



PSYCHOLOGICAL DISTRESS AMONG MBBS STUDENTS IN ASSAM: A CROSS-SECTIONAL STUDY USING KESSLER-10 SCALE

Dr Dakshadhwari Upadhyay^{1*}, Dr Farhana Shaheen Hussain², Dr Manjit Boruah³

^{1*} Assistant Professor, Community Medicine, Assam Medical College and Hospital
drdakshaupadhyay@gmail.com

² Assistant Professor, Community Medicine, Assam Medical College and Hospital,
farhanashaheen39@gmail.com

³ Associate Professor, Community Medicine, Tinsukia Medical College and Hospital,
drmanjitboruah@gmail.com

Abstract:

Background:

Psychological distress refers to a general state of emotional discomfort marked by symptoms of depression such as loss of interest, sadness, or hopelessness, and anxiety, such as restlessness or tension. Evidence suggests that psychological distress among medical students is consistently higher than that observed in general population and among peers of similar age. Therefore, this study aims to estimate the prevalence of psychological distress among MBBS students of a medical college in Assam.

Materials and methods:

A cross-sectional study was conducted among undergraduate MBBS students of Phase I to Phase III Part II students who were present on the day of data collection. Data was collected using self-administered questionnaires, which included the Kessler 10 Psychological Distress (K10) instrument and scores ≥ 20 indicated psychological distress (mild, moderate, severe). Chi-square tests were used to test associations, considering $p < 0.05$ as statistically significant.

Results:

Response rate was 96.2% with 423 responses. 65.2% of the students had psychological distress: 25.1% had mild psychological distress, 20.8% had moderate psychological distress and 19.4% had severe psychological distress. Only 34.8% of the students were well and had no psychological distress. Demographic and academic factors were not found to be statistically significant.

Conclusion:

The findings of this study underscore a high prevalence of psychological distress in the study population with an alarmingly high prevalence of severe psychological distress. This level of psychological burden poses a serious risk to the students' well-being, academic performance, and future professional competence. Mandatory psychological screening and support, accessible and destigmatised counselling and mental health services, targeted academic support via workshops and study skill training and promoting wellness and leisure by introducing mandatory modules focussed on physical exercises and yoga/ mindfulness is need of the hour.

Keywords: MBBS students, Kessler 10 scale, mental health, psychological distress, MBBS curriculum

Introduction:

Psychological distress refers to a general state of emotional discomfort marked by symptoms of depression such as loss of interest, sadness, or hopelessness, and anxiety, such as restlessness or tension.¹ These symptoms have considerable impact on individuals' relationships, academic achievements, physical well-being and future prospects.²

The curriculum of an Indian Medical Graduate, the MBBS (Bachelor of Medicine and Bachelor of Surgery) course is recognised to be rigorous and demanding and the environment within the medical colleges is inherently stressful as well with vast syllabuses, fear of academic failure, pressure to cope and high expectations from parents, teachers, and self.³⁻⁶ A moderate degree of anxiety can enhance creativity and drive achievement, but when psychological distress becomes severe it negatively affects working memory and coping skills, leading to poor academic performance.⁷ Evidence suggests that psychological distress among medical students is consistently higher than that observed in general population and among peers of similar age.⁷

Despite the known challenges and stimulants in medical education, psychological distress among MBBS students of Assam remain understudied. Therefore, this study addresses that gap, aiming to estimate the prevalence of psychological distress among MBBS students of a medical college in Assam using the Kessler-10 Psychological Distress (K10) scale and to better portray its findings within established research.

Material and Methods:

This study was a cross-sectional, institution-based study conducted among the undergraduate medical students of a medical college in Assam over a period of six months. A census-based approach was utilized and all students (Phase 1 to Phase 3 Part II) present in their respective classrooms on the day of the visit were approached to participate in the study.

Data was collected using a structured, self-administered questionnaire, which was divided into two primary sections: the first part captured the essential variables related to socio-demographic and academic profile including sex, residential status, academic semester, self-reported attendance, and academic grading. The second part utilized the Kessler 10 item (K10) Psychological Distress Scale which is a valid and reliable screening instrument, developed on item response theory to measure non-specific psychological distress and stress over the most recent four-week period by assessing symptoms of anxiety and depression.⁷

Written informed consent was obtained from the students before proceeding to the questionnaire and respondents who refused to participate had an option to refrain from answering the questionnaire. Incomplete responses were not included for analysis.

Data from the responses were entered in MS Excel. Descriptive statistics were used to summarize the data, primarily presented as frequencies and percentages. To explore associations between categorical variables, chi-square test was used and p value < 0.05 was considered as statistically significant.

Results:

A total of 449 undergraduate students were present on the day of data collection and were approached to participate in the study. 17 students declined to participate and 9 incomplete questionnaires were submitted. Response rate was 96.2%. Analysis was done on the 423 complete responses.

The mean age of students was 21.6 ± 1.8 years. Other information regarding student characteristics is given in Table 1.

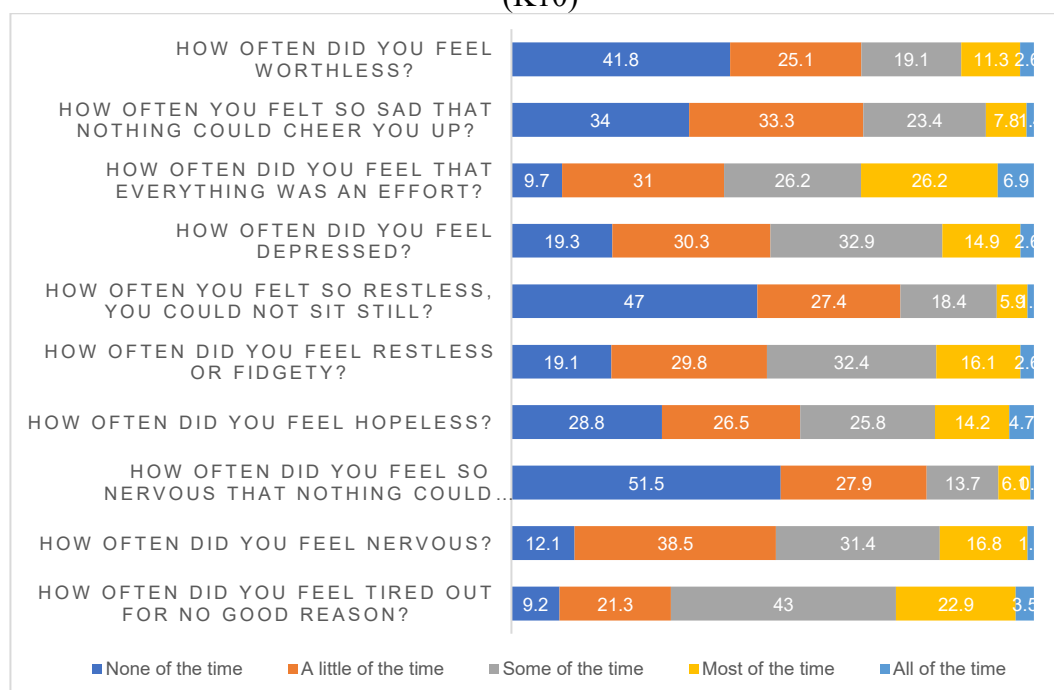
Table 1: Background information of MBBS students

		Frequency	Percentage
Gender	Male	201	47.5
	Female	222	52.5
Academic year	Phase 1	129	30.5
	Phase 2	100	23.6
	Phase 3 Part 1	125	29.6
	Phase 3 Part 2	69	16.3
Residence	Hostel	405	95.7
	Parental Home	18	4.3
Attendance	Regular	386	91.3
	Irregular	37	8.7
Academic grade	Above average	22	5.2
	Average	333	78.7
	Below average	68	16.1

Overall, 65.2% of the students experienced some degree of psychological distress and 34.8% reported experiencing no psychological distress. The breakdown of psychological distress prevalence among the students based on the K10 scores is presented in Table 2. Responses to individual questions asked as per Kessler psychological distress scale are shown in Figure 1.

Table 2: Prevalence of psychological distress among MBBS students based on K10 score

Prevalence of Psychological distress	Frequency	Percentage
No psychological distress	147	34.8
Mild psychological distress	106	25.1
Moderate psychological distress	88	20.8
Severe psychological distress	82	19.4
Total	423	100

Figure 1: Student responses (%) to individual questions of Kessler psychological distress scale (K10)

Gender difference in prevalence of psychological distress was observed. Among male students, prevalence of psychological distress (62.2%) was lower than what was found in female students. Prevalence of severe psychological distress was also higher among females than in males. But no significant association was observed between psychological distress and gender of the students ($p=0.316$) (Ref: Table 3)

In the different academic years, highest overall psychological distress was observed in Phase 1 (74.4%) followed by Phase 3 (II) (65.1%) and least in Phase 3 (I) (57.4%). Severe psychological distress was also highest in Phase 1 (23.3%), followed by Phase 3 (II) (22.2%). No significant association was seen between psychological distress and academic phase of study ($p=0.067$) (Ref: Table 3)

Overall, the prevalence of psychological distress was higher among students residing at home (72.2%) compared to those residing at hostel (64.9%). Severe and moderate psychological distress was also higher among students residing at home. (Ref: Table 3)

Table 3: Prevalence of psychological distress and it's association to students' characteristics.

Characteristic		Psychological distress				p value
		None (Well)	Mild	Moderate	Severe	
Sex	Male	76 (37.8 %)	52 (25.9%)	41 (20.4%)	32 (15.9%)	0.316
	Female	71 (32.0 %)	54 (24.3%)	47 (21.2%)	50 (22.5%)	
Academic year	Phase 1	33 (25.6%)	39 (30.2%)	27 (20.9%)	30 (23.3%)	0.067
	Phase 2	41 (41%)	27 (27%)	18 (18%)	14 (14%)	
	Phase 3 (I)	29 (42.6 %)	10 (14.7 %)	19 (27.9%)	10 (14.7 %)	
	Phase 3 (II)	44 (34.9 %)	30 (23.8 %)	24 (19.0 %)	28 (22.2 %)	
Residence	Hostel	142 (35.1%)	102 (25.2%)	83 (20.5%)	78 (19.3%)	0.840
	Parental Home	5 (27.8%)	4 (22.2%)	5 (27.8%)	4 (22.2%)	
Attendance (Self-Reported)	Regular	134 (34.7%)	100 (25.9%)	83 (21.5%)	69 (17.9%)	0.058
	Irregular	13 (35.1%)	6 (16.2%)	5 (13.5%)	13 (35.1%)	
Academic Grade (Self-Reported)	Below Average	23 (33.8%)	15 (22.1%)	13 (19.1%)	17 (25.0%)	0.514
	Average	114 (34.2%)	84 (25.2%)	71 (21.3%)	64 (19.2%)	
	Above Average	10 (45.5%)	7 (31.8%)	4 (18.2%)	1 (4.5%)	

Among the students who were regular in attendance (self-reported) overall prevalence of psychological distress was similar (65.3%) compared to those with irregular attendance (self-reported) (64.9%). No statistical association was noted between psychological distress and attendance (self-reported) ($p=0.058$) (ref: Table 3)

Prevalence of overall psychological distress in terms of academic grade was 72.2% in below average students, 75.8% in average students and 54.5% in above average students. But no statistically significant association was observed between psychological distress and self-reported academic grade ($p=0.514$) (ref: Table 3)

Discussion:

This study conducted among MBBS students of a medical college in Assam using K10 scale revealed psychological distress is a significant problem among them and that 65.2% of the students had psychological distress: 25.1% had mild psychological distress, 20.8% had moderate psychological distress and 19.4% had severe psychological distress. Only 34.8% of the students were well and had no psychological distress.

The observed prevalence in this study falls within the wide range reported by other institutions across India. A systematic and meta-analysis conducted recently among health science students estimated the pooled prevalence of psychological distress 51.0% which is consistent with our findings.⁸ Tsegay et al. found the prevalence of psychological distress to be 42.8% among medical students in Ethiopia which is lower than what was found in this study, however further division into mild moderate and severe disorder has not been reported.⁷ In another study by Das U. et al., higher proportions of depression (81.7%) and anxiety (76.2%) among medical students during the COVID-19 pandemic was found.⁹ These elevated rates are indicative of context-specific influences, such as public health emergencies, and reinforce the need for contextually adapted interventions. In study done by Sahu et al. depressive symptoms have been reported in 51.0% and anxiety in 63.0% of medical students which is similar to the findings of current study.¹⁰ Fakir M. have reported the prevalence of psychological distress as 52.5% in adults which is lower than what was found in this study. The prevalence of mild (22.7%) and moderate (20.8%) distress is comparable to the findings in the present study, however the prevalence of severe distress was found to be low (9.0%).¹¹ These findings reiterate that the MBBS curriculum and training environment amplify distress beyond the background community level.

In the current study no statistically significant association was observed between psychological distress and sex of the student; but higher distress among female students as compared to males is a consistent finding from other similar studies.^{8, 12-15}

The prevalence of distress was also highest among Phase 1 students and those residing at home, though not significant statistically. Studies suggest that early years in medical training may be associated with adjustment difficulties, while later years bring academic pressure and career uncertainty.¹⁶⁻¹⁹ Hostel stay, usually perceived as a support resource, was not protective in this sample, highlighting that social support systems require qualitative attention, not just structural provision.^{20,21}

While the findings of this study and other similar studies on this area strongly suggest a critical need for intervention based on the consistent, quantifiable high prevalence of distress, it must also be moderated by considering the limitations of the study related to a snapshot picture because of the cross-sectional study design, reliance of results on a self-administered tool, data from only a single institution and exclusion of specific stressors like financial pressure, academic difficulties and poor student-teacher interaction in the K10 Scale. The strengths of the current study include a high response rate, the use of a validated screening tool, and the ability to capture distinctions in severity of distress.

Conclusion:

The findings of this study underscore a high prevalence of psychological distress in the study population with an alarmingly high prevalence of severe psychological distress. This level of psychological burden poses a serious risk to the students' well-being, academic performance, and future professional competence. While demographic and academic factors were not statistically significant predictors, the numerically high stress found in Phase I and female students warrants focussed immediate and proactive institutional interventions. Mandatory psychological screening and support, accessible and destigmatised counselling and mental health services, targeted academic support via workshops and study skill training and promoting wellness and leisure by introducing mandatory modules focussed on physical exercises and yoga/ mindfulness is need of the hour.

To conclude, the evidence of psychological distress confirms that the well-being of medical students is at risk and requires a decisive shift towards institutionally supported preventive and

therapeutic interventions to cultivate a healthier and more sustainable learning environment for future empathic healthcare professionals.

Acknowledgements:

We are sincerely thankful to all the MBBS students who participated in this study.

Conflicts of interest

There are no conflicts of interest.

Source of funding:

Nil

References

1. Belay AS, Guangul MM, Asmare WN, Mesafint G. Prevalence and Associated Factors of Psychological Distress among Nurses in Public Hospitals, Southwest, Ethiopia: A cross-sectional Study. *Ethiop J Health Sci.* 2021 Nov;31(6):1247–56.
2. Roy S, Biswas AK, Sharma M. Stress, Anxiety, and Depression as Psychological Distress Among College and Undergraduate Students: A Scoping Review of Reviews Guided by the Socio-Ecological Model. *Healthcare.* 2025 Jan;13(16):1948.
3. Abraham RR, Zulkifli EM, Fan ES, Xin GN, Lin JJ. A report on stress among first year students in an Indian medical school. *South East Asian Journal of Medical Education.* 2009;3:78-81
4. Kaur H, Gupta V, Garg A, Sangeeta, Padhi BK. Prevalence of depression, anxiety, stress and suicide ideation among undergraduate medical students in India: A systematic review and meta-analysis. *National Journal of Community Medicine.* 2024;15(10):868-83
5. Luthra R, Hathi MR, Nagar H. Assessment of the depression, anxiety and stress levels among the medical undergraduate students using DASS. *International Journal of Health and Clinical Research.* 2020;3(11):206-12
6. Pandey A, Pandey AK, Sueka P, Singh A, Gupta S. Stress and depression among medical students from different professional year. *Journal of Clinical and Diagnostic Research.* 2021;15(2):VC01-VC05
7. Tsegay L, Ayano G. Psychological distress and associated factors among medical students in Addis Ababa, Ethiopia: A cross-sectional study (May 2018). *Journal of Affective Disorders Reports.* 2024 Apr 1; 16:100783.
8. Almansoor AS, Masuadi E, Al-Muallem A, Agha S. Prevalence of psychological distress among health sciences students: a systematic review and meta-analysis. *Qual Quant.* 2024 Aug 1;58(4):3747–68.
9. Das U, Ganguly A, Haldar D, Mukhopadhyay A. Magnitude of Psychological Distress Among Medical and Non-Medical Students During the Late Phase of the COVID-19 Pandemic in West Bengal: A Cross-Sectional Study. *International Journal of Medical Students.* 2024 Dec 17;12(4):403–14.
10. Sahu PK, Nayak BS, Rodrigues V, Umakanthan S. Prevalence of Psychological Distress among Undergraduate Medical Students: A Cross-Sectional Study. *Int J Appl Basic Med Res.* 2020;10(4):270–5.
11. Islam FMA. Psychological distress and its association with socio-demographic factors in a rural district in Bangladesh: A cross-sectional study. *PLOS ONE.* 2019 Mar 13;14(3): e0212765.
12. Paula W de, Breguez GS, Machado EL, Meireles AL. Prevalence of anxiety, depression, and suicidal ideation symptoms among university students: a systematic review / Prevalência de sintomas ansiedade, depressão e ideação suicida entre estudantes universitários: uma revisão sistemática. *Brazilian Journal of Health Review.* 2020 July 20;3(4):8739–56.

13. Liu XQ, Guo YX, Zhang WJ, Gao WJ. Influencing factors, prediction and prevention of depression in college students: A literature review. *World J Psychiatry*. 2022 July 19;12(7):860–73.
14. Li W, Zhao Z, Chen D, Peng Y, Lu Z. Prevalence and associated factors of depression and anxiety symptoms among college students: a systematic review and meta-analysis. *J Child Psychol Psychiatry*. 2022 Nov;63(11):1222–30.
15. Qamar K, Kiani MRB, Ayyub A, Khan AA, Osama M. Higher stress scores for female medical students measured by the Kessler Psychological Distress Scale (K10) in Pakistan. *J Educ Eval Health Prof*. 2014 Oct 9; 11:27.
16. Agarwal M, Sharma P, Goswami A, Mittal R. A 2023 nationwide study on adjustment disorder among first year MBBS students in India. *Bioinformation*. 2024 Feb 29;20(2):190–5.
17. Suriakumar J, Murugalakshmi T, Malar BSB, J D. Stress Factors Among Medical Students -A Survey Based Analysis of Academic and Personal Challenge. *European Journal of Cardiovascular Medicine*. 2025 Apr 16; 15:436–41.
18. Akdemir M, Sonmez Y, Şenol YY, Gulpinar E, Aktekin MR. A Six-Year Longitudinal Study of Psychological Distress, Depression, Anxiety, and Internet Addiction Among Students at One Medical Faculty. *Healthcare (Basel)*. 2025 July 19;13(14):1750.
19. Fris DAH, van Vianen AEM, Koen J, de Hoog M, de Pagter APJ. Medical students' career decision-making stress during clinical clerkships. *Perspect Med Educ*. 2022 Dec;11(6):350–8.
20. Viertiö S, Kiviruusu O, Piirtola M, Kaprio J, Korhonen T, Marttunen M, et al. Factors contributing to psychological distress in the working population, with a special reference to gender difference. *BMC Public Health*. 2021 Mar 29;21(1):611.
21. Shrestha R, Timalina S, Shakya R, Shrestha N, Kotera Y, Hashemy T, et al. Stress and Coping Mechanism among Students Residing in Private School Hostels. *Mental Illness*. 2023;2023(1):6535583.