

Original Article

# Perceived stress among doctors working in a dedicated COVID-19 hospital in North India

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## ABSTRACT

**Objectives:** The present study was aimed to assess the level of perceived stress among doctors working in COVID-19 ward in a tertiary care medical college and hospital of North India and to find the association of stress with time spent in ward, age, and designation of the doctors.

**Material and Methods:** It was a cross-sectional, Google-based survey conducted in October and November 2020. The form was circulated and recorded the sociodemographic data, time spent in the COVID-19 ward, etc. The perceived stress scale (PSS) was used to assess the level of stress. Appropriate statistical analysis was used and all ethical considerations were followed.

**Results:** Mean PSS score of the sample was  $22.22 \pm 7.13$ . Twenty-five (10%) doctors reported low stress (mean PSS score 0–13). Moderate (mean PSS score 14–26) and high stress (mean PSS score >26) were found among 156 (62.4%) and 69 (27.6%) doctors, respectively. Perceived stress showed significant negative correlation with age and significant positive correlation with hours spent in COVID ward in a week. Senior residents and junior residents had significantly higher perceived stress than faculty ( $P = 0.001^{**}$ ). Nearly 50% of doctors (fairly often or very often) felt nervous and stressed, angered because they felt out of control, unable to control important things in their lives, and have been upset because of something that happened unexpectedly. About 40% felt (fairly often or very often) that they could not cope with all the things they had to do. Nearly one-third of doctors felt (fairly or very often) that difficulties were piling up so high that they could not overcome them.

**Conclusion:** Doctors working in COVID-19 wards perceive considerable stress. Stress management should be an integral part of the curriculum of doctors so that they can serve the humanity efficiently and effectively during the pandemic and in future.

**Keywords:** COVID-19, Doctors, Pandemic, Residents, Stress

## INTRODUCTION

Health care workers (HCWs) face multiple issues like increased risk of infection to self and family, being isolated from family, being quarantined, and fear on ever-increasing violence from public just to name a few.<sup>[1,2]</sup> Multiple studies from all over the world have shown that HCWs suffer from increased stress, anxiety, depression, insomnia, and other psychological problems because of working in COVID-19 wards.<sup>[1-14]</sup> The present study is being reported from a dedicated COVID-19 hospital in Punjab in North India to assess the perceived stress among doctors and find its association with working hours, age, designation, and other parameters.

## MATERIAL AND METHODS

It was a cross-sectional survey-based study conducted at the department of psychiatry of a tertiary care medical college

and hospital of North India. Being the only medical college of the district, the institute was converted into a Category-I dedicated COVID hospital with 600 beds for COVID-19 patients (in addition to the 1200-bedded tertiary care hospital) in March 2020 and it is having all the facilities for screening, testing, and management of COVID-19 patients. The facility also served as the referral center for eight other districts of the states. As a result, there were at least 300–350 patients with COVID-19 admitted in the facility at all times. All the doctors of all specializations including faculty, senior residents (SRs), and junior residents (JRJs) were trained in management of patients with COVID-19 by the hospital administration and posted in COVID-19 isolation wards in addition to duties in their respective departments of specializations.

For the purpose of this study, a Google survey form was created and circulated among all the doctors through

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Received: 06 March 2021 Accepted: 17 April 2021 Epub Ahead of Print: 04 May 2021 Published: 24 September 2021 DOI 10.25259/IJMS\_94\_2021

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WhatsApp groups in October and November 2020. The doctors included JRs (doctors with MBBS degree and pursuing postgraduation;  $n = 380$ ); SRs (doctors with postgraduate degree;  $n = 170$ ); and faculty (doctors with a minimum of 3 years' experience as SR;  $n = 203$ ). All the doctors were included except those who had themselves suffered from COVID-19 or if their family members had suffered since that could have led to increased stress and skewed the findings. They were also contacted personally and requested to get enrolled in the survey and fill the form. The total time taken to complete the form was about 10 min. The survey form was circulated once a week for 2 months and it was decided to stop the recruitment when there were no more enrollments in the past two consecutive requests.

### Following assessments were recorded in the survey

#### Sociodemographic details

It included age, gender, marital status, designation, and participants' hours of working per week in COVID-19 ward.

#### Perceived stress scale (PSS-10)<sup>[15]</sup>

The PSS-10 was used to assess perceived stress. It is one of the most widely used instruments to assess how unpredictable, uncontrollable, and overloaded the respondents find their lives and how stressful the events in life are perceived to be. It is a self-report instrument consisting of 10 items to assess perceived stress during the past month. Each of the items on the PSS-10 is rated on a 5-point Likert scale, ranging from 0 (never) to 4 (very often). Total scores range from 0 to 40, with higher scores indicating higher levels of perceived stress. A score of 0–13 is considered as low stress, 14–26 as moderate stress, and more than 27 as high stress.<sup>[2,4]</sup>

#### Ethical considerations

The Institutional Ethics Committee gave ethical clearance for the survey before data collection. The Indian Council of Medical Research guidelines<sup>[16]</sup> for biomedical research in human subjects and the code of ethics of the World Medical Association (Declaration of Helsinki) were followed as applicable. The survey form included acknowledgment for maintenance of confidentiality and consent for participation.

#### Statistical analysis

Statistical analysis was done using SPSS (version 25; Chicago, IL). The level of statistical significance was set at  $P \leq 0.05$ . Student's  $t$ -test and Pearson correlation test were used for analysis of data.

## RESULTS

Out of 753 doctors in the institute, 250 (response rate 33.20%) responded. Out of 250 doctors, 178 belonged to the clinical departments and 78 to the preclinical and paraclinical departments.

Mean perceived stress score of the sample was  $22.22 \pm 7.13$ . Twenty-five (10%) doctors reported low stress (mean PSS score 0–13). Moderate (mean PSS score 14–26) and high stress (mean PSS score >26) were found among 156 (62.4%) and 69 (27.6%) doctors, respectively. As can be seen from Table 1, there was no significant effect of gender or marital status on perceived stress score. However, perceived stress showed significant negative correlation with age and significant positive correlation with hours spent in COVID ward in a week.

The perceived stress was statistically significant between the three groups of professionals ( $t = 10.93$ ;  $P = 0.001^{**}$ ), as shown in Table 2. SRs and JRs had significantly higher perceived stress than faculty ( $P = 0.001^{**}$ ). The perceived stress between SRs and JRs was not statistically different ( $P = 2.080$ ).

The detailed observation of the PSS-10 showed that nearly 50% of doctors (fairly often or very often) felt nervous and stressed, angered because they felt out of control, unable to control important things in their lives, and have been upset because of something that happened unexpectedly. About 40% felt (fairly often or very often) that they could not cope with all the things they had to do. Nearly one-third of doctors felt (fairly or very often) that difficulties were piling up so high that they could not overcome them.

Nearly half (49.2%) felt (fairly often or very often) that they were on top of things and, only 30% felt (fairly often or very often) that things were going their way and only 25% felt (fairly often or very often) confident about their ability to handle personal problems. Only 22.8% of doctors felt

**Table 1:** Association of perceived stress scale score with sociodemographic variables.

Variable	Perceived stress scale score (mean±SD)	t-test	P-value
Gender			
Male (107)	22.00±7.94	0.171	0.679
Female (143)	22.38±6.47		
Marital status			
Married (133)	21.45±7.47	1.818	0.070
Unmarried (117)	23.09±6.64		
Age (years)	35.40±10.70	r value -0.292	0.000**
Number of hours per week spent in COVID ward	29.73±16.30	0.179	0.005**

(fairly often or very often) that they have been able to control irritations in their lives.

## DISCUSSION

The present study assessed perceived stress among doctors working in a COVID-19 dedicated hospital using a standardized and widely used scale for perceived stress.

Mean perceived stress score of the sample was  $22.22 \pm 7.13$  which is slightly higher than that reported in two previous studies using the same scale and falls in the moderate range.<sup>[2,4]</sup> The score is significantly higher than that reported for normal population norms.<sup>[15]</sup> It is pertinent to note that 90% of doctors were found to have moderate to high stress and only 10% had low stress, showing that no doctor in our study was without stress. Many other studies and reviews using different instruments have shown considerable levels of stress among doctors working in COVID-19 wards.<sup>[1,5,7-10]</sup> The present findings show that there is a dire need for taking care of the mental health of the doctors. Doctors face high levels of stress even under usual circumstances and this stress can be heightened manifold during unpredictable events such as COVID-19.<sup>[3]</sup> It is important to reach out to doctors and assess their mental health status, because they may be reluctant to seek professional help for mental health issues due to stigma and losing out on their jobs and careers.<sup>[14,17]</sup>

The present study found significantly higher stress among younger doctors, namely, JRs (trainees) and senior residents as compared to faculty who were older in age. The previous studies have also found significantly high stress among trainee doctors<sup>[9]</sup> and younger doctors.<sup>[4,7,11]</sup> We also found that perceived stress increased significantly with increasing time spent in the COVID-19 wards which is similar to a previous study.<sup>[8]</sup> The residents represent a unique and special group among doctors. They are required to spend a lot of time interacting with patients, taking samples, and doing other interventions which generate aerosols such as non-invasive ventilation and high pressure nasal cannulas. Apart from this, this group of doctors is also involved in other works such as managing their thesis research, studying during their degree training, and working in their respective departments along with COVID-19 wards. The

resident doctors also have a higher direct interaction with patients as compared to senior faculty members who have more of supervisory roles. It has been previously reported that HCWs such as nurses and general physicians, who have closer interaction with patient, have higher degree of stress.<sup>[4,6,7,10,11]</sup>

The perceived stress of doctors can further lead to a plethora of mental health problems including attention, understanding, decision-making, anger, insomnia, anxiety, depression, burnout, and reduced efficiency.<sup>[1,4,6]</sup> Indeed, the present study found that majority of doctors have the feelings of nervousness, stress, anger, feeling out of control in their lives, and being upset. It is very important to preserve and promote mental health of doctors and other HCWs for their effective functioning for sustaining long-term quality care since the pandemic does not seem to be going away soon with the new mutations of the virus coming up.<sup>[18]</sup> There is a never-ending uncertainty surrounding this virus in spite of the fact that many vaccine candidates are coming up.<sup>[19]</sup> Giving the doctors adequate rest in between duty hours, recruiting larger workforce to reduce the workload, freeing doctors from administrative work to increase patient care, fast tracking medical students to join the workforce, involving retired doctors and private doctors, adequate time with family and friends, good social contacts, adequate and healthy food, adequate and effective personal protective equipment, enhancing motivation, and regular screening for early detection and management of stress are a few options.<sup>[6,20]</sup> Telemedicine holds great promise as it reduces the actual contact time with the patients and reduces risk of infection.<sup>[6]</sup> Regular training of doctors in stress management techniques such as yoga, meditation, mindfulness techniques, and psychological support should be a part of their curriculum. Social media platforms and support groups can be used to disperse information on stress management and other aspects of mental health well-being. Setting up a support group of psychiatrists who regularly remain in touch with other physicians could be a very useful strategy.

## CONCLUSION

The present study found that almost all doctors suffer from perceived stress while working in the COVID-19 wards during the pandemic. The younger doctors, residents doctors, and those who spend higher time with patients suffer from higher stress. Management of stress among doctors should be a priority during these testing times.

## Declaration of patient consent

Institutional Review Board (IRB) permission obtained for the study.

**Table 2:** Perceived stress among the three professional groups.

Designation	Number of hours spent in COVID-19 ward per week	Perceived stress scale score (mean±SD)
Faculty	27.52±17.92	19.70±7.07
Senior resident	40.13±15.29	25.81±7.46
Junior resident	28.73±14.56	23.01±6.57

Perceived stress scale score *P*-values: Faculty versus JRs–0.001\*\*; faculty versus SRs–0.001\*\*; SRs versus JRs–2.080

**Financial support and sponsorship**

Nil.

**Conflicts of interest**

There are no conflicts of interest.

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**How to cite this article:** Garg R, Singla A, Garg J. Perceived stress among doctors working in a dedicated COVID-19 hospital in North India. *Indian J Med Sci* 2021;73(2):155-8.