

Unmet Mental Health Care Needs and Barriers to Treatment for Depression in Medical Students: A Study from North Indian State of Delhi

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Abstract

Introduction: Depression among medical students is a significant public health concern in India due to the demanding nature of medical education. The study aims to determine the prevalence of depression, evaluate unmet mental health care needs, and identify barriers to seeking help. **Methodology:** A cross-sectional study was conducted in 2023 among undergraduate medical students in New Delhi. The PHQ-9 assessed depression, while the BACE scale evaluated barriers to mental health care. Data analysis was performed using STATA 18. **Results:** Of the 413 participants, 31.4% screened positive for depression, with higher rates among second year students and those dissatisfied with academic performance or with low physical activity. Only 43.8% perceived a need for care, while 78.9% reported unmet needs. Key barriers included stigma (e.g., fear of family reactions and mental health records), attitudinal factors (e.g., preference for self-management), and instrumental challenges (e.g., academic pressures and time constraints). **Conclusion:** Depression is prevalent among medical students, with significant unmet care needs driven by stigma and other barriers. Interventions focusing on stigma reduction, accessibility, and mental health awareness are critical to enhancing care-seeking behavior and improving student well-being.

Keywords: Depression, medical students, mental health, stigma, barriers to care, help-seeking behaviour, India, PHQ-9.

Introduction

Depression is a significant public health concern globally, with its prevalence among medical students emerging as a critical area of research ^[1]. In India, where the medical education system is highly demanding, medical students face substantial academic and personal pressures, making them particularly vulnerable to depression, which is one of the most prevalent mental health conditions ^[2]. A 2024 report by the National Task Force on the mental health of Indian medical students found that the prevalence of depression ranged from 8.5% to 71%, influenced by differences in study methodologies, assessment tools, cultural factors, and stigma ^[3]. Despite the high prevalence, a substantial unmet need for mental health care persists, as many students, though recognizing their need for help, are hindered by stigma, fear of professional consequences, and limited awareness of resources ^[4]. Studies show a significant gap between perceived need and help-seeking behavior, with only 16.2% of those acknowledging the need for care accessing professional services within a year ^[5,6].

Untreated depression has far-reaching implications, negatively impacting academic performance, future professional competence, and the quality of care provided by medical students as future healthcare professionals ^[7]. Early identification and intervention are vital to mitigate the long-term consequences for both students and the healthcare system ^[8]. While the prevalence of depression among medical students is well-documented, there remains a significant gap in understanding the unmet need for care and the barriers to seeking treatment. This study aims to examine not only the prevalence of depression but also the unmet need for mental health care and the factors contributing to this gap, providing essential insights to develop targeted interventions for reducing the burden of depression in this vulnerable population.

Study methodology

Study Setting and Design: This cross-sectional study was conducted at a medical college in New Delhi during June 2023.

Study Participants: The study included undergraduate medical students from all semesters who provided written informed consent. Students under the age of 18 and those who did not give consent were excluded from the study.

Sample Size and Sampling Method: The sample size was calculated to be 425, taking the prevalence of depression as 50%, 5% absolute error and 10% non-response rate. [1] A list of all students enrolled in the MBBS program was obtained, and each student was assigned a unique serial number. Participants were selected using simple random sampling, facilitated by computer-generated random numbers.

Operational Definitions

Actual Need: Defined as the proportion of students who screened positive for depression.

Actual Unmet Need: Defined as the proportion of students with depression who had not accessed mental healthcare services in the past 12 months.

Study Tools: Data were collected using a self-administered questionnaire that included sociodemographic details, validated screening tools for common mental disorders, and questions regarding perceived unmet mental health needs. Follow-up questions addressed barriers to seeking professional mental health care.

Depression Screening: The Patient Health Questionnaire (nine-item version) (PHQ-9) was employed as a diagnostic tool for the assessment of depressive symptoms. PHQ-9 is a short scale consisting of nine questions, which are symptoms of depression, enabling criteria-based diagnosis of depression. Each item is allocated a score that ranges from zero (indicative of minimal presence) to three (representative of occurrence on nearly every day), thereby permitting a scoring continuum with a minimum of zero and a maximum of 27, where elevated scores correlate with increased severity of depressive symptoms [2]. A score of 10 was considered as screened positive for depression.

Barriers to Care: The 30-item Barriers to Access to Care Evaluation (BACE) scale was used to assess stigma, attitudinal, and instrumental barriers. Some questions marked as not applicable were adapted according to BACEv3 guidelines [3]. Permission was obtained from the authors to use this validated questionnaire.

Study Methodology: A sampling frame was created from the list of undergraduate medical students enrolled in the MBBS program at a medical college of New Delhi. A total of 425 students were selected through simple random sampling and approached to participate in the study. Students who could not be contacted after three attempts were marked as non-responders. All selected students were assessed for depression. Students were assessed for perceived mental health needs. They were asked "During the past 12 months, have you thought you might need help for depression?" Participants with perceived needs were also asked about mental health care utilization over the past 12 months. Those with unmet needs were evaluated using BACEv3 to identify barriers to seeking mental health care for depression.

Statistical Analysis: Data analysis was conducted using STATA 18 software. The study reported actual need, perceived need, and unmet need as proportions with 95% confidence interval (CI). Prevalence rates of depression, anxiety, and alcohol use disorder were also reported. Quantitative variables were summarized using the mean

and standard deviation, while the median and interquartile range (IQR) were used for variables that did not follow a normal distribution.

Ethical Clearance: Ethical clearance was obtained from the Institutional Ethical Committee under the reference IEC/VMMC/SJH/Project/06-2023/CC-01. Each student was briefed about the study's purpose and provided with a participant information sheet. Written informed consent was obtained from all participants prior to participation. To ensure confidentiality, all data were anonymized by assigning unique codes to participants and securely storing the key linking these codes to individual identities. Only the research team had access to the data, which were stored in password-protected electronic files. Participants scoring above the cutoff on the PHQ-9 scale were informed of their results privately and provided with contact information for mental health resources available at the institution.

Result

In our study, we achieved a high response rate of 97.4%, with 413 students participating. The sample was predominantly male, constituting 61.7% of the participants. The average age of the respondents was 20.4 years (SD 1.6), with males having a slightly higher mean age compared to females. The largest group of students were in their first year, making up 33.6% of the sample, while the smallest group was in their final year, comprising 16.8%. Using the modified B.J. Prasad scale, a substantial portion of the students (81.6%) were classified as upper class. More than half of the participants, 63.4%, were living in hostels or alone in rented accommodations. Notably, two students had repeated an entire year, and 38 students (9.2%) had to take supplementary exams. Less than half of the students, 45.3%, did not meet the recommended levels of physical activity. Additionally, 57 students (13.8%) reported using tobacco. Social media usage was significant, with 14.8% of students spending more than four hours daily on these platforms.

Among the total 413 participants, 130 were suffering from depression, taking the prevalence to 31.4% [95% CI 27.0% - 36.1%] (Figure 1).

The socio-demographic profiles of study participants are mentioned in Table No. 1 in detail.

Depression was more prevalent among second-year students (43.2%) compared to other years of study, with year of study emerging as a statistically significant factor ($P < 0.01$). Dissatisfaction with academic performance showed a strong association with depression, as 44.6% of dissatisfied students screened positive compared to 17.2% of satisfied students ($P < 0.01$). Physical inactivity was also a key correlate, with 41.2% of participants engaging in less than 150 minutes of weekly moderate intensity physical activity screening positive, compared to 23.5% of their more active counterparts ($P < 0.01$). Social media use displayed a dose-response relationship with depression, with positivity rates increasing from 11.1% among those with no use to 49.2% for those exceeding four hours daily ($P < 0.01$). Although gender, current place of stay, and tobacco use were not significantly associated with depression, alcohol addiction demonstrated a trend toward higher depression rates (54.6%) despite borderline significance ($P = 0.09$).

Second-year students (adjusted OR: 2.0, $p=0.01$) and final-year students (adjusted OR: 2.22, $p=0.02$) were significantly more likely to experience depression compared to first-year students. Students who were dissatisfied with their academic performance had over three times the likelihood of experiencing depression (adjusted OR: 3.33, $p<0.01$). Additionally, students engaging in less than 150

minutes of physical activity per week had a higher likelihood of depression (adjusted OR: 1.79, $p < 0.01$). Alcohol use did not show a significant association with depression in the adjusted model (adjusted OR: 1.44, $p = 0.59$). Although there was an indication that higher social media usage might be associated with increased odds of depression, the association was not statistically significant for those using it for more than four hours daily (adjusted OR: 4.36, $p = 0.19$) (**Table 2**).

Of the 130 (31.7%) participants who were screened positive for depression, 57 (43.8%) perceived the need to seek mental health care. However, only 12 (21.1%) of those who perceived the need actually sought mental health care. Thus, 45 students were depressed, perceived the need for mental health care, but did not seek it. (**Figure 2**) The unmet need for seeking care for depression was 78.9% (95% CI: 66.1%-88.65%).

The most significant stigma-related barriers to seeking mental health care among the participants were concerns about what their family might think, say, or feel (mean score 1.1, SD 1.0) and not wanting a mental health problem to be on their medical records (mean score 1.0, SD 1.1). Among the attitude-related barriers, the most significant were wanting to solve the problem on their own (mean score 1.9, SD 1.0) and thinking that the problem would get better by itself (mean score 1.6, SD 1.1). These findings suggest a high degree of self-reliance among students, who may believe that they can manage their mental health issues without external help. The most significant instrumental barriers to accessing mental health care were not being able to afford the financial costs (mean score 0.7, SD 1.0) and having no one to help them get professional care (mean score 0.7, SD 0.9) (**Table 3**).

Table 1: Association of demographic, academic, and lifestyle factors with depression (n=413)

Variables		Yes (n = 130)	No (n = 283)	P Value
Gender	Male	84 (32.9%)	171 (67.1%)	0.4
	Female	46 (29.1%)	112 (70.9%)	
Year of study	First year	35 (28.1%)	104 (78.9%)	<0.01*
	Second year	48 (43.2%)	63 (56.7%)	
	Third year	20 (21.2%)	74 (78.7%)	
	Final year	27 (39.1%)	42 (60.9%)	
Current place of stay	Hostel	88 (33.6%)	174 (66.4%)	0.22
	With Parents	42 (28.8%)	109 (72.2%)	
Satisfied with academic performance	No	96 (44.6%)	119 (55.4%)	<0.01*
	Yes	34 (17.2%)	164 (82.8%)	
Physical activity	Yes (>150 min/week)	53 (23.5%)	173 (76.5%)	<0.01*
	No (<150 min/week)	77 (41.2%)	110 (58.8%)	
Ever used tobacco	Yes	21 (16.2%)	36 (12.7%)	0.34
	No	109 (83.8%)	247 (87.3%)	
Alcohol addiction	No	124(30.8%)	278(69.2%)	0.09
	Yes	6(54.6%)	5(45.4%)	
Social media use	No use at all	1 (11.1%)	8 (88.9%)	<0.01*
	Less than 1 hour	13 (17.8%)	60 (82.2%)	
	1 to 4 hours	86 (31.8%)	184 (68.2%)	
	More than 4 hours	30 (49.2%)	31 (50.8%)	

* Statistically significant

Table 2: Unadjusted and Adjusted Odds Ratios for Predictors of Depression

		Unadjusted odds ratio	P value	Adjusted Odds ratio	P value
Year of study	First year	Ref		Ref	
	Second year	2.26	<0.01*	2.0	0.01*
	Third year	0.80	0.492	0.99	0.98
	Final year	1.91	0.04*	2.22	0.02*
Satisfied with academic performance	No	3.88	<0.01*	3.33	<0.01*
	Yes	Ref		Ref	
Physical activity	No (<150 min/week)	1.6	<0.01*	1.79	<0.01*
	Yes (>150 min/week)	Ref		Ref	
Alcohol use	No	Ref	0.108	Ref	0.59
	Yes	2.69		1.44	
Social media use	No use at all	Ref		Ref	
	Less than 1 hour	1.73	0.618	1.45	0.74
	1 to 4 hours	3.73	0.217	2.26	0.46
	More than 4 hours	7.74	0.061	4.36	0.19

Table 3: Barriers to Seeking Mental Health Care: Frequencies and Mean Responses Across Categories (n=45)

Stigma Barriers	Not at all	A little	Quite a lot	A lot	Mean(SD)
Feeling embarrassed or ashamed	13(28.9%)	21(46.7%)	8(17.8%)	3(6.7%)	1.0(0.9)
Concern that I might be seen as weak for having a mental health problem	16(35.6%)	18(40%)	7(15.6%)	4(8.9%)	1.0(0.9)

Concern what my family might think, say do or feel	15(33.3%)	15(33.3%)	10(22.2%)	5(11.2%)	1.1(1.0)
Not wanting a mental health problem to be on my medical records	19(42.2%)	11(24.4%)	9(20%)	6(13.3%)	1.0(1.1)
Concern that I might be seen as crazy	21(46.7%)	13(28.9%)	8(17.8%)	3(6.6%)	0.8(0.9)
Concern that people I know might find out	20(44.5%)	13(28.9%)	8(17.8%)	4(8.8%)	0.9(1.0)
Concern that people might not take me seriously if they found out I had professional care	19(42.2%)	14(31.2%)	8(17.8%)	4(8.8%)	0.9(1.0)
Concern about what my friends might think, say or do	19(42.2%)	15(33.4%)	8(17.8%)	3(6.6%)	0.9(0.9)
Attitude barriers					
Dislike about talking about my feelings, emotions, and thoughts	16(35.6%)	15(33.3%)	8(17.8%)	6(13.3%)	1.1(1.0)
Concerns about the treatment available (for example, medication side effects)	19(42.2%)	14(31.1%)	8(17.8%)	5(11.1%)	1.0(1.0)
Wanting to solve the problem on my own	5(11.1%)	11(24.4%)	12(26.7%)	16(35.6%)	1.9(1.0)
Thinking that professional care would not help	18(40%)	18(40%)	7(15.6%)	2(4.4%)	0.9(0.9)
Fear of being put in a hospital against my will	24(53.4%)	13(28.9%)	4(8.9%)	4(8.8%)	0.7(0.9)
Thinking the problem would get better by itself	9(20%)	13(28.9%)	13(28.9%)	10(22.2%)	1.6(1.1)
Having had previous bad experiences with professional care for mental health	32(71.1%)	8(17.8%)	4(8.9%)	1(2.2%)	0.4(0.8)
Thinking I did not have a problem	16(35.6%)	16(35.6%)	8(17.7%)	5(11.1%)	1.1(1.0)
Preferring to get help from family or friends	13(28.9%)	16(35.6%)	10(22.2%)	6(13.3%)	1.2(1)
Preferring to get alternative forms of care	18(40%)	14(31.1%)	9(20%)	4(8.9%)	0.9(1.0)
Instrumental barriers					
Not being able to afford the financial costs	24(53.3%)	12(26.7%)	5(11.1%)	4(8.9%)	0.7(1.0)
Being too unwell to ask for help	30(66.7%)	10(22.2%)	4(8.9%)	1(2.2%)	0.4(0.7)
Difficulty taking time off work	19(42.4%)	11(24.3%)	10(22.2%)	5(11.1%)	1.0(1.0)
Unsure where to get professional care	21(46.7%)	15(33.3%)	5(11.1%)	4(8.9%)	0.8(0.9)
Problem with transport/travel with appointments	25(55.5%)	12(26.7%)	5(11.1%)	3(6.7%)	0.7(0.9)
Having no one who could help me get professional care	25(55.6%)	10(22.2%)	8(17.8%)	2(4.4%)	0.7(0.9)
Unavailability of professionals from my ethnic or cultural group	31(68.9%)	9(20.0%)	3(6.7%)	2(4.4%)	0.5(0.8)

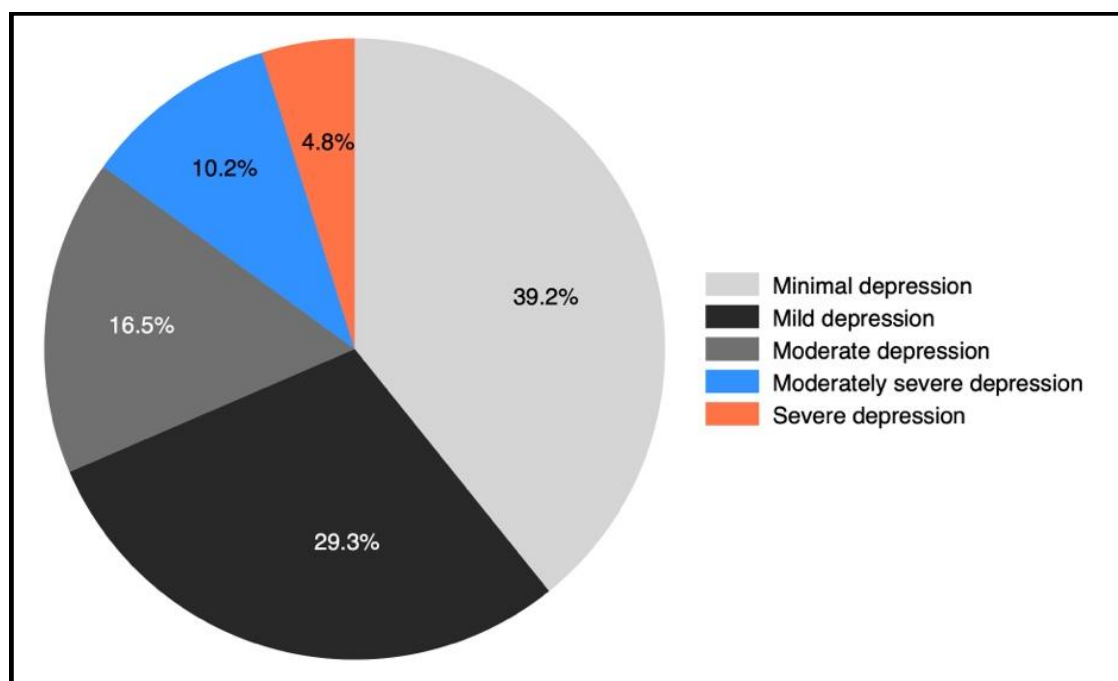


Figure 1: Prevalence of depression among medical students (N=413)

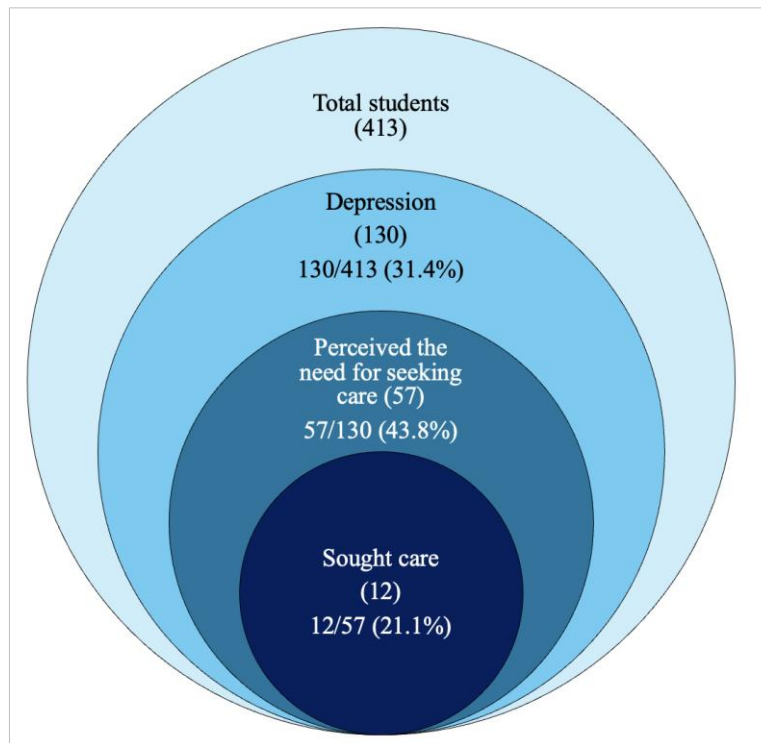


Figure 2: Proportions of Depression, Perceived Need, and Mental Health Care Seeking in the Study Population

Discussion

Our study revealed a 31.4% prevalence of depression among medical students, aligning with some global findings and Indian studies [4-7]. However, we have observed a lot of variation in the prevalence of depression in India. Studies conducted by Chakraborty et al., Kethawath et al., and Pattnaik et al. show the prevalence of depression is much higher, whereas some authors report a lower prevalence of depression [8-10]. Vala et al. reported a lower prevalence of 10.8%, likely influenced by focusing on first-year students during the COVID-19 pandemic [11]. Lepcha et al. found a lower rate of 22.44% [12]. This difference in prevalence is largely due to differences in the tools used for diagnosis, and while some authors use the same tools, they apply different cut-offs to diagnose depression. Differences across studies may also stem from variations in sample sizes and external factors like the recent COVID-19 pandemic. A meta-analysis conducted by Dutta et al. showed the prevalence of depression to be 50%, which is higher compared to our study [1].

In our study, final-year students were more likely to experience depression; this is consistent with studies conducted by Dakshitha et al. [13]. This may be due to academic demands and pressures increasing in the final years, especially with clinical responsibilities and upcoming exams. Additionally, as students progress through medical school, the pressures of future career choices and postgraduate exams further contribute to mental health deterioration, making final-year students more vulnerable to depression. Most studies have mentioned that depression is higher in first-year students, which is not true in our study [14]. This may be due to variations in the study population that took part in the study.

In our study, students dissatisfied with their academic performance were over three times more likely to experience depression. This aligns with findings by Lepcha et al., Rana et al., and Prabhakar et al., where academic dissatisfaction and stress were key predictors of depression [12,14,15]. The high self-imposed pressure in medical school, where academic success is tied to career opportunities, can lead to feelings of inadequacy, frustration, and

chronic stress. These factors are linked to depressive symptoms through HPA axis dysregulation and elevated cortisol. Repeated academic failure can also result in learned helplessness, a key feature in depressive disorders.

In our study, students engaging in less than 150 minutes of physical activity per week had a higher likelihood of experiencing depression. This is consistent with findings from Vala et al., where physical inactivity was noted as a significant risk factor for depression, especially during the COVID-19 pandemic, as lockdowns restricted movement and access to exercise [11]. Similarly, Prabhakar et al. identified physical inactivity as a contributing factor, though academic stress was more heavily emphasized in their study [15]. Lack of exercise, especially in high-stress environments like medical schools, can lead to increased cortisol levels and a decrease in sleep quality, both of which are linked to depression [16]. Additionally, exercise improves overall cognitive function and stress resilience, further mitigating the risk of depression.

The study highlights a very small percentage of medical students who were screened positive for depression actually sought health care.

Stigma-related, attitudinal, and instrumental barriers were identified as key factors preventing students from seeking mental health care. Stigma-related concerns, such as fear of judgment and professional repercussions, discouraged students from addressing their mental health needs. Many doctors fear being labelled as "mentally ill" by their colleagues, which could lead to reputational harm and negative career implications. This is exacerbated by concerns about appearing weak among their peers. A study conducted by Grover et al. among trainee doctors in North India found that 54.6% of respondents cited the stigma of mental illness as the primary reason for not seeking help, while 58.1% worried about being seen as weak [17]. Doctors are often concerned about the confidentiality of their mental health records, especially when consulting with mental health professionals within the same institution where they work. This fear is compounded by worries about being reported to licensing boards or other professional bodies, potentially affecting their careers [18].

Attitude-related barriers, including a preference for self-reliance and the belief that problems would resolve on their own, were consistent with the findings of Balon et al.^[19] Given et al. conducted a similar study in California, and that study also showed a similar trend, which found medical students who are suffering from mental illness prefer to self-medicate rather than seek help from a professional^[20]. Medical students often self-medicate for mental health issues due to stigma, fear of career repercussions, and concerns about confidentiality. A similar patterns is also noted for anxiety^[21].

Instrumental barriers, such as Difficulty taking time off classes were also identified in our study as a barrier. A study examining stress among trainee doctors in North India showed long working hours and lack of off days were significant factors contributing to stress and a barrier to seeking mental health care. The inability to take time off work was cited as one of the primary reasons why only about 13% of the trainees sought help from mental health professionals^[17].

A key strength of this study is its exploration of not only the prevalence and associated factors of depression among medical students, as done in many Indian studies but also its focus on treatment-seeking behaviour and the barriers to accessing care. By using a validated tool, this study provides valuable insights into why students are reluctant to seek mental health care an area less explored in previous research. However, the cross-sectional design limits causality, and self-reported data may introduce bias. Future research should focus on longitudinal studies to track changes over time and examine the effectiveness of institutional interventions in improving mental health care access for students.

Conclusion

This study found a high prevalence of depression (31.4%) among medical students, aligning with similar research in India. Also, the study highlights the striking difference between the perceived need for mental health care and the meagre percentage of actual health-seeking behaviour among medical students. Key barriers identified include stigma, fear of professional consequences, and difficulty taking time off work. Many students prefer to manage their issues independently, further reducing help-seeking behaviour. Addressing these barriers through targeted interventions is essential to improve the well-being of medical students and ensure they receive timely care.

List of abbreviations

BACE: Barriers to Access to Care Evaluation
 CI: Confidence Interval
 HPA axis: Hypothalamic-Pituitary-Adrenal axis
 IEC: Institutional Ethics Committee
 MBBS: Bachelor of Medicine and Bachelor of Surgery
 OR: Odds Ratio
 PHQ-9: Patient Health Questionnaire - 9 item version
 SD: Standard Deviation

Declarations

Ethics approval and consent to participate

Ethical clearance for this study was obtained from the Institutional Ethics Committee of VMMC & Safdarjung Hospital, New Delhi (Reference: IEC/VMMC/SJH/Project/06-2023/CC-01). All participants were provided with detailed information regarding the study and gave written informed consent prior to participation.

Data Availability

The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request. Due to privacy concerns, individual-level data are not publicly available.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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Authors' contributions

AD: conceptualized the study, designed the methodology, supervised the research, and contributed significantly to manuscript writing. PG: Coordinated data collection, managed the data, and assisted in statistical analysis. SC: Supported data interpretation and helped draft sections of the manuscript. SB: conducted literature review and contributed to identifying barriers and discussing results. NV: Helped refine the questionnaire, contributed to the ethical clearance process, and supported data handling. AV: critically reviewed the manuscript for intellectual content and provided expert inputs in study design and final analysis.

All authors read and approved the final manuscript.

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Supplementary Materials

NIL

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