"EVALUATING SAD USING DASS- A SHORT STUDY TO ASSESS PREVALENCE AND SITUATIONAL FACTORS IMPACTING DEPRESSION, ANXIETY AND STRESS IN MEDICAL POSTGRADUATES IN A TERTIATRY CARE HOSPITAL."

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ABSTRACT

INTRODUCTION

Medical education has been found to be stressful, and residency training may make it even more so because of increased expectations, demands and responsibilities. One-fourth to one-third of residents may have clinical depression during their training, according to several studies. Research shows that depression affects one-fourth to one-third of doctors undergoing postgraduate study, and that the suicide incidence among doctors is 1.4–2.3 times greater than that of the general population. It has been stated that medical students failed to get the proper assistance when they needed it for mental health issues.

METHODS

It is a cross-sectional, observational study. Objectives were to determine prevalence of depression, anxiety and stress in postgraduate students of Sri Devaraj Urs Medical College, Kolar. To study correlation with sociodemographic and other variables as specified in semi structured proforma.

RESULTS

47.9% of the students had stress, 54.9% depression and 60.4% anxiety of various severities. Stress showed statistically significant correlation with students of age 26-30 years with medical morbidities. Anxiety was slightly higher in women participants. There was significant correlation of depression with medical comorbidity. Also, significant correlation was established between stress, depression and anxiety with dissatisfactory department treatment and peer support.

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CONCLUSION

The present study concluded that a high level of stress, anxiety and depression is seen in postgraduate medical students. The study further concluded that there are various factors which can affect the level of stress, anxiety and depression. This requires intervention in terms of identifying stressors and encouraging medical postgraduates to seek help as required.

KEYWORDS: Anxiety, stress, depression, postgraduate medical students, DASS-21.

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INTRODUCTION

Medical education has been found to be stressful, and residency training may make it even more so because of increased expectations, demands and responsibilities.[1,2]

After completing their studies, postgraduates are expected to be skilled physicians, educators, researchers, and administrators.[1]High levels of perceived stress can lead to a variety of negative outcomes, such as substance addiction, depression, burnout, anxiety, irritability, and poor sleep.[3,4]Lack of sleep has also been demonstrated to put residents at risk for injuries, medical mistakes, increased drug and alcohol usage, and greater confrontation with other medical staff members.[5]

One-fourth to one-third of residents may have clinical depression during their training, according to several studies.[6] Mental health is an essential component of health as per the World Health Organization. A person could be depressed if he/she shows a variable combination of low mood; loss of interest or pleasure; feelings of guilt; low self-esteem; disturbed appetite; disturbed sleep; or disturbed concentration.

The American Psychological Association characterizes anxiety and stress by feelings of tension, worried thoughts, and physical changes. Anxiety depicts autonomic arousal, skeletal muscle tension, and situational aspects, whereas stress is more related to irritability, impatience, and difficulty in relaxing.[7]

Research shows that depression affects one-fourth to one-third of doctors undergoing postgraduate study, and that the suicide incidence among doctors is 1.4–2.3 times greater than that of the general population.[8,9]Their mental health is significantly impacted by a number of variables, including the amount of work they have to do, their peers' skill levels, obstacles to achieving their chosen specialization, and the period of transition from being a student to practically being a doctor.[10,11]

Stress is a state of an individual that results from the interaction of the individual with the environment that is perceived as threatening to the well-being. It is an external constraint which directly upsets the individual both mentally and physically.[12]An individual's capacity to focus and perform continuous tasks is impacted by their mental state during stressful situations.[13,14]

Depression has been linked to unresolved stress as well.[15]Physician depression has a detrimental impact on the standard of care they deliver and creates issues in the workplace [16]. Furthermore, mental health issues have a detrimental effect on learning and academic achievement in a field where graduate study is crucial.[17]

It has been stated that medical students failed to get the proper assistance when they needed it for mental health issues. We need to address this problem, and we should encourage students to ask for assistance.[18]

OBJECTIVES

- To determine prevalence of depression, anxiety and stress in postgraduate students of Sri Devaraj Urs Medical College, Kolar
- To study correlation with sociodemographic and other variables as specified in semi structured proforma.

MATERIALS AND METHODS

The cross-sectional study was done over a period of 2 months that is from May to June

2024, in postgraduate students of Sri Devaraj Urs Medical College, Kolar.

Inclusion Criteria

Medical postgraduates of all departments in Sri Devaraj Urs Medical College who give consent were included in the study.

Exclusion Criteria

Postgraduates who refused consent were excluded from the study.

Postgraduates with preexisting psychiatric illness were excluded from the study.

Sample Size

Based on the previous study conducted by Shete AN et al [19], by assuming equal variance and considering mean DASS score among postgraduate medical students, the sample size is calculated as follows,

Formula,

$$n = \frac{Z_\alpha{}^2 \sigma^2}{d^2}$$

On substitution,

$$n = \frac{1.96^2 \times 6^2}{1^2}$$

$$n = 138.3$$

The sample size is approximately 138.

Ethical Approval

Ethical approval was obtained from the Institutional Review Board (approval number: SDUAHER/KLR/R&D/CEC/S/PG/12/2024-25).

After obtaining clearance, informed consent from study participants, an online proforma was circulated for consent and data collection.

Data Collection

To assess socio-demographic profile, pre tested semi-structured questionnaire was used. For depression, anxiety and stress Scale-21 items (DASS-21) was used.

The institute encompasses various medical and surgical specialties, including super specialty departments, offering postgraduate training across multiple disciplines. The scale comprises seven items for each subscale, and students will score each item on a scale of 0-3, where zero signifies "did not apply to me at all," and three denotes "applied to me very much." The sum of scores for each subscale will be calculated and multiplied by two.

Scores will be categorised into different levels. A "normal" score for depression will be 0-9, for anxiety 0-7, and for stress 0-14. A "mild" score for depression will be considered 10-13, for anxiety 8-9, and for stress 15-18. "Moderate" scores for depression will range from 14-20, for anxiety 10-14, and for stress 19-25. "Severe" scores for depression will be 21-27, for anxiety 15-19, and for stress 26-33. An "extremely severe" score for depression will be 28+, for anxiety 20+, and for stress 34+. The proforma aims to evaluate participant's emotional well-being based on their DASS-21 scores, providing a comprehensive categorization of depression, anxiety, and stress severity levels.

Analysis & Statistical Methods

All data will be entered in Microsoft office excel sheet, analysed using SPSS v 22(IBM Corp). Descriptive statistics will be applied. To check for association between factors Chi-square will be applied with level of significance defined as p value less than 0.05. To compare between groups, independent t test and ANOVA will be used.

RESULTS

Findings

The burden of psychiatric morbidities like stress, anxiety and depression is notable in medical profession. The study includes 144 medical post graduates studying in Shri Devaraj Urs Medical College attached to R. L. Jalappa Hospital.

Demographic Profiles

Following were demographic profiles studied in this study.

Descriptive analysis of participant characteristics				**Count**	**Column N %**
Age in years	Less than 26 years			27	18.8%
	26-30 years			102	70.8%
	More than 30 years			15	10.4%
Gender	Male			57	39.6%
	Female			87	60.4%
Marital Status	Unmarried			109	75.7%
	Married			35	24.3%
Year of residency	1st year			32	22.2%
	2nd year			55	38.2%
	3rd year			57	39.6%
Branch	Clinical	Stream	Medical	73	50.6%
			Surgical	52	36.1%
	Para clinical			19	13.2%
Housing	Without family			100	69.4%
	With family			33	22.9%
	Hostel			10	6.9%
	With Friends			1	0.7%
Parent with difficulties in rearing the child	No			98	68.1%
	Yes			8	5.6%
	Not applicable			38	26.3%
Department treatment and environment	Dissatisfactory			55	38.2%
	Satisfactory			89	61.8%
Peer support	Dissatisfactory			27	18.8%
	Satisfactory			117	81.3%
Average working hours/day	8-12 hours			58	40.3%
	More than 12 hours			86	59.7%
Average number of night duties/month	2-7 days			78	54.2%
	More than 7 days			66	45.8%
Average hours of sleep/day	Less than 6 hours			98	68.1%
	6-8 hours			46	31.9%
Frequency of leaves in a year	2-3 times			94	65.3%
	More than 3 times			50	34.7%
Average duration of leaves	Less than 1 week			131	91.0%
	More than 1 week			13	9.0%
Medical morbidity	No			117	81.3%
	Yes			27	18.8%
Tobacco use	Never			128	88.9%
	Occasional			12	8.3%
	Frequent			4	2.8%
Alcohol use	Never			93	64.6%
	Occasional			49	34.0%
	Frequent			2	1.4%
Other substance abuse	No			144	100.0%
	Yes			0	0.0%
Ever self-medicated for feeling worried/sad	No			135	93.8%
	Yes			9	6.3%
Willingness to consult a psychiatrist	No			19	13.2%

for self if required	Yes	125	86.8%
Stress level	Normal	75	52.1%
	Mild	16	11.1%
	Moderate	19	13.2%
	Severe	24	16.7%
	Very severe	10	6.9%
Depression level	Normal	65	45.1%
	Mild	19	13.2%
	Moderate	26	18.1%
	Severe	11	7.6%
	Very severe	23	16.0%
Anxiety level	Normal	57	39.6%
	Mild	12	8.3%
	Moderate	25	17.4%
	Severe	12	8.3%
	Very severe	38	26.4%

Table 1

Majority of the post graduates who responded to the questionnaire were females aged between 26-30 years old, unmarried, studying clinical medicine, residing without family, with satisfactory department treatment and peer support. Most of them working more than 12 hours a day, with 2–7-night duties a month and getting less than 6 hours of sleep a day. Most of the trainees get less than a week of vacation 2-3 times a year. Most of them do not have any co morbidities with no tobacco or alcohol use. Most of them have no history of self-medication and are willing to consult a psychiatrist if required. There was significant overall prevalence of stress, depression and anxiety in the postgraduates at 47.9%, 54.9% and 60.4% respectively.

Stress

		Stress				
		Yes		**No**		
		Count	**Row N %**	**Count**	**Row N %**	**Chi square/ Fischer Exact, df , p value**
Age group	Less than 26 years	8	29.6%	19	70.4%	8.925, df=2, p=0.012*
	26-30 years	57	55.9%	45	44.1%	
	More than 30 years	4	26.7%	11	73.3%	
Medical morbidity	No	51	43.6%	66	56.4%	4.681, df=1, p=0.03*
	Yes	18	66.7%	9	33.3%	
Department treatment and environment	Dissatisfactory	37	67.3%	18	32.7%	13.359, df=1, p=0.000*
	Satisfactory	32	36.0%	57	64.0%	
Peer support	Dissatisfactory	19	70.4%	8	29.6%	6.713, df=1, p=0.010*
	Satisfactory	50	42.7%	67	57.3%	
Average working hours/day	8-12 hours	20	34.5%	38	65.5%	7.023, df=1,p=0.008*
	More than 12 hours	49	57.0%	37	43.0%	
Average hours of sleep/day	Less than 6 hours	55	56.1%	43	43.9%	8.277, df=1, p=0.004*
	6-8 hours	14	30.4%	32	69.6%	

Table 2

After adjusting for other variables, participants aged 26-30 years were found to have 4 (95% CI: 1.3-12.4) times higher chance of experiencing stress compared to those aged less than 26 years. Participants with medical morbidity had 4.1 (95% CI: 1.4-12.5) times higher chance of experiencing stress compared to those who did not have any medical morbidity. Those participants who had stress also perceived department support as dissatisfactory (OR: 2.9; 95% CI: 1.3-6.9). They are also higher odds of sleeping for less than 6 hours. Stress has no statistically significant correlation with other parameters.

Depression

		Depression				
		Yes		**No**		
		Count	**Row N %**	**Count**	**Row N %**	**Chi square/ Fischer Exact, df , p value**
Medical morbidity	No	58	49.6%	59	50.4%	7.047, df=1, p=0.008*
	Yes	21	77.8%	6	22.2%	
Branch	Clinical	73	58.4%	52	41.6%	4.791, df=1, p=0.029*
	Paraclinical	6	31.6%	13	68.4%	
Department treatment and environment	Dissatisfactory	39	70.9%	16	29.1%	9.255, df=1, p=0.002*
	Satisfactory	40	44.9%	49	55.1%	
Peer support	Dissatisfactory	24	88.9%	3	11.1%	15.538, df=1, p=0.000*
	Satisfactory	55	47.0%	62	53.0%	
Average working hours/day	8-12 hours	25	43.1%	33	56.9%	5.421, df=1,p=0.020*
	More than 12 hours	54	62.8%	32	37.2%	
Average hours of sleep/day	Less than 6 hours	62	63.3%	36	36.7%	8.750, df=1, p=0.003*
	6-8 hours	17	37.0%	29	63.0%	

Table 3

After adjusting for other variables, it was found that participants with medical morbidity had 3.5 (95% CI: 1.2-10.5) times chance of having depression, compared to those who did not. Peer support was found to be dissatisfactory among them and they had more odds of sleeping for less than 6 hours a day. Depression has no statistically significant correlation with other parameters.

Anxiety

		Anxiety				
		Yes		**No**		
		Count	**Row N %**	**Count**	**Row N %**	**Chi square/ Fischer Exact, df , p value**
Gender	Male	27	47.4%	30	52.6%	6.717, df=1, p=0.010*
	Female	60	69.0%	27	31.0%	
Department treatment and environment	Dissatisfactory	40	72.7%	15	27.3%	5.639, df=1, p=0.018*
	Satisfactory	47	52.8%	42	47.2%	
Peer support	Dissatisfactory	22	81.5%	5	18.5%	6.166, df=1, p=0.013*
	Satisfactory	65	55.6%	52	44.4%	
Average working hours/day	8-12 hours	29	50.0%	29	50.0%	4.406, df=1,p=0.036*
	More than 12 hours	58	67.4%	28	32.6%	

Average hours of sleep/day	Less than 6 hours	67	68.4%	31	31.6%	8.109, df=1, p=0.004*
	6-8 hours	20	43.5%	26	56.5%	

Table 4

After adjusting for other variables, it was found that female participants had 2.4 (1.1-5.3) times higher chance of having anxiety, compared to men. Those with medical morbidity had 3.0 (1.0-9.1) times chance of having anxiety, compared to those who did not. They had more odds of sleeping for less than 6 hours a day. Anxiety has no statistically significant correlation with other parameters.

DISCUSSION

In the present study, the prevalence of depression, anxiety, and stress among medical postgraduates, and the influence of situational factors on these were assessed. In our study we found the overall prevalence of stress, depression and anxiety were 47.9%, 54.9% and 60.4% respectively. This points towards relatively higher levels of anxiety in our study population. This was similar to a study conducted by Shete et al.[19] Out of this 16.7 had severe levels of stress, 18.1 scored moderate depression and 26.4% were suffering from severe grade of anxiety. The more severe grade of anxiety finding is similar to another study conducted by Dave S et al in Ahmedabad.[20]

Majority of our responders were females which was 60.4%of total study population and had significant association with anxiety but no significant correlation was found with depression or stress. This finding was in accordance with studies conducted by Salam et al and Amr et al. responders belonging to age group of 26-30years showed a significant association with stress whereas population of more than 30 did not indicating higher levels of stress in younger population.[12,21] Similar findings were shown by Johari et al but they were not statistically significant.[22]

The additional factors which significantly influenced stress in our study population were presence of medical morbidities, department environment, peer support, increased work hours and sleep less than 6. Sleep duration is an important component of quality sleep and inadequate sleep hours contributed to psychological morbidities. This was in concordance with finding of Lemma et al.

The situational factors significantly associated with depression were again department environment, peer support, average work hours and average sleep hours which seemed to play a significant association across all 3 variables that is stress, depression and anxiety. Apart from this medical morbidity and branch played significant roles. Individuals suffering from a medical morbidity had 3.5 times risk of developing depression, this was unique to our study. Depression was found to be more prevalent in clinical branches than non-clinical but no difference was noted in medical or surgical branches. This was similar to study by Dave S et al but contrasting to study by Thomas et al which noted more depression in surgical branches.[20,23]

Anxiety was most prevalent although to varying degrees in our study population. Here as well department environment, peer support, average work hours and sleep hours played a significant role. Besides this even gender had a significant correlation. Female postgraduates were noted to have 2.5times risk of anxiety than male counterparts. This was in keeping with multiple studies (pokhrel et al, Kebede et al, kumar et al).[24,25,26] There was contradictory finding in study by Dave et al where males suffered higher levels of anxiety than females.[20]

To conclude our study significantly highlighted the role of age, gender, branch medical comorbidities and certain other crucial factors determining a postgraduate life like department environment, peer support, average work hours and sleep hours and their influence on mental health and wellbeing of a trainee.

Limitations

This study isn't without a few drawbacks in that it is not multicentric but a singlepoint and hence findings may not be representative of general population. It was conducted cross sectionally and hence a lack of insight on other contributory causal factors to depression, anxiety or stress couldn't be established. It was questionnaire based and hence reporting bias cannot be completely eliminated and preexisting stigma especially around sensitive issues like substance use can compound to that.

CONCLUSIONS

The propensity of psychiatric illnesses hinders success and effective performance of medical trainees. Yet, mental illnesses are more common in healthcare providers than general population. Our study shed significant light on influencing factors like gender, branch, department environment, peer support and average work hours and sleep hours amongst other things on its impact on a medical postgraduate's mental wellbeing. It also established a significant degree of anxiety followed by depression and stress in our study population. It also uncovered that women trainees are especially vulnerable to workplace induced psychological illnesses. Hence this requires intervention and encouraging medical trainees to seek help as required.

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Declarations

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Nil.

Conflict of interests

All authors declare that they do not have any competing interests.

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