

**ORIGINAL RESEARCH**

# Prevalence of Depression Among Medical Students Who Completed Schooling in Vernacular Medium: A Cross-Sectional Study

<sup>1</sup>Dr. N.Ramakrishna Reddy, <sup>2</sup>Dr. D. Jaiganesh, <sup>3</sup>Dr. ARC. Poornima, <sup>4</sup>Dr. C. Karthik

<sup>1</sup>Professor, Department of Community Medicine, Bangalore Medical College and Research Institute, Bangalore, Karnataka, India

<sup>2</sup>Associate Professor, Department of Community Medicine, Chengalpet Medical College, Chengalpet, Tamil Nadu, India

<sup>3</sup>Assistant Professor, Department of Dermatology, Madras Medical College, Chennai, Tamil Nadu, India

<sup>4</sup>Assistant Professor, Department of Community Medicine, Madras Medical College, Chennai, Tamil Nadu, India

## Corresponding author

Dr. C. Karthik

Assistant Professor, Department of Community Medicine, Madras Medical College, Chennai, Tamil Nadu, India

**Email:** [drkarthikslm04@gmail.com](mailto:drkarthikslm04@gmail.com)

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## ABSTRACT

**Introduction:** Depression is a growing concern among medical students, exacerbated by the demanding curriculum and academic pressures. Students from vernacular-medium schooling background may face additional challenges due to language barriers when transitioning to an English-medium medical education. This study aims to assess the prevalence and severity of depression among first-year medical students who completed their schooling in Vernacular medium and explore the impact of language barriers on their mental health. **Materials and Methods:** A cross-sectional observational study was conducted among 150 first-year medical students from a medical college in South India, all of whom had completed their schooling in Vernacular medium. Sociodemographic data were collected using a pre-designed proforma, and the Patient Health Questionnaire-9 (PHQ-9) was used to assess depression. Students with a prior history of mental illness or chronic conditions were excluded from the study. Descriptive statistics and Chi-square analysis were applied to evaluate the prevalence and gender differences in depression severity. **Results:** The study revealed that 65.33% of the students experienced depression. Among them, 31.3% had mild, 24% moderate, 8.7% moderately severe, and 1.3% severe depression. Female students were more likely to suffer from depression than male students, with a significant gender difference observed ( $p$ -value < 0.05). Most of the students (68%) belonged to lower middle-class families, and 76% were from rural areas. **Discussion:** The high prevalence of depression among Vernacular-medium students highlights the significant role of language barriers in mental health outcomes. Students transitioning from Vernacular to an English-medium medical curriculum face difficulties in understanding academic content, contributing to their mental health challenges. Female students and those from lower socioeconomic backgrounds are particularly vulnerable. **Conclusion:** This study underscores the need for targeted mental health interventions, including language support and counselling services, to reduce depression among Vernacular-medium medical students.

**Keywords:** Depression, medium of study, language barriers, medical students, mental health.

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## INTRODUCTION

Mental health issues among medical students are a growing concern worldwide. Medical education is widely recognized for its demanding curriculum, high academic expectations, and rigorous examinations, which place an immense psychological burden on students. Research shows that the prevalence of

depression is disproportionately high among medical students compared to their peers in other fields of study. This is particularly concerning due to its impact on academic performance, social interactions, and overall quality of life.

According to a systematic review and meta-analysis by Rotenstein et al. (2016), the prevalence of

depression and depressive symptoms among medical students worldwide is considerably higher, with estimates ranging from 21.2% to 43.8%, and suicidal ideation occurring in about 11.1% of students.<sup>[1]</sup> The prevalence of depression, anxiety, and stress among medical students in India is significant, with studies reporting rates as high as 57.98% for depression and 66.05% for anxiety.<sup>[2,3]</sup> These findings underscore the widespread mental health challenges faced by medical students across India. This highlights the severity of the issue and the urgent need for addressing the mental health challenges in this population.

First-year medical students face immense academic pressure, coupled with major social and psychological adjustments as they transition from school to the demanding environment of medical college. As highlighted by Picton et al. (2022), students entering Bachelor of Medicine and Bachelor of Surgery (MBBS) programs undergo significant changes during this period, which can lead to increased stress and mental health issues. Students' susceptibility to depression is influenced by factors such as lifestyle changes, financial stress, family dynamics, and academic pressures. Key risk factors include being female, younger, in lower class years, living alone, and having financial difficulties, with first-year students facing stress from workload and feedback absence, while upper-year students worry about future capabilities and non-supportive environments. Additionally, lower socioeconomic status, rural living, and personal or family histories of mental health issues contribute to higher depression rates. These findings emphasize the multifaceted nature of depression in this group and underscore the importance of a supportive environment to alleviate stress and improve mental well-being.

In Tamil Nadu, the student population in government medical colleges is highly diverse, with many students coming from rural backgrounds and Vernacular medium schooling. For students who did schooling in Vernacular medium, the transition to medical colleges, where instruction is predominantly in English, significantly exacerbates academic pressures. These students often face difficulties not only in understanding their coursework but also in communicating in English, leading to feelings of isolation and inadequacy. Students with limited English skills frequently experience heightened anxiety, frustration, and a sense of alienation, all of which contribute to mental health disorders. The difficulties in adapting to a new language and academic environment can amplify self-doubt and worsen the psychological challenges these students face, highlighting the urgent need for targeted research and support systems to address their unique needs. Despite these challenges, there is limited research that specifically explores the prevalence of depression in this group, making it an area of critical concern for educators and policymakers.

This study aims to fill the gap in understanding how language barriers affect the mental health of first-year medical students in Tamil Nadu, specifically focusing on those who completed their schooling in vernacular medium. The findings from this study will help identify the prevalence of mental health issues among this vulnerable group. Educational institutions can develop targeted interventions to support students, such as offering language assistance, counselling services, and academic support programs.

## MATERIALS AND METHODS

A cross-sectional observational study was conducted among 150 undergraduate medical students who did schooling in vernacular medium at a medical college in South India, after obtaining Institute Ethics Committee approval. Students with previous history of any mental illness or other chronic conditions were excluded from the study. Participation in the study was on voluntary basis and those who accepted to participate were asked to fill out a pre-designed semi-structured proforma to gather details about sociodemographic parameters and Patient Health Questionnaire-9 (PHQ-9) for mental health assessment using DSM – IV criteria. The Patient Health Questionnaire-9 (PHQ-9) used in the study had nine items with total scores ranging from 0 to 27. A cut-off score of 15, which has a sensitivity of 62% and a specificity of 96%, was utilized to diagnose depression, with scores of 5, 10, 15, and 20 representing mild, moderate, moderately severe, and severe depression, respectively.

## Statistical Analysis

Sociodemographic variables, prevalence and severity levels of depression, were summarized using frequencies and percentages. A Chi-square analysis was performed to examine gender-based differences in both the prevalence and severity of depression.

## RESULTS

In the current study, 67 (44.67%) students were male and 83 (55.33%) were female. Majority of the students (76%) were from rural areas, remaining were from semi urban area. Among the 150 students in the study, 68% (102) belonged to lower middle-class family, 18% (36) belonged to lower class, 8% were from upper middle class based on socioeconomic condition.

Out of the 150 students, 65.33% (98 students) were found to be experiencing depression. Among them, 47 had mild depression, 36 had moderate depression, 13 had moderately severe depression, and 2 had severe depression based on PHQ-9 scores. [Table No.1]

In terms of gender distribution, 16 males and 31 females had mild depression. Moderate depression was observed in 9 males and 27 females. Moderately severe depression affected 5 males and 8 females, while severe depression was reported in 2 female students. A Chi-square analysis showed a significant

gender difference in the severity of depression [Table No.2] between male and female students ( $p$ -value < 0.05).

**Table No.1: Severity of Depression based on PHQ – 9 Scores Among Medical Students**

Severity of Depression based on PHQ – 9 Scores	Numbers	Percentage
No depression	52	34.6
Mild depression	47	31.3
Moderate depression	36	24
Moderately severe depression	13	8.7
Severe depression	2	1.3

**Table No.2: Gender-wise distribution of Depression among Medical Students**

Severity of Depression	Male	Female	Total
No depression	37	15	52
Mild depression	16	31	47
Moderate depression	9	27	36
Moderately severe depression	5	8	13
Severe depression	0	2	2
Total	67	83	150

## DISCUSSION

The present study highlights the significant impact of language barriers on the prevalence of depression among vernacular-medium students transitioning to an English-medium medical curriculum. With 65.33% of the participants experiencing some level of depression, the findings suggest that the difficulties faced in adapting to a new language of instruction contribute to their mental health challenges. This finding is consistent with previous research, such as that conducted by Dutta et al., which reported a pooled prevalence of depression among medical students of 50.0%.<sup>[4]</sup> Their findings indicated substantial variability in prevalence rates across studies, ranging from 16.0% to 100.0%. This highlights the pervasive nature of mental health challenges in medical education, necessitating urgent attention and intervention. Language barriers hinder students' ability to comprehend complex medical terminology and create feeling of inadequacy, compounding the psychological stress associated with the rigorous demands of medical education.

This aligns with previous research that emphasizes the critical role language proficiency plays in the academic experiences of students. Additionally, Vankar et al. reported that 26.6% of medical students scored  $\geq 10$  on the PHQ-9, indicating a prevalence of depression slightly lower than that found in the present study, where 35.4% of students were categorized as having mild to moderate depression.<sup>[5]</sup> The variation in prevalence rates may be attributed to differences in the student populations and the specific challenges faced by vernacular-medium students as they navigate the complexities of medical education. Studies by Calikoglu et al. and Martirosyan et al. indicate that non-native speakers often struggle with effective communication, which adversely affects their social interactions and academic performance.<sup>[6,7]</sup> The transition to English can result in communication gaps that impede students'

understanding of lectures and their ability to engage confidently in discussions, ultimately impacting their overall academic success. The findings of the current study can be compared with those of Kabir et al., who investigated the relationship between language barriers, academic stress, and depression among students unable to communicate effectively in Bengali (Bangla).<sup>[8]</sup> In Kabir et al.'s study, approximately 60% of students who struggled with communication in Bengali experienced depression, and about 63% of those who reported academic challenges also suffered from depression. Additionally, poor academic interaction with teachers was linked to depression, with 69.2% of students reporting that they were depressed.

In this context, the current study adds to the body of literature by specifically examining the mental health outcomes of vernacular-medium students in medical education, revealing a pressing need for targeted interventions to support this demographic as they navigate the complexities of their training.

In terms of severity, the study found that the majority of students with depression had mild to moderate levels, with 47 students (31.3%) presenting with mild depression and 36 students (24%) with moderate depression. Early intervention strategies aimed at those with mild to moderate depression could prevent the progression of the disorder and mitigate its impact on academic performance and overall well-being. The two students who reported severe depression represent a smaller yet critical group that may require immediate psychiatric support.

Moreover, the gender differences observed in the current study resonate with findings from Naz et al., where the prevalence of depression among female students was significantly higher compared to their male counterparts, with rates varying from 53.9% to 30% for females and 46.1% to 16% for males, respectively.<sup>[9]</sup> This pattern is reinforced by the results from the present study, which also found that female

students were more likely to suffer from depression across all severity levels. Various factors may contribute to this disparity, including gender-specific stressors such as societal expectations, family pressures, and unique academic challenges faced by female students. Furthermore, females are often more likely to report mental health issues, which could partially account for the higher prevalence observed.

Socioeconomic and demographic factors also appear to influence the mental health outcomes of the students. A significant proportion of the students (68%) came from lower middle-class families, with an additional 18% from lower-class backgrounds. These students may face additional financial stressors that contribute to their mental health challenges. Additionally, the majority of students (76%) were from rural areas, which may further compound the difficulties they face, particularly in adjusting to the academic and social demands of medical college life, which is often more urban-centric and English-based in nature.

Overall, the study underscores the urgent need for targeted mental health interventions in medical colleges, particularly for female students and those from lower socioeconomic backgrounds. Proactive support mechanisms, including counselling services, peer support groups, and early screening for depression, could help address these mental health challenges before they escalate. Special attention should be given to students transitioning from vernacular-medium schooling, as they may experience additional stress related to language barriers, potentially exacerbating their mental health struggles. Future research should explore other variables influencing the mental health of vernacular-medium students, such as the quality of academic support, peer interactions, and the availability of mental health resources. A deeper understanding of these factors can guide the development of tailored interventions to support this vulnerable group and reduce the prevalence of depression in medical students.

## CONCLUSION

The study demonstrates a high prevalence of depression among vernacular-medium students transitioning to an English-medium medical curriculum. Addressing the language barrier through targeted interventions, such as academic support and mental health services, can significantly improve the well-being and academic performance of this vulnerable group.

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