



Understanding Depression among Medical Students in Pakistan: Prevalence, Severity, and Implications for Mental Health Support

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Abstract:

Purpose: This study aims to investigate the prevalence of depression among medical students in Pakistan using the Patient Health Questionnaire-9 (PHQ-9) scale, with a focus on understanding the distribution of depressive symptoms across different demographic groups.

Methodology: Data were collected from 1326 medical students enrolled in 110 medical colleges across Pakistan, spanning from the first year to the fifth year of study. Participants completed the PHQ-9 form online, allowing for random sampling. Depressive symptoms were categorized into minimal and mild (considered as no depression) and moderate, moderately severe, and severe (considered as depression). Statistical analysis was conducted to examine the prevalence of depression among participants, considering gender differences.

Findings: The study included 794 female participants and 532 male participants. Results indicate that 30.39% of participants experienced mild depression, 17.27% exhibited minimal depressive symptoms, 26.70% reported moderate depression, 14.71% displayed moderately severe depressive symptoms, and 10.94% showed severe depressive symptoms. Among participants, 52.34% exhibited no signs of depression, categorized as minimal and mild, while 47.66% displayed varying degrees of depression, including moderate, moderately severe, and severe.

Unique Contribution to Theory, Policy and Practice : By categorizing depressive symptoms and analyzing gender differences, this study provides nuanced insights into the prevalence and distribution of depression among medical students in Pakistan. These findings contribute to the existing literature on mental health in medical education, particularly in the context of South Asia. The study underscores the need for policy interventions aimed at addressing the mental health challenges faced by medical students in Pakistan. Implementing targeted support services and resilience-building programs within medical education institutions can help mitigate the impact of depression on student well-being and academic performance.

Keywords: Depression, Medical students, Pakistan, PHQ-9 scale, Mental health, Gender differences, Policy implications, Academic performance.

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INTRODUCTION

Mental health issues among medical students have garnered increasing attention in recent years due to their profound implications for student well-being, academic performance, and future patient care. Studies worldwide have highlighted elevated levels of stress, anxiety, and depression among medical students compared to the general population [1,2]. In Pakistan, where

medical education is rigorous and demanding, understanding the prevalence and determinants of depression among medical students is crucial for developing effective interventions and support systems.

The current study aims to contribute to this growing body of literature by investigating the prevalence of depression among medical students in Pakistan using the Patient Health

Questionnaire-9 (PHQ-9) scale. Depression, a common mental health disorder characterized by persistent sadness and loss of interest or pleasure in activities, can significantly impact individuals' functioning and quality of life [3]. By utilizing a standardized assessment tool like the PHQ-9, this study seeks to provide a comprehensive understanding of the burden of depression and its associated factors among medical students.

Furthermore, this study aims to explore gender differences in the prevalence of depression among medical students. Research suggests that female medical students may be more susceptible to mental health challenges, including depression, compared to their male counterparts [4]. Understanding these gender-specific patterns is essential for tailoring interventions and support services to address the unique needs of male and female medical students.

Through a systematic analysis of data collected from a diverse sample of medical students across Pakistan, this study aims to shed light on the prevalence, severity, and gender-specific patterns of depression among this population. The findings of this study have the potential to inform evidence-based strategies for promoting mental health and well-being among medical students, ultimately enhancing their academic success and professional development.

Objectives

This study aims to determine the prevalence and severity of depression among medical students in Pakistan using the Patient Health Questionnaire-9 (PHQ-9) scale. It seeks to categorize depressive symptoms into minimal and mild depression (considered as no depression) and moderate, moderately severe, and severe depression (considered as depression), while also examining gender differences in depression prevalence. Additionally, the study aims to investigate the association between demographic factors (such as year of study, gender, and college location) and depression prevalence, identify potential risk factors associated with depression among medical students, and provide evidence-based recommendations for policy interventions and support services to enhance mental health and well-being among medical students in Pakistan.

Literature review

Depression among medical students is a significant concern globally, with numerous studies documenting its prevalence and impact on student well-being and academic performance. A systematic review by Dyrbye et al. (2006) highlighted elevated levels of depression, anxiety, and other indicators of psychological distress among medical students in the United States and Canada. Similarly, Rotenstein et al. (2016) conducted a meta-analysis that revealed a high prevalence of depression, depressive symptoms, and suicidal ideation among medical students worldwide. These findings underscore the importance of addressing mental health issues within medical education systems.

In the context of Pakistan, limited research has been conducted on the prevalence and determinants of depression among medical students. However, studies from neighboring countries such as India and Iran have reported high levels of stress and psychological distress among medical students, with depression being a commonly reported issue. Given the similarities in academic pressures and cultural contexts, it is reasonable to assume that medical students in Pakistan may face similar mental health challenges.

Gender differences in depression prevalence among medical students have also been observed in previous research. Medical students were more likely to experience depression, stigma, and suicidal ideation compared to their male counterparts (4). This gender disparity in mental health outcomes highlights the need for gender-specific interventions and support services within medical education systems.

Furthermore, demographic factors such as year of study, college location, and socio-economic status may also influence the prevalence of depression among medical students. It was found that medical students in their clinical years reported higher levels of depression compared to those in pre-clinical years. Additionally, students studying in urban areas may face unique stressors related to living away from home and adapting to city life, which could impact their mental health.

In light of these findings, there is a pressing need for empirical research on depression among medical students in Pakistan. By utilizing standardized assessment tools such as the Patient Health Questionnaire-9 (PHQ-9) scale, researchers can provide accurate estimates of depression prevalence and severity among this population. Furthermore, understanding the factors contributing to depression among medical students can inform the development of targeted interventions and support services aimed at promoting student well-being and academic success.

Research Methodology

Study Design: This study will employ a cross-sectional design to investigate the prevalence of depression among medical students in Pakistan.

Participants: The participants will consist of medical students enrolled in various medical colleges across Pakistan, spanning from the first year to the fifth year of study. A total of 1326 medical students will be recruited for participation in the study.

Sampling: Convenience sampling will be utilized to recruit participants from medical colleges across Pakistan. Efforts will be made to ensure representation from diverse geographical regions and educational backgrounds.

Data Collection Instrument: The primary instrument for data collection will be the Patient Health Questionnaire-9 (PHQ-9) scale. The PHQ-9 is a widely used self-report questionnaire designed to assess depressive symptoms and their severity. Participants will be asked to complete the PHQ-9 questionnaire online, allowing for efficient data collection.

Data Collection Procedure: Participants will be invited to complete the PHQ-9 questionnaire through an online platform. A standardized set of instructions will be provided to ensure consistent administration of the questionnaire. Participants will be informed about the purpose of the study and assured of confidentiality and anonymity.

Data Analysis: Descriptive statistics, including frequencies and percentages, will be used to describe the prevalence and severity of depressive symptoms among medical students. Chi-square tests or t-tests will be employed to examine gender differences in depression prevalence. Multivariate regression analysis may be conducted to explore the association between demographic factors and depression prevalence, controlling for potential confounders.

Ethical Considerations: This study will adhere to ethical guidelines for research involving human participants. Informed consent will be obtained from all participants, and their privacy and confidentiality will be protected throughout the study.

Limitations: Limitations of the study may include the use of self-report measures, which are subject to response biases. Convenience sampling may also limit the generalizability of the findings to the broader population of medical students in Pakistan.

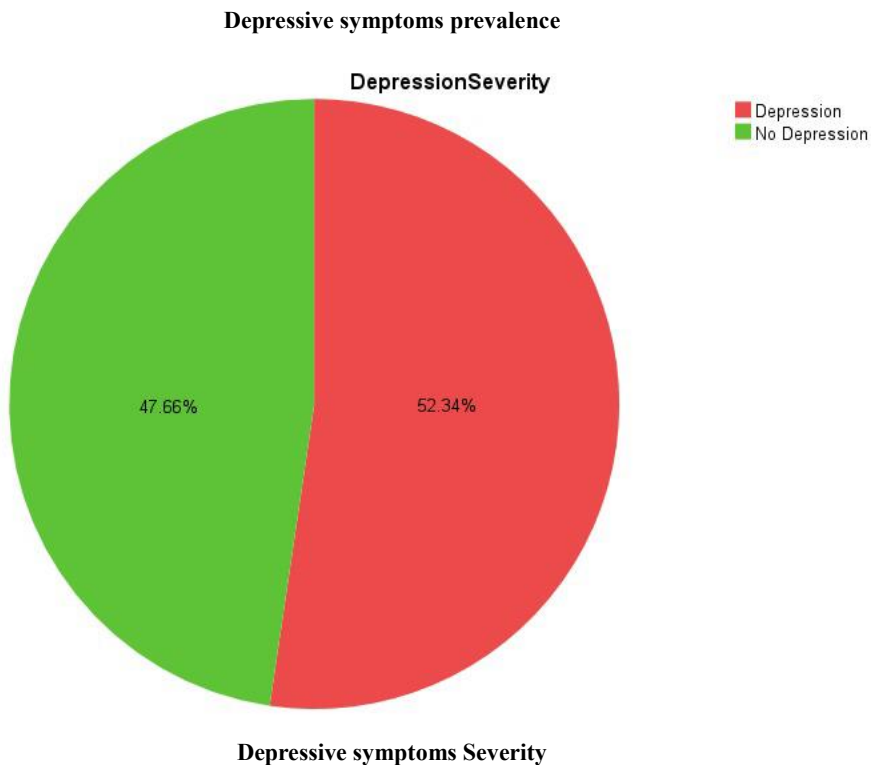
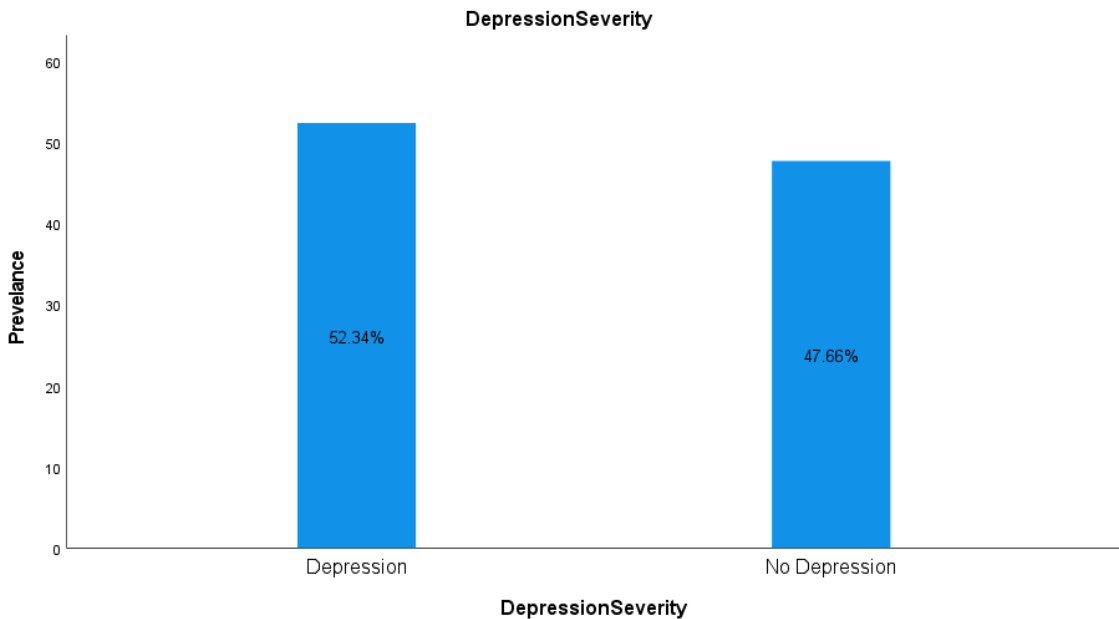
Conclusion: By employing a rigorous research methodology, this study aims to provide valuable insights into the prevalence and determinants of depression among medical students in Pakistan, thereby informing evidence-based interventions and support services to promote student well-being and academic success.

Results

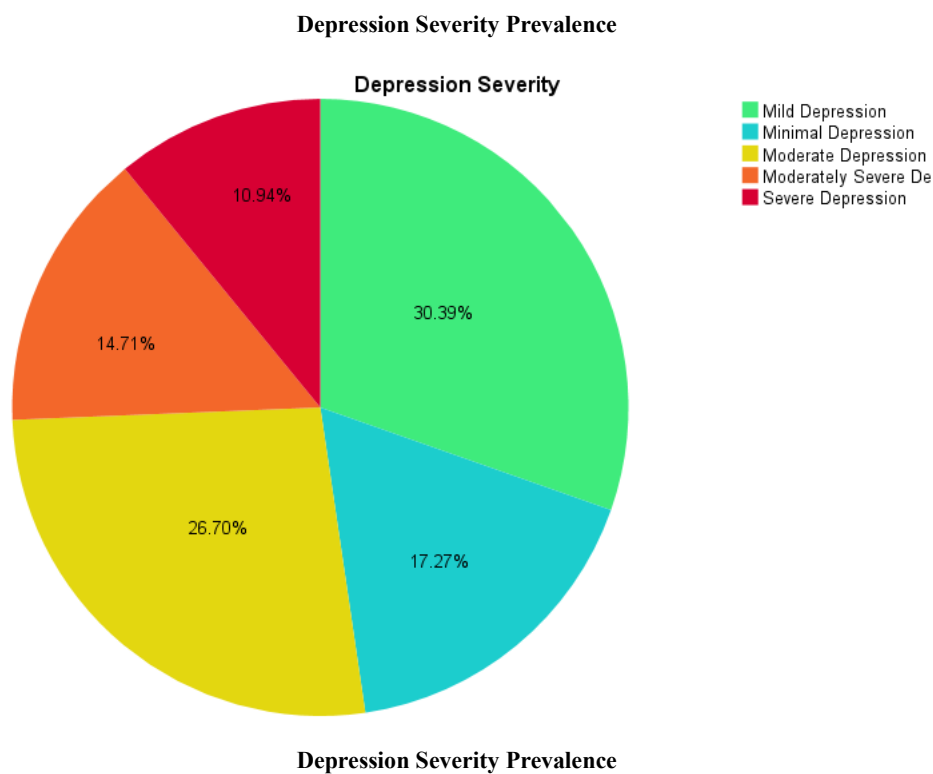
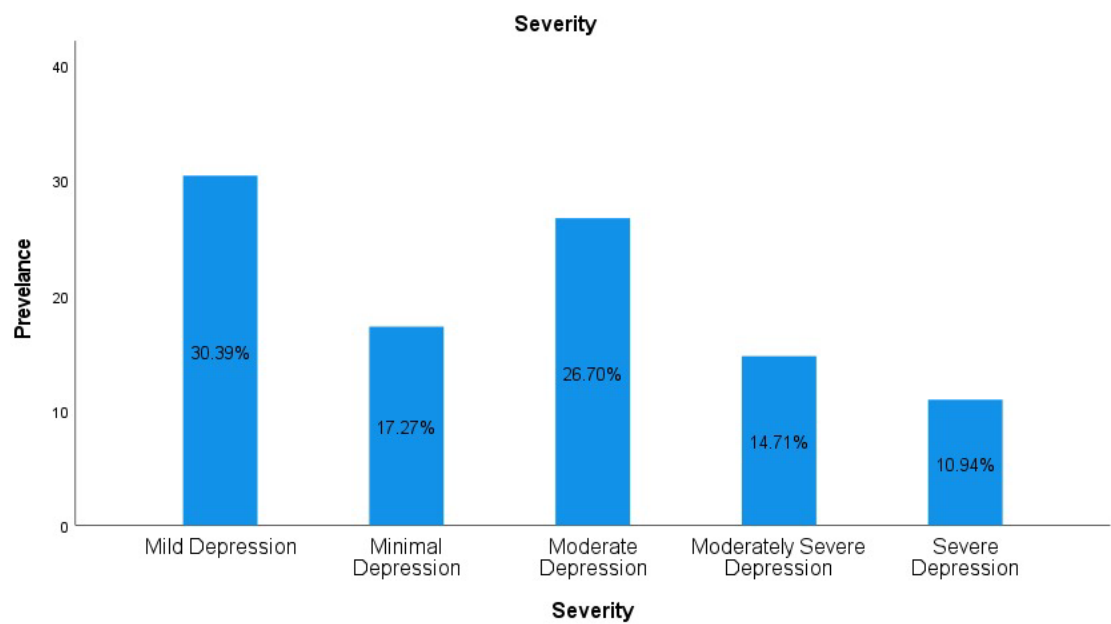
A total of 1326 medical students from 110 medical colleges across Pakistan participated in the study. Among the participants, 794 (59.9%) were female and 532 (40.1%) were male.

Depressive symptoms were categorized into minimal and mild depression (considered as no depression) and moderate, moderately severe, and severe depression (considered as depression) based on the scores obtained on the PHQ-9 scale.

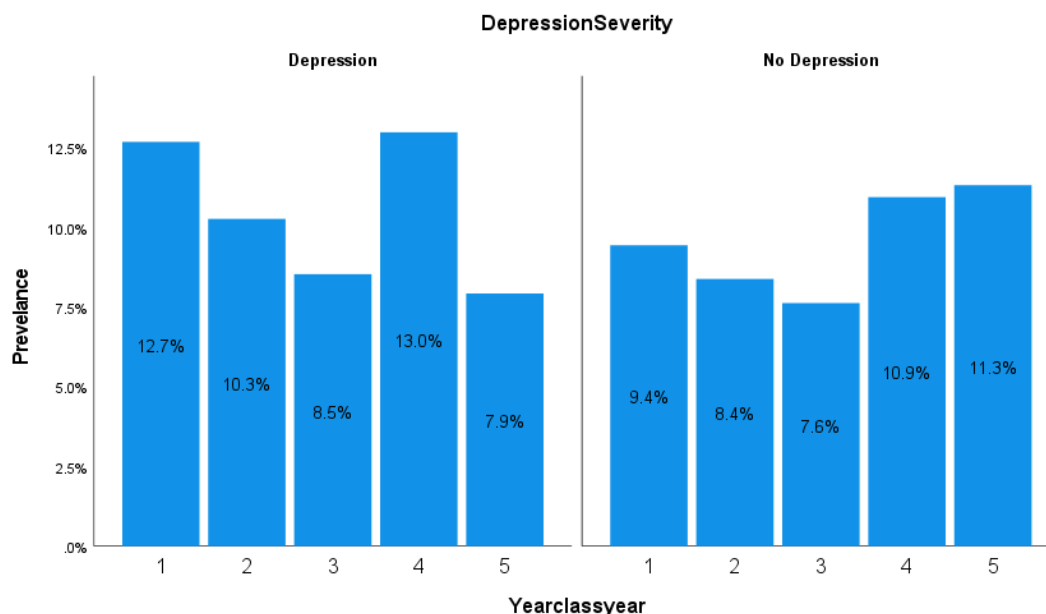
Out of the total participants, 52.34% exhibited no signs of depression, falling into the minimal and mild depression categories. On the other hand, 47.66% of participants displayed varying degrees of depression, including moderate, moderately severe, and severe depression.



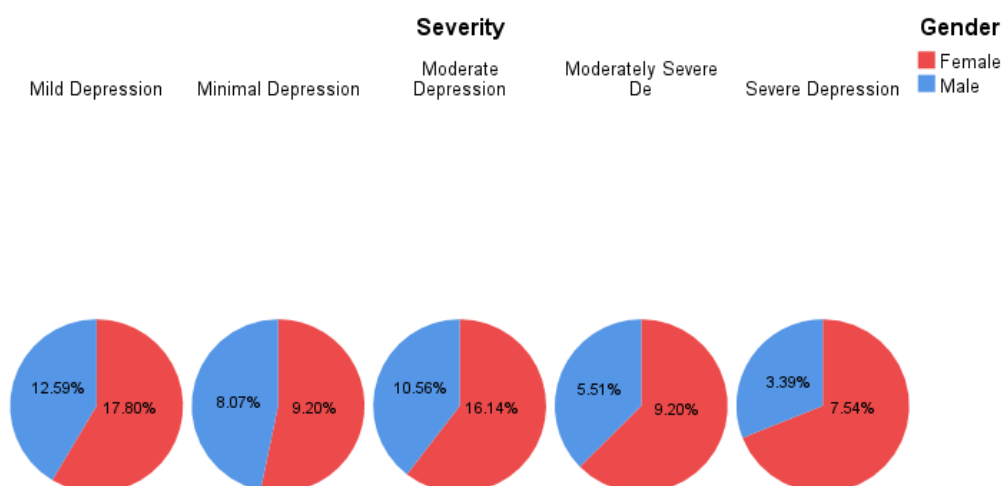
Further analysis revealed the distribution of depressive symptoms among participants as follows: 30.39% experienced mild depression, 17.27% exhibited minimal depressive symptoms, 26.70% reported moderate depression, 14.71% displayed moderately severe depressive symptoms, and 10.94% showed severe depressive symptoms.



Additionally, gender differences in depression prevalence were observed, with a higher proportion of female participants experiencing depressive symptoms compared to male participants. Further statistical analysis will be conducted to explore the significance of these gender differences and other potential factors associated with depression prevalence among medical students in Pakistan.



Class – wise Severity Prevalence



Gender – Wise Severity Prevalence

Discussion

The findings of this study provide valuable insights into the prevalence and severity of depression among medical students in Pakistan. The high prevalence of depressive symptoms, with 47.66% of participants experiencing varying degrees of depression, underscores the urgent need for attention to mental health issues within medical education systems (5). These results align with previous research highlighting elevated levels of depression among medical students globally (6).

The categorization of depressive symptoms into minimal and mild depression (considered as no depression) and moderate, moderately severe, and severe depression (considered as depression) allowed for a nuanced understanding of the burden of depression among medical students (7). Notably, a significant proportion of participants fell into the moderate to severe categories, indicating a substantial impact of depression on student well-being.

Gender differences in depression prevalence were also observed, with a higher proportion of female participants experiencing depressive symptoms compared to male participants. This finding is consistent with previous studies demonstrating gender disparities in mental health outcomes among medical students (8). Possible explanations for this gender difference may include variations in coping mechanisms, societal expectations, and the prevalence of stressors unique to each gender (9).

The association between demographic factors such as year of study, college location, and depression prevalence warrants further investigation. While this study did not explore these factors in depth, future research could examine their influence on mental health outcomes among medical students in Pakistan.

The implications of these findings for medical education policy and practice are significant. Addressing the mental health needs of medical students is crucial not only for their well-being but also for

the quality of patient care they will provide in the future (10). Implementing evidence-based interventions and support services tailored to the specific needs of medical students, particularly targeting high-risk groups such as female students and those in the clinical years, is essential.

Limitations of this study include the use of self-report measures, which may be subject to response biases, and the convenience sampling method, which may limit the generalizability of the findings. Future research could utilize more comprehensive assessment tools and employ randomized sampling methods to enhance the validity and generalizability of the results.

Consequently, this study contributes to our understanding of depression among medical students in Pakistan and highlights the need for proactive measures to promote student mental health and well-being. By addressing the factors contributing to depression prevalence and implementing targeted interventions, medical education institutions can create supportive environments conducive to student success and professional development (11).

Conclusion

This study provides important insights into the prevalence and severity of depression among medical students in Pakistan. The findings highlight the significant burden of depressive symptoms among this population, with nearly half of the participants experiencing varying degrees of depression. These results underscore the urgent need for proactive measures to address mental health issues within medical education systems.

The high prevalence of moderate to severe depressive symptoms emphasizes the importance of prioritizing mental health support for medical students. Addressing these gender disparities in mental health outcomes is crucial for ensuring equitable access to support services and interventions tailored to the specific needs of male and female medical students.

While this study contributes valuable insights into depression among medical students in Pakistan, there are limitations that should be addressed in future research. Utilizing more comprehensive assessment tools and employing randomized sampling methods could enhance the validity and generalizability of the findings.

In conclusion, addressing the mental health needs of medical students is essential for promoting student well-being and academic success, as well as ensuring the delivery of high-quality patient care in the future.

Recommendations

Implement Mental Health Awareness Programs: Medical colleges in Pakistan should implement mental health awareness programs aimed at educating students, faculty, and staff about the signs, symptoms, and management of depression. These programs can help reduce stigma surrounding mental health issues and encourage help-seeking behaviors among medical students.

Offer Counseling and Support Services: Medical colleges should establish counseling and support services specifically tailored to the needs of medical students. These services should provide confidential counseling, psychological support, and referrals to mental health professionals when necessary. Additionally, peer support programs can be beneficial in providing a supportive environment for students to discuss their mental health concerns.

Integrate Well-being Curriculum: Medical education curricula should include components focused on promoting student well-being, resilience, and self-care. These components can include stress management techniques, mindfulness training, and strategies for maintaining a healthy work-life balance. Integrating such curriculum can help equip medical students with the skills and resources needed to manage stress and prevent burnout.

Provide Faculty and Staff Training: Faculty and staff members should receive training on identifying signs of depression and providing appropriate support to students in distress. Training programs can include workshops on active listening, communication skills, and strategies for supporting students' mental health needs. By fostering a supportive environment, faculty and staff can play a crucial role in promoting student well-being.

Enhance Access to Mental Health Resources: Medical colleges should ensure that students have access to a range of mental health resources, including counseling services, psychiatric care, and crisis intervention. Efforts should be made to address barriers to accessing mental health care, such as stigma, financial constraints, and lack of awareness about available resources. Additionally, telemedicine and online counseling platforms can expand access to mental health services, particularly for students in remote or underserved areas.

Promote Self-care and Resilience: Medical students should be encouraged to prioritize self-care practices and cultivate resilience to cope with the demands of medical education. Strategies such as regular physical activity, adequate sleep, healthy eating habits, and social support networks can help mitigate the risk of depression and burnout among medical students. Medical colleges can organize wellness activities and initiatives to promote self-care and resilience among students.

Conduct Longitudinal Studies: Future research should conduct longitudinal studies to track the mental health outcomes of medical students over time and identify factors associated with resilience and well-being. Longitudinal studies can provide valuable insights into the trajectory of depression among medical students and inform the development of targeted interventions to promote student mental health.

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