Global Journal of Medicine & Public Health

Assessment of Anxiety Disorder in First Year Undergraduate Students of a Medical College in Ahmedabad, Gujarat,India

Sweta Desai[1], Sheetal Shrimali[2], Rachna Kapoor[3], Chetan Prajapati[4], Parth Joshi[5], Bhargav Dave[6]

ABSTRACT

Introduction: Medical education is competitive across the globe. It is considered to be one of the most academically and emotionally demanding training programs out of any profession.

Objectives: Assessment of level of anxiety amongst newly admitted first year undergraduate medical students.

Methods: Cross sectional study was carried out amongst students by using a pre-designed and pre-tested, semi structured questionnaire. Hamilton Anxiety Rating scale (HAM-A) was used for assessing the level of anxiety. Google form was prepared and explained to the students and responses were collected.. 167 students participated in this research.

Result: Out of total 167 students,75(44.91%) were boys and 92(55.09%) were girls. Mean age of boys and girls was 18.16 + 0.77 and 17.91 + 0.77 years respectively.103(61.68%) were residing in hostels. Forty (53.33%) boys and 36(39.13%) girls had no anxiety ,35(46.67%) boys and 53(57.61%) girls had mild anxiety, none of boys have moderate to severe type of anxiety, 2(2.17%) girls have moderate type of anxiety and 1(1.08%) girl has severe type of anxiety.Fifty- nine (35.33%) students are using relaxation method to relieve anxiety. The mean HAM-A score was 7.42 ± 3.65, indicating mild anxiety levels overall. There is no significant difference in anxiety levels as per age, gender, type of residence and different living situation.

Conclusion: Though the anxiety level as assess by HAM-A scale amongst the medical students was high but the overall mean score of anxiety was very low and all had only mild level of anxiety. These findings highlight the importance of early psychological orientation and stress management sessions to help students adapt to the demanding medical curriculum.

Keywords: Anxiety, Hamilton anxiety rating scale, Medical Students, Relaxation practice

GJMEDPH 2025; Vol. 14, issue 4 | OPEN ACCESS

6*Corresponding author: Bhargav Dave, MD (Tutor, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India). ORCID: 0009-0000-5570-9699, Email: bbdave1307@gmail.com; 1. Sweta Desai, MBBS (Resident Doctor, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India). ORCID: 0009-0000-6661-963X; 2. Sheetal Shrimali, MD (Professor & Head, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India). ORCID: 0000-0002-2756-6608; 3.Rachna Kapoor, MD (Associate Professor, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India). ORCID: 0009-0000-8424-9169; 4.Chetan Prajapati, MBBS (Resident Doctor, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India); 5.Parth Joshi, MBBS (Resident Doctor, Department of Community Medicine, Narendra Modi Medical College, Ahmedabad, Gujarat, India). ORCID: 0009-0007-2493-4798

Conflict of Interest—none | Funding—none

INTRODUCTION

Medical education is one of the most academically and emotionally demanding training programs.[1] Assessment is perceived to create a highly stressful environment among medical students.[2] College students, who are in a transitional phase from adolescence to adulthood, face significant challenges during this period[3] The sudden exposure to an extensive medical curriculum after school education creates pressure to perform better and compete with peers. In addition, prolonged use of social media contributes to sleep deprivation and reduced academic performance .[4] Many students live away from home for the first time, adjusting to new environments while feeling anxious about their future.[3] Those living in shared accomodation may experience additional stress due to noise and distractions. Compared with other Undergraduate programmes, medical studies are generally e more stressful because of the rigorous curriculum and frequent evaluations, leading to emotional strain.[5] Anxiety is considered as a state of uneasiness, it's a bodily response to a perceived danger that could be real or imaginary and triggered by an individual's thoughts, beliefs and feelings. Although a certain amount of stress can foster competition and motivation, excessive stress may lead to anxiety helplessness, and stress-related disorders, ultimately affecting both academic and non-academic performance.[6].

In view of these concerns, the present study was conducted with following objectives:

1. Assessment of level of anxiety among newly admitted first year undergraduate medical students.
2. To study the association of level of anxiety with their selected socio-demographic characterisitics.

Methods:

A cross-sectional study was conducted amongst first year MBBS students of batch 2023-24 in a Medical College of Ahmedabad during the month of October-November 2023. Ethical approval was taken from institutional review board (IRB/2024/132)

Inclusion criteria: First year MBBS students of batch 2023-24 who were present on the day of assessment.

Exclusion criteria: Students who did not give consent.

Google form was prepared which consisted of two parts of questionnaire. Questionnaire included following parts: (A)The first part of the questionnaire to assess sociodemographic profile of the participants such as age, gender, height, weight, residence, living condition (B) The second part contained Hamilton Anxiety rating (HAM-A) Scale questionnaire. The questionnaire has both open and close ended questions. There is total fourteen questions in 2nd part questionnaire and in each question, scores are given from 0 to 4. The total score ranged from 0 to 56. In HAM-A scale, score 0 corresponds with no anxiety, 1 to 17 corresponds with mild anxiety ,18 to 24 corresponds with moderate anxiety, 25 to ≥ 30 corresponds with severe anxiety. All the first year MBBS students who were present on the day of assessment were given a predesigned and pretested questionnaire-based goggle form via link in a classroom. Students were explained about the purpose of study, details of proforma and various parameters they are supposed to response. Informed Consent and assent form of the students was taken prior to filling the form. The information was collected by providing them the link for the google form in presence of investigators in a classroom and response was collected on the spot. The information was entered in Microsoft excel. Qualitative data was presented by number and proportion, quantitative data was presented as mean and standard deviation. Appropriate parametric and non-parametric test was applied to test statistical significance. To ensure standardization while using HAM-A (a clinician-rated scale), the investigators provided clear written instructions and illustrative examples to help students interpret each item consistently. Responses were collected under supervision to reduce variability. As the HAM-A was self-administered via Google Form, potential response bias was acknowledged as a limitation. Efforts to improve reliability included anonymity assurance and internal consistency checks.

Results:

A cross-sectional study was conducted among 167 first year students for assessing anxiety level and following results were obtained.

Out of 200 students, response was taken of 167 students as 33 students were absent on the day of

data collection for present study. Among them, 75 (44.91%) were boys and 92 (55.09%) were girls. Male/Female Ratio 8.1:10. Age range was 17-20 years. Mean Age of boys and girls was (18.16 ± 0.77 years) and (17.9 ± 0.77 years) respectively.

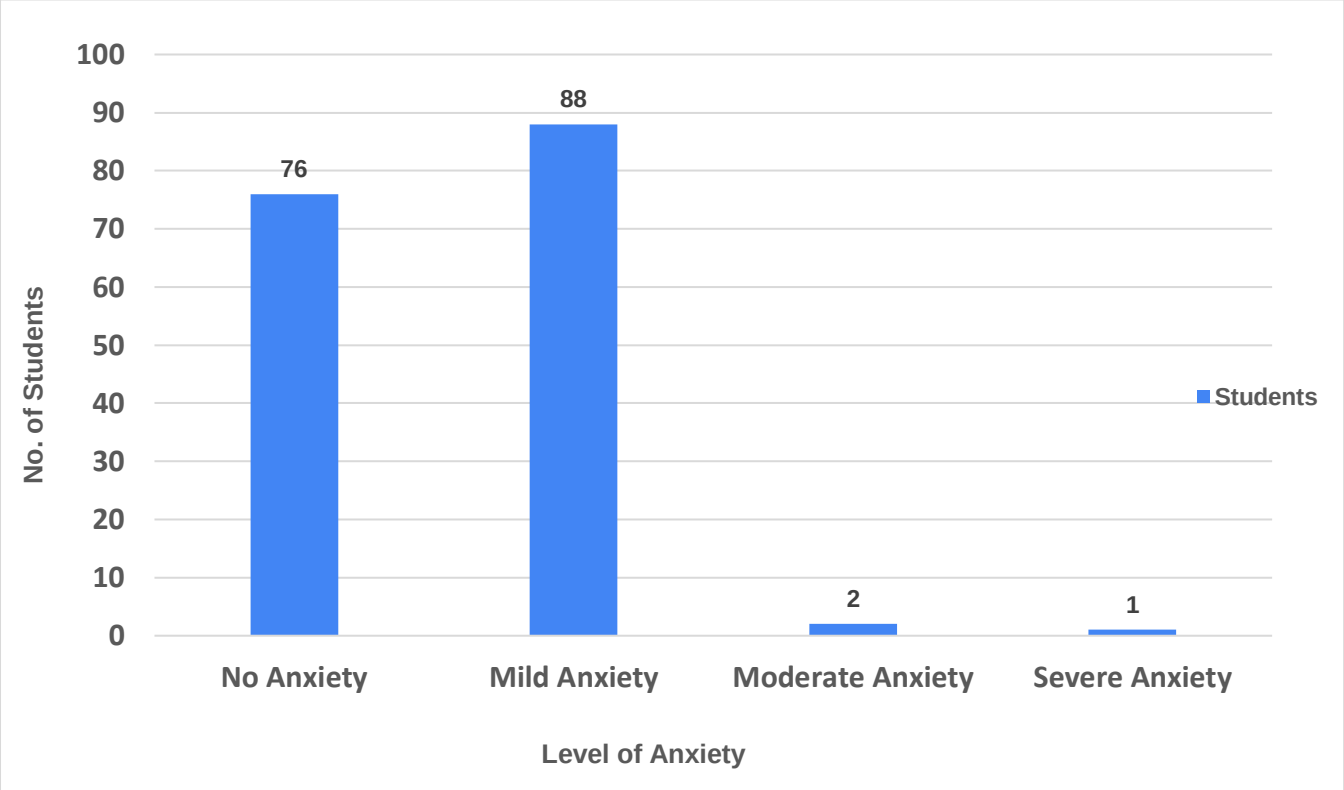
Mean BMI for boys and girls was 23.89 ± 4.62 kg/m^2 and 20.14 ± 4.61 kg/m^2 respectively. Boys had significantly higher BMI as compared to girls. (Z Score = 5.22 P Value = 0.00001). One boy (1.33%) and three girls (3.26%) had addiction. Five (3%) and 6 (3.59%) had past and family history of psychiatric illnesses respectively. There is no statistically significant difference between boys and girls regarding their addiction, past history and family history of psychiatric illness. (Table 1)

Table1: Profile of students

Variable	No (%)		Z score / p value
1. Age (Years)	Boys	Girls	
17	16(21.33)	28(30.43)	0.8 / 0.42
18	33(44)	45(48.91)	0.47 / 0.64
19	24(32)	18(19.56)	0.0315 / 0.98
20	2(2.67)	1(1.08)	0.42 / 0.67
2. BMI (kg/m2)			
<18.5	10 (13.33)	36 (39.13)	5.22 / 0.00001
18.5-24.9	36 (48)	47 (51.08)	
25-29.9	22 (29.33)	7 (7.06)	
30-34.9	7 (9.33)	2 (2.17)	
35-39.9	0 (0)	0 (0)	
>40	0 (0)	0 (0)	
3. Addiction			
Yes	1 (1.33)	3 (3.26)	0.81/0.42
No	74 (98.66)	89 (96.74)	
4. Family problems or conflicts in past six months			
Yes	7 (9.33)	7 (7.61)	0.4/0.68
No	68 (90.67)	85 (92.39)	
5. Past history of psychiatric illness			
Yes	1 (1.33)	4 (4.35)	1.13/0.25
No	74 (98.67)	88 (95.65)	
6. Family history of psychiatric illness			
Yes	1 (1.33)	5 (5.43)	1.41/0.15
No	74 (98.67)	87 (94.57)	

In the present study, 76(45.50%) students had no anxiety, 88(52.69%) had mild level of anxiety, 2(1.19%) had moderate level of anxiety and only 1(0.59%) had severe type of anxiety. Maximum students had mild level of anxiety. (Figure 1)

Figure 1: Level of Anxiety among students



103(61.68%) were residing in hostels. Forty (53.33%) boys and 36(39.13%) girls had no anxiety, 35(46.67%) boys and 53(57.61%) girls had mild anxiety, none of boys have moderate to severe type of anxiety, 2(2.17%) girls have moderate type of anxiety and 1(1.08%) girl has severe type of anxiety. There was no statistically significant difference in anxiety as per age, gender, living situation, residence and BMI among the respondents. But there was statistically significant difference in the anxiety among the respondents who had family problems or conflict in past six months, past history of psychiatric illness and family history of psychiatry illness. (table 2)

Table: 2 Association of Anxiety with various socio demographic variables

Variable	No anxiety (No %)	Mild anxiety (No %)	Moderate anxiety (No %)	Severe (No%)	anxiety	z score	p value
1. Age							
17	23 (52.27)	20 (45.45)	0 (0)	1 (2.27)		0.8	0.42
18	33 (42.31)	43 (55.13)	2 (2.56)	0 (0)		0.47	0.64
19	19 (45.24)	23 (54.76)	0 (0)	0 (0)		0.0315	0.98
20	1 (33.33)	2 (66.67)	0 (0)	0 (0)		0.42	0.67
2. Gender							
Boys	40 (53.33)	35 (46.67)	0 (0)	0 (0)		1.84	0.067
Girls	36 (39.13)	53 (57.61)	2 (2.17)	1 (1.08)			
3. Residence							
Hostelite	47 (45.63)	55 (53.4)	1 (0.97)	0 (0)		1.84	0.067
Localite	29 (45.31)	33 (51.56)	1 (1.56)	1 (1.56)			
4.Living Situation							

Single	1 (25)	3 (75)	0 (0)	0 (0)	0.81	0.42
With roommate	46 (45.54)	54 (53.46)	1 (0.99)	0 (0)	0.0057	0.99
With family	29 (46.77)	31 (50)	1 (1.61)	1 (1.61)	0.17	0.86
5. BMI						
<18.5	20 (43.48)	26 (56.52)	0 (0)	0 (0)	0.24	0.8
18.5 - 24.9	40 (48.19)	40 (48.19)	2 (2.41)	1 (1.2)	0.4	0.68
25 - 29.9	11 (37.93)	18 (62.07)	0 (0)	0 (0)	0.75	0.44
30 - 34.9	5 (55.55)	4 (44.44)	0 (0)	0 (0)	0.58	0.55
35 - 39.9	0 (0)	0 (0)	0 (0)	0 (0)	0	0
>40	0 (0)	0 (0)	0 (0)	0 (0)	0	0
6. Family problems or conflicts in past six months						
Yes	1 (7.14)	12 (85.71)	1 (7.14)	0 (0)	2.78	0.0052
No	75 (49.01)	76 (49.67)	1 (0.65)	1 (0.65)		
7. Past history of psychiatric illness						
Yes	0 (0)	3 (60)	1 (20)	1 (20)	2.01	0.043
No	76 (46.91)	85 (52.46)	1 (0.61)	0 (0)		
8. Family history of psychiatric illness						
Yes	0 (0)	6 (85.71)	1 (14.28)	0 (0)	2.37	0.017
No	76 (47.5)	82 (51.25)	1 (0.62)	1 (0.62)		

Fifty- nine (35.33%) students are using relaxation method (yoga, meditation, physical exercise, and pursuing hobbies) to relieve anxiety. Main method to relieve anxiety in boys and girls was pursuing hobbies. Those who had past history of psychiatric illness 40% students using relaxation method and who had family history of psychiatric illness only 14.28% students using relaxation practice to relieve their anxiety. There was no statistically significant difference in relaxation practice as per age, gender, residence, living situation, BMI, family problems or conflicts in past six months, past history and family history of psychiatric illness. (Table 3)

Table 3: Association of Relaxation practice with various sociodemographic variables

Variable	Relaxation Practice			
	Yes	No	Z score	p value
1. Age	No. (%)	No. (%)		
17	10 (22.72%)	34 (77.27%)	1.58	0.11
18	28 (35.89%)	50 (64.10%)	0.086	0.92
19	20 (47.61%)	22 (52.38%)	1.46	0.14
20	1 (33.33%)	2 (66.66%)	0.071	0.94
2. Gender				
Boys	31 (41.33%)	44 (58.66%)	0.89	0.37

Girls	28 (30.43%)	64 (69.56%)	0.79	0.42
3. Residence				
Hostelite	37 (35.92%)	66 (64.07%)	0.098	0.92
Localite	22 (34.37%)	42 (65.62%)	0.13	0.88
4. Living Situation				
Single	3 (75%)	1 (25%)	1.63	0.1
With Roommate	36 (35.64%)	65 (64.35%)	0.05	0.96
With Family	20 (32.25%)	42 (67.74%)	0.43	0.66
5. BMI				
<18.5	13 (28.26%)	33 (71.73%)	0.89	0.36
18.5 - 24.9	28 (33.73%)	55 (66.26%)	0.24	0.8
25 - 29.9	14 (48.27%)	14 (48.27%)	1.33	0.18
30 - 34.9	4 (44.44%)	5 (55.55%)	0.55	0.57
35 - 39.9	0 (0%)	0 (0%)		
>40	0 (0%)	0 (0%)		
6. Family problems or conflicts in past six months				
Yes	7 (50%)	7 (50%)	1.09	0.27
No	52 (33.98%)	101 (66.01%)		
7. Past history of psychiatric illness				
Yes	2 (40%)	3 (60%)	0.21	0.82
No	57 (35.18%)	105 (64.81%)		
8. Family history of psychiatric illness				
Yes	1 (14.28%)	6 (85.71%)	1.14	0.25
No	58 (36.25%)	102 (63.75%)		

Discussion

The present study, which assessed the prevalence of anxiety disorder among first-year undergraduate medical students in Ahmedabad, Gujarat, reveal a significant prevalence of anxiety within this cohort. The current research indicates that 54.49% of the first-year medical students experienced some level of anxiety. This figure is considerably higher than the global pooled prevalence of anxiety among medical students, which a comprehensive meta-analysis by Tian et al. [1] reported as 33.8% (95% Confidence Interval: 29.2–38.7%). The elevated prevalence observed in our study aligns with the broader understanding that medical education is an inherently demanding and stressful endeavor, often leading to psychological distress among students. For instance, a study conducted in Nepal by Shah et al.[7] on first-year medical students similarly reported a high anxiety prevalence of 59.3%. In the Indian context, Venkatarao et al.[8] observed an overall anxiety prevalence of 66.9% among medical undergraduates, while Raja et al.[4] found a prevalence of 66.8% among private medical college students in South India. Furthermore, a study on dental students in India by Ahad et al.[9] also reported a comparable anxiety prevalence of 66.8%. These higher figures from South Asia might suggest a regional trend of increased anxiety among medical students, possibly influenced by the highly competitive academic environment and intense societal pressures. However, the reported anxiety prevalence in our study is higher than findings from other regions or different populations of medical

students. For example, Gin-Gin Gan et al.[9] documented a lower anxiety prevalence of 32.7% among Malaysian medical students. In Pakistan, Syed et al. [6] reported an anxiety prevalence of 48.0% among physiotherapy students. Azad et al.[5] found that 37.46% of medical students in a private college experienced moderate to severe anxiety, and Singh (2016) reported a 36% anxiety prevalence among medical students in a study comparing them with engineering and arts students in India. James et al.[10] observed an even lower prevalence of 28.6% among Nigerian medical students. The disparity in prevalence rates could be attributed to various factors, including the specific validated instruments used Hamilton Anxiety Rating Scale in our study vs. Depression Anxiety Stress Scales, Hospital Anxiety and Depression Scale, Beck Anxiety Inventory, Generalized Anxiety Disorder 7-item Scale in others, differing cut-off scores, and socio-cultural variations in self-reporting mental health issues. Despite the high overall prevalence, the mean HAM-A score in our study was notably low (2.59 ± 4.32), indicating that most anxious students experienced only mild levels of anxiety. This nuanced finding implies that while many students may encounter anxiety-provoking situations, the severity of their symptoms generally remains manageable, with only a small fraction of students (1.19% moderate, 0.59% severe) exhibiting higher levels of anxiety.

Our investigation found no statistically significant differences in anxiety levels based on age, gender, type of residence (hostelite versus localite), or specific living situation. This aligns with several studies in the literature. For instance, Tian et al.[1]'s meta-analysis, while noting a slightly higher prevalence in females globally (38.0%) compared to males (27.6%), concluded that this difference was not statistically significant as a moderator. This suggests that the pervasive academic demands within medical education may affect all students irrespective of gender. Similar to our findings, Ahad et al.[11] in Indian dental students, Azad et al.[5] in Pakistani medical students, Gin-Gin Gan et al. [9] in Malaysian medical students, Shah et al.[7] in Nepalese medical students, and Syed et al.[6] in Pakistani physiotherapy students also reported no significant gender-based differences in anxiety prevalence. This consistent observation across different cohorts and geographies underscores that the universal stressors in medical school may override gender-specific predispositions to anxiety. However, Venkatarao et al.[8], in another Indian study, presented a contrasting finding, reporting that female students exhibited significantly higher anxiety scores than their male counterparts, suggesting some regional variability. Regarding residence, our study found no significant difference in anxiety levels between students residing in hostels and those living locally. This finding is consistent with results from Ahad et al.[11] and Shah et al.[7] It is noteworthy that a substantial proportion of participants in our study (61.68%) were hostelite students. While studies often highlight the stress associated with living away from home for the first time, our results suggest that this factor alone did not significantly differentiate anxiety levels in this specific cohort. Both Ahad et al.[11] and Raja et al.[4] found that anxiety prevalence was highest in the first year of medical/dental education, suggesting that the initial transition into medical school can be particularly challenging. Conversely, longitudinal studies by Mallaram et al.[12] and McCrew et al.[13] indicate that anxiety and stress levels can either persist or even increase as students progress through their medical training, challenging the notion that students inherently develop better coping skills over time. This highlights a critical need for continuous mental health support throughout the entire medical curriculum, not just in the initial year.

A key finding of the present study was the identification of statistically significant differences in anxiety levels among students who reported family problems or conflicts in the past six months, had a past history of psychiatric illness, or a family history of psychiatric illness. These findings are strongly supported by other studies in the field. Shah et al.[7] similarly concluded that family problems and a past history of psychiatric illness were significantly associated with higher anxiety levels among first-year medical students. Mallaram et al.[12] found a direct link between a family history of psychiatric illness and higher anxiety levels among first-year medical students in South India. These factors underscore the importance of students' pre-existing vulnerabilities and the influence of their social support systems in mitigating psychological distress during medical training. While financial burdens

were not directly assessed as a significant factor for anxiety in our study, they are widely recognised as a major stressor for medical students globally. Such financial strain can contribute to family problems or conflicts, indirectly impacting anxiety levels as shown by James et al.[10] who found financial difficulties to be significantly associated with anxiety. Medical schools should consider these background factors when designing mental health interventions, as students with such predispositions may require more targeted and proactive support.

Our study found that 35.33% of students engaged in relaxation methods, including yoga, meditation, physical exercise, or hobbies, to alleviate anxiety. For both boys and girls, pursuing hobbies was identified as the primary method of relaxation. Interestingly, while 40% of students with a past history of psychiatric illness reported using relaxation methods, only 14.28% of those with a family history of psychiatric illness engaged in such practices. This suggests a potential gap in awareness or engagement with effective coping strategies among students with familial predispositions to mental health issues, who might benefit most from early intervention.

Key Interpretations and Implications:

The significant associations found between anxiety and factors such as family conflicts, past psychiatric illness, and family history of psychiatric disorders highlight the interplay between personal vulnerability and environmental stressors. Similar associations have been documented by Shah et al.[7] and Mallaram et al.[12], emphasizing the role of psychosocial background in shaping mental health outcomes.

From an educational perspective, these findings underscore the urgent need for:

- Early screening and counseling for students with personal or familial mental health histories.
- Structured stress management programs (e.g., yoga, mindfulness, and mentoring).
- Continuous mental health support throughout medical training rather than focusing solely on the initial year.

Although one-third of students engaged in relaxation activities, the lower engagement among those with familial psychiatric history indicates a gap in mental health literacy. Integrating structured well-being programs into the medical curriculum may enhance coping and resilience among vulnerable groups.

Strengths:

- Use of a validated standardized instrument (HAM-A) ensures reliable anxiety measurement.
- Inclusion of a homogeneous cohort (first-year students) eliminates confounding due to academic year differences.
- The study provides region-specific data from Gujarat, contributing to the limited literature on Indian medical students' mental health.

Limitations

- The cross-sectional design restricts causal inference between identified factors and anxiety.
- Self-reported data may be influenced by social desirability bias.
- The study was conducted at a single institution, limiting generalizability to broader student populations.
- Financial and academic stressors were not explored in depth, though these are known contributors to anxiety.

Conclusion

In conclusion, the findings of this study highlight a substantial prevalence of anxiety among first-year medical students in Ahmedabad, Gujarat, a finding that is consistent with patterns observed in other South Asian contexts. While most students experienced mild anxiety, the overall prevalence underscores the persistent need for proactive mental health support. Our study confirms that family problems and a personal or family history of psychiatric illness are significant risk factors for anxiety, whereas gender, age, and residence did not show a statistically significant association in this cohort. The observed engagement in relaxation practices, though present, indicates an area for further emphasis and integration into the curriculum. These insights call for comprehensive and sustained interventions, including destigmatization efforts, promotion of effective coping strategies, and targeted support for vulnerable students, to nurture a more resilient and

psychologically healthy generation of future medical professionals. Students counselling sessions should

be organized as lectures, skits and group discussions to manage stress and mental health simultaneously organizing stress management programs for the students already suffering from stress and managing mental health at institutional level.

Limitations

A significant limitation of the current study is its focus solely on first-year students. This cross-sectional design restricts our ability to assess the trajectory of anxiety levels throughout the entire medical curriculum, preventing longitudinal comparisons across different professional years.

Abbrevations:

Sr. no	Short form	Abbreviation
1	HAM-A	Hamilton Anxiety Rating Scale
2	BMI	Body Mass Index
3	MBBS	Bachelor of Medicine and Bachelor of surgery

REFERENCES

1. Quek T-C, Tam WSW, Tran BX, Zhang M, Zhang Z, Ho CSH, et al. The global prevalence of anxiety among medical students: a meta-analysis. *Int J Environ Res Public Health* [Internet]. 2019 [cited 2025 Mar 3];16(15):2735. Available from: https://www.mdpi.com/1660-4601/16/15/2735
2. Khoshhal KI, Khairy GA, Guraya SY, Guraya SS. Exam anxiety in undergraduate medical students of Taibah University. *Med Teach* [Internet]. 2017 [cited 2025 Mar 3];39(sup1):S22–6. Available from: https://www.tandfonline.com/doi/full/10.1080/0142159X.2016.1254749
3. Singh R. Pilot study to assess the quality of life, sleepiness and mood disorders among first year undergraduate students of medical, engineering and arts. *J Clin Diagn Res* [Internet]. 2016 [cited 2025 Mar 3];10(5):JC01–3. Available from: http://jcdr.net/article_fulltext.asp?issn=0973-709x&year=2016&volume=10&issue=5&page=JC01&id=7878
4. Raja S, Balasubramanian G, Rani JR. Prevalence of depression, anxiety and stress among private medical college students in South India: a cross-sectional study. *J Educ Health Promot* [Internet]. 2022 [cited 2025 Mar 3];11(1):373. Available from: https://journals.lww.com/10.4103/jehp.jehp_393_22
5. Azad N, Shahid A, Abbas N, Shaheen A, Munir N. Anxiety and depression in medical students of a private medical college. *J Ayub Med Coll Abbottabad* [Internet]. 2017 [cited 2025 Mar 3];29(1):123–7. Available from: https://jamc.ayubmed.edu.pk/index.php/jamc/article/view/126
6. Syed A, Syed SA, Khan M. Frequency of depression, anxiety and stress among undergraduate physiotherapy students. *Pak J Med Sci* [Internet]. 2018 [cited 2025 Mar 3];34(2):468–71. Available from: http://pjms.com.pk/index.php/pjms/article/view/12298
7. Shah P, Sapkota A, Chhetri A. Depression, anxiety, and stress among first-year medical students in a tertiary care hospital: a descriptive cross-sectional study. *J Nepal Med Assoc* [Internet]. 2021 [cited 2025 Mar 3];59(236):292–6. Available from: http://www.jnma.com.np/jnma/index.php/jnma/article/view/6420
8. Venkatarao E, Iqbal S, Gupta S. Stress, anxiety, and depression among medical undergraduate students and their sociodemographic correlates. *Indian J Med Res* [Internet]. 2015 [cited 2025 Mar 3];141(3):354–7. Available from: http://www.ijmr.org.in/text.asp?2015/141/3/354/156571
9. Gan GG, Ling HY. Anxiety, depression and quality of life of medical students in Malaysia. *Med J Malaysia*. 2019;74(1):57–61.
10. James BO, Thomas IF, Omoaregba JO, Okogbenin EO, Okonoda KM, Ibrahim AW, et al. Psychosocial correlates of perceived stress among undergraduate medical students in Nigeria. *Int J Med Educ* [Internet]. 2017 [cited 2025 Mar 3];8:382–8. Available from: http://www.ijme.net/archive/8/perceived-stress-in-medical-students/
11. Ahad A, Chahar P, Haque E, Bey A, Jain M, Raja W. Factors affecting the prevalence of stress, anxiety, and depression in undergraduate Indian dental students. *J Educ Health Promot* [Internet]. 2021 [cited 2025 Mar 3];10(1):266. Available from: https://journals.lww.com/10.4103/jehp.jehp_1475_20
12. Mallaram GK, Gopalakrishnan U, Mathews DA, Mudamala DS, Gangavarappagari H, Modi U, et al. Stress, anxiety, and depression in first-year medical students: a prospective cohort study from a women's medical college in South India. *Indian J Psychol Med* [Internet]. 2024 [cited 2025 Mar 3];46(2):150–7. Available from: https://journals.sagepub.com/doi/10.1177/02537176241282100
13. McKerrow I, Carney PA, Caretta-Weyer H, Furnari M, Juve AM. Trends in medical students' stress, physical, and emotional health throughout training. *Med Educ Online* [Internet]. 2020 [cited 2025 Mar 3];25(1):1709278. Available from: https://www.tandfonline.com/doi/full/10.1080/10872981.2019.1709278