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Original Research Article

Prevalence of Exam Anxiety and Its Determinants among Medical Students

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Abstract:

Introduction: Exam anxiety also called as test anxiety is a psychological condition in which people experience extreme distress. Anxiety level among medical students is of rising concern in the present days.

Objectives: (1). To determine the prevalence of exam anxiety among medical students. (2). To assess the Socio-demographic determinants of exam anxiety among medical students.

Material and Methods: This cross-sectional study was conducted during December 2023 to January 2024 after the Institutional Ethical committee approval. The study proforma was distributed to second, third, and final-year undergraduates through an online Google forms link one month prior to the start of their university theory examinations. A proforma is created with the following sections: (a) Participant consent and General Information, (b) Examination Anxiety Scale (EAS).

Assessment Tool: The STAI-5 scales, derived from the Spiel Berger State-Trait Anxiety Inventory, gauge present and overall anxiety levels with 5-item versions for state and trait anxiety, evaluating immediate and general feelings. Individuals use a 4-point scale to rate their emotions.

Results: The prevalence of exam anxiety among students is around 77% and the prevalence of general anxiety among students is 28%. Female students, year of study, staying at hostel, frequency of communication with the parents and engaging in physical activity are the determinants of exam anxiety and it is statistically significant.

Conclusion: The prevalence of exam anxiety is very high among students, which is slightly more among female students compared to male students. Less physical activity and place of residence also showed higher prevalence of exam anxiety. There is a need for anxiety reduction programme for the benefit of the students as greater anxiety can give unsatisfactory results in both academics and non –academic activities.

Keywords: Exam Anxiety, General Anxiety, Prevalence, Medical students, Determinants.

Introduction

Exam anxiety also called as test anxiety is a psychological condition in which people experience extreme distress. It can be due to in response to the exam or its outcome. It can also manifest in the form of palpitations, sweating, cognitive problems like inability to recall. [1] Anxiety level among medical students is of rising concern in the present days.

A systematic review with aim of estimating the global prevalence of anxiety among Medical students reported it to be around 33.8% which means one in three suffering from high anxiety levels. [2] This distress can be in response to the Exam or its outcome. [3] When this distress is excessive in nature, it has been found to be impairing learning experience and test performance. [4,5] Test anxiety can affect the academic performance of students. Many studies have been conducted to identify and analyse the various factors affecting the academic performance of students. These factors include student's effort, learning preferences, entry qualifications, class attendance, anxiety, lack of motivation, lack of supervision, habits of study. [6] Students who suffer from test anxiety frequently experience distraction in exams and problems in preparing for exams. [7]

The various consequences of test anxiety include long period of the study, increased dropout rates at the University, exam failures, physical and psychological impairments. [8] Test anxiety reflects in student's complaints of lacking enough

time to prepare for the exams or study the course materials, or being dissatisfied with the academic performance in previous assessments. [9] Being a student at present time means living in a state of constant pressure generated by a series of factors that are related to both the academic environment as well as non-academic (economic difficulties, personal aspiration). Exam stress together with the lifestyle of the students can produce some unhealthy habits – excess consumption of caffeine, tobacco, psychoactive substances, and tranquillizers. It has been proven that while a moderate increase in the level of anxiety can be useful if motivates the student to increase their efforts and to focus their attention on the test. Exam anxiety manifestations can be in the form of physical symptoms like palpitation, sweating or in the form of cognitive symptoms like inability to recall what has been learned well or in form of mood-related symptoms like feeling depression, withdrawal symptoms. [10]

Objectives:

1. To determine the prevalence of exam anxiety among medical students
2. To assess the Socio-demographic determinants of exam anxiety among medical students.

Material and Methods:

This cross-sectional study was conducted during December 2023 to January 2024 after the Institutional Ethical committee approval. The study proforma was distributed to second, third, and final-year undergraduates through an online Google forms link one month prior to the start of their university theory examinations.

Embracing eco-friendly practices, electronic means was employed for both informed consent and data collection. Strict access controls will be implemented to safeguard the confidentiality of the gathered data. For every qualified participant a link to complete the survey along with an electronic informed consent was sent. Students were explicitly briefed on the study's purpose, confidentiality, and the voluntary aspect of participation, allowing withdrawal at any time. Those who gave their consent were the study subjects. To boost motivation to participate, the target audience were sent weekly reminders for a span of two weeks, after which we ceased the reminders. A proforma is created with the following sections: (a) Participant consent and General Information, (b) Examination Anxiety Scale (EAS). Information that will be gathered from the General Information section will encompass the following details - year of study, family type, type of residence, admission type, frequency of communication with parents, relationship status, quantity of close friends, pocket money, weekly physical activity, course selection motivation and previous experiences with anxiety.

Assessment Tool:

The STAI-5 scales, derived from the Spiel Berger State-Trait Anxiety Inventory [11], gauge present and overall anxiety levels with 5-item versions for state and trait anxiety, evaluating immediate and general feelings. Individuals use a 4-point scale to rate their emotions. These concise versions exhibit strong reliability, rendering them beneficial for swift anxiety evaluation in research settings. The reliability of the 5-item trait anxiety scale has been substantiated through assessments employing classical test theory and item response theory. The forms distributed via Google Forms to undergraduates taking university exams were downloaded after submission, consolidated in a Microsoft Excel spread sheet, and reviewed for proforma completeness. Only those with responses to all questions will be included in the analysis. Meanwhile, students also were sent with health education material after they completed the survey. The material emphasizes strategies for maintaining positive mental health before and during examinations.

Inclusion Criteria

1. 2nd, 3rd, 4th year medical students of a private medical college in central Karnataka.
2. Students who give voluntary consent.
3. Students who are appearing for examination

Exclusion Criteria

1. Those who are not giving voluntary consent
2. Those who are on psychiatric interventions.

Statistical Analysis: The data was analysed using SPPS version 16. Descriptive analysis like proportion, percentages, mean, standard deviation will be used for reporting socio demographic data and distribution of stress levels in the study subjects. Chi square test was used to see the association.

Results

Table 1: Socio-demographic details of the study participants

Category		Frequency	Percent
Gender	Female	247	54.3
	Male	208	45.7
Year of Study	2nd Year MBBS	140	30.8
	3rd Year MBBS	147	32.3
	Final Year MBBS	168	36.9

Type of Family	Joint	87	19.1
	Nuclear	368	80.9
Residence	Hostel	279	61.3
	Localite	78	17.1
	Outside campus	98	21.5
How frequently do you communicate with your parents?	A few times a week	110	24.2
	Almost everyday	297	65.3
	Once a month or less	11	2.4
	Two or three times a month	37	8.1
Relationship Status	In a Relationship	212	46.6
	Prefer not to say	81	17.8
	Single	162	35.6
Motivation for selecting the MBBS course	Persuasion	95	20.9
	Self-Interest	360	79.1
How much physical activity are you getting (You appreciate a noticeable increase in heart rate)??	Less than 150 minutes per week	320	70.3
	More than 150 minutes per week (20 minutes a day on average)	135	29.7
Total		455	100.0

Table 2: Prevalence of Exam Anxiety among students

Exam anxiety scores	Frequency (%)	General anxiety scores	Frequency (%)
> 9.5	348(77)	> 13.5	125(28)
< 9.5	107(24)	< 13.5	330(23)
Total	455	Total	455

Table 2: Prevalence of anxiety during exams among students is 77% and anxiety is around 28% among students throughout and not only during exams.

Table 3: Socio demographic determinants of exam anxiety among students

Determinants		Anxious During exams	Non – Anxious During exams	Chi square and p value
		> 9.5	< 9.5	
Gender	Female	186(53)	61(57)	0.518
	Male	162(47)	46(43)	
Year of Study	2nd Year MBBS	120(34)	20(19)	**0.001**
	3rd Year MBBS	114(39)	33(31)	
	Final Year MBBS	114(33)	54(51)	
Type of Family	Joint	60(17)	27(25)	0.06
	Nuclear	288(83)	80(75)	
Residence	Hostel	210(60)	69(65)	**0.02**
	Localite	54(16)	24(22)	
	Outside campus	84(24)	14(13)	
How frequently do you communicate with your parents?	A few times a week	95(27)	15(14)	**0.03**
	Almost everyday	218(63)	79(74)	
	Once a month or less	9(3)	2(2)	
	Two or three times a month	26(8)	11(10)	
Relationship Status	In a Relationship	53(15)	16(15)	0.07
	Prefer not to say	55(16)	27(25)	
	Single	240(69)	64(60)	
Motivation for selecting the MBBS course	Persuasion	78(22)	17(16)	0.14
	Self-Interest	270(78)	90(84)	
How much physical activity are you getting (You appreciate a noticeable increase in heart rate)??	Less than 150 minutes per week	253(73)	67(63)	**0.04**
	More than 150 minutes per week (20 minutes a day on average)	95(27)	40(37)	
Total		455	100.0	

Table 3: Anxiety during exams among female students is slightly higher when compared to male students. 2nd year students had higher scores of anxiety during exams and it is statistically significant. Students staying in hostel had higher scores of anxiety and it is significant. 73% of the students doing less than 150 minutes of physical activity have higher scores of anxiety which is statistically significant.

Discussion

Our study described that the prevalence of anxiety during exams among students was 77% and general anxiety was around 28% among students. In a study conducted in Kolkata, [12] around 30% of the students suffered from moderately high test anxiety during exams. 8% of them with comfortably low test anxiety, 11% with extremely high test anxiety. In a similar study by Khalid et al., [13] 65% of the students experienced exam anxiety and 25 % of the students study all night before exams due to anxiety.

The anxiety levels were 17%, 77% and 6% mild, moderate and severe respectively in a study conducted by Joseph N et al., [14] A study conducted in Malaysia showed a prevalence of test anxiety to be 18% which is very less compared to our results. In a study conducted by Stover J et al., [15] in Malaysia the prevalence of test anxiety is high around 52%. In similar studies conducted by Roy et al., [12] Brouse CH [16] et al., Glym SM [17] et al., in various places, the prevalence of exam anxiety to be 59%, 64% and 61% respectively which is similar to our results. Sharma [18] et al., reported that 15% of the students showed high normal exam anxiety levels and 50% of the students showed high anxiety levels.

A systematic review with the global prevalence of anxiety among medical students reported to be 34%, one in three students suffer from exam anxiety. Few other studies reported a prevalence of 25 -50%. Tsegay [19] et al., reported a prevalence of exam anxiety to be 52%, Saravananan C [20] et al., reported 28%, in a similar study conducted in Vijayapura, [21] a prevalence of exam anxiety of 37%, 28% and 32% among 1st year, 2nd year and 3rd year medical students respectively.

Our study reported anxiety during exams among female students was slightly higher when compared to male students. Similar studies conducted by Stober J [15] and Khalid [13] et al., described anxiety levels more among female students. In a study conducted by Roy et al., showed male students had higher levels of anxiety compared to female students. Studies conducted by Sharma [18] et al., and Patil SG [21] et al., showed higher levels of examination anxiety among female students. No specific gender difference in anxiety scores were seen in a study done by Zhang Z1 et al., A study conducted by Memon I [22]et al., described a significant association between gender and high test anxiety scores, higher prevalence among females.

Our study reported that, 2nd year students had higher scores of anxiety during exams and it is statistically significant. Similar results were seen in a study conducted by Glym17et al., were second year students had lower odds of having test anxiety than first year students. Students in the age group 20 years or more had lower levels of anxiety scores in a study conducted by Memon I [22] et al.

Students staying in hostel had higher scores of anxiety and it is significant. In a study conducted by Roy SK [12] et al., reported that coming from a nuclear family and staying at home during exams had greater odds of having anxiety than their counterparts. Roy SK [12] et al., in their study reported that on assessing lifestyle and behavioural factors, 40 % of the students who had anxiety during exams were abusing tobacco and alcohol, in a similar study conducted by Sharma et al., [18] et al., where students abusing alcohol, tobacco had higher odds ratio of 1.52 for having higher anxiety levels.

Our study reported that, 73% of the students doing less than 150 minutes of physical activity have higher scores of anxiety which is statistically significant. Study results conducted by Roy SK [12] et al., showed that 51% of the students were engaged in indoor or outdoor games, 54% of the students involved in music or dance like extracurricular activities, more than 50% of the students were involved in reading books who had less exam anxiety. Similar studies conducted by Sharma [18] et al., Grewal [23] et al., and Rodger S et al., reported that students generally involved in yoga, games, reading books, music had less anxiety levels were getting involved in physical activity and extracurricular activities played an important role in alleviating anxiety level.

Conclusion and Recommendation:

The prevalence of exam anxiety is very high among students, which is slightly more among female students compared to male students. 2nd year students had higher prevalence of exam anxiety when compared to other year students. Less physical activity and place of residence also showed higher prevalence of exam anxiety. There is a need for anxiety reduction programme for the benefit of the students as greater anxiety can give unsatisfactory results in both academics and non – academic activities. Involving students in different extra-curricular activities like outdoor games, yoga, playing music may be helpful in alleviating anxiety level.

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