



ORIGINAL RESEARCH ARTICLE

STRESS AND STRESSORS IN FEMALE MEDICAL AND DENTAL STUDENTS AT KATHMANDU MEDICAL COLLEGE

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ABSTRACT

**Background:** Stress is a physical, mental or emotional factor that causes bodily or mental tension. Stress upsets an individual both mentally and physically. Study showed that medical students suffer from higher stress than other stream students. Among medical students also female students are more prone to stress due to varied reasons. This study aimed to determine the stress among female medical and dental undergraduates.

**Methods:** This cross-sectional study was designed to evaluate and assess the levels of perceived stress and common stressors among female medical and dental students at a teaching institute of Kathmandu, Nepal. A cross-sectional study was done to the first- and second-year undergraduate female medical and dental students. Perceived stress was evaluated using universally accepted Cohen's Perceived Stress Scale (CPSS-10).

**Results:** A total of 176 female medical and dental students were enrolled in the study. The mean COHEN PSS score was found to be 27.97 (SD 4.32) which showed high stress among study population. Fifty nine percent (59%) of the female medical and dental students had perceived stress.

**Conclusions:** Levels of perceived stress were very high in female students. The most common stressors were related to educational and economic concerns. The students were more focused to daily matters and problems related to their academic achievements.

INTRODUCTION

Stress is a state of an individual that persists from the interaction of the individual with the environment which is perceived as unusual to the human being. Stressors directly or indirectly irritate the individual both mentally and physically.<sup>1</sup> Stress may generate feelings of anxiety and aggressiveness.<sup>2</sup>

Medical education is stressful with a minimal opportunity for the student to relax and recreate. Stress and depression have been consistently linked to mental and physical health effects.<sup>3</sup> Studies have shown very high prevalence of stress among medical students, compared to other profession.<sup>4</sup> In the United States, 26% of the medical students had depression compared to 22% of pharmacy students.<sup>5</sup> Optimal level of stress enhances learning while excess of stress can cause health related problems.<sup>6</sup> Young medical students are always vulnerable to stress due to competitive environment.<sup>7</sup> Medical students exposed to work overload with sustained pressure of examination and assessment causes different changes in their daily habits such as insomnia, irregular and unhealthy diet, and substance abuse in the form of excessive consumption of alcohol and smoking in order to tackle with the academic burden and stress.<sup>8</sup> Failing to

cope with the stressors during the transition causes deterioration of academic performances and increases the psychological distress. First semester students were found more prone to stress which is due to the transition to a new environment.<sup>9</sup>

This study was conducted to determine the stress among female medical and dental undergraduates studying Kathmandu Medical College.

METHODS

A cross sectional study was conducted during Sept 2018 and Jan 2019 after obtaining ethical clearance and approval from the Institutional Review Committee of Kathmandu Medical College. The study populations were the first and second year MBBS and BDS female students. Purposive sampling method was used. Out of 201 female medical and dental students 176 participated in our study whose age ranged from 17 to 21 years. The questionnaire was administered to the students in each academic year separately and they were instructed to fill it completely in specific time which was provided to them. The questionnaire consisted of demographic data, Cohen's Perceived Stress Scale (CPSS-10)<sup>10</sup> with 10 potential stressors.

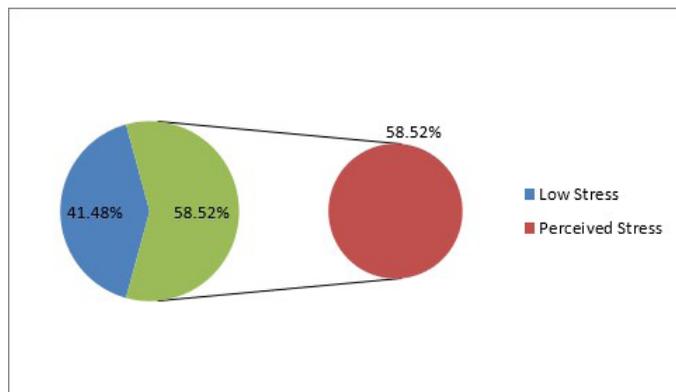
Individual scores on the CPSS-10 can range from 0 to 40 with higher scores indicating higher perceived stress.

- 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. For descriptive statistics, the calculation of mean and standard deviation was done.

**RESULTS**

The total sample size of the study was 176 female medical and dental students. The mean age was 18.45 ± 1.37 years. 58.52% of female students had perceived stress (Figure 1).



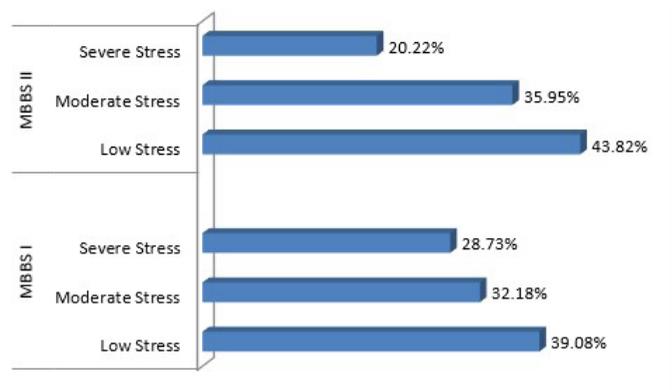
**Figure 1: Prevalence of Stress among female medical students of the study population**

The mean CPSS Score was 27.97 with standard deviation of 4.32. Table 1 & Figure 2 shows the distribution of stress in the study population. 28.73% in first year and 24.43% in second year had severe stress whereas 32.18% in first year and 35.95% in second year had moderate stress. Fortunately, 39.08% in first year and 43.82% in second year had no stress at all.

**Table 1: Prevalence of Stress (COHEN Perceived Stress Scale CPSS) in the study population**

Score and grade of Stress (out of 40)	MBBS I and BDS I (Females=87)	MBBS II and BDS II (Females=89)	Total=176
Low Stress (CPSS score 0-13)	34 (39.08%)	39 (43.82%)	73 (41.47%)
Moderate Stress (CPSS score 14-26)	28 (32.18%)	32 (35.95%)	60 (34.09%)
High Stress (CPSS score 27-40)	25 (28.73%)	18 (20.22%)	43 (24.43%)

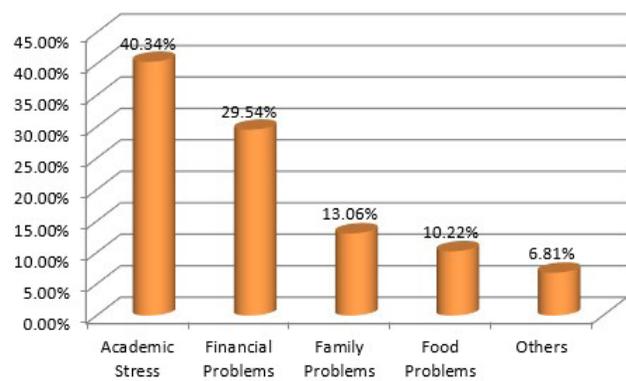
Among different stressors, the most potent stressors to female medical and dental students were academic stress (40.34%), financial related stress (29.24%), family related stress (13.06%) and food related stress (10.22%) respectively. 6.25% female students had severe stress related to academics. Similarly, 3.40% students had family related serious stress whereas 2.84% had serious issues regarding financial matters (Table 2 & Figure 3).



**Figure 2: Comparison of Stress between MBBS I (including BDS I) and MBBS II (including BDS II) Female Students**

**Table 2: Most potent stressor among the study subjects (N=176)**

Stressors	Mild Stress N (%)	Moderate Stress N (%)	Severe Stress N(%)	Total No (%)
Academic Stress	29 (16.47%)	31 (17.61%)	11 (6.25%)	71 (40.34%)
Financial Related Stress	27 (15.34%)	20 (11.36%)	05 (2.84%)	52 (29.54%)
Family Related Stress	10 (5.68%)	07 (3.97%)	06 (3.40%)	23 (13.06%)
Food Related Stress	08 (4.54%)	07 (3.97%)	03 (1.70%)	18 (10.22%)
Others	02 (1.13%)	08 (4.54%)	02 (1.13%)	12 (6.81%)
<b>Total</b>	<b>76 (43.18%)</b>	<b>73 (41.47%)</b>	<b>27 (15.35%)</b>	<b>176 (100%)</b>



**Figure 3: Comparison of most potent Stressors among the study population (N=176).**

**DISCUSSION**

The vital aim of medical and dental undergraduate training courses is to produce knowledgeable, skilful, competent and professional graduates who will deliver quality healthcare services in the society and country. In the present study the mean COHEN PSS score was 27.97 (SD 4.32) in female medical and dental students. This showed very high stress among female medical and dental students. It is a matter of common fact that medical courses are overloaded with lectures, practical and many examinations. The medical students

spend many hours a day trying to achieve the expected high academic results. Therefore, these courses may lead to stress with respect to students' personal mental and physical health. Among medical students also female students are affected by the stress most. It has also been postulated that a measure of increasing depression in newly graduated doctors and older medical personnel has its origins in medical colleges. Although medical education has changed methodologies since its early beginnings and more recently has become more professionalized and community oriented, then also the incidence of stress and depression in the students is increasing day by day. The prevalence of a greater level of stress in female medical students in this study cannot be attributed to a single factor. Overall the females were in stressed conditions from a variety of sources. This is similar to the study carried out by Dyrbe stating higher stress in the female medical students in Canada and United States.<sup>7,11,12</sup> The results of our study is similar to the study from Pakistan by Khan et al. verifying higher stress in female students.<sup>13</sup> The findings about stressors were similar in a study done by Sreeramareddy et al. where the most vital stressors for the medical students were staying in hostel, high parental expectations, vast curriculum, exams, lack of time and less facilities for the entertainment.<sup>14</sup> In a similar type of study done by Ghosal et al. in Mumbai, India they found that academic related stress was of moderate degree with highest level in 2nd year. Result was statistically significant. Academic related stress was seen more in females and was also of moderate degree.<sup>15</sup>

In a similar study done by Brahmabhatt et al found a higher mean score of 27.53.<sup>16</sup> In other study done by Sethia et al

mean PSS score was significantly higher for female gender in a medical college in Bikaner, Rajasthan, India. Mean PSS score was 25.53±5.55 and was significantly higher for females. Psycho-social stressors occurred most frequently, followed by the academic causes.<sup>17</sup> Thus, the study clearly shows the high prevalence of stress among female medical students not only in Nepal but also around the subcontinent. But the study was done only in our medical institute so further research in other medical colleges need to be done in vulnerable groups with larger sample size.

## CONCLUSION

The present study has shown that levels of perceived stress are very high in both medical and dental female students. Those students under higher stress have explained that the potent source of stress was course overload, high expectations from their parents, financial matters, food of the canteen and problems related to their interpersonal issues. So, proper intervention in minimizing the stress should be implemented by every medical college.

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**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

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