



EXAM ANXIETY AMONG POST GRADUATE MEDICAL STUDENTS

Dr Khushboo Kothari

Post Graduate Student

Dr Srikanth Reddy

Professor.

ABSTRACT **Background:** Medical profession is considered to be a stressful profession as medical students confront variable stress throughout their course particularly during post graduate years and a high level of stress results in increased prevalence of psychological problems. This cross-sectional study was conducted to determine the prevalence of stress among post graduate medical students and to observe an association between the levels of stress and their performance in the exams. **Methods:** A cross-sectional study was conducted among final year post graduate medical students of a tertiary care hospital in Indore, Madhya Pradesh, from January to December 2023. Data were collected using a Semi-structured sociodemographic proforma (sociodemographic & academic variables), Westside Test Anxiety Scale- to assess the severity of anxiety, Google forms to survey online. **Results:** Among 30 participants, the female were found to be 56.7% and male were 43.3%. The Prevalence of anxiety was found to be 73.3%. The mean Anxiety score was found to be 3.11 ± 0.78 . Exam related anxiety is fairly common among exam-going post graduate medical residents. We found statistically significant associations between anxiety and upper middle socioeconomic status, high peer or societal pressure, inadequate period of preparation leave provided, inadequate preparation due to extensive syllabus load, and lack of awareness regarding anxiety reduction techniques. **Conclusion:** This study reflects the need for assessing exam anxiety in medical postgraduates & the relevant associated factors. Appropriate preventive & intervention techniques addressing the above issues would help the medical postgraduates to alleviate stress & deal with performance related anxiety.

KEYWORDS :

BACKGROUND

Considering today's competitive world, stress is becoming a universal phenomenon. In recent decades, the increase in stress levels of university students has been seen as a serious threat (1). Excessive stress results in increased prevalence of psychological problems like depression, anxiety, substance abuse and suicidal acts (2). Medical profession is considered to be a stressful profession as medical students confront variable stress throughout their course particularly during post graduate year, and a high level of stress may have a negative effect on cognitive functioning and learning of students in a medical school, affecting their performance in exams (3). Studies have shown prevalence of stress was higher ($p < 0.5$) among females (75.7%) than among males (57%) ($p < 0.0001$). The stress significantly decreased as the year of study increased, except for the final year. (3) Nearly 60% of medical students suffer from anxiety and depression during their study period leading to poor academic performance more so among students with high test anxiety (4). Preventive mental health services, therefore, could be made an integral part of routine clinical services for medical students, especially in the initial academic years, to prevent such OCCURRENCE. (3)

METHODS

Study design, setting and duration

The current study has a cross sectional design and was conducted among final year post graduate medical students of a tertiary care hospital in Indore, Madhya Pradesh, from January to December 2023.

Selection of participants

Minimum sample size of 30 was estimated.

Data collection tools and procedure

After obtaining written informed consent from all the final year exam going post graduate medical students and explaining them the significance of the study, participants were enrolled. Data were collected using a pre-tested semi-structured questionnaire consisting of the sociodemographic and academic variables of the participants.

The Westside Test Anxiety Scale was used to assess the severity of the anxiety in students. It is an extremely brief screening instrument meant to identify students with anxiety impairments. The scale is comprised of ten items and is a 5-point scale and takes about five to eight minutes to administer. Each item is rated on a scale of 1 (never true) to 5 (always true). Total score is calculated by adding the sum of all 10 questions and it is then divided by 10 to obtain the test anxiety scores, which ranges from 1.0-1.9 (Comfortably low test anxiety) to 4.0-5.0 (Extremely high anxiety).(5,6)

Google forms were used to survey online.

Statistical analysis

All the data collected was entered in the google forms and descriptive statistics were used to analyse frequencies of variables. Appropriate tests of significance including chi square test and correlation was applied to find any significant association.

RESULTS

The demographic and clinical characteristics of the study participants ($n = 30$) are summarized in Table 1. Regarding sex distribution, 43.3% were male and 56.7% were female. In terms of marital status, the majority were unmarried 90% and remaining 10% were married). Most of them resided in hostel 83.3% and remaining resided in home 16.7%. Socioeconomic status ranged from lower middle (16.7%) to upper middle (60%). Most participants identified as Hindu (80%), followed by others (10.0%). Body Mass Index of most of the people was normal (60.0%) followed by overweight (33.3%) followed by obese (6.7%). More than half (66.7%) had substance use present, with combination of alcohol and tobacco (33.3%) being used most commonly with least commonly used substance being combination of the above with cannabis (3.3%) with the frequency of substance use almost daily (23.3%).

Table 1: Demographic And Clinical Characteristics Of Study Participants

Variables		Frequency (n)	Percent (%)
Gender	Female	17	56.7
	Male	13	43.3
Religion	Hindu	24	80.0
	Muslim	2	6.7
	Other	3	10.0
Marital Status	Married	3	10.0
	Never married	27	90.0
Socio-economic status (as per the modified kuppuswamy scale)	lower middle	5	16.7
	Upper	7	23.3
	upper middle	18	60.0
Place of residence	Home	5	16.7
	Hostel	25	83.3
Body Mass Index	Normal	18	60.0
	Obese	2	6.7
	Overweight	10	33.3
Substance Use	No	10	33.3
	Yes	20	66.7

If substance use present, type of substance used (can choose more than one)	Cannabis	9	30.0
	Alcohol	6	20.0
	Alcohol; Tobacco (smoking or chewing)	10	33.3
	Alcohol; Tobacco (smoking or chewing);Cannabis	1	3.3
	Tobacco (smoking or chewing)	4	13.3
If substance use present, frequency of substance used	Everyday	7	23.3
	Every alternate day	2	6.7
	Once in 15 days	2	6.7
	Once in 2-3 months	2	6.7
	Once in a month	4	13.3
	Once in a week	6	20.0
	Yearly	4	13.3
History of anxiety episodes in previous exams	No	18	60.0
	Yes	12	40.0
Family history of anxiety spectrum disorder	No	26	86.7
	Yes	4	13.3
Branch	Non-Surgical	23	76.7
	Surgical	7	23.3
Do you feel have any parenteral pressure	No	23	76.7
	Yes	7	23.3
Do you feel any peer or societal pressure	No	10	33.3
	Yes	20	66.7
Period of preparation leave provided	1-2 weeks	13	43.3
	2-3 weeks	15	50.0
	3-4 weeks	2	6.7
Preparation status	Adequate preparation and able to recall	2	6.7
	Adequate preparation, but unable to recall	24	80.0
	Inadequate preparation	4	13.3
Reason of inadequate preparation	Extensive syllabus load	21	70.0

Time spent in sleeping a night before exam	Lack of strategic planning	5	16.7
	Lack of time management	4	13.3
	1-3 hours	10	33.3
Does exam has impact on your sleep pattern	3-5 hours	14	46.7
	5-7 hours	6	20.0
Are you aware about the anxiety reduction techniques and its use	No	2	6.7
	Yes	28	93.3
	No	19	63.3
	Yes	11	36.7

More than half (60.0%) had no history of anxiety episodes in previous exams. Majority (86.7%) of them had no family history of anxiety spectrum disorder. Majority (76.7%) belonged to non-surgical branch and rest (23.3%) were of surgical branch. Most of them (76.7%) had no parenteral pressure, however most of them (66.7%) had societal or peer pressure. Preparation leave provided to 50.0% were of 2-3 weeks with the status of preparation for majority (80.0%) was adequate preparation, but unable to recall, followed by inadequate preparation. Reason of inadequate preparation for majority (70.0%) was extensive syllabus load followed by lack of strategic planning followed by lack of time management. In 46.7% time spent in sleeping a night before exam was 3-5 hours followed by 1-3 hours (33.3%) followed by 5-7 hours (20.0%) with majority (93.3%) of them had impact on their sleep pattern. More than half (63.3%) were not aware about the anxiety reduction techniques and its use.

The Prevalence of anxiety was found to be 73.3% as shown in Table 2. The mean Anxiety score was found to be 3.11 + 0.78.

Table 2: Levels of Anxiety

	Frequency	Percent
extremely high	3	10.0
high	9	30.0
high normal	3	10.0
low test	3	10.0
moderately high	7	23.3
normal	5	16.7
Total	30	100.0

Table 3 shows statistically significant associations between anxiety and upper middle socioeconomic status (p value (0.014), high peer or societal pressure (0.002), inadequate period of preparation leave provided (0.016), inadequate preparation due to extensive syllabus load (0.021), and lack of awareness regarding anxiety reduction techniques (0.039).

Table 3: Association Between Various Demographic And Academic Variables With Anxiety And Its Severity

		Anxiety (Frequency %)						P- Value
		Extremely high	High	High Normal	Low	Moderately high	Normal	
Gender	Female	33.3%	77.8%	33.3%	100.0%	42.9%	40.0%	0.272
	Male	66.7%	22.2%	66.7%	0.0%	57.1%	60.0%	
Religion	Hindu	66.7%	77.8%	66.7%	100.0%	85.7%	80.0%	0.252
	Muslim	0.0%	0.0%	33.3%	0.0%	0.0%	20.0%	
	Other	0.0%	22.2%	0.0%	0.0%	14.3%	0.0%	
	Sikh	33.3%	0.0%	0.0%	0.0%	0.0%	0.0%	
Marital Status	Married	0.0%	11.1%	0.0%	0.05	0.0%	40.0%	0.236
	Unmarried	100.0%	88.9%	100.0%	100.0%	100.0%	60.0%	
Socioeconomic status	lower middle	33.3%	0.0%	0.0%	66.7%	28.6%	0.0%	0.014**
	Upper	0.0%	66.7%	0.0%	0.0%	0.0%	20.0%	
	upper middle	66.7%	33.3%	100.0%	33.3%	71.4%	80.0%	
Place of residence	Home	33.3%	11.1%	33.3%	0.0%	0.0%	40.0%	0.373
	Hostel	66.7%	88.9%	66.7%	100.0%	100.0%	60.0%	
Body Mass Index	Normal	66.7%	44.4%	100.0%	66.7%	57.1%	60.0%	0.582
	Obese	33.3%	11.1%	0.0%	0.0%	0.0%	0.0%	
	Overweight	0.0%	44.4%	0.0%	33.3%	42.9%	40.0%	
Substance use	No	66.7%	0.0%	33.3%	66.7%	42.9%	40.0%	0.162
	Yes	33.3%	100.0%	66.7%	33.3%	57.1%	60.0%	
History of anxiety previously in exams	No	0.0%	55.6%	100.0%	33.3%	71.4%	80.0%	0.122
	Yes	100.0%	44.4%	0.0%	66.7%	28.6%	20.0%	

Family history of anxiety spectru	No	66.7%	88.9%	100.0%	33.3%	100.0%	100.0%	0.056
	Yes	33.3%	11.1%	0.0%	66.7%	0.0%	0.0%	
Branch	Non surgical	66.7%	88.9%	66.7%	100.0%	71.4%	60.0%	0.717
	Surgical	33.3%	11.1%	33.3%	0.0%	28.6%	40.0%	
Do you feel have any parenteral pressure	No	66.7%	55.6%	100.0%	66.7%	85.7%	100.0%	0.376
	Yes	33.3%	44.4%	0.0%	33.3%	14.3%	0.0%	
Do you feel any peer or societal pressure	No	0.0%	0.0%	100.0%	66.7%	14.3%	80.0%	0.002**
	Yes	100.0%	100.0%	0.0%	33.3%	85.7%	20.0%	
Period of preparation leave provided	1-2 weeks	100.0%	0.0%	33.3%	66.7%	57.1%	60.0%	0.016**
	2-3 weeks	0.0%	100.0%	66.7%	0.0%	42.9%	20.0%	
	3-4weeks	0.0%	0.0%	0.0%	33.3%	0.0%	20.0%	
Preparation status	Adequate preparation and able to recall	0.0%	0.0%	0.0%	33.3%	14.3%	0.0%	0.456
	Adequate preparation, but unable to recall	100.0%	88.9%	100.0%	66.7%	71.4%	60.0%	
	Inadequate preparation	0.0%	11.1%	0.0%	0.0%	14.3%	40.0%	
Reason of inadequate preparation	Extensive syllabus load	66.7%	88.9%	66.7%	0.0%	85.7%	60.0%	0.021**
	Lack of strategic planning	0.0%	0.0%	33.3%	100.0%	0.0%	20.0%	
	Lack of time management	33.3%	11.1%	0.0%	0.0%	14.3%	20.0%	
Time spent in sleeping a night before exam	1-3 hours	33.3%	33.3%	33.3%	0.0%	71.4%	0.0%	0.091
	3-5 hours	33.3%	44.4%	0.0%	100.0%	28.6%	80.0%	
	5-7 hours	33.3%	22.2%	66.7%	0.0%	0.0%	20.0%	
Does exam has impact on your sleep pattern	No	0.0%	11.1%	0.0%	0.0%	14.3%	0.0%	0.857
	Yes	100.0%	88.9%	100.0%	100.0%	85.7%	100.0%	
Are you aware about the anxiety reduction techniques and its use	No	66.7%	100.0%	66.7%	0.0%	57.1%	40.0%	0.039**
	Yes	33.3%	0.0%	33.3%	100.0%	42.9%	60.0%	

DISCUSSION

The Prevalence of anxiety in our study was found to be 73.3%. The mean Anxiety score was found to be 3.11 + 0.78. According to a survey conducted in India, 66.9% of medical students experienced anxiety. (7) Our study had sex distribution as 43.3% were male and 56.7% were female, however the association between gender and test anxiety was found to be statistically not significant ($P = 0.272$). In Tsegay *et al* (8) the population was 59.5% male and 40.5% female, however In this study also, the association between gender and test anxiety was found to be statistically not significant ($P = 0.40$). In a survey of medical students, anxiety was found to be significantly more common in women than in men (40% vs. 20%), indicating a gender gap (9). Present study indicates statistically significant associations between anxiety and upper middle socioeconomic status, high peer or societal pressure, inadequate period of preparation leave provided, inadequate preparation due to extensive syllabus load, and lack of awareness regarding anxiety reduction techniques. In Aktekin *et al* (10) unpleasant exam experiences, high workload and pressure to perform lead to an increase in exam-related anxiety.

CONCLUSION

This study reflects the need for assessing exam anxiety in medical postgraduates & the relevant associated factors. Appropriate preventive & intervention techniques addressing the above issues would help the medical postgraduates to alleviate stress & deal with performance related anxiety. We hope this study provides an impetus for medical educators to create supports as well as appropriate interventions that foster the well-being of medical students. While further research is needed to validate these findings, the present study adds a new perspective to the debate on the high prevalence of anxiety among medical students and it's effect on their exams.

REFERENCES

- Gallardo-Lolandes Y, Alcas-Zapata N, Flores JE, Ocaña-Fernández Y. Time Management and Academic Stress in Lima University Students. *International Journal of Higher Education*. 2020;9(9):32-40.
- Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, Rasoulpoor S, Khaledi-Paveh B. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: a systematic review and meta-analysis. *Globalization and health*. 2020 Dec;16(1):1-1.
- Abdulghani HM, AlKhanhal AA, Mahmoud ES, Ponnampereuma GG, Alfari EA. Stress and its effects on medical students: a cross-sectional study at a college of medicine in Saudi Arabia. *Journal of health, population, and nutrition*. 2011 Oct;29(5):516.
- Al-Mahini MS, Alsayid M, Al Jandali O. The impact of anxiety and depression on academic performance: a cross-sectional study among medical students in Syria. *Avicenna Journal of Medicine*. 2022 Jul 14;12(03):111-9.
- Cassady, J. & Johnson, R. (2001). Cognitive test anxiety and academic performance.

Contemporary Educational Psychology, 27, 270–295

- Hembree, R. (1988). Correlates, causes, effects and treatment of test anxiety. *Review of Educational Research*, 58(1), 47-77.
- Iqbal S, Gupta S, Venkatarao E. Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates. *Indian J Med Res* 2015;141:354-7.
- Tsegay L, Shumet S, Damene W, Gebreegziabhier G, Ayano G. Prevalence and determinants of test anxiety among medical students in Addis Ababa Ethiopia. *BMC Med Educ* 2019;19:423.
- Ghomasara SL, Davidson MA, Reich MS, Savoie CV, Rodgers SM. Assessing student mental health at the Vanderbilt university school of medicine. *Acad Med* 2011;86:116–21.
- Aktekin M, Karaman T, Senol YY, Erdem S, Erengin H, Akaydin M. Anxiety, depression and stressful life events among medical students: A prospective study in Antalya, Turkey. *Med Educ* 2001;35:12–7.