

*Original Article*

## Psychological Distress in Early Medical Training: A Study of Anxiety and Its Correlates with BMI

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### ABSTRACT

**Background:** Mental health disorders among university students have emerged as a growing global concern, particularly among medical students who are exposed to intense academic and emotional stressors in medical field. Therefore, we are conducting this study amongst first year MBBS students.

**Methods:** 125 MBBS students giving consent were selected and questionnaire was given to assess the anxiety according to Hamilton Anxiety Scale.

**Results:** We found that anxiety is significant in First MBBS students; females are more affected than males with anxiety score being  $16.36 \pm 7.02$  and  $11.12 \pm 6.41$  respectively. The BMI was positively correlated with anxiety levels.

**Conclusion:** Anxiety is common among newly admitted medical students, with higher levels observed in females. Early identification and intervention strategies are essential to improve mental wellbeing.

**Key words:** Anxiety, Hamilton Anxiety Score, Medical students, Questionnaire

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## INTRODUCTION

Medical students are exposed to substantial academic, psychosocial, and existential challenges as they adjust to a new college environment and demanding schedules.<sup>[1,2]</sup> Mental health disorders among university students have emerged as a growing global concern, particularly among medical students who are exposed to intense academic and emotional stressors.<sup>[3]</sup>

Anxiety, characterized by excessive worry and physiological arousal, is one of the most prevalent psychological conditions in this population.<sup>[4]</sup> Academic factors such as vast syllabus, fear of failure, and high expectations, along with non-academic stressors like separation from family and social pressures, contribute to increased anxiety levels.<sup>[5,6]</sup> Early identification of anxiety and associated factors is essential for timely intervention. Therefore, it is important to evaluate symptoms of depression, anxiety, and stress in this population to enable timely intervention and prevent potential psychiatric morbidity. Psychological distress during medical training can impair cognitive function, academic performance, and professional development.<sup>[7]</sup>

Body Mass Index (BMI) has been increasingly explored in relation to mental health. Studies suggest a complex relationship between BMI and anxiety, possibly mediated through behavioral, hormonal, and lifestyle factors.<sup>[11,12]</sup> Both undernutrition and obesity have been linked with psychological disturbances.<sup>[12]</sup>

## METHODS

A Cross-sectional observational study was conducted in a tertiary care centre in September 2025 after the approval of the Ethics Committee taking. 125 First MBBS students giving consent for the study were selected. The students were asked to fill in the anxiety questionnaire without knowing the interpretation of the scoring system. History of any chronic illness or any kind of psychiatric illness was ruled out.

A google form was created asking for demographic details, reason to join the course, usage of phones, psychological assessment to assess the level of anxiety and stress. The scoring of each response was kept anonymous. Hamilton Anxiety Scale was applied. All the data were recorded in Excel (Microsoft Corporation) and assessed for accuracy. The summary of responses was depicted in a pie chart on Google forms. The statistical analysis was completed using SPSS, version 25.

## RESULTS

The percentage of females was 88.75%. 98.4% of the students took the course with self-interest. 92% of students were residents of the hostel.

The mean anxiety score was found to be 11.12± 6.41; 16.36± 7.02 in male and female students respectively. The level of anxiety is more in females as compared to males. We found that almost 12% of students feel anxious every day; 16% are unable to stop worrying; 19 Students are having trouble sleeping and 25 students cannot concentrate on regular basis, and they have a significant history of spending time on their mobile phones.

This needs further evaluation. Table 1 and graph 1 show the data of the google form signifying anxiety.

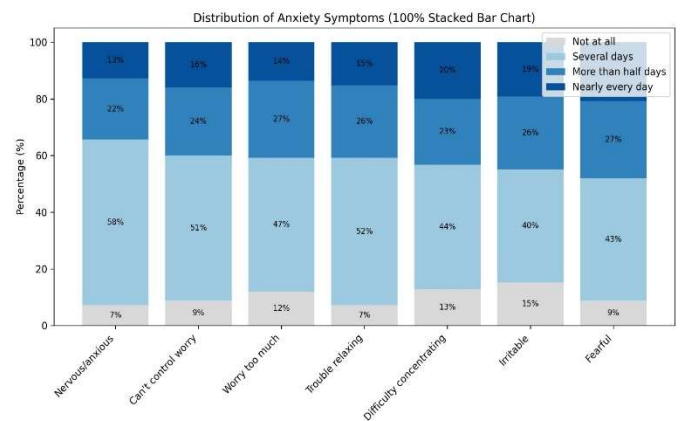


Figure 1: Distribution of Anxiety

When the students were assessed with their demographic data a significant finding was derived suggesting Anxiety and BMI were correlated and it is not gender biased.

Table 1: Comparison of BMI and Anxiety score among males and females

Gender	N	BMI	P value	Anxiety Score	P value
Male	54	25.81±3.2	<0.001	11.12± 6.41	<0.001
Female	71	22.43±2.9		16.36± 7.02	

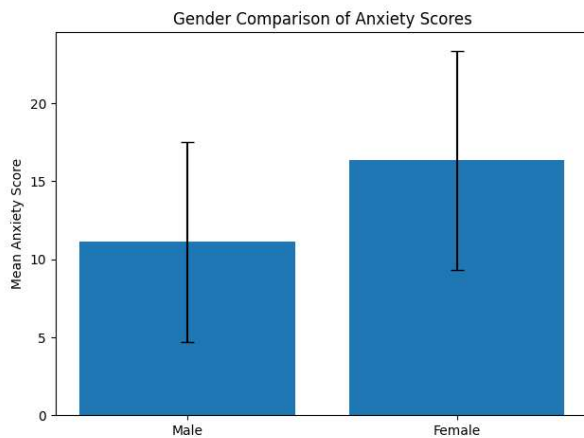
**Table 2: Anxiety assessment in 125 First MBBS students**

Anxiety Parameter	Not at all n (%)	Several days n (%)	More than half days n (%)	Nearly everyday n (%)
Feeling nervous/ anxious/on edge	9 (7%)	73 (59%)	27 (22%)	16 (12%)
Unable to stop/control worrying	11 (9%)	64 (51%)	30 (24%)	20 (16%)
Worrying too much about different things	15 (12%)	59 (47%)	34 (27%)	17 (14%)
Trouble in relaxing/Insomnia	9 (7%)	65 (52%)	32 (26%)	19 (15%)
Difficulty to concentrate	16 (13%)	55 (43%)	29 (23%)	25 (21%)
Becoming easily annoyed/irritable	19 (15%)	50 (40%)	32 (26%)	24 (19%)
Feeling afraid as if something awful might happen	11 (9%)	54 (43%)	34 (27%)	26 (21%)

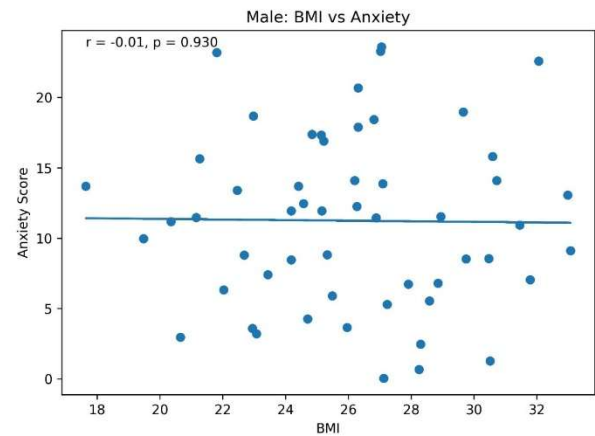
When the students were assessed with their demographic data a significant finding was derived suggesting Anxiety and BMI were correlated and it is not gender biased.

**Table 3: Comparison of BMI and Anxiety score among males and females**

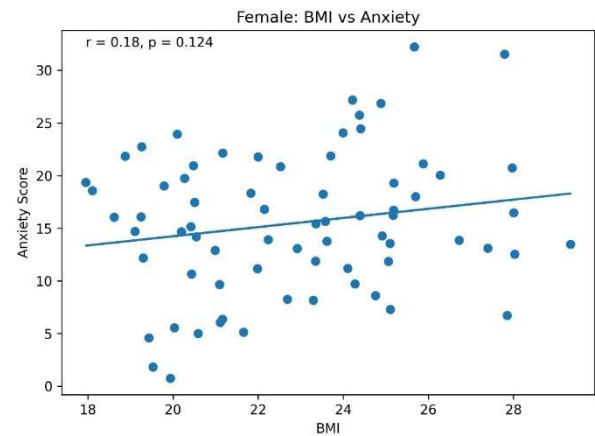
Gender	N	BMI	P value	Anxiety Score	P value
Male	54	25.81±3.2	<0.001	11.12±6.41	<0.001
Female	71	22.43±2.9		16.36±7.02	



**Figure 2: Mean Anxiety Score in Males and Females**



**Figure 3: Correlation between Anxiety and BMI in Males**



**Figure 4: Correlation between Anxiety and BMI in Females**

## DISCUSSION

The present study demonstrates a high prevalence of anxiety among first-year MBBS students, consistent with earlier research across diverse populations.<sup>[1]</sup> The transition into medical education represents a critical period characterized by academic overload, adaptation to a new learning environment, and psychosocial adjustments. These stressors make first-year students particularly vulnerable to anxiety and related disorders.<sup>[2,5]</sup> A landmark systematic review by Liselotte N. Dyrbye et al. reported that medical students consistently exhibit higher levels of psychological distress compared to the general population, reinforcing the findings of the present study

The study was conducted to assess the level of anxiety based on the questionnaire in first MBBS students. We found that the anxiety in females is more than the males.<sup>[13,14,15]</sup> Similar findings were reported by Roh et al., who demonstrated a higher prevalence of psychological morbidity among female medical students.<sup>[10]</sup> This is found in a study conducted by Smita Mokal et al in 2020, Roopam Bassi, et al. in 2014, Dr. Havana Kasukurti1, et al., in 2021.<sup>[14]</sup> There was no significant data on the anxiety levels between hostellers and day-scholars.

An important finding of this study is the observed correlation between Body Mass Index (BMI) and anxiety levels. This is in accordance with previous studies suggesting a link between physical health and psychological wellbeing.<sup>[11,16]</sup> Ma and Xiao demonstrated a significant association between obesity and mental health disorders, particularly anxiety and depression. The anxiety levels generated significant positive correlation with the BMI in males and females both. Similar findings were noted by studies done by Roopam Bassi et al.<sup>[11]</sup> Furthermore, increased screen time, as observed in the present study, may contribute to worsening anxiety levels by disrupting circadian rhythms and reducing physical activity. Although not directly assessed in detail, this factor warrants further investigation into future studies.

To evaluate further, clinical assessments should be done.

Sample size must be increased to assess the condition at National level; to do the root cause analysis and suggest better conservative and preventive guidelines. Another study by Moulika Muthe et al., suggested a 6-week yoga and meditation program on stress and anxiety. The mean Perceived Stress Scale (PSS) 0PSS score in the case group decreased to  $17.2 \pm 3.8$ , and the mean Beck Anxiety Inventory (BAI) score was decreased to  $15.6 \pm 4.2$ .<sup>[12]</sup>

## CONCLUSION

The anxiety is positively correlated with BMI. Anxiety needs further clinical evaluation. Screen time analysis and preventive management of stress and anxiety using Yoga and meditation is recommended.

## DECLARATIONS

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