RESEARCH ARTICLE
Depression in the 1st year of MBBS – A longitudinal perspective

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ABSTRACT

Background: Medical school is difficult, and studies have shown that medical students have a higher rate of depression than general people. This may be related to a competitive environment or intellectual burnout. Other contributing variables to this issue include the person’s social background, financial situation, and mental state. This may have long-lasting impacts and help to explain why a lot of doctors commit suicide. It is crucial to pinpoint the causes and deal with them to prevent the detrimental effects of depression among medical students.

Aims and Objectives: The present study aims to measure the depression among medical students using patient health questionnaire-9 (PHQ-9) and to assess the correlates of depression among them.

Materials and Methods: In this longitudinal study, data collected from 214 1st year medical students thrice: At the beginning, at midterm, and after completion of their university examination. PHQ-9 was used for screening of depression and multidimensional scale of perceived social support was used to find out the social support in the study participants.

Results: It is found that depression affects the majority of the male younger students staying at hostels and coming from the rural background.

Conclusion: The extent of depression is high among the study population which warrants its screening with the incorporation of mental health services for promotion of mental well-being among medical students.

KEY WORDS: Mental Health; Depression; Medical Students

INTRODUCTION

Depression is a psychiatric condition that causes a persistent feeling of sadness and loss of interest. Depressive disorders are fairly common in India and globally, causing significant suffering, high morbidity and death, and impairment in psychosocial functioning. Sadly, despite the availability of multiple effective treatments for depressive disorders, these conditions are frequently misdiagnosed and undertreated in the community.[1]

Medical school is a fundamentally distinct environment, and mental health care for medical students is a complex process impacted by circumstances that are quite different from those influencing other professions. Depression not only impacts medical students’ emotional and mental well-being, but it also inhibits their learning and academic performance, which can compromise patient care. To support their general well-being and academic achievement, it is critical to address depression among medical students and foster a healthy learning environment.[2]

Medical students have a greater risk of depression than the general population, with rates ranging from 16.6% to 28.47%,
across studies. A review of 14 studies on suicide rates from 1963 to 1991 indicated that doctors had greater suicide rates than the general population. The intensive academic load, high expectations, and stress of medical school all contribute to the development of depression in these individuals. In comparison to research undertaken in medical school, it was significantly higher in the first (59.3%) and second (65.6%) years. Medical school stress depletes the coping reservoir, but a solid support system can help restore it. Medical students who receive less assistance are more likely to experience difficulty, including burnout.

Given the significance of depression and its effects, it is necessary to examine its temporal development along the student’s journey in medical school to pinpoint its key period and reveal whether other conditions are also linked to this phenomenon. Prospective longitudinal data also enables the identification and characterization of vulnerable and robust students, as well as the investigation of long-term predictors. This discovery will aid in the development of sufficient preventive measures and methods to cope with depression and its consequences, as well as in the establishment of healthy studying environments. The current study was designed to investigate the longitudinal pattern of depression among 1st-year medical students in West Bengal.

The objective of the present study is to measure depression using patient health questionnaire-9 (PHQ-9) among 1st-year medical students over 1 year by collecting longitudinal data that allow to assess their changes. In addition, it aims to assess the correlates of depression among the study population.

MATERIALS AND METHODS

After taking permission from the Institutional Ethics Committee, a longitudinal study was conducted among a sample of 1st-year MBBS, academic year 2021–2022 admitted to and studying at two medical colleges of West Bengal. Students on psychotropic drugs and antithyroid drugs and thyroid supplements were excluded from the study.

The students were evaluated through a questionnaire in three divided parts:

- Part I: Sociodemographic variables related to gender, age, living status (either hostel or residence), permanent address, and any previous medical history related to depression.
- Part II: PHQ-9 was used for screening of depression. PHQ-9 contains nine questions based on DSM-IV. The questions are arranged like Likert items and graded from 0 to 3 (not at all, several days, more than half the days, and nearly every day). The Likert items are computed in a total score out of 27 categorized in a diagnostic algorithm where a score of 5–9 is considered mild, 10–14 moderate, 15–19 moderately severe, and ≥20 severe depression.

Data were collected from the students thrice, one at the very beginning of the course and the second response after 6 months (midterm), and the third response just after their final university examination. The data from each medical student were entered into dedicated case record sheets made for this purpose.

Before initiation of the study, informed consent was taken from the students, and they were not forced to participate in the study. It was made clear to them that if anyone is unwilling to participate it would not affect their academic evaluation in the forthcoming examinations.

Collected data were analyzed by IBM SPSS Statistics (Version 20.0, IBM Corp., Armonk, NY, USA). The descriptive statistics are presented in percentages and proportions using tables and charts. Repeated measures analysis of variance statistic was used to test for differences between the first, second, and third surveys. Sociodemographic variables [Table 1] were considered as the inter-subject factor and time-point as the intra-subject factor. The Bonferroni statistic was used for intergroup and intragroup multiple comparisons. A $P < 0.05$ was considered as statistically significant.

RESULTS

The final study included 214 1st-year medical students with the mean age of 20.18 ± 0.92 years. Table 1 depicts that the majority of the students belonged to the age group 20 years and below (62.6%), male gender (57.5%), were staying at a hostel currently (82.7%), and hailed from the rural parts of the country (42.5%).

The mean depression scores among the medical students were assessed at 3 time periods: At the initiation of the MBBS course, 6 months after the initiation, and at the end of the
first professional MBBS exam. The mean scores according to PHQ-9 increased from the initiation to midterm and then the scores dipped at the final time period [Figure 1].

Table 2 depicts the support from family and friends perceived by the study population as assessed by the MSPSS. It can be seen that most of the students felt moderate support from their respective family and friends.

The mean scores of PHQ-9 were compared across various time periods during 1st year of MBBS course. It can be seen that across all the time zones, the mean PHQ scores were higher in the younger age group, that is, younger students were more depressed than their older peers. This association was found to be statistically significant. Although the association between gender and PHQ scores was not statistically significant, the female students had slightly higher scores than the males.

Among the students who stayed at the college hostels, the scores were significantly higher than the day scholars at the initial and midterm assessments, but fell down during the final assessment.

The MSPSS scores were inversely related to PHQ scores and thereby, depression. Students with a perceived low support had significantly higher scores in the PHQ-9 across all the time zones and conversely, the students with a high support system had lower PHQ scores [Table 3].

**DISCUSSION**

Depression among medical students is a multifaceted issue with multiple contributing variables such as excessive stress, long hours of study, sleep deprivation, and, in many cases, a lack of social life. This, combined with the emotional toll of disease and death, can result in high rates of depression and other mental health difficulties among medical students. In the current study, the temporal development of depression was studied with the help of mean depression scores using PHQ-9 questionnaire. It has been observed that the mean depression score escalated from the beginning phase to midterm and thereafter reduced at the final phase. Depression is seen to have a complex relationship with age, hence maturity, impacting the occurrence and presentation of depressed symptoms. Young adulthood is a vital time because they are frequently exposed to situations that put them at risk for mental health disorders. Here, younger students exhibited higher PHQ-9 scores. Gender disparities in major depressive disorder present themselves in a variety of ways, including differences in onset age, mood regulation, and personality traits. In the present study, women were found to develop more severe depression symptoms such as sorrow, worry, sleep and appetite disorders, concentration difficulties, and suicide thoughts. The family environment has a considerable impact on personality features, resulting in behavioral changes and adaptations throughout life. However, to pursue higher education, many people must leave their homes and stay in hostels, where the environment is vastly different from that at home. Because residents share rooms and amenities such as lounges, kitchens, dining halls, and internet cafés, hostels encourage social contact. In the current study, the majority of the students were hostelites who were living away from their parents for the first time in their lives, which might contribute to feelings of loneliness and, as a result, depression. The high stress of the medical curriculum and semester preparation can compound their tension. Social support is critical in lowering the risk of depression in many populations. The
assistance and comfort that individuals receive from their social networks, such as family, friends, and peers are referred to as social support. Emotional support (listening and providing empathy), instrumental assistance (physical help or resources), informational support (providing advice or knowledge), and assessment support (providing feedback) are all examples. In the context of the COVID-19 pandemic, perceived social support was associated with a 55% decreased risk of depression, with emotional/informational support and good social contacts being the most protective. The strongest protective correlates with depression have been found to be emotional/informational support and healthy social contacts, followed by practical support.

Several studies have found that the prevalence of depression or depressed symptoms is much higher among medical students than in the general population. According to a 2016 study published in JAMA, 27% of medical students experienced depressed symptoms and 11% expressed suicidal ideations. Depression is frequent among college students, according to studies, with different types of depression having varying symptoms and prevalence rates. During college, students may face challenges that put them at risk for mental health illnesses as they make the journey to adulthood. In contrast to the finding of the present study, Pan et al. found that older medical students or more senior students had a statistically significant greater proportion of depressed symptoms in 33 Chinese medical universities. Epidemiologic studies also have revealed significant gender variations in the frequency of major depressive disorder. In contrast to the present study’s findings, Gani et al. found considerable discomfort and depression among medical students, with male medical students experiencing greater depression severity than female students. In respect to the residential status, contrary to our finding, one study observed hostel residents more determined, self-sufficient, and confident than non-resident students, and they had a more hopeful mindset. According to Mayda et al., the prevalence of depression, anxiety, and stress was high in both home and hostel medical students, with no significant association with living conditions identified. According to a systematic review of 1033 distinct articles on depression among medical students, home-staying medical students are 1.33 times more likely to be depressed than hostel-stayers, similar to our observation. A study among Thai medical students discovered that MSPSS was inversely connected with depression score, which was similar to the current study’s findings.

The present study was conducted with relatively smaller number of participant students which might have resulted in a few contradictory findings, particularly regarding the relation of depression with variables such as age, gender, and residential status. An appropriate study with a larger sample size can provide clue for more concrete finding.

**CONCLUSION**

In the present scenario, the level of depression was determined to be fairly high. Despite the fact that medical students have high rates of depression, few seek therapy due to a variety of challenges such as stigma, a lack of time, and concerns about confidentiality. It is critical for institutions, teachers, and peers to develop a supportive climate that supports open conversation about mental health, lowers stigma, and encourages people to seek help when they need it. Prioritizing self-care and seeking professional support are also important steps for medical students suffering with depression or any other mental health issue. Screening programs and the incorporation of mental health services are

<table>
<thead>
<tr>
<th>Depression score (PHQ-9) initial</th>
<th>Depression score (PHQ-9) midterm</th>
<th>Depression score (PHQ-9) final</th>
<th>Statistical tests of significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤20 years</td>
<td>9.9±5.8</td>
<td>9.7±4.9</td>
<td>F=6.08</td>
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<tr>
<td>≥21 years</td>
<td>7.8±4.3</td>
<td>8.7±4.2</td>
<td>P-value=0.01</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>8.9±5.1</td>
<td>9.3±4.6</td>
<td>F=1.272</td>
</tr>
<tr>
<td>Female</td>
<td>9.4±5.8</td>
<td>9.4±4.8</td>
<td>P-value=0.268</td>
</tr>
<tr>
<td>Residential status of the student</td>
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<td></td>
<td></td>
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<tr>
<td>Hostelite</td>
<td>9.2±5.4</td>
<td>9.4±4.7</td>
<td>F=2.718</td>
</tr>
<tr>
<td>Day scholar</td>
<td>8.8±5.2</td>
<td>9.1±4.3</td>
<td>P-value=0.049</td>
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<tr>
<td>Support category</td>
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<tr>
<td>Low support</td>
<td>12.9±7.8</td>
<td>13.1±6.4</td>
<td>F=3.617</td>
</tr>
<tr>
<td>Moderate support</td>
<td>9.4±4.7</td>
<td>9.5±4.1</td>
<td>P-value=0.022</td>
</tr>
<tr>
<td>High support</td>
<td>3.6±3.9</td>
<td>4.5±3.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>9.1±5.4</td>
<td>9.3±4.6</td>
<td></td>
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PHQ-9: Patient health questionnaire-9

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suggested techniques for reducing depression and promoting mental well-being among medical students.

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REFERENCES


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