An Evaluation of Stress in Medical and Dental Students at Kathmandu Medical College, Nepal

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ABSTRACT

Background: Medical students are overloaded with many lectures and academic activities, the students spend many hours a day trying to achieve the expected academic outcomes. Stress impacts negatively, the health (mental and physical) and performance (academic and physical), resulting in emotional exhaustion. The impact on health may manifest as depression, substance use and abuse and suicidal tendency. Aims: This cross-sectional study was designed to evaluate the levels of perceived stress and common stressors among medical and dental students at Kathmandu Medical College of Nepal. Methods: A cross-sectional, questionnaire-based survey was carried out on the first and second year undergraduate medical and dental students. Perceived stress was assessed using universally accepted COHEN PERCEIVED STRESS SCALE (CPSS-10). The students were given a questionnaire which was completed by them individually during May-June 2017. Results: A total of 375 students (290 medical and 85 dental students) were studied. The mean COHEN PSS score was 25.74(SD 4.56) for medical students and 21.34(SD 4.68) for dental students. Conclusion: Levels of perceived stress were very high in dental students and high in medical students. The most common stressors were related to academic and economic concerns. Such students blamed reasons such as their course overload, monetary matters and problems related to their academic performances.

Keywords: Perceived stress, medical students, dental students

1. INTRODUCTION

Stress persists when a person is unable to cope with the situations of the past, present or future. Stress may evoke feelings of fear, anxiety, anger, and aggressiveness and if not solved in time may even lead to associated physical and psychological abnormalities. However, it differs from individual to individual, the same situation that induces stress in one individual may not have the same consequences on another1,2. Stress and stressors have long been a major research concept in health science since it is linked to various diseases and illnesses, including cancer, diabetes and other major ailments3. There are three major ways in which the concept of stress has been assessed: (a) focused on stressors or life events; (b) related to psychological and (c) biologically related activation which provokes stress on the physiological systems4.
A high prevalence of stress has been found in medical students globally. Reported levels of stress in medical students range from 25–90%. It is seen from the beginning of the students’ training till their graduation. High levels of stress and burnout have also been seen in medical doctors after graduation, and these are believed to have evolved during medical training and exposure to stressful working conditions. Higher levels of mental distress have been discovered in female medical students than in their male counterparts. A number of stressors were found. Academic and relationship factors were the main causes of stress in students across all five years of the curriculum in this study, followed by personal issues which include wasting of time and uncertainty about the future. Environmental factors were the least stressful. Male medical students in this study reported higher stress levels in the first, third and fifth years of their studies, while the female students in this study found similar levels of stress in years 1–3, and the most stressful in the fifth year\(^{5,6}\).

Severe stress was noted in less than 10% in both sexes in all the years, with the third year being the most stressful for males, and the fifth year for female students. Examination results were linked with high-stress levels in students taking Anatomy and Physiology. However, the study which focused on stress in medical students reported similar levels of stress in students in the preclinical and clinical years. This study also discovered that students in the clinical years lacked to cope with strategies compared to their preclinical counterparts. Both groups complained about the unavailability of time within the course to be involved in other activities. While the preclinical students reported a range of coping strategies\(^{7,8}\). The professional educational programs are highly stressful. Enrolling into the medical school is a matter of pride but the challenges faced and tackled by students of being in medical colleges are often overlooked\(^ {9,10}\). Many studies have focused on the stressors of medical training and its effect on the mental and physical health of medical students\(^ {11,12}\).

2. METHODS

A cross-sectional study was conducted in May-June 2017 after getting ethical clearance and approval from the Institutional Review Committee (IRC) of Kathmandu Medical College. The study populations were the first and second-year MBBS and BDS students studying at KMCTH, Kathmandu. A total of 375 (290 medical and 85 dental) students age ranging from 17 to 27 years were enrolled in the study. The participants were given to sign a consent form before taking any form of data for the research. They were told to complete the questionnaire sincerely. COHEN PERCEIVED STRESS SCALE (CPSS-10)\(^ {3}\) was used to know the perceived stress.

Individual scores on the PSS can range from 0 to 40 with higher scores indicating higher perceived stress.

- Scores ranging from 0-13 was considered as low stress.
- Scores ranging from 14-26 was considered as moderate stress.
- Scores ranging from 27-40 was considered as high perceived stress

The collected data was analyzed statistically by SPSS Version 21. Statistical significance was assessed at a type I error rate of 0.05.

3. RESULTS

The total sample size of the study was 375 medical and dental students. The age of the studied population ranged from 17 years to 27 years. The mean CPSS Score was 25.74 with a standard deviation of 4.56 for medical students and 21.34 with a standard deviation of 4.68 for dental students. Table-1 shows the distribution of stress in the study population.

<table>
<thead>
<tr>
<th>Score and grade of Stress (out of 40)</th>
<th>MBBS=290</th>
<th>BDS=85</th>
<th>Total=375</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Stress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPSS score 0-13</td>
<td>173</td>
<td>56</td>
<td>229</td>
</tr>
<tr>
<td></td>
<td>(46.13%)</td>
<td>(14.93%)</td>
<td>(61.06%)</td>
</tr>
<tr>
<td>Moderate Stress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPSS score 14-26</td>
<td>98</td>
<td>25</td>
<td>123</td>
</tr>
<tr>
<td></td>
<td>(26.13%)</td>
<td>(6.67%)</td>
<td>(32.8%)</td>
</tr>
<tr>
<td>High Stress</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPSS score 27-40</td>
<td>19</td>
<td>4</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>(5.07%)</td>
<td>(1.07%)</td>
<td>(6.13%)</td>
</tr>
</tbody>
</table>

The total male and female population was 211 (56.26%) and 164 (43.74%) respectively. The overall prevalence of stress among students (males and females combined) was found in 39% (moderate and high). Among medical students, the prevalence of stress was 40.34 % whereas in dental students it was 34.1 % when compared to their counterparts (Figure 1).
The difference between males and females was found remarkable. The females were more stressed (45%) and males were only 29% stressed as compared to their own counterparts (Figure 2). The most potent stressors among the study population were academic pressures, monetary problems, and food (Table 2).

### Table 2: Most common stressors among the study subjects (N=375)

<table>
<thead>
<tr>
<th>Stressors</th>
<th>Mild N (%)</th>
<th>Moderate N (%)</th>
<th>Severe N (%)</th>
<th>No N (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic pressures</td>
<td>201(53.6%)</td>
<td>39(10.4%)</td>
<td>49(13%)</td>
<td>86(22.93%)</td>
<td>375(100%)</td>
</tr>
<tr>
<td>Monetary problems</td>
<td>102(27.2%)</td>
<td>76(20.26%)</td>
<td>5(1.33%)</td>
<td>192(51.2%)</td>
<td>375(100%)</td>
</tr>
<tr>
<td>Family problems</td>
<td>21(5.6%)</td>
<td>26(6.93%)</td>
<td>2(0.53%)</td>
<td>326(86.93%)</td>
<td>375(100%)</td>
</tr>
<tr>
<td>Food</td>
<td>133(35.46%)</td>
<td>37(9.86%)</td>
<td>7(1.86%)</td>
<td>198(52.8%)</td>
<td>375(100%)</td>
</tr>
</tbody>
</table>

### 4. DISCUSSION

The main aim of medical training programs is to produce knowledgeable, skillful, competent, and professional graduates who will provide quality healthcare services to their communities. Unfortunately, most medical programs are overloaded with lectures, practicals, and the students spend many hours a day trying to achieve the expected academic outcomes. Therefore, these programs may lead to stress with respect to students’ personal mental and physical health. It has also been postulated that a measure of distress in newly graduated doctors and older physicians has its origins in medical school. Although medical education has changed in focus and methodologies since its early beginnings and more recently has become more professionalized and community oriented, then also the amount of stress to the students is increasing day by day.
In the present study, the mean COHEN PSS score was 25.74(SD 4.56) for medical students and 21.34(SD 4.68). In a similar type of study done by Thangaraj et.al in Bangalore, the mean PSS Score was 20.29(SD = 6.24)(13) and Malaysia(14) with a mean PSS Score of 20.4.

In the present study, 39% students were stressed which is lower than the similar study done by Ranade et al.(15) who reported that 85% first-year medical students had stress. The findings of our study are by and large similar to the studies across the globe. The research confirms that stress, depression, and anxiety are common among Arab medical students as well like other medical students(16).

In our study, the most potent stressors were academic pressures which are similar to the study done in Pakistan where a cross-sectional, questionnaire-based survey was carried out among undergraduate medical students of CMH Lahore Medical College, during January to March 2009, and perceived stress was assessed using the PSS. A higher level of perceived stress was found, and the main stressors were academic and psychosocial domains(17).

Thus, the study clearly shows the high prevalence of stress among medical and dental students not only in Nepal but also around the globe.

5. CONCLUSION

The present study has shown that levels of perceived stress are high in both medical and dental students. Those students under higher stress have clarified that the potent stressors were course overload, pressure from their parents for high achievement, monetary matters, food of the canteen and problems related to their interpersonal issues. So, proper intervention in solving the problems of students and counseling will definitely be helpful in reducing further risks in future.

6. LIMITATIONS

There is a chance of reporting bias as the recorded stress levels depend entirely on the students' opinion and honesty.

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REFERENCES