

Level of Exam Anxiety in Students of a Public Sector Medical College, Lahore

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Abstract:

Background: This study examines the anxiety levels experienced by medical students during their academic journey in medical sciences. For many, approaching exams feels like an arduous and stressful endeavor.

Objective: To evaluate the extent of examination-related anxiety among students at a public medical college.

Methods: This study follows a cross-sectional, descriptive, and quantitative design. Participants, comprising students from public medical colleges in Lahore, were included after obtaining their informed consent. Data collection was carried out using a structured questionnaire, and the analysis was conducted using SPSS software version 27. Qualitative data were summarized using frequencies and percentages. To analyze the results, statistical methods such as the chi-square test and independent t-test were applied, with a significance threshold set at 5% or less.

Results: Among the 350 female participants, the average age was 23.6 ± 2.1 , a small proportion exhibited low anxiety levels during exams, Students were asked to rate their perceived level of exam anxiety on a scale from 0 to 100. The responses were categorized into three levels: 51(55.00%) reported maximum anxiety in 2nd Prof. year, in 3rd Prof 80(72%), students suffering moderate anxiety, while in 4th Prof. mostly students 38(46%) showed moderate anxiety during exam but students of final Prof maximum anxiety noted as 33(50%) with statistically significant p-value as 0.001.

Conclusion: The study determined that exam anxiety was at a moderate to severe level during different profs as measured by the Visual Analogue Scale. To address this, teachers, parents, and college administrations should collaborate to implement strategies that help reduce stress and promote a healthier lifestyle.

Keywords: Visual Analogue Scale, Exam Anxiety, Anxiety

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Introduction:

Exam anxiety is a significant concern within university education systems.¹ It is a specific form of anxiety marked by physical,

cognitive, and behavioral symptoms that arise while preparing for or taking exams. This becomes problematic when high anxiety levels hinder effective preparation and

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performance. Test anxiety is characterized by an intense fear of underperforming.² It is an emotional response accompanied by feelings of unease and worry during situations where an individual's performance is being assessed.³ Exam anxiety involves fear, apprehension, and stress before, during, or after an exam, often leading to mental distraction, memory issues, and physical symptoms such as nausea, headaches, and tachycardia.⁴

Research indicates that approximately 15% of students experience varying degrees of anxiety each year.^{5,6} Tsegay et al.⁷ reported that 52.3% of medical students faced test anxiety, with significantly higher prevalence among females. Test anxiety plays a crucial role in determining academic success.⁸ It can lead to reduced intrinsic motivation and impaired cognitive ability, potentially causing academic failure.⁹ Test anxiety as self-preoccupation; dominated by self-defeat or lack of confidence in his/her abilities. This form of anxiety often manifests as self-preoccupation, characterized by self-doubt, low confidence, and negative physiological responses, which, in turn, adversely affect academic performance. Studies consistently show a strong inverse relationship between anxiety levels and test scores.¹⁰ For instance, Cassady's research revealed that students with higher levels of test anxiety tended to achieve poorer academic results.¹¹

Students often adopt coping mechanisms to manage and control anxiety. Coping involves efforts to address and navigate challenging or stressful situations. There are two primary coping strategies: problem-focused and emotion-focused approaches. Problem-focused strategies aim to address and resolve the root cause of anxiety, while emotion-focused strategies seek to quickly alleviate or transform emotional distress.^{12,13} noted that students often manage their anxiety through traditional methods, such as reflecting on positive past memories, engaging in prayer, and eliminating negative thoughts and beliefs.¹³ Medical students, in particular, face

immense academic and professional challenges, which can result in significant stress and anxiety.¹⁴ Moreover, societal expectations place additional pressure on these students, who must excel in a highly competitive environment. Studies have consistently indicated that medical students face greater psychological distress than students in other academic disciplines.¹⁵ Recent studies conducted in various countries, including the UK, have highlighted concerning levels of psychological stress among medical students.¹⁶

Stress and anxiety adversely impact academic performance, reduce empathy, and, in some cases, trigger thoughts of dropping out or even suicidal ideation, particularly among first-year medical students. Medical schools have a responsibility to develop graduates who are not only knowledgeable and skilled but also professional and emotionally resilient. This obligation necessitates addressing the issue of student distress.¹⁷ Initiatives such as stress-relief programs, counseling services, and targeted academic support for struggling students can play a significant role in mitigating these challenges.¹⁸

Medical colleges and universities are tasked with ensuring their graduates are not only well-educated and skilled but also emotionally and mentally prepared to navigate the challenges of this demanding profession. Understanding the factors contributing to exam anxiety and stress among medical students is essential, making it crucial to develop effective interventions and support systems.¹⁹

The prevalence of psychological distress among medical students is widely documented, with research from various countries highlighting significant levels of anxiety, depression, and related mental health challenges. Compared to the general student population, medical students experience notably higher levels of psychological distress.²⁰

Public-sector medical students, in particular, are more prone to severe stress and anxiety, which can lead to serious consequences. Some studies link these high stress levels to reduced empathy, suicidal thoughts, and diminished academic performance. Consequently, it is essential for medical schools to ensure their graduates are not only knowledgeable and skilled but also emotionally and mentally resilient to meet the demands of the medical profession.²¹

Stress and anxiety significantly impact academic performance, empathy, and can even lead to higher dropout rates or suicidal thoughts among first-year medical students. Medical schools have the critical responsibility of producing graduates who are not only well-trained and knowledgeable but also emotionally resilient and professional. In Pakistan, research has shown that anxiety levels among medical students are alarmingly high, with prevalence rates ranging from 44% to 74.2%.²¹ This study focuses on identifying the causes of stress and anxiety among high-achieving students at a public-sector medical college in Lahore, Pakistan, and aims to propose practical solutions to address these issues. The study seeks to assess the prevalence of exam anxiety and explore the factors influencing it among medical students at a public-sector medical college in Lahore, Pakistan.

Methodology:

This cross-sectional study was conducted at a public medical college in Lahore, focusing on students enrolled in the MBBS program. A sample size of 350 was calculated using a 95% confidence interval, a 5% margin of error, and an assumed prevalence of 50%. Participants were selected through simple random sampling. Exam anxiety levels were assessed using the Visual Analogue Scale (VAS), which ranges from 0 (no anxiety) to 100 (severe anxiety). Students from the second to the final year were selected for the study because they had experienced professional exams during their time in college. Final-year students had taken four exams, whereas

second-year students had only participated in one exam.

Data was gathered through a self-administered questionnaire that included demographic details, along with the Visual Analogue Scale (VAS), a validated tool for assessing the cognitive component of test anxiety, a key aspect of overall exam anxiety.²¹ Descriptive statistics were used for data analysis, and chi-square tests were applied to examine the relationship between exam anxiety and various demographic factors.

Results:

The mean age of the participants was 23.6± 2.1 years. The majority of students 183(52%) belonged from ≥ 22+ years age group. Most participants belonged from 3rd year 111(31%), followed by 2nd year 92(26%), 4th year 83(24%) and final year 66(19%) respectively. (Table 1)

Table 1: Background characteristics of study participants

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Characteristics	Frequency (%)			
Age	23.6± 2.1			
Age Group	≤ 21 years old	167(48%)		
	≥ 22+ years old	183(52%)		
Professional Year	2 nd	3 rd	4 th	Final
	92(26%)	111(31%)	83(24%)	66(19%)

Table 2 Symptoms of Anxiety among Students

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Factors	Yes	No
Feel increased heart beat?	250 (71%)	100(29%)
Experience disrupted sleep patterns?	223(64%)	127(36%)
Experience weight gain or loss during examination?	208(59%)	142(41%)

Table 2 presents the anxiety symptoms among female students. Around 250 students (71%) experienced increased heart rate, 223(64%) reported disrupted sleep patterns and 208(59%) students experienced disturbances in weight during exams.

Table 3 Level of Exam Anxiety among students based on Visual Analogue Scale

Professional	Level of Anxiety (Visual Analogue Scale)			p-value
Professional Year	Mild anxiety (0-35)	Moderate anxiety (36-65)	Maximum anxiety (66-100)	
2 nd Prof	5(5%)	30(39%)	51(55%)	0.001
3 rd Prof	17(15%)	80(72%)	14(13%)	
4 th Prof	8(10%)	38(46%)	37(45%)	
Final Prof	12(18%)	21(32%)	33(50%)	

Students were asked to rate their perceived level of exam anxiety on a scale from 0 to 100. The responses were categorized into three levels: 51(55.00%) reported maximum anxiety in 2nd Prof year, in 3rd Prof 80(72%), students suffering moderate anxiety, while in 4th Prof. mostly students 38(46%) showed moderate anxiety during exam but students of final Prof maximum anxiety noted as 33(50%) with statistically significant p-value as 0.001.

Discussion:

The notion that examinations contribute to anxiety has been widely acknowledged and discussed in numerous published studies. However, some still argue against the existence of exam-related anxiety. It is also a well-established observation that females are more susceptible to this form of anxiety, with a significant body of research providing substantial evidence to support this claim.²⁴ Various explanations have been proposed to account for this gender difference. These include the tendency among females to over-report physical and psychological symptoms, heightened stress due to personal expectations and perceived lack of ability, and an amplified concern about the quantity and complexity of the material they need to study.

The current study included 350 female students, highlighting the encouraging participation of women in medical education. The study focused on students from the second to final years, as they had experience with professional examinations during their time in college. The findings of current study showed that Students were asked to rate their

perceived level of exam anxiety on a scale from 0 to 100. The responses were categorized into three levels: 51(55.00%) reported maximum anxiety in 2nd Professional year, in 3rd Prof 80(72%), students suffering moderate anxiety, while in 4th Prof. mostly students 38(46%) showed moderate anxiety during exam but students of final Prof maximum anxiety noted as 33(50%) with statistically significant p-value as 0.001.

Rahman et al. conducted a study with 240 participants, of whom 114 (47.5%) were 21 years old or younger, and 126 (52.5%) were 22 years or older. The sample included 87 male students (36.3%) and 153 female students (63.7%). Regarding academic year distribution, 25 students (10.4%) were in their second year, 68 (28.3%) in their third year, 99 (41.3%) in their fourth year, and 48 (20%) in their fifth year. Moreover, 86 students (36.1%) were from nuclear families, while 152 (63.9%) belonged to joint family systems.²⁶

When exam-related anxiety escalates beyond certain limits, it can lead to sleep deprivation and difficulty concentrating causing significant harm. Overall, the prevalence of exam-related anxiety appears to be relatively low, possibly due to improved student-teacher relationships over the years, with educators adopting a more empathetic approach toward students' challenges.²⁷⁻²⁸ A study by Tsegay et al. involving 423 medical students found that the prevalence of problematic test anxiety was 52.30% (95% CI: 47.40–57.30). Test anxiety was significantly higher among female students (79.75%) compared to male students (33.62%). Factors associated with test anxiety included being female (AOR = 3.25), achieving lower grades (AOR = 0.11), being in the first year of study (AOR = 10.55), heavy coursework, and oral examinations. Additional predictors identified were an absence of a structured study plan (AOR = 2.4), insufficient social support (AOR = 3.6 for poor support and AOR = 3.39 for moderate support), and psychological distress (AOR = 2.68).²⁹

Memon et al. conducted a cross-sectional study to assess exam anxiety among medical students from the third to sixth years before their final exams for the academic year. The study found a significant association between gender and high exam anxiety ($p < 0.001$), with higher levels observed in females (47.9%) compared to males (22.5%). Although not statistically significant, anxiety was more prevalent among 20-year-old students (34%) and those with a GPA between 4.00 and 4.49 (37.9%). Anxiety levels showed a decline as students progressed in their studies, decreasing from 37.9% in the third year to 9.1% in the sixth year ($p = 0.073$). Students who studied five or more days per week experienced lower anxiety levels (26.7%). No significant difference was observed between students studying alone and those studying in groups. Additionally, while the difference was not statistically significant ($p = 0.754$), studying from textbooks appeared to result in slightly less anxiety (29% compared to 33%).³⁰

Conclusion:

This study highlights a moderate to severe level of exam anxiety during the different years of their study period as measured by the Visual Analogue Scale (VAS). Collaboration among teachers, parents, and college administrators is essential to alleviate stress and implement strategies that encourage a healthier lifestyle. Incorporating stress and time management training into the first-year curriculum could also prove beneficial.

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