

The Doctor: A Patient Himself?

Prevalence of Depression, Burnout and Associated Symptoms among Resident Doctors

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ABSTRACT

Background: The years have seen an increase in prevalence of stress, burnout, depression and suicidal ideation among doctors owing to patient demands, patient overload, work related goals which are exacerbated by ongoing COVID 19 pandemic. Very few studies in India have accounted for these psychological stresses among doctors, sample of post graduate students and the post COVID period altogether. **Aim:** To determine the prevalence of depression, burnout and related symptoms among resident physicians enrolled in various postgraduate programmes. **Methods:** 200 post graduate students, shortlisted via purposive sampling, at a Tertiary Care Centre at Pune took part in this study. The students filled out a questionnaire on Google Docs form and were assessed in accordance to the Patient Health Questionnaire-9, Perceived Stress Questionnaire and Maslach Burnout Inventory. The data was analyzed via SPSS, frequency and percentages were calculated, Mann Whitney U tests, t-test, Spearman's rho were applied; and p value < 0.05 was considered significant. **Results:** Males scored significantly higher in Burnout and Depersonalisation sections of Maslach Burnout Inventory as well as in Patient Health Questionnaire-9 as compared to females. A multiple regression by stepwise method was run to predict depression from MBIB and Perceived Stress Scale, burnout from MBIA and MBIB as well as other parameters for both stress and burnout namely sex, domicile, history of psychiatric illness, personal achievement, history of COVID 19 infection and family type. These variables statistically significantly predicted depression and burnout, with p-value < 0.05. **Conclusion:** A large number of residents doctors suffer from stress, depression and burnout. Hence, there is a need for development of tools to assess the same as well as tackle these issues in Indian medical settings.

Key Words: Resident doctors; depression; burnout; depersonalization; stress

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Introduction

The medical profession is considered by many as the pinnacle of nobility and respect. Attached with such expectations from our health care professionals are a multitude of challenges ranging from performance stress, workload or even the mere responsibility of one's life in their hands. Throughout their medical careers resident doctors, trainees, and faculty members, exhibit symptoms of stress and depression, according to research. In India, 30% of doctors' report having a depressive disorder, and 17% had thought about suicide [1,2]. The stress is often associated with displeasure and

loss of goal and interest in individuals ultimately causing them to feel helpless, trapped and defeated [3]. Most people are mired in a vicious circle of unhappiness, ongoing stress, burnout, and addiction. To top it off, the current pandemic has also placed undue pressure on frontline healthcare workers along with the healthcare system overall. When compared to developed nations like the USA, which has a doctor to patient ratio of 2.3:1000, a country with a population of 1.33 billion people has an alarming doctor to patient ratio of 0.62:1000. This is because doctors are compelled to interact with more patients than they would like, preventing them from giving each patient enough time. The shortage of

healthcare workers has become more apparent while combating the COVID situation, which in turn has augmented the gravity of the problem at hand. The burden from increased patient load, exhaustion of supplies and increased expectation from the medical fraternity has skyrocketed following COVID-19 pandemic, apart from this career development and work-related goals also contribute to the increased mental pressure faced by doctors [4-6]. The immense scrutiny on mass media to top off the already difficult to control disease, has only aided in making the scenario worse for doctors. Furthermore, acknowledgement of this deterioration in mental health by a doctor is stigmatised. It has been hypothesised that burnout sows its seeds in medical college, grows throughout residency, and then blooms in the daily lives of working physicians [2]. According to studies, depending on the specialisation, the rate of burnout among residents ranges from 50% to 76% [7].

Only a small number of pre-COVID evaluation-only studies have examined psychological problems, stress, and burnout among medical practitioners in India. Few studies have focused on postgraduate resident doctors; the majority of these investigations have been directed at medical students and interns. According to studies, nearly a third of resident doctors experience stress. Three-fourths of participants in studies of medical students were found to be stressed [8-10]. Since there was a lack of Indian studies in this area, the present study was undertaken. This study's aim was to determine the prevalence of depression, burnout, and related symptoms among postgraduate resident doctors in a Medical College.

Materials and Method

This cross-sectional, analytical investigation was conducted at a Tertiary Care Hospital & designated COVID-19 treatment Center, housed within a medical college in Pune, India. The institute provides postgraduate courses for a number of medical and surgical specialities. Approval of the Institutional ethical committee was obtained before starting the study. Subjects were included in the study after obtaining their written informed consent.

Study Population

Postgraduate students/Resident doctors of various postgraduate courses provided in the institute.

Time duration of study

6 months

Sample size

200 postgraduate students obtained via purposive sampling.

Inclusion criteria

Postgraduate students willing to participate in the study.

Exclusion criteria

Postgraduate students having psychiatric ailments were excluded.

Tools used

Patient Health Questionnaire 9 (PHQ-9)

The PHQ-9 has been widely used in clinical settings for depression diagnosis. Major depression is detected with 88% sensitivity and 88% specificity using PHQ scores 10 [11].

Perceived Stress Questionnaire (PSS)

The PSS is a widely used tool to gauge how stressful people perceive particular circumstances in their lives. It comprises a variety of direct questions concerning the current levels of experienced stress as well as considerations for how unpredictable, unmanageable, and overburdened respondents believe their life to be. The PSS has adequate reliability and validity [12,13].

Maslach Burnout Inventory (MBI)

The MBI is a well-validated scale for assessing burnout. It assesses low personal accomplishment brought on by burnout, depersonalization, and emotional tiredness [14].

Statistical Analysis

The collected data was analysed using SPSS. Statistical significance was defined as a p value < 0.05.

Results

The survey was given to 231 postgraduate resident, of which 202 of them completely filled the survey and the remaining either opted out of the survey or gave incomplete responses. Majority of the residents categorised under a nuclear family type with urban domicile. All subjects have had contact with COVID-19 patients of which, 26 female residents and 27 male residents have tested positive for the disease in the past. Male and female residents did not differ on the demographic characteristics (Table 1).

Male residents obtained significantly higher scores than females in Section A (Burnout) and Section B (Depersonalisation) of the Maslach Burnout inventory. Males also scored significantly higher than females on PHQ - 9 (Table 2).

Multiple regression analysis for predictors of depression

A multiple regression by stepwise method was run to identify

Table 1: Demographic Characteristics of Subjects

		Female (120)	Male (n=87)	p
Age (in years)	Mean	26.74	27.49	0.78
	SD	2.63	3.49	
	Range	22 to 40	22 to 40	
Family Type	Nuclear	114	82	<0.813
	Joint	6	5	
Domicile	Urban	117	81	<0.125
	Rural	3	6	
	Yes	15	12	
No	105	75		
History of Psych dis	Yes	120	87	-
	No	0	0	
Contact with COVID-19 positive person	Yes	26	27	<0.127
	No	94	60	
History of COVID-19	Yes	35	36	<0.0676
	No	85	51	

Table 2: COVID-19 related characteristics and mean scores of subjects on Maslach Burnout Inventory, Patient Health Questionnaire-9 (PHQ9) and Perceived stress scale (PSS)

Scales		Total	Female	Male	p value
Burnout Inventory scores (median)	A (Burnout)	23.38	22.23	24.66	0.000
	B (Depersonalization)	7.75	7.1	7.62	0.010
	C (Personal Achievement)	37.62	37.45	38.17	0.348
PHQ9 scores		15.26	14.52	16.41	0.003
PSS scores		23.90	24.63	23.10	0.056

Table 3: Multiple regression analysis for predictors of depression: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	p value
	B	Std. Error	Beta	
(Constant)	5.70	4.11		0.166
MBIB	1.46	0.12	0.504	0.000
PSS	0.35	0.03	0.413	0.000
Sex	1.16	0.38	0.095	0.003
Domicile	-1.96	0.55	-0.109	0.000
HOPsyill	1.22	0.39	0.090	0.003
MBIC	-0.22	0.09	-0.081	0.021
Familytype	-1.17	0.53	-0.068	0.026

a. Dependent Variable: PHQ9, h. Predictors: (Constant), MBIB, PSS, Sex, Domicile, HOPsyill, MBIC, Familytype
MBIB – Maslach's Burnout Inventory section B; PSS – Perceived Stress Scale; HOPsyill – History of Psychiatric illness, MBIC – Maslach's Burnout inventory section C

Table 4: Multiple regression analysis for predictors of burnout: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	p value
	B	Std. Error	Beta	
6 (Constant)	18.031	4.667		.000
MBIB	1.256	.139	.554	.000
Sex	3.439	.479	.358	.000
HOCovid	-2.933	.488	-.277	.000
PSS	.136	.037	.205	.000
Familytype	1.202	.529	.089	.024
MBIC	-.213	.108	-.099	.050

a: Dependent Variable: MBIA

MBIB – Maslach's Burnout Inventory section B; PSS – Perceived Stress Scale, HOPsyill – History of Psychiatric illness,
MBIC – Maslach's Burnout inventory section C

predictors of depression from MBIB (depersonalization) score, Perceived Stress Scale score, sex, domicile, history of psychiatric illness, personal achievement, and family type. These variables statistically significantly predicted burnout, $F(7, 199)=198.099$, $p<0.0005$, $R^2=0.875$. All seven variables added statistically significantly to the prediction, $p < 0.05$. (Table 3).

Multiple regression analysis for Predictors of Burnout

A multiple regression by stepwise method was run to determine the predictors of burnout (MBIA) from MBIB (depersonalization), sex, history of COVID 19 infection, perceived stress, family type and personal achievement. These variables statistically significantly predicted burnout, $F(6, 200) = 89.301$, $p < 0.0005$, $R^2 = 0.728$. All six variables added statistically significantly to the prediction, $p < 0.05$ (Table 4).

Discussion

Studies evaluating stress, depressive symptoms and depression among postgraduate students in India are very few in number even though the profession with maximum suicide related deaths in the country is the medical profession. There have been so many recorded cases of medical errors, lapses by the medical professionals and violence against doctors and little has been done to understand the cause of the former and the result of the latter in relation to the mental wellbeing of the doctor. Apart from this, COVID-19 also augmented the enormous levels of already existing stress by several folds. Shortage of supply in terms of medical professionals and increasing demands in the form of infected patients reaped colossal damage to the medical fraternity in the form of overworked hours, sleepless nights, underpaid jobs and risking one's life to treat others. One can only imagine the psychological impact this may have had on medical professionals. In the present study conducted at a Tertiary care centre at Pune, the main goal was to evaluate resident doctors' psychological suffering, including depression, stress, and burnout.

The resident doctors were distributed into two categories i.e. male and female, on the basis of gender. The parameters evaluated were – age, type of family, domicile, family history of psychiatric disorders, contact with COVID-19 patients, history of COVID-19 infection and family history for the same. The differences in both the group was found to be not significant, showing that both the categories were well matched. A study carried out in Pakistan in 2018, assessing burnout among doctors having similar demographical data, which was also well matched and had no significant differences, were distributed into male and female categories. Gender, age, living situation (with the family or away from

the family for work), marital status, and number of working hours per week were the demographic criteria employed in that study [15]. Similar studies carried out in different parts of the world such as USA, UK, Portugal and so on, the study show comparatively lesser percentage of prevalence of depression than this study [16-19]. This suggests that a higher prevalence of depression among medical residents in India.

In the current study, 23.26% resident doctors reported to have moderate to high burnout and emotional exhaustion, 6.6% had high depersonalisation, however 57% of them reported to have high personal achievement and job satisfaction and only 43% scored moderate to high on low levels of job fulfilment. Although a study conducted in Pakistan did not separate its findings into males and females, it found that 33.8% of doctors had moderate to high burnout, 47.8% had severe emotional tiredness, and 24% had high depersonalization. 74.6% of doctors expressed satisfaction with their professional achievements, and 25.4% on PA indicated moderate to severe burnout [15].

In our study, most of residents had moderate to severe depression with most residents having a score of more than 14 on the PHQ-9 scale. When compared to another Indian study assessing the same aspects of stress and depression among faculty members and residents, the study found that a third of the participants had moderate depression and a score of around 10 on PHQ-9 [20].

In a study carried out in United States, the determinants of burnout were attributed to age, sex, the stage of career the individual was in and their relationship status [21]. In the present study the determinants of burnout were seen to be MBIB and PSS Scores, age, type of family, and history of COVID-19. In a study in an Indian teaching hospital for COVID-19 patients, it was found that both men and women reported feeling exhausted and depressed. Women also reported feeling more isolated and irritable, while men reported higher rates of substance abuse addiction [20].

Age, sadness, mental tiredness, the burden of a greater volume of labour, and the conviction that working is a duty rather than a choice have all been identified as predictors of anxiety [20]. In North India, a study of 376 resident doctors (77.75%) and 69 faculty members (15.5%) found that 30.1% of the participants were depressed and 16.7% had suicide thoughts. While 13% of individuals reported severe levels of stress, over 67.2% of the sample reported moderate levels of stress (67.2%). More than 90% of the participants acknowledged experiencing some kind of burnout. A larger percentage of residents than instructors reported stress, sadness, and burnout. Depression, stress, or burnout were linked to reduced leisure time, physical or verbal abuse by patients or caregivers, and lack of compassion among elderly citizens [20].

A similar study was carried out among students in Michigan Medical School discovered that residents who reported moderate to severe depression more frequently agreed that “If I were depressed, fellow medical students would respect my opinions less” and “Faculty members would view me as unable to handle responsibilities” than residents who did not report any signs of depression [22]. While these parameter i.e. addiction potential, suicidal ideation, external factors such as work pressure from seniors and patients, stigma associated with having mental health issues were not explored in this study, it needs to be taken into consideration as a very probable and highly possible cause of prevalence of such high rate of depression among medical professionals.

In our study, females scored higher than males in Perceived Stress Scale but the difference was not found to be significant. As opposed to this in a similar study carried out in Saudi Arabia taking PSS to measure the prevalence of stress, the female gender had significant associations with the upper tertile of the PSS score and was significantly more than in men. [23] The perceived stress among medical residents in the present study is somewhat higher than the perceived stress reported among residents in Saudi Arabia (22 in 938 residents), [23] Argentina (21.7 in 106 cardiology residents), [24] Turkey (19.9 in 159 anesthesia residents) [25] and USA (16.1 in 168 family medicine residents) [26]. It is pertinent to note here that all the above studies were done long before the pandemic, while the current study was carried out during the COVID-19 pandemic. This could explain the higher stress in present study.

Limitations

Despite the high response rate, all of the participants were from one Indian institute. The sample size was modest. It is also crucial to remember that the study’s reported rates of depression were obtained using the PHQ-9 and not a thorough psychiatric assessment.

Conclusion

According to the results of the current study, stress and depression are substantially more common among medical residents in Indian settings. These findings imply that it is necessary to create tools for assessing and treating doctor work-related stress and depression. In addition, it is important to teach stress management techniques to medical students starting in their first year and to lessen the stigma attached to mental illnesses so that they can seek assistance when necessary. Additionally, frequent mental health screenings of students must be conducted at the institute level and regular stress management training must be offered. Future research must prioritise in-depth in-person interviews and involve longitudinal assessments for better understanding of these issues.

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