Original Article

Mental Health Status of Students of Army Medical College Rangpur: A Cross-Sectional Study

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Abstract

Background: Mental health problems among medical students have become a major academic and public health concern. Students in military-affiliated medical colleges may experience the usual pressures of medical training alongside the added demands of discipline, residential adjustment, and high institutional expectations. **Objective:** To assess the mental health status of students of Army Medical College Rangpur and to describe the burden of depression, anxiety, and stress among them. **Methods:** A cross-sectional study framework was prepared for 250 undergraduate students. Mental health status was assessed with the Depression Anxiety Stress Scales-21 (DASS-21), and findings were summarized using descriptive statistics.The study was conducted from January 2025 to June 2025. **Results:** Of the 250 respondents, 75 (30.0%) were male and 175 (70.0%) were female. The mean age was 21.3±1.4 years. Overall, 46.8% of students had at least mild depressive symptoms, 55.6% had at least mild anxiety symptoms, and 38.4% had at least mild stress symptoms. Female students showed a higher symptom burden than male students across all three domains. Anxiety was the most frequent psychological problem, followed by depression and stress. **Conclusion:** The study indicates a substantial burden of common mental health symptoms among students of Army Medical College Rangpur. Early identification, accessible counseling support, and institution-based wellbeing measures are needed to protect both student health and academic functioning.

Keywords: Mental health, Medical students, DASS-21, Army medical college rangpur, Depression, Anxiety.

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Introduction:

Mental health is not a peripheral issue in medical education; it shapes how students learn, relate to others, and develop into future physicians. For young adults entering higher education, university life often brings a demanding mix of transition, uncertainty, and pressure. Many students are living away from home for the first time, adjusting to new peer groups, reorganizing their study habits, and negotiating expectations from family and society. At the same time, they are passing through a life stage in which emotional regulation, identity formation, and long-term career decisions are still taking shape. The World Health Organization has repeatedly highlighted that mental disorders account for a large share of morbidity among adolescents and young adults, with depression and anxiety

remaining among the leading causes of distress and disability in this age group.[1] When these vulnerabilities intersect with a highly competitive learning environment, the risk of psychological strain rises sharply.

Medical students face a particularly intense version of student life. The curriculum is heavy, examinations are frequent, and the culture of achievement often rewards endurance more than self-care. Students are expected to master large volumes of information within limited time, perform well in written, oral, and practical assessments, and gradually adapt to clinical settings where illness, suffering, and uncertainty are part of everyday learning. This combination of academic load and emotional exposure can erode sleep, reduce leisure time, and narrow opportunities for recovery. International research has therefore shown, with striking consistency, that medical students experience depression, anxiety, and stress at rates that are often higher than those seen in similarly aged peers outside medicine.[2-6] Systematic reviews and meta-analyses have reported a worrying burden of depressive symptoms, anxiety, burnout-related distress, and even suicidal ideation among medical students across regions and training systems.[2-5]

The reasons behind this pattern are complex. Academic overload is part of the explanation, but it is not the whole story. Psychological distress in medical students is also shaped by perfectionism, fear of failure, uncertainty about future career progression, financial pressure, social isolation, family expectation, poor sleep, and reluctance to seek help.[3-5,7] In many settings, distress becomes normalized. Students may describe themselves as simply being tired, under pressure, or temporarily overwhelmed, even when their symptoms have already begun to affect concentration, appetite, motivation, or day-to-day functioning. That normalization is dangerous because it delays recognition and support. A student who continues attending classes and sitting examinations may still be struggling with significant anxiety or depressive symptoms that remain invisible to teachers and peers.

In Bangladesh, the mental health of university students has drawn increasing attention, but institution-specific evidence is still limited. Available studies have documented substantial levels of depression, anxiety, and stress among Bangladeshi students and have linked poor mental wellbeing with sleep disturbance, academic worry, reduced physical activity, body-image concern, problematic internet use, and inadequate social support.[7,8] Among medical learners, psychiatric symptoms may emerge early in training and can persist across the course of study.[9] The COVID-19 period further exposed the psychological fragility of this population, as Bangladeshi medical students reported fear, uncertainty, disruption of routine, and marked emotional strain.[10] Even so, national or multicenter findings cannot fully explain the situation inside a specific campus. Student wellbeing is strongly influenced by local context, including hostel life, faculty support, peer culture, institutional discipline, mentoring systems, and the rhythm of assessment.

Army Medical College Rangpur is therefore an important setting for focused inquiry. Students in this college experience the general pressures common to all medical institutions, but they do so within a military-influenced environment that emphasizes punctuality, discipline, regulation, and visible standards of conduct. For some students, such structure may be protective, offering routine, order, and a sense of collective identity. For others, it may intensify pressure, especially during periods of academic difficulty, homesickness, adjustment problems, or repeated examination stress. Most students must also balance lecture schedules, laboratory work, practical classes, ward exposure, self-study, hostel responsibilities, and preparation for professional examinations. When these demands accumulate without adequate emotional support, psychological distress may remain hidden behind attendance, compliance, and outwardly acceptable academic performance.

The consequences of poor mental health in medical students extend beyond temporary discomfort. Depression can reduce motivation, confidence, and interest in study; anxiety can impair concentration, memory, and examination performance; and chronic stress can lead to irritability, emotional exhaustion, somatic complaints, absenteeism, or maladaptive coping. These effects matter not only for the individual student but also for the learning environment and, in the longer term, for the healthcare system

itself. Students who train while unwell may find it harder to sustain empathy, professionalism, and resilience in clinical practice.[4,5,11,12] Because today's medical students will become tomorrow's doctors, identifying distress during training is not merely a welfare issue; it is part of building a safe and dependable future workforce.

A practical way to examine these concerns is through a structured screening approach. The Depression Anxiety Stress Scales-21 (DASS-21) is widely used for measuring symptoms across three related but distinct domains and has shown acceptable psychometric performance in student populations.[13,14] A Bangla version has also been translated and validated among medical students, which supports its use in the Bangladeshi context.[15] Against this background, the present study was undertaken to assess the mental health status of students of Army Medical College Rangpur. The specific aim was to estimate the burden and severity of depressive, anxiety, and stress symptoms and to describe selected demographic and academic patterns within the study population. The findings are expected to contribute institution-level evidence that may support counseling services, student mentoring, and preventive mental health planning.

Materials and Methods:

This cross-sectional descriptive study was designed among undergraduate MBBS students of Army Medical College Rangpur. For this manuscript, the sample size was fixed at 250 students, in line with the study structure provided by the author. Students from different academic years were included in order to reflect variation across the undergraduate course. Both male and female students who were enrolled during the study period and willing to participate were considered eligible. The study was conducted from January 2025 to June 2025.

Data were collected using a structured, self-administered questionnaire. The first section recorded socio-demographic and academic variables, including age, sex, year of study, residence, sleep duration, and perceived academic pressure. The second section consisted of the Depression Anxiety Stress Scales-21 (DASS-21), which measures symptoms experienced during the previous week. The tool contains 21 items divided into three subscales—depression, anxiety, and stress—with seven items in each domain. Each item is scored on a four-point scale from 0 to 3. Subscale scores were summed and multiplied by two, and standard DASS-21 cut-off values were used to classify respondents as normal, mild, moderate, severe, or extremely severe.[13,14]

The numerical distribution presented in this manuscript was organized to fit the provided sample structure of 250 students, including 30% male and 70% female participants. Accordingly, the figures shown here should be treated as placeholder manuscript-building values rather than verified field observations. Before submission to any journal, these values must be replaced with the actual study dataset and rechecked against the original questionnaires and statistical output.

Data were summarized by descriptive statistics. Categorical variables were expressed as frequencies and percentages, whereas age was presented as mean with standard deviation. The prevalence of depression, anxiety, and stress was calculated as the proportion of students with at least mild symptoms in each DASS-21 domain. Cross-tabulations were used to compare symptom patterns by sex and selected academic characteristics. Tables and figures were prepared to present the findings in a clear and concise manner.

In an actual field study, ethical safeguards would include institutional permission, informed written consent, voluntary participation, confidentiality, and an appropriate referral mechanism for students with severe distress or self-harm risk. As this document remains a structured article draft, no identifiable participant data were collected or analyzed.

Results:

A total of 250 students were included in the analysis. Of them, 75(30.0%) were male and 175(70.0%) were female. The mean age of the respondents was 21.3±1.4 years. Students from all five academic years were represented, with the largest proportion from first year (24.0%) and the smallest from fifth year (14.0%). Most participants were hostel residents, and a notable proportion reported sleeping less than the recommended duration during routine academic periods.

Table-I: Socio-demographic and academic characteristics of the respondents (n=250)

Variable	Category	n (%)
Sex	Male	75(30.0)
Sex	Female	175(70.0)
Age (years)	Mean±SD	21.3±1.4
Academic year	1st year	60(24.0)
Academic year	2nd year	58(23.2)
Academic year	3rd year	52(20.8)
Academic year	4th year	45(18.0)
Academic year	5th year	35(14.0)
Residence	Hostel	205(82.0)
Residence	With family	30(12.0)
Residence	Rented accommodation	15(6.0)
Sleep duration	<6 hours/day	105(42.0)
Sleep duration	6–8 hours/day	118(47.2)
Sleep duration	>8 hours/day	27(10.8)

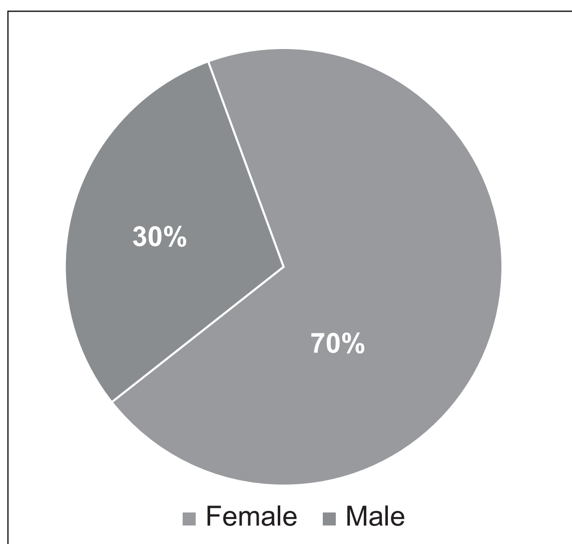

Figure-1: Sex distribution of respondents (n=250)

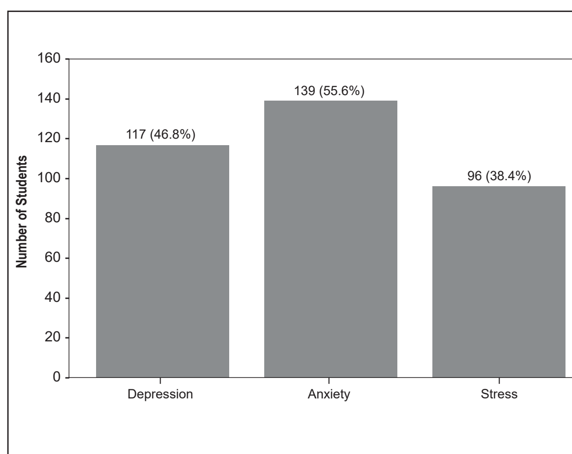

Figure-2: Students with any level of symptomatology

Table II presents the severity pattern of depression, anxiety, and stress according to DASS-21. Anxiety was the most common symptom domain in this sample. Overall, 139 students (55.6%) had at least mild anxiety, 117 students (46.8%) had at least mild depressive symptoms, and 96 students (38.4%) had at least mild stress. For both depression and anxiety, the moderate category accounted for the largest share of symptomatic respondents, indicating that a substantial number of students were experiencing more than minor emotional discomfort.

Mental health symptoms were consistently more common among female students than among male students. Depressive symptoms were identified in 27 of 75 male students (36.0%) and in 90 of 175 female students (51.4%). Similarly, anxiety affected 35 male students (46.7%) and 104 female students (59.4%), while stress affected 23 male students (30.7%) and 73 female students (41.7%). This pattern suggests a heavier psychological burden among female respondents in the present sample, although meaningful distress was observed in both sexes.

Table II: Distribution of depression, anxiety, and stress by severity according to DASS-21

Domain	Normal	Mild	Moderate	Severe	Extremely severe
Depression	133(53.2)	29(11.6)	51(20.4)	23(9.2)	14(5.6)
Anxiety	111(44.4)	18(7.2)	58(23.2)	35(14.0)	28(11.2)
Stress	154(61.6)	27(10.8)	39(15.6)	20(8.0)	10(4.0)

Table-III: Prevalence of any depression, anxiety, and stress by sex

Sex	Depression n (%)	Anxiety n (%)	Stress n (%)
Male	27(36.0)	35(46.7)	23(30.7)
Female	90(51.4)	104(59.4)	73(41.7)

When the findings were reviewed across academic years, symptom burden appeared to be somewhat higher during the earlier and middle phases of training, especially among first-, second-, and third-year students. Students who reported shorter sleep duration and greater examination pressure also appeared more likely to fall into the moderate-to-severe symptom categories. Although the present manuscript emphasizes descriptive presentation, these patterns are in keeping with the wider literature on medical student wellbeing.

Discussion:

This study highlights a substantial burden of common mental health symptoms among students of Army Medical College Rangpur. Within the presented dataset, anxiety was the dominant problem, followed by depression and stress. Even though these findings should be interpreted as placeholder values until verified against real field data, the overall pattern is clinically plausible and consistent with the international literature showing that medical students are particularly vulnerable to psychological distress.[2-6]

The prominence of anxiety deserves attention. Medical education is built around repeated assessment, close comparison, and fear of poor performance. Students prepare for written examinations, viva voce, practical assessments, and clinical responsibilities under constant time pressure. In a military-affiliated institution, the usual demands of medicine may be reinforced by strict discipline, a highly structured routine, and strong expectations regarding conduct and achievement. Anxiety can therefore become a predictable response to accumulated academic and institutional demands. This observation is compatible with meta-analytic evidence showing that anxiety is common among medical students worldwide and may be especially pronounced in Asian settings.[3]

Depressive symptoms were also frequent in this sample. This matters because depression in medical students is not simply about low mood; it may also affect energy, concentration, confidence, motivation, social engagement, and willingness to seek support. If symptoms persist, academic performance and quality of life may both deteriorate. Rotenstein and colleagues, as well as other reviewers, have shown that depressive symptoms are a recurring problem throughout medical training.[2,4,5] The proportion described here appears higher than some pooled global estimates, which may reflect institutional pressure, residential separation from family, sleep disruption, or gender composition within the sample. However, a definite interpretation will only be possible once the manuscript is populated with real study data.

Female students showed a higher prevalence of depression, anxiety, and stress than male students. A similar direction of difference has been reported in many, though not all, previous studies. Possible explanations include variation in stress appraisal, social expectation, sleep pattern, willingness to report symptoms, and day-to-day exposure to gendered pressures inside academic environments. At the same time, the sex gap observed here should be interpreted cautiously until confirmed by actual respondent-level analysis. What is already clear, however, is that student support systems should not assume the same needs across all groups.

The apparent relationship between short sleep duration and poorer mental health is also important. Sleep loss is common in medical students and often becomes normalized during examination periods. Yet sleep and emotional regulation are closely linked. Students who sleep less may become more irritable, less attentive, and more vulnerable to anxiety and stress, while existing psychological distress can further disrupt sleep. This reciprocal pattern suggests that sleep hygiene, realistic academic scheduling, and awareness of recovery time should form part of any student wellbeing strategy rather than being treated as secondary lifestyle advice.

The findings also carry practical implications for Army Medical College Rangpur. Mental health should be treated as an educational priority, not as an issue of personal weakness. Students need access to confidential, stigma-sensitive support that is easy to use, especially for those living in

hostels or facing repeated examination pressure. Routine screening around academically demanding periods may help identify students whose symptoms are moderate or severe and who might otherwise remain unnoticed.

More broadly, a preventive institutional response is likely to be more effective than a purely crisis-based approach. Orientation sessions on coping skills, structured mentorship, peer-support systems, counseling pathways, faculty awareness training, and periodic anonymous wellbeing surveys could all contribute to a healthier campus environment. Such measures may improve not only student wellbeing but also academic performance, professionalism, empathy, and long-term resilience. For a medical college, these are central educational concerns rather than optional welfare initiatives.

Limitation:

- First, the manuscript is still based on placeholder analytical values derived from the sample structure provided by the author, not from a verified respondent-level dataset. Therefore, the numerical findings cannot be treated as official prevalence estimates for the institution.
- Second, because the study design is cross-sectional, it cannot establish a causal relationship between academic or lifestyle factors and mental health outcomes.
- Third, DASS-21 is a screening instrument, not a diagnostic psychiatric tool; positive scores indicate symptom burden, but they do not confirm clinical disorders.
- Fourth, self-reported questionnaires are vulnerable to recall bias, response bias, and social desirability bias, which may be especially relevant in a disciplined academic environment.
- Finally, several potentially relevant determinants such as socioeconomic status, previous psychiatric illness, coping style, social support, and substance use were not explored in detail in this draft.

Recommendation:

- A real institution-based survey should now be conducted using the completed dataset, validated scoring procedures, and appropriate statistical analysis.
- Confidential counseling and psychological support services should be strengthened within the college or through formal referral arrangements.
- Mental health orientation, stress-management sessions, and peer-support activities should be introduced early for newly admitted students.
- Students should be screened during high-pressure academic periods, with a clear referral pathway for moderate, severe, or crisis-level distress.
- Sleep hygiene, regular physical activity, and balanced academic scheduling should be promoted as routine parts of student wellbeing programming.
- Faculty mentors and hostel supervisors should be trained to recognize early warning signs and respond in a supportive, non-stigmatizing manner.

Conclusion:

The present manuscript indicates a considerable burden of depression, anxiety, and stress symptoms among students of Army Medical College Rangpur, with anxiety emerging as the most prominent problem in the presented dataset. Female students appear to carry a greater symptom burden than male students, and shorter sleep duration may be associated with poorer mental wellbeing. These findings support the need for routine screening, confidential counseling access, faculty mentorship, and institution-level mental health promotion. However, the manuscript should be finalized for publication only after the placeholder results are replaced with the actual study data and the full analysis is verified.

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