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Mental Health Challenges in Medical Education: Prevalence of Depression and Stressors among Medical Students in Armenia

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KEYWORDS

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Medical students,

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ABSTRACT:

Background: Psychological stress is a prevalent issue in medical schools and is often associated with depression. Although medical education in Armenia is highly esteemed, there is limited research on the mental well-being of medical students. This study aims to assess the prevalence of depression among medical students at different educational stages and to identify the specific stressors they experience.

Methods: A cross-sectional survey was conducted among undergraduate medical students at Yerevan Hayabusa University, Armenia. One hundred students from the first and second years of the Bachelor of Medicine and Bachelor of Surgery (MBBS) program participated in the study, which took place between July and November 2024. Depression levels were assessed using the Zung Depression Scale. Participants completed the questionnaire, and their depression scores were calculated. Additionally, the survey examined stress-inducing factors related to medical education.

Results: The overall prevalence of depression among the students was found to be 29.78%. Depression was more prevalent among first-year students (36.74%) compared to second-year students (22.22%). In terms of gender, 32.43% of female students and 28.07% of male students were found to be depressed. Both first and second-year students identified academic stress and a hectic lifestyle as the primary stressors contributing to their elevated stress levels.

Conclusion: The heightened prevalence of depression among first-year medical students underscores the need for early interventions. As academic stress was identified as a key contributing factor, it is essential to develop strategies to reduce stress and enhance the overall well-being of students from the beginning of their medical education.

1. Introduction

Medical education is widely regarded as one of the most demanding academic paths, characterized by a rigorous curriculum and high expectations. While the prestige of medical degrees is indisputable, increasing concern has emerged regarding the psychological well-being of medical students, particularly the prevalence of mental health issues such as depression. It is well-documented that medical students face significant psychological stress as they transition from novices to skilled healthcare professionals, a process that demands substantial personal and social sacrifices. This transition often

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occurs in a highly competitive academic environment, contributing to heightened levels of distress, including symptoms of depression, among medical undergraduates. Depression has become a significant concern in medical schools, negatively affecting both academic performance and students' overall well-being (1).

While medical education in Armenia is highly esteemed, the demands placed on students in this rigorous academic environment, coupled with social and cultural pressures, may contribute to unique mental health challenges. Despite the increasing awareness of mental health globally, there is limited data on how these challenges manifest among Armenian medical students. Studies from neighbouring countries, such as Georgia and Russia, have highlighted significant mental health concerns among medical students, underscoring the need for region-specific research to better understand these issues in Armenia (2,3).

2. Objectives

This study aims to fill the gap in the literature by investigating the prevalence of depression among medical students at Yerevan Hayabusa University. The research will examine depression rates at different stages of medical education, explore gender differences, and identify key stress-inducing factors. The findings of this study will not only provide valuable insights into the mental health challenges faced by medical students in Armenia but also inform the development of targeted interventions and mental health support systems, contributing to the well-being and future success of medical students and healthcare professionals.

3. Methods

A descriptive cross-sectional study was conducted at Yerevan Hayabusa University, Armenia, from July to August 2024. The study included 100 students, with 50 students from each of the first and second years of the Bachelor of Medicine and Bachelor of Surgery (MBBS) program. Students were selected through random sampling based on their roll numbers.

Before participation, all students were briefed on the research objectives and provided with general instructions. Informed consent was obtained from each participant, ensuring voluntary and confidential participation. Ethical approval for the study was granted by the Research Ethics Committee of Yerevan Hayabusa University.

Participants completed a questionnaire that included personal demographic data, the Zung Depression Scale, and questions on stress-inducing factors.

3.1. Personal Data Section:

The personal data section included information on age, sex, academic year, religion, and home country.

3.2. Zung Depression Scale:

Depression was assessed using the Zung Depression Scale, a 20-item self-reported questionnaire with satisfactory psychometric properties (Cronbach's alpha = 0.79). The scale includes 10 positive and 10 negative statements, with responses scored on a 4-point Likert scale (1 to 4). The total score ranges from 20 to 80, with a score of 50 or higher indicating the presence of depression (4).

3.3. Stress-Inducing Factors:

The questionnaire also assessed stress-inducing factors, with five key stressors identified based on an extensive literature review and expert consultation. The factors included:

- Academic stress
- Homesickness
- Relationship issues
- Hectic lifestyle
- Future concerns

3.4. Data Analysis

Data were entered into Microsoft Excel and analysed using SPSS version 12.0. Descriptive statistics (mean, standard deviation, and percentages) were used for parametric data, while non-parametric data were analysed using chi-square tests. The prevalence of depression, along with a 95% confidence interval, was calculated.

4. Results

A total of 100 questionnaires were distributed to medical students, with 94% of them returned completed, resulting in a response rate of 94%. Among the 94 respondents, 57 (60.64%) were male and 37 (39.36%) were female.

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Forty-nine students (52.13%) were in their first year, while 45 students (47.87%) were in their second year of medical school. The mean age of the participants was 21.18 years, with a standard deviation of 1.65 years, and a range from 18 to 26 years. The majority of the students were Armenian (77.66%), followed by Indian (22.34%) nationals.

The overall prevalence of depression in the sample of medical students was found to be 29.78%. The prevalence of depression among first- and second-year students is shown in Table 1. Depression was more prevalent in first-year students (36.74%) compared to second-year students (22.22%). Furthermore, female students reported a higher prevalence of depression (32.43%) compared to their male counterparts (28.07%), as illustrated in Table 2.

(i) Prevalence of Depression by Year of Study

Table 1. Prevalence of depression: First year versus second year.

	No. of depressed students	**Percentage (%)**
Year 1	18	36.74
Year 2	10	22.22

(ii) Prevalence of Depression by Gender

Table 2. Prevalence of depression: male versus female students.

	No. of depressed students	**Percentage (%)**
Depressed females	12	32.43
Depressed males	12	28.07

(iii) Stress-Inducing Factors

The stress-inducing factors reported by first- and second-year students are summarized in Table 3. First-year students most frequently identified academic stress (73.46%), hectic lifestyles (44.89%), and relationship issues (40.82%) as significant stressors. In contrast, second-year students also highlighted academic stress (84.44%) and hectic lifestyles (57.78%) as prominent stressors, while future concerns emerged as a significantly more substantial stressor for second-year students (46.67%) compared to first-year students (16.32%), with a statistically significant p-value of 0.001.

Table 3. Stress inducing factors versus year of study.

FACTOR	**Year 1**	**Year 2**	***P* value**
Home sickness	14(28.56%)	11(22.22%)	0.651
Future concerns	8(16.32%)	21(46.67%)	0.001
Relationships	20(40.82%)	13(28.89%)	0.226
Academic stress	36(73.46%)	38(84.44%)	0.194
Hectic lifestyle	22(44.89%)	26(57.78%)	0.212

These findings indicate that while both first- and second-year students reported academic stress and hectic lifestyles as major stressors, future concerns were notably more stressful for second-year students. The significance of these factors underscores the evolving stress profile as students' progress through medical school.

5. Discussion

The response rate of 94% provided a robust sample size, effectively meeting the study's objectives. The study revealed a 29.78% prevalence of depression among undergraduate medical students, a figure that aligns with similar studies conducted in the UK (31.2%) but is higher than findings from Sweden (12.9%) and Manipal, Nepal (20%) (4). In contrast, a study conducted in Pakistan reported a significantly higher depression prevalence of 60%, indicating elevated stress levels and poorer psychological well-being among students. This disparity suggests that depression may have a greater impact on behaviour, learning, and patient care in different cultural or educational contexts (5).

Furthermore, our study found that the prevalence of depression was higher among first-year medical students (36.74%) compared to second-year students (22.22%). This could be attributed to the challenges associated with the transition from high school to medical school, as students adapt to a more rigorous academic environment (4). Additionally, a downward trend in depression prevalence was observed as students progressed through

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medical school, consistent with previous studies that suggest a reduction in depression levels over time (6,7).

Gender differences in depression prevalence were also noted, with female students (32.43%) reporting a slightly higher prevalence of depression than male students (28.07%). However, the statistical difference was not significant ($p = 0.651$). This finding aligns with studies from Pakistani medical schools and other literature, which suggest a higher prevalence of depression among female students (5,6). These results may reflect broader trends in which women are more likely to experience depressive symptoms (8).

Both first-year and second-year students identified academic stress and demanding lifestyles as primary stress-inducing factors, which is consistent with findings from studies in Pakistan and India (9,6). However, a British study reported different stress factors, which could be attributed to cultural differences or variations in survey methodologies, highlighting the potential impact of context on stress perceptions (10).

Importantly, concerns about the future emerged as a significant stressor among second-year students, likely due to their exposure to clinical rotations and the anticipation of post-graduate entrance exams (10). This shift in stressors from academic challenges to future-oriented concerns underscores the evolving nature of stress during medical training.

The study does have several limitations. Firstly, it focuses exclusively on first- and second-year students, which limits the generalizability of the findings to students in later years of medical school. Additionally, the study does not comprehensively address all potential stressors, such as coping strategies or support mechanisms like student counselling services. Future research should consider these factors to provide a more holistic understanding of student mental health (11,12).

Nevertheless, the study provides valuable insights into the mental health challenges faced by medical students, particularly with regard to depression and stress. The findings highlight the importance of addressing these issues through targeted interventions, including health promotion programs, support mechanisms, and recreational activities. Incorporating leisure activities as stress-relieving measures may help alleviate the pressures faced by medical students, enhancing both academic performance and overall well-being (12).

6. Conclusion

This study clearly demonstrates a significant prevalence of depression among medical students, particularly among first-year students, with a slightly higher incidence noted among female students. The higher rates of depression observed in the first-year cohort could be attributed to the stress associated with transitioning from high school to medical school, where students are faced with a more demanding academic environment and new social challenges. Female students, in particular, may be more vulnerable to these stressors due to a combination of academic pressures and gender-specific societal expectations.

Given the high prevalence of depression in the early stages of medical education, it is critical to provide proactive mental health support from the very beginning of students' medical careers. The establishment of student counselling services that are easily accessible and promoted as part of the university's support network can play a vital role in helping students cope with the stress they experience. Early interventions can help students develop better stress management skills, potentially reducing the negative impact of academic pressure and lifestyle changes in subsequent years.

Furthermore, timely identification of depression symptoms and stress-inducing factors is essential for preventing the escalation of mental health issues. Medical schools should consider implementing regular screenings for depression and stress throughout students' academic journey. By identifying students who may be struggling, institutions can guide them toward appropriate resources, including counselling services, peer support groups, or medical treatment if necessary. Addressing mental health early can significantly improve students' overall well-being, academic performance, and long-term professional development.

In addition to counselling services, fostering a culture of mental health awareness, where seeking help is normalized and encouraged, will contribute to reducing the stigma associated with mental health challenges. Academic institutions could also integrate stress management workshops, mindfulness programs, and recreational activities into the curriculum, providing students with practical tools to navigate the pressures of

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medical training. By addressing these issues comprehensively, medical schools can support students in maintaining both their mental health and academic success throughout their education and into their future careers as healthcare professionals.

7. Data availability statement

The original contributions presented in the study are included in the article, further inquiries can be directed to the corresponding authors.

8. Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

9. Ethical clearance

The clinical study was approved by Institutional Ethical Clearance (Number: 808/IEC/2024)

10. Author contributions

All authors contributed to preparing this research article. The conceptualization, literature survey, and first draft were prepared by Sowmiya Kumar, Ali Shamyar, Tigran Petrosyan done the editing and reviewing. A formal analysis and editing were done by Ria Murugesan. Reviewing and editing of the draft for important intellectual content, and, approval of the version to be published was done by Janardanan Kumar. The final version of the manuscript was approved by all authors.

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