RESEARCH ARTICLE

Anxiety and depression among medical undergraduate students and their sociodemographic correlates in Sikkim: A cross-sectional study

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ABSTRACT

Background: Psychological morbidity in medical undergraduate students has always been reported from various countries across the globe. Studies which document this burden among medical students in India are very few.

Aims and Objectives: The presence of depression and anxiety among medical undergraduate students was assessed using a previously validated and standardized instrument, hospital anxiety and depression scale (HADS) and the associations with their sociodemographic and comorbidities were identified.

Materials and Methods: In a cross-sectional survey, a self-administered, pre-designed, pre-tested HADS was used to collect information on basic sociodemographic (age, gender, semester, and socioeconomic status) and comorbidities through a Google Forms. Informed written consent was obtained from all participants. Scores for each of the respondents over each of the subscales (depression and anxiety) were calculated as per the severity rating index.

Results: The study showed that majority (77.4%) of the students did not feel that they were depressed which was found to be similar in both male and female students. However, about 50% of both male and female students were found to be suffering from either mild or moderate anxiety.

Conclusion: A substantial proportion of medical undergraduate students was found to be anxious and quite a lot of them were found to be suffering from mild to moderate depression, revealing a neglected area of the students’ psychology requiring urgent attention. Student counseling services need to be made available and accessible to curb this morbidity.

KEY WORDS: Anxiety; Hospital Anxiety and Depression Scale; Depression; Medical Students; Sikkim

INTRODUCTION

Medical education is stressful enough to often exert a negative effect on the academic performance, physical health, and psychological well-being of the students. High rates of psychological morbidity among medical students, such as anxiety and depressive symptoms, have been reported in several studies from different Western countries as well as from other parts of the world. A variety of different assessment tools have been used such as the Beck’s depression inventory, the 12-item general health questionnaire, and different versions of the symptom checklist as well as less common instruments to address this problem amongst medical students all across the globe. A gender difference regarding stress levels has also been reported, where women reported higher levels of stress than men.

Almost 20% of the world’s children and adolescents suffer from mental disorders or problems. Medical school has always been recognized as a stressful environment which...
often has a negative effect not only on students’ academic performance but also on physical health and psychosocial well-being.\[^{[1]}\] About 50% of the medical undergraduate students are affected by either depression, anxiety, or stress which is a cause of grave concern for our future doctors.\[^{[2]}\]

Thus, this study, a first of its kind in the state of Sikkim, would shed some light into this rather pretty menace of medical education and hopefully elucidate measures to overcome this huge burden on future doctors.

**Aim and Objective**

This study aims to assess the presence of anxiety and depression among undergraduate students in a premier medical institute in Sikkim (North-East India) and their sociodemographic and socioeconomic correlates.

**MATERIALS AND METHODS**

It is observed that medical students undergo tremendous stress during various stages of the MBBS course to the extent of suffering from severe anxiety and depression. This is a cross-sectional study done on students of the 1st, 2nd, 3rd, and 4th year MBBS students of a private medical college who have given written consent after reading the information sheet regarding this research work. These students were asked to complete a questionnaire called “hospital anxiety and depression scale” (HADS) and a sociodemographic questionnaire. The HADS questionnaire is a tool containing 14 questions with a cutoff score for depression and anxiety of \( \geq 8 \).\[^{[3]}\] The socioeconomic and sociodemographic questionnaire contained questions pertaining to gender, academic year, ethnicity, and socioeconomic status based on the modified BG Prasad scale 2019.

**Study Design**

This was a descriptive cross-sectional study.

**Place of Study**

The study was conducted at Sikkim Manipal Institute of Medical Sciences, Gangtok.

**Sampling Technique**

Total enumeration of all the students of MBBS curriculum.

**Sample Size**

A total of 382 belonging to all the four batches of MBBS.

**Duration of the Study**

The study duration was 1 year from January 2020 to January 2021.

**Inclusion Criteria**

The following criteria were included in the study:

- MBBS students (both male and female) of all the semesters studying in SMIMS
- Voluntary participation

**Exclusion Criteria**

Students not willing to take part in the study were excluded from the study.

**Ethical Clearance**

Obtained from the Institutional Ethics Committee.

The students were asked to fill the “HADS” questionnaire\[^{[3]}\] as well as a demographic questionnaire as Google Forms and submit it within a week of receiving it. Those students who did not return the questionnaires even after two reminders were taken as non-responders. The data were analyzed with Statistical Package for the Social Sciences (SPSS) 20.0 software (IBM Corp., Armonk, NY). Continuous data were expressed in terms of mean and standard deviation. Means were compared using Student’s \( t \)-test and one-way analysis of variance.

**RESULTS**

A total of 382 students participated in the study giving a non-response rate of only 4.5%. Out of 382 students, 144 (37.70%) were male and 238 (62.30%) were female. Based on the ethnicity of the participants, 120 (31.41%) were of Sikkimese origin while 262 (68.59%) were of non-Sikkimese origin. Based on the modified BG Prasad scale 2019, majority of the participants 252 (65.97%) belonged to the upper class, 86 (22.52%) belonged to middle class, and 44 (11.52%) belonged to lower class socioeconomic category.

The main result of this study showed that majority (77.4%) of the students, out of which 86.1% were male and 72.2% were female participants, did not feel that they suffered from any degree of depression. Only 1.04% of the participants suffered from severe depression, while 5.2% of the participants suffered from moderate depression and 16.2% suffered from mild depression. However, 47.13% of the participants were found to be suffering from some degree of anxiety with both male and female participants showing somewhat equal representation. About 23.56% of the participants were seen to be suffering from mild anxiety, 20.42% from moderate anxiety, and 3.14% from severe anxiety. About 52.87% of the participants did not feel that they suffered from any degree of anxiety in the study.

Table 1 shows that 1.04% of the participants suffered from severe depression, while 5.2% of the participants suffered
from moderate depression and 16.2% suffered from mild depression. It also shows that 23.56% of the participants were suffering from mild anxiety, 20.42% from moderate anxiety, and 3.14% from severe anxiety. The present study showed that there was no significant association between HADS score and socioeconomic and sociodemographic characteristics among medical undergraduate students [Table 2].

Table 2 shows that no significant positive correlation was found between anxiety and depression and the different socioeconomic and sociodemographic variables.

Table 1: Severity distribution of HADS scores (%) among medical undergraduate students

<table>
<thead>
<tr>
<th>Variables</th>
<th>Normal (%)</th>
<th>Mild (%)</th>
<th>Moderate (%)</th>
<th>Severe (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All (382)</td>
<td>296 (77.4)</td>
<td>62 (16.2)</td>
<td>20 (5.2)</td>
<td>4 (1.04)</td>
</tr>
<tr>
<td>Males (144)</td>
<td>124 (86.1)</td>
<td>14 (9.7)</td>
<td>4 (2.7)</td>
<td>2 (1.38)</td>
</tr>
<tr>
<td>Female (238)</td>
<td>172 (72.2)</td>
<td>48 (20.1)</td>
<td>16 (6.7)</td>
<td>2 (0.84)</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All (382)</td>
<td>202 (52.87)</td>
<td>90 (23.56)</td>
<td>78 (20.41)</td>
<td>12 (3.14)</td>
</tr>
<tr>
<td>Males (144)</td>
<td>76 (52.77)</td>
<td>40 (27.77)</td>
<td>24 (16.66)</td>
<td>4 (2.77)</td>
</tr>
<tr>
<td>Female (238)</td>
<td>126 (52.94)</td>
<td>50 (21.00)</td>
<td>54 (22.68)</td>
<td>8 (3.36)</td>
</tr>
</tbody>
</table>

HADS: Hospital anxiety and depression scale

Table 2: Univariate analysis of association of HADS scores with sociodemographic and socioeconomic characteristics among undergraduate medical students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Categories (n)</th>
<th>Depression</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male (144)</td>
<td>4.83±3.31</td>
<td>7.83±3.70</td>
</tr>
<tr>
<td></td>
<td>Female (238)</td>
<td>5.29±3.46</td>
<td>7.87±3.85</td>
</tr>
<tr>
<td>Academic year</td>
<td>1st (112)</td>
<td>4.98±3.69</td>
<td>7.82±3.87</td>
</tr>
<tr>
<td></td>
<td>2nd (86)</td>
<td>5.13±3.48</td>
<td>7.74±3.75</td>
</tr>
<tr>
<td></td>
<td>3rd (74)</td>
<td>6.00±3.48</td>
<td>8.81±3.61</td>
</tr>
<tr>
<td></td>
<td>4th (110)</td>
<td>4.65±2.93</td>
<td>7.21±3.90</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Sikkimese</td>
<td>4.70±3.35</td>
<td>7.62±3.38</td>
</tr>
<tr>
<td></td>
<td>Non-Sikkimese</td>
<td>5.31±3.46</td>
<td>7.97±3.97</td>
</tr>
<tr>
<td>Socioeconomic status</td>
<td>Upper class</td>
<td>4.90±3.48</td>
<td>7.87±3.98</td>
</tr>
<tr>
<td></td>
<td>Upper-middle class</td>
<td>4.93±2.60</td>
<td>7.46±3.91</td>
</tr>
<tr>
<td></td>
<td>Middle class</td>
<td>6.00±4.24</td>
<td>8.29±3.03</td>
</tr>
<tr>
<td></td>
<td>Lower-middle class</td>
<td>6.88±4.79</td>
<td>8.25±3.10</td>
</tr>
<tr>
<td></td>
<td>Lower class</td>
<td>5.68±3.08</td>
<td>8.00±3.071</td>
</tr>
</tbody>
</table>

DISCUSSION

Medical curriculum has always been demanding in terms of physical and mental well-being of the students so as to provide able and efficient doctors to the society. Some degree of stress does help students in bringing out the best in them but persistently stressful environment not relieved by suitable measures can sooner or later lead to physical as well as psychological ill health. The result of this study showed that majority (77.4%) of the students did not feel that they were depressed which was found to be similar in both male and female students. Only 22.44% of the students suffered from some form of depression ranging from mild (16.2%) to moderate (5.2%) and severe depression (1.04%). However, about 50% of both male and female students were found to be suffering from either mild or moderate anxiety, with 23.56% of the participants were suffering from mild anxiety, 20.42% from moderate anxiety, and 3.14% from severe anxiety.

The findings are similar to a study done by Moutinho et al. where 34.6% reported depressive symptomatology and 37.2% showed anxiety symptoms. The findings of this study corroborate with the findings of a Malaysian study by Yusoff et al. where they found that the prevalence of anxiety during medical training ranged between 41.1% and 56.7%, and the prevalence of depression during medical training ranged between 12% and 30%. The present study showed that there was no significant association between HADS score and socioeconomic and sociodemographic characteristics among medical undergraduate students unlike a study by Huda et al. which reported that there is a strong association between family social circumstances and psychological distress as supported by international literature, suggesting that students who had low socioeconomic position and lived in hostels or rented houses experienced higher psychological distress. This may be due to Sikkim, being a very pleasant place to live in where the students feel comfortable enough to forget about the sociodemographic and socioeconomic disparities that tend to exist in this materialistic world.

One limitation of this cross-sectional study is that it has its inability to show cause-effect associations between the variables studied. We cannot determine exactly whether these findings of psychological distress existed before their entry into medical colleges or were as a result of stressful medical environment as data on psychological status of students before embarking on this medical journey were not available. Furthermore, self-reported questionnaires do have its own limitations.

CONCLUSION

Healthy medical students are likely to become healthy doctors in the true sense that not only would they become physically and mentally healthy but also influence the way they would
take care of their careers, family, and also in the way they would take care of their patients. The results of this study suggest that medical curriculum is indeed stressful enough to cause some form of mild-to-moderate anxiety where the need for counseling services demands highest priority so as to make it readily and easily available to all the students to control this morbidity. If appropriate measures are taken at the right time, anxiety would be easy to control and treat rather than stress and depression.

REFERENCES


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