

## Original Research Article

# Prevalence of stress amongst postgraduate residents by using DASS-21 and perceived stress scale: a cross-sectional study at a tertiary care centre

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### ABSTRACT

**Background:** The medical profession is uniquely challenging, offering both professional and personal satisfaction. However, postgraduate residents face multiple stressors due to their demanding clinical duties, academic responsibilities and long working hours. Prolonged exposure to such stress can lead to anxiety, depression or even suicidal tendencies. To assess the prevalence and causes of stress among postgraduate residents using the DASS-21 and perceived stress scale (PSS).

**Methods:** A cross-sectional study was conducted among all postgraduate residents of a tertiary care teaching hospital for duration of 4 months i.e., from July 2025 to October 2025. After obtaining informed consent, participants were provided with a self-administered, predesigned questionnaire containing demographic details, stress-related factors and standardized tools-PSS and DASS-21 (stress subscale). Data were collected and analysed to determine stress levels and contributing factors.

**Results:** Majority of study participant belong to 24 to 29 years of age. 32.72% of PG residents were suffered from mild to extremely severe degree stress as per DASS-21 scale and 56.36% were included in moderate level of stress as per PSS scale.

**Conclusions:** Stress does affect physical and mental health. Academic and psychological were the leading causes of stress. Various preventive measures such as improving time management, coping skills to optimize the balance between professional and social commitment, fixed duty hours, better living facilities in hostel and good quality of food in mess would go a long way to improve the physical and mental well-being of these young doctors.

**Keywords:** DASS-21, Perceived stress scale, Postgraduate residents, Stress

### INTRODUCTION

The Medical education is a very long duration, challenging and complex process for both undergraduate and postgraduate who, in future will be caretakers for physical and mental well-being of patients.<sup>1,2</sup> During this process they are responsible for patients care, have research assignments and participate in teaching programmes.<sup>3,4</sup> Therefore they considered as “backbone of entire medical system”. Due to long working hours they are at risk of acquiring various degrees of hospital

acquired infections, health related risks and a lot of stress.<sup>5</sup> Stress is an important occupational health problem among medical profession. United Nation labelled stress as “The 20th century Diseases”. The many studies in the world found that the prevalence of stress among postgraduate residents is very high. In International PG residents, prevalence is 54%, in South Eastern USA 48.9%, 55.1% in Pakistan and our country it was 52%. Similarly, the multi-institution-based study conducted in Indian university by using DASS 42 scale

found that prevalence of stress was higher than depression and anxiety.<sup>6</sup>

**Objectives**

To determine the prevalence of stress among post graduate residents by using DASS-21 and perceived stress scale to find out causes of stress among resident doctors.

**METHODS**

The present cross-sectional study was conducted amongst the postgraduate residents of a tertiary care hospital of a medical college. The study duration period was for 4 months i.e., from July 2025 to October 2025. The study was approved by the institutional ethics committee. All the postgraduate students were explained the purpose of the study and requested to participate in the study after getting the list from admission section of college. There were 171 postgraduate students in the college of which 165 participated in the study; Six participants didn't give any response after repeated visits so they were excluded from the study considering them not willing to participate. They were personally contacted by the principal investigator for data collection. A predesigned closed questionnaire was used for collecting the data which was to be self-filled by the participant. It contained identification data, habits or addictions if any, details of academics like, department studying, year of residency, number of working days and daily duration of work.

PSS DASS-21 scale was used to assess the stress amongst them. They were asked to mention the factors related to stress if any. PSS is the instrument for stress assessment which containing 10 questions with five alternatives to choose; 0–never, 1–almost never, 2–sometimes, 3–fairly often, 4–very often. Question numbers 4, 5, 7 and 8 to be scored with reverse scores. Total score of 0 to 13 to be considered as low stress, 14 to 26 as moderate and 27 to 40 as high perceived stress. DASS–21 contains twenty-one questions related to depression, anxiety and stress. In the present study, only the questions related to stress were considered for assessment i.e., scale was customized for stress. The participants had to give score from 0 to 3. The total score was to be multiplied by two to get the final score. So, the final score of 0 to 14 was to be considered as normal, 15 to 18 as mild, 19 to 25 as moderate, 26 to 33 as severe and more than 34 was considered as extremely severe stress. The data was entered in Microsoft excel and was analyzed by frequencies,

percentages and chi square test using Epi info version 7.2.2.6.

**RESULTS**

Table 1 shows age wise distribution of PG residents. The maximum age being 43 years and minimum is 24 years. Among 165 post graduate residents, nearly 72.12% (119) were between age group of 24 to 29 years and very few i.e., 3.03% (05) were between 35 to 43 years. Table 2 shows that about 32.72% PG residents were suffered from mild to extremely severe degree stress and about 67.27% (111) were included under normal level according to DASS-21 scale. Table 3 shows the distribution of PG residents according to PSS score. Out of 165 PG residents, highest i.e., 93 (56.36%) were included in moderate level of stress.

Table 4 shows association between socio-demographic factors and presence of stress according to DASS-21 scale. Stress level was significantly higher among unmarried and clinical department residents, with P value of 0.014 and 0.009 respectively. Those who work for all days of week and duration were between 12 to 18 hours per day shows higher level of stress with P value of 0.04 for both factors. Residents who took fresh admission have higher level of stress with p value of (0.02) as compared to In-service candidate. Those who stay at hostel was found to be significantly associated with high level of stress with p value of 0.001. There is no significant association between other socio-demographic factor such as sex, year of residency and place of residence.

The causes of stress as perceived by PG residents were noted in table no.5. The highest rated academic causes were heavy workload or long working schedule (73.33%), lack of time for study (64.24%), insufficient working staff at workplace (62.42), academic load (47.88%). The highest rated psychological causes were not enough time for recreational activities or hobbies (75.15%), not enough holidays or leaves (71.52%), sleeping difficulties or not enough sleep (57.58%), poor food quality in mess or tiffin (52.12%), living away from home (46.67%) and living condition in hostel (43.64%). Table 6 shows that which measures taken by PG residents to cope up with stress. Among 165 residents, 125 (75.76%) have read books to relieve stress. About 110 (66.67%) were watch movie, 54.55% were do web surfing, 52.12% were chat on social media and very less i.e., 0.61% were consume alcohol to cope up with stress.

**Table 1: Age wise distribution of PG residents.**

S. no.	Age group	Frequency (n=165)	%
1.	24 to 29	119	72.12
2.	30 to 35	41	24.85
3.	35 to 43	05	3.03
<b>Total</b>		165	100

**Table 2: Prevalence of stress among postgraduate residents according to DASS -21.**

S. no.	Stress as per DASS-21	Frequency (n=165)	%
1.	Normal	111	67.27
2.	Mild	25	15.15
3.	Moderate	20	12.12
4.	Severe	04	2.42
5.	Extremely severe	05	3.03
<b>Total</b>		165	100

**Table 3: Stress among postgraduate residents according to perceived stress scale.**

S. no.	Stress as per PSS	Frequency (n=165)	%
1.	Mild	58	35.15
2.	Moderate	93	56.36
3.	Severe	14	8.49
<b>Total</b>		165	100

**Table 4: Association between variables and stress with DASS – 21.**

S. no.	Sociodemographic factors	Stress			X <sup>2</sup>	P value
		Present	Absent	Total		
1.	<b>Sex</b>				0.1	0.75
	Male	27 (31.03)	60 (68.97)	87 (100)		
	Female	27 (52.94)	51 (47.06)	78 (100)		
2.	<b>Year of residency</b>				2.16	0.34
	First year	19 (32.2)	40 (67.8)	59 (100)		
	Second year	23 (63.89)	36 (36.11)	59 (100)		
3.	<b>Marital status</b>				5.98	0.014
	Married	06 (15.38)	33 (84.62)	39 (100)		
	Unmarried	48 (61.54)	78 (38.46)	126 (100)		
4.	<b>Department</b>				6.82	0.009
	Clinical	51 (37.5)	85 (62.5)	136 (100)		
	Pre and para clinical	03 (11.54)	26 (88.46)	29 (100)		
5.	<b>Place of residence</b>				1.17	0.29
	Maharashtra	46 (31.08)	102 (68.92)	148 (100)		
	Out of Maharashtra	08 (88.89)	09 (11.11)	17 (100)		
6.	<b>Working days per week</b>				3.93	0.04
	3 to 6 days	02 (10.53)	17 (89.47)	19 (100)		
	All day of week	53 (36.3)	93 (63.67)	146 (100)		
7.	<b>Work duration</b>				6.25	0.04
	6 to 12 hours	03 (12)	22 (88)	25 (100)		
	12 to 18 hours	40 (54.05)	74 (45.95)	114 (100)		
8.	<b>Type of admission</b>					0.02*
	Fresh	54 (35.53)	98 (64.47)	152 (100)		
	In-service	0 (0.00)	12 (100)	12 (100)		
9.	<b>Staying at</b>				10.06	0.001
	Hostel	53 (37.86)	87 (62.14)	140 (100)		
	With family or relatives	01 (4.17)	24 (95.83)	25 (100)		

\*Probability by Fischer Exact probability test.

**Table 5: Causes for stress as perceived by the PG residents.**

S. no.	Causes of stress	Frequency (n=165)	%
<b>I.</b>	<b>Academic or work related causes</b>		
	Heavy workload /Long working schedule	121	73.33

Continued.

S. no.	Causes of stress	Frequency (n=165)	%
	Lack of time for studies	106	64.24
	Insufficient working staff at workplace	103	62.42
	Academic load	79	47.88
	Research work (Dissertation, research paper)	51	30.91
	Lack of guidance from teacher	35	21.21
	Competition with peers	12	7.27
<b>II.</b>	<b>Psychological Causes</b>		
	Not enough time for recreational activities or hobbies	124	75.15
	Not enough holidays or leaves	118	71.52
	Sleeping difficulties or not enough sleep	95	57.58
	Poor food quality in mess or Tiffin	86	52.12
	Living away from home	77	46.67
	Living condition in hostel /home	72	43.64
	Financial problems	59	35.76
	Health problems	25	15.15
	Interpersonal relationship with colleagues or roommates	15	9.09
	Family Conflicts	10	6.06
	Not satisfied with PG branch that I got	4	2.42
	Addictions	3	1.82

**Table 6: Measures taken by the PG residents to cope up with stress.**

S. no.	Measures taken to cope up with stress	Frequency (n=165)	%
1.	Reading books	125	75.76
2.	Movie watching	110	66.67
3.	Web Surfing	90	54.55
4.	Chatting on social media	86	52.12
5.	Listening Music	35	21.21
6.	Talking with friends	21	12.73
7.	Talking to relatives	3	1.82
8.	Alcohol consumption	1	0.61

## DISCUSSION

Stress is an additional pressure to every individual. Now a days it is commonest risk factor for development of various diseases. In the study, prevalence of stress among resident's doctors was 32.7% (Table 2). In a similar study conducted by Saini et al in a tertiary care institute in Delhi that prevalence was 32.8%.<sup>7</sup> The most common age group in study was 24 to 43 years as consistent with study by Issa et al where it was 26 to 46 years due to competitive nature of residency training.<sup>6</sup> In present study, about 56.36% (Table 2) post graduate residents were found to have moderate level of stress according to PSS. Similar study conducted on junior residents, in Bangalore city shows that about 72.2% PG residents were under stress as per PSS. Stress level among residents of clinical departments in our study was 37.5% (Table 4) which was higher as compared to pre and para clinical residents (11.54%) and it was statistically significant. Similar findings were seen in another study by Gobbur et al in which stress levels among clinical residents was 33.33% But it was not statistically significant.<sup>3</sup> The cause behind this might be inadequate time for recreational

activities, criticism from staff for academics and coping with faculty mood swings. The statistically significant association was seen between marital status and stress with proportion of 61.54% in unmarried postgraduate and 15.38% in married residents (Table 4) which is consistent with study conducted by Gobbur et al.<sup>3</sup> Contrasting results were found in study conducted in Sahastrabudhe et al that married PG graduate found more stress i.e., 45.5% as compared to unmarried 35.3% because, they had to take care of their families and also study which can be described as dual career.<sup>9</sup> The proportion of stress among fresh candidate was more (35.33%) (Table 4) than in service, because they had an experience of handling difficult cases at periphery level and had done work in various administrative fields. The residents staying at hostel were more (37.86%) stressed as compared to those who were living with their family or relatives (4.17%) (Table 4), as families are shock- absorber to every individual. Authors inferred from the study that, not only did the hostelites handled various personal problems, but also faced factors like improper living conditions (43.64%), poor food quality in mess or tiffin (52.12%) and living away from home (46.67%). The present study

showed that about 73.33% were stressed due to heavy workload or long working schedule and similar finding were seen in study conducted by Issa et al which showed that about 89% residents were high clinical workload.<sup>6</sup> The reason may be more clinical work with simultaneous completion of thesis. Most of residents read book (75.7%) and watched movies (66.6%) rather than talking to friends (12.7%) and relative (1.8%) (Table 6).

## CONCLUSION

In the present study it has been found that postgraduate residents were suffering from moderate stress. It affect their physical and mental health. The both academic & psychological were the leading causes of stress. Management of stress consists of various preventive measures such as improving time management, coping skills to optimize the balance between professional and social commitment. Fixed duty hours, better hostel, mess facilities and social support would go a long way to improve the physical and mental wellbeing of these young doctors.

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