4
Nurse	25	10.0
Pharmacist	12	4.8
Allied healthcare worker	24	9.6
Administrative employee	19	7.6
Student	28	11.2
Occupational status community 89 (35.6%)		
Professional	24	9.6
Non-professional	11	4.4
Unemployed	54	21.6
Monthly income		
<50 K	57	22.8
≥50K	120	48.0
No income	73	29.2

Table 2: Reliability statistics

Reliability statistics		
Type	Cronbach's alpha	No. of items
HCPs+community	0.915	21
Health-care professionals	0.923	21
Community	0.898	21

The prevalence of depression, anxiety, and stress in HCPs and in community is shown in Figures 1 and 2. Majority of HCPs had their depression, anxiety, and stress scores in normal range, so followed for the community.

The Spearman's rank correlation coefficient (r) was used to investigate the relationship between levels of depression and levels of anxiety and stress (Table 3). A statistically significant positive correlation was estimated between the levels of depression and anxiety ($n=250$, $r=0.730$, $P < 0.001$). Similarly, statistically significant positive correlation was calculated between the levels of depression and stress ($n=250$, $r=0.799$, $P < 0.001$). Levels of anxiety and stress also show

Table 3: Correlation between depression, anxiety, and stress scores (health-care professionals and community)

Statistical tool	Type	Depression score	Anxiety score	Stress score
Spearman's correlation	Health-care professionals			
	Depression score			
	Correlation Coefficient	1.000	0.739	0.797
	P-value	.	<0.001	<0.001
	n	161	161	161
	Anxiety score			
	Correlation Coefficient	0.739	1.000	0.703
	P-value	<0.001	.	<0.001
	n	161	161	161
	Stress score			
	Correlation Coefficient	0.797	0.703	1.000
	P-value	<0.001	<0.001	.
	n	161	161	161
	Community			
	Depression score	1.000	0.687	0.769
	Correlation Coefficient	.	<0.001	<0.001
	P-value	89	89	89
	n			
Anxiety score				
Correlation Coefficient	0.687	1.000	0.674	
P-value	<0.001	.	<0.001	
n	89	89	89	
Stress score				
Correlation Coefficient	0.769	0.674	1.000	
Sig. (2-tailed)	0.000	0.000	.	
n	89	89	89	

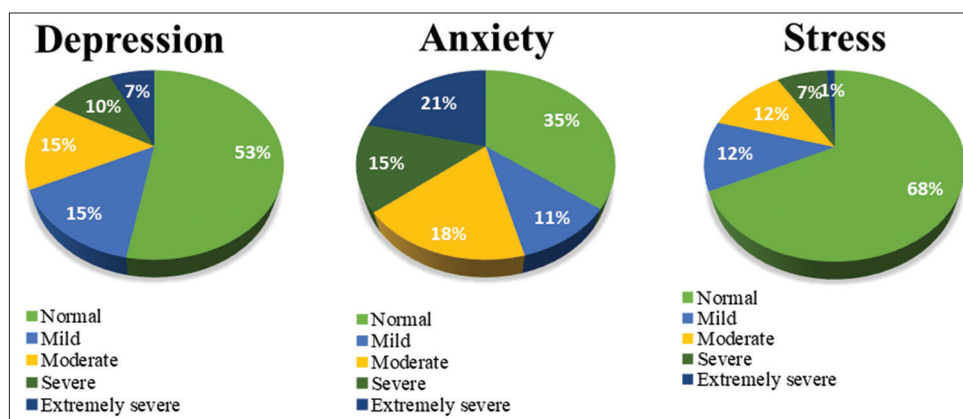


Figure 1: Prevalence of depression, anxiety, and stress in HCPs

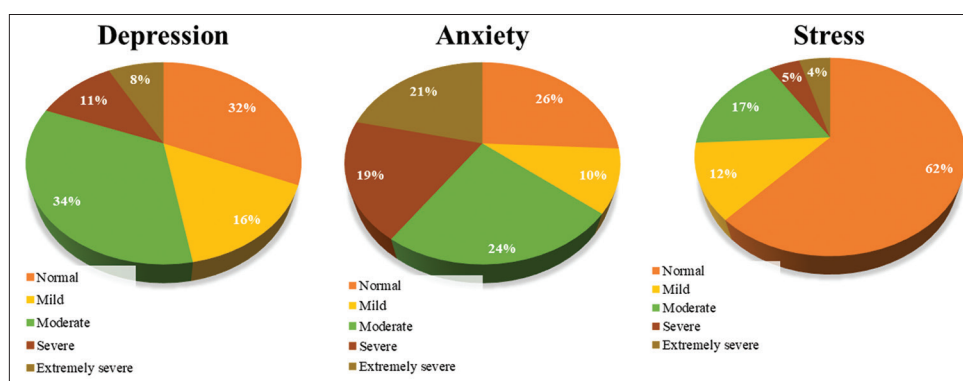


Figure 2: Prevalence of depression, anxiety, and stress in community

statistically significant positive correlation (n=250, r=0.698, P<0.001). Association of depression, anxiety, and stress scores with sociodemographic variables was assessed and mapped in

Table 4: Association of depression, anxiety, and stress scores with occupational status, age groups, and smoking status in health-care professionals and community using Fischer’s exact test

DASS dimension	Category	Occupational status	Normal n (%)	Mild n (%)	Moderate n (%)	Severe n (%)	Extremely severe n (%)	Total n (%)	P-value		
Depression	Health-care professionals	Doctor	21 (56.8)	5 (13.5)	5 (13.5)	3 (8.1)	3 (8.1)	37 (100)	0.687		
		Researcher	8 (50)	2 (12.5)	5 (31.3)	1 (6.3)	0 (0)	16 (100)			
		Nurse	9 (36)	6 (24)	5 (20)	2 (8)	3 (12)	25 (100)			
		Pharmacist	7 (58.3)	1 (8.3)	1 (8.3)	3 (25)	0 (0)	12 (100)			
		Allied healthcare worker	14 (58.3)	2 (8.3)	3 (12.5)	4 (16.7)	1 (4.2)	24 (100)			
	Administrative staff	13 (68.4)	3 (15.8)	1 (5.3)	0 (0)	2 (10.5)	19 (100)				
	Community	Student	13 (46.4)	5 (17.9)	5 (17.9)	3 (10.7)	2 (7.1)	28 (100)		0.586	
		Professional	10 (43.5)	3 (13)	7 (30.4)	3 (13)	0 (0)	23 (100)			
		Non-professional	2 (20)	3 (30)	3 (30)	1 (10)	1 (10)	10 (100)			
		Unemployed	16 (29.6)	6 (11.1)	20 (37)	6 (11.1)	6 (11.1)	54 (100)			
		21 (56.8)	4 (10.8)	3 (8.1)	6 (16.2)	3 (8.1)	37 (100)	0.013			
Health-care Professionals	Researcher	5 (31.3)	3 (18.8)	4 (25)	2 (12.5)	2 (12.5)	16 (100)				
	Nurse	1 (4)	2 (8)	8 (32)	7 (28)	7 (28)	25 (100)				
	Pharmacist	5 (41.7)	1 (8.3)	2 (16.7)	1 (8.3)	3 (25)	12 (100)				
	Allied healthcare worker	9 (37.5)	2 (8.3)	2 (8.3)	3 (12.5)	8 (33.3)	24 (100)				
	Administrative staff	11 (57.9)	1 (5.3)	1 (5.3)	3 (15.8)	3 (15.8)	19 (100)				
Community	Student	5 (35.4)	4 (10.6)	9 (18)	2 (14.9)	8 (21.1)	28 (100)		0.499		
	Professional	9 (39.1)	1 (4.3)	4 (17.4)	2 (8.7)	7 (30.4)	23 (100)				
	Non-professional	2 (20)	2 (20)	2 (20)	2 (20)	2 (20)	10 (100)				
	Unemployed	12 (22.2)	5 (9.3)	14 (25.9)	13 (24.1)	10 (18.5)	54 (100)				
		25 (67.6)	5 (13.5)	3 (8.1)	4 (10.8)	0 (0)	37 (100)	0.484			
Health-care professionals	Researcher	12 (75)	2 (12.5)	0 (0)	2 (12.5)	0 (0)	16 (100)				
	Nurse	15 (60)	3 (12)	3 (12)	3 (12)	1 (4)	25 (100)				
	Pharmacist	8 (66.7)	0 (0)	4 (33.3)	0 (0)	0 (0)	12 (100)				
	Allied healthcare worker	15 (62.5)	2 (8.3)	5 (20.8)	1 (4.2)	1 (4.2)	24 (100)				
	Administrative staff	16 (84.2)	1 (5.3)	1 (5.3)	1 (5.3)	0 (0)	19 (100)				
Community	Student	18 (64.3)	6 (21.4)	3 (10.7)	1 (3.6)	0 (0)	28 (100)		0.957		
	Professional	14 (60.9)	4 (17.4)	3 (13)	1 (4.3)	1 (4.3)	23 (100)				
	Non-professional	5 (50)	1 (10)	2 (20)	1 (10)	1 (10)	10 (100)				
	Unemployed	34 (63)	6 (11.1)	10 (18.5)	2 (3.7)	2 (3.7)	54 (100)				
		97(44.7)	32(14.7)	48(22.1)	25(11.5)	15(6.9)	217(100)	0.412			
Depression	Smoking status	Non-Smoker	7(70)	1(10)	0(0)	1(10)	1(10)			10(100)	
		Ex-Smoker	9(39.1)	5(21.7)	7(30.4)	0(0)	2(8.7)			23(100)	
Anxiety		Non-Smoker	64(29.5)	23(10.6)	45(20.7)	39(18)	46(21.2)			217(100)	0.412
		Ex-Smoker	7(70)	0(0)	1(10)	0(0)	2(20)			10(100)	
Stress		Smoker	9(39.1)	3(13)	4(17.4)	2(8.7)	5(21.7)			23(100)	
		Non-Smoker	142(65.4)	26(12)	31(14.3)	13(6)	5(2.3)		217(100)	0.412	
		Ex-smoker	8(80)	0(0)	1(10)	1(10)	0(0)		10(100)		
		Smoker	14(60.9)	4(17.4)	2(8.7)	2(8.7)	1(4.3)		23(100)		
Depression	Age group	16–25	33 (42.9)	10 (13)	18 (23.4)	12 (15.6)	4 (5.2)		77 (100)		
		26–35	35 (46.1)	14 (18.4)	16 (21.1)	4 (5.3)	7 (9.2)	76 (100)			
		36–45	23 (44.2)	7 (13.5)	11 (21.2)	7 (13.5)	4 (7.7)	52 (100)			
		>45	22 (48.9)	7 (15.6)	10 (22.2)	3 (6.7)	3 (6.7)	45 (100)			
Anxiety		16–25	19 (24.7)	7 (9.1)	18 (23.4)	14 (18.2)	19 (24.7)	77 (100)	0.921		
		26–35	26 (34.2)	9 (11.8)	12 (15.8)	14 (18.4)	15 (19.7)	76 (100)			
		36–45	19 (36.5)	5 (9.6)	9 (17.3)	8 (15.4)	11 (21.2)	52 (100)			
		>45	16 (35.6)	5 (11.1)	11 (24.4)	5 (11.1)	8 (17.8)	45 (100)			
Stress		16–25	48 (62.3)	11 (14.3)	15 (19.5)	3 (3.9)	0 (0)	77 (100)		0.601	
		26–35	49 (64.5)	11 (14.5)	8 (10.5)	6 (7.9)	2 (2.6)	76 (100)			
		36–45	38 (73.1)	4 (7.7)	5 (9.6)	3 (5.8)	2 (3.8)	52 (100)			
		>45	29 (64.4)	4 (8.9)	6 (13.3)	4 (8.9)	2 (4.4)	45 (100)			

Table 5: Association of depression, anxiety and stress scores gender, residence and marital status using independent sample t-test (over all)

Demographic variables	Scores (DASS)	Categories	n	Mean	Standard deviation	P-value	
Gender	Depression score	Male	101	5.515	5.088	0.355	
		Female	149	6.087	4.574		
	Anxiety score	Male	101	6.000	5.020		0.565
		Female	149	6.336	4.142		
	Stress score	Male	101	5.594	4.650		0.168
		Female	149	6.403	4.452		
Residence	Depression score	Rural	116	5.836	4.746	0.952	
		Urban	134	5.873	4.839		
	Anxiety score	Rural	116	6.379	4.442		0.560
		Urban	134	6.045	4.580		
	Stress score	Rural	116	5.957	4.367		0.700
		Urban	134	6.179	4.701		
Marital status	Depression score	Married	138	5.891	4.922	0.897	
		Un-married	112	5.813	4.635		
	Anxiety score	Married	138	6.167	4.539		0.897
		Un-married	112	6.241	4.495		
	Stress score	Married	138	6.203	4.854		0.625
		Un-married	112	5.920	4.140		

Tables 4 and 5. $P < 0.05$ based on Independent t-test and Fisher's exact test was considered statistically significant. Among the HCPs doctors, nurses, students, and researchers show significant depression, anxiety, and stress prevalence.

DISCUSSION

The present study aimed to evaluate the impact of COVID-19 on mental health of HCPs as well as community. Results from this study using DASS-21 revealed an overall 54.8%, 68%, and 34.4% prevalence of depression, anxiety, and stress, respectively, in all the participants. About 47.2%, 64.6%, and 32.3% of HCPs were found to have depression, anxiety, and stress, respectively. Similarly, 68.5%, 74.1%, and 38.2% participants in community had depression, anxiety, and stress, respectively. In HCPs, severe and extremely severe depression corresponded to 9.9% and 6.8% participants, respectively. Severe and extremely severe anxiety existed in 14.9% and 21.1% of HCPs, respectively, followed by 7.5% and 1.2% severe stress and extremely severe stress percentages. About 11.2% and 7.9% participants in community experienced severe and extremely severe depression, respectively. Although 19.1% and 21.3% values corresponded to severe and extremely severe anxiety in community, 5% participants were found to have severe stress, and 4% had extremely severe stress. These findings in the present study clearly indicate a comparatively high prevalence of anxiety followed by depression and stress in both HCPs as well in general population. Among the 64.6% HCPs with anxiety, most of them were found to have extremely severe anxiety followed by moderate, severe, and mild anxiety. In contrast, majority of study subjects in community had moderate followed by extremely severe, severe, and mild anxiety. Almost same percent of individuals

from HCPs had mild and moderate depression; however, in community, most of the subjects had moderate depression followed by mild depression. In comparison to depression and anxiety, an overall low prevalence of stress was found in both HCPs and community. Equal number of individuals in HCPs had mild and moderate stress scores. However, most of the study subjects in community experienced moderate stress levels followed by mild stress. A similar study using DASS-21 conducted in a tertiary care center in Mumbai on HCPs reported an equal 44% prevalence of depression, anxiety, and 36% stress among 212 study participants.¹¹ In another study conducted among general population, depression, anxiety, and stress were quiet prevalent.¹² Similarly, another study based on DASS-21 conducted in 23 states of India in online mode including participants from every sphere of life showed a considerable 35%, 32%, and 35.5% prevalence of depression, anxiety, and stress, respectively.¹³ All these studies are in consonance with the present study indicating a significant number of individuals be that from health care or general population had experienced mental burden during COVID-19, upholding the fact that HCPs are the afflicted population. Furthermore, both in HCPs and community a significant correlation was found between depression, anxiety, and stress levels which imply participants who experienced depression also experienced anxiety and stress.

In the present study, no significant association was found between depression, anxiety, and stress levels and demographic variables except anxiety in HCPs. High anxiety scores had a statistically significant association with HCPs especially nurses, students, and doctors. These high anxiety scores may be attributed to health anxiety which is observed when bodily sensations such as fever, coughing, and body

pains (connected to infectious disease or not) are perceived as illness.¹⁴ Possible reasons for experiencing anxiety in particular include shadow of menacing insecurity, fear of infection, moral distress, and grief especially when alone.¹⁵ The findings of the present study are in stark disparity with a similar study conducted in 2020 in AIIMS Patna, where a statistically significant association of depression, stress, and anxiety was found with occupational and marital status.¹⁶ Another study conducted among armed forces doctors reported a significant association of anxiety with age groups (20–35 years) and gender (females).¹⁷

The results of the present study indicated a significant levels of depression, anxiety, and stress among both HCPs and general population; therefore, relevant interventions must be practiced to improve the mental health of people from all quarters during this ongoing pandemic. The results also signified a positive correlation of depression with anxiety and stress. Stress plays a role in the development of depression¹⁸ and when it prolongs it develops into anxiety as well.¹⁹

Limitations of the study

This study was conducted with only 250 participants. To assess the psychological distress by Covid-19, it is imperative to include a larger sample size. In addition to the correlation of psychological distress with demographic variables, research evaluating the effects of other variables is needed.

CONCLUSION

The aim of the present study was to assess depression, anxiety, and stress levels among HCPs of SKIMS and general population. The findings indicated that pandemic has inflicted a psychological distress among people. High levels of depression were accompanied by high levels of anxiety and stress among all participants. Providing relevant clinical interventions in the form of free telemedicine services, implementing stress-reducing activities such as mindfulness and group activities, strict implementation of work-hour limitations to reduce physician burnout to alleviate stress among HCPs especially physicians, and committing support of all sorts are the doable steps that can be taken by government and policy makers to ensure mental well-being. More large scale studies assessing psychological impact of COVID-19 among community as well as in HCPs are warranted to establish absolute causes and develop proper interventions and maneuvers in future in response to similar crisis.

ACKNOWLEDGMENT

We thank Zulfkar Qadri, Syed Zaheer Abass and Supinder Pall Singh (Sher-i-Kashmir Institute of Medical Sciences,

Soura) for their assistance in data acquisition. We are also grateful to the healthcare professionals of Sher-i-Kashmir Institute of Medical Sciences, Soura for participating in this study.

REFERENCES

1. Chan JF, Yuan S, Kok KH, To KK, Chu H, Yang J, et al. A familial cluster of pneumonia associated with the 2019 novel coronavirus indicating person-to-person transmission: A study of a family cluster. *Lancet*. 2020;395(10223):514-523. [https://doi.org/10.1016/S0140-6736\(20\)30154-9](https://doi.org/10.1016/S0140-6736(20)30154-9)
2. Kshirsagar MM, Dodamani AS, Dodamani GA, Khobragade VR and Deokar RN. Impact of Covid-19 on mental health: An overview. *Rev Recent Clin Trials*. 2021;16(3):227-231. <https://doi.org/10.2174/1574887115666210105122324>
3. Available from: [https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-\(pheic\)-global-research-and-innovation-forum](https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-(pheic)-global-research-and-innovation-forum) [Last accessed on 2022 Jan 06].
4. Cucinotta D and Vanelli M. WHO declares COVID-19 a pandemic. *Acta Bio Med*. 2020;91(1):157-160. <https://doi.org/10.23750/abm.v91i1.9397>
5. Kunzler AM, Röthke N, Günthner L, Stoffers-Winterling J, Tüscher O, Coenen M, et al. Mental burden and its risk and protective factors during the early phase of the SARS-CoV-2 pandemic: Systematic review and meta-analyses. *Global Health*. 2021;17(1):34. <https://doi.org/10.1186/s12992-021-00670-y>
6. Available from: <https://www.who.int/publications/m/item/weekly-epidemiological-update-on-covid-19-11-january-2023>
7. Sharma S, Kundu A, Basu S, Shetti NP and Aminabhavi TM. Indians vs. COVID-19: The scenario of mental health. *Sens Int*. 2020;1:100038. <https://doi.org/10.1016/j.sintl.2020.100038>
8. Housen T, Lenglet A, Ariti C, Shah S, Shah H, Ara S, et al. Prevalence of anxiety, depression and post-traumatic stress disorder in the Kashmir Valley. *BMJ Glob Health*. 2017;2(4):e000419. <https://doi.org/10.1136/bmjgh-2017-000419>
9. Beaufort IN, De Weert-Van Oene GH, Buwalda VA, de Leeuw JR and Goudriaan AE. The depression, anxiety and stress scale (DASS-21) as a screener for depression in substance use disorder inpatients: A pilot study. *Eur Addict Res*. 2017;23(5):260-268. <https://doi.org/10.1159/000485182>
10. Marijanović I, Kraljević M, Buhovac T, Cerić T, Abazović AM, Alidžanović J, et al. Use of the depression, anxiety and stress scale (DASS-21) questionnaire to assess levels of depression, anxiety, and stress in healthcare and administrative staff in 5 oncology institutions in Bosnia and Herzegovina during the 2020 COVID-19 pandemic. *Med Sci Monit*. 2021;27:e930812. <https://doi.org/10.12659/MSM.930812>
11. Khan F, Dewalwar V, Roy P, Merchant H, Das S and Desousa A. The silent toll of second COVID-19 wave: A DASS-21 questionnaire survey among health-care workers at a tertiary-care public hospital, Mumbai. *Ann Indian Psychiatry*. 2022;6(2):155. https://doi.org/10.4103/aip.aip_61_22
12. Ray S. Mental and psychosocial health: A post-COVID concern in India. *Neurol India*. 2022;70(5):2116-2120. <https://doi.org/10.4103/0028-3886.359196>
13. Hazarika M, Das S, Bhandari SS and Sharma P. The psychological impact of the COVID-19 pandemic and associated

- risk factors during the initial stage among the general population in India. *Open J Psychiatry Allied Sci.* 2021;12(1):31-35.
<https://doi.org/10.5958/2394-2061.2021.00009.4>
14. Asmundson GJ and Taylor S. How health anxiety influences responses to viral outbreaks like COVID-19: What all decision-makers, health authorities, and health care professionals need to know. *J Anxiety Disord.* 2020;71:102211.
<https://doi.org/10.1016/j.janxdis.2020.102211>
 15. Cullen W, Gulati G and Kelly BD. Mental health in the COVID-19 pandemic. *QJM.* 2020;113(5):311-312.
<https://doi.org/10.1093/qjmed/hcaa110>
 16. Shekhar S, Ahmad S, Ranjan A, Pandey S, Ayub A and Kumar P. Assessment of depression, anxiety and stress experienced by health care and allied workers involved in SARS-CoV2 pandemic. *J Family Med Prim Care.* 2022;11(2):466-461.
https://doi.org/10.4103/jfmprc.jfmprc_2518_20
 17. Gupta S, Kohli K, Padmakumari P, Dixit PK, Prasad AS, Chakravarthy BS, et al. Psychological health among armed forces doctors during COVID-19 pandemic in India. *Indian J Psychol Med.* 2020;42(4):374-378.
<https://doi.org/10.1177/0253717620934037>
 18. Baum A and Posluszny DM. Health psychology: Mapping biobehavioral contributions to health and illness. *Annu Rev Psychol.* 1999;50(1):137-163.
<https://doi.org/10.1146/annurev.psych.50.1.137>
 19. Acosta J, Chavda A, Verma D, Marker M and Anzisi L. Prevalence of anxiety and depression among emergency department staff. *New York. Med J.* 2007;21(3):321-327.

Authors' Contributions:

MSB- Concept of study, data collection, questionnaire designing; **MM**- Data collection, manuscript writing, data interpretation; **SAR**- Editing final version of manuscript; **BAP**- Data analysis and data interpretation. All authors revised and approved final manuscript.

Work attributed to:

Sher-i-Kashmir Institute of Medical Sciences, Soura, Jammu and Kashmir, India.

Orcid ID:

Dr. Muddasir Sharief Banday - <https://orcid.org/0000-0002-5494-5849>

Muntaha Manzoor - <https://orcid.org/0000-0002-7575-9033>

Dr. Sajad Ahmad Rather - <https://orcid.org/0000-0002-8676-6132>

Dr. Bilal Ahmad Para - <https://orcid.org/0000-0002-0077-3391>

Source of Support: Nil, **Conflicts of Interest:** None declared.