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Comparison Of Stress Among Medical Students.

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ABSTRACT

There is a huge concern for stress among medical students during their undergraduate studies. Many studies have been done to show the causes and severity of stress among medical graduates. The main objective of this study is to calculate the perceived stress score and find out the prevalence, mean score and standard deviation among male and female medical students. A cross-sectional questionnaire-based survey was carried out among undergraduate medical students from June 2022 to August 2022. The perceived stress score was calculated. The questionnaire has 33 items listed in it. There is a moderate level of stress prevailing among male and female undergraduate medical students. The difference in mean score and the standard deviation among different sexes is minimal. Moreover, it was found that further studies are required to be conducted for knowing the association between academic stressors and psychological stressors.

Keywords: Stress, medical students, cross-sectional.

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INTRODUCTION

Stress is the perception of disparity between the demands put by the environment and a person's ability to cope with it. It is defined as the body's non-specific response to the challenges or disturbing events in the surroundings. Various factors cause stress, including occupational, community, individual, socio-economic and ideological. One of the major groups affected by stress is the students. There are many academics and non-academic reasons which are known stressors in their lives [1]. Medical students are no exception to this. They also experience significant stress during their preparation and patient care process. [2] Excessive stress can lead to physical and mental health issues. Persistent stress can cause impairment in academic achievements and the personal and professional development of the students [3]. Additionally, the pressure of completing a vast syllabus in a stringent timeline and fast-track academic processes put extra responsibility on students [4]. There are two types of positive and negative stress. The movement from positive to negative stress happens when the stress is far more than the capacity of an individual which leads to anxiety and depression causing psychological and physical disorders [5]. There is very less study done in India to compare the stress level among medical students. In this study, we have found out the prevalence, the mean score and the standard deviation among the medical students according to the level of stress.

METHODOLOGY

This was a cross-sectional and observational study conducted in a health institute in eastern India between June 2022 to August 2022. The study was approved by the institutional ethical committee of the institution where the study was conducted. A total of 215 medical students from different years were recruited including 149 males and 66 females. Medical students who are considered to be healthy and had no health abnormalities were selected for this study. Students not interested to participate and having any chronic disease, were psychologically unstable, smokers and using drugs chronically were excluded from the study. A perceived stress scale (PSS) was administered to assess the stress level of the students [6]. This questionnaire was distributed to the students in Google form with proper instructions on how to fill up the form with honesty. The questionnaire was distributed to 250 students, out of which 11 did not respond and 24 forms were incomplete. So, the final study participants for this study were 215.

Statistical analysis

Statistical analysis was done with SPSS software (version:20.) Chi-square test has been used to find the association of different parameters. The Chi-square value and p-value were determined in various comparisons to find the strength of the association. A P value less than 0.05 was considered to be significant.

RESULTS

In this study, there were 215 medical students, including both males and females. Out of 149 total male students, as illustrated in Table 1, 10.52% of them have a low prevalence of stress, whereas 69.7% have a moderate level of stress prevalence. The remaining 19.7% have a high level of stress prevailing among them. It means a maximum of the male medical students come under the moderate category for which the PSS is between 14-26. The prevalence rate in percentage (%) of different category of stress among male is represented in Figure 2.

Similarly, the prevalence of stress varies among female medical students. Out of 66 students as shown in Table 1, the maximum comes under the moderate stress level reporting 68.18%, which is likewise the prevalence rate among males. The low-stress prevalence is around 7.57% and 24.24% of students have a high-stress level widespread among them. The prevalence rate in percentage (%) of different category of stress among female is represented in Figure 1.

When finding out the mean score for various levels of stress score as depicted by Table 2, it was found the mean score for students with high stress is the largest which is 29.23, whereas it's the smallest among the low-stress category which accounts for 8.37. The students with a moderate level of stress have a mean score of 19.82. The standard deviation of low-stress, moderate-stress and high-stress levels is comparatively similar. It ranges from 3.06 among high-stress medical students 3.28 in moderate stress levels and 3.98 in low-stress students.

Furthermore, as per Table 3, the mean score value of females with low-stress levels is 12.2 and moderate stress level is found to be 21.24. The students with a high-stress level were interpreted to be 30.5. After calculating the mean score, it was found that the standard deviation is almost the same for female students with different stress levels. The standard deviation for the students with moderate-stress is the highest, i.e., 3.50 whereas, for the low-stress category is 0.74 and for high stress category it is 2.89.

STRESS PREVALENCE AMONG FEMALES

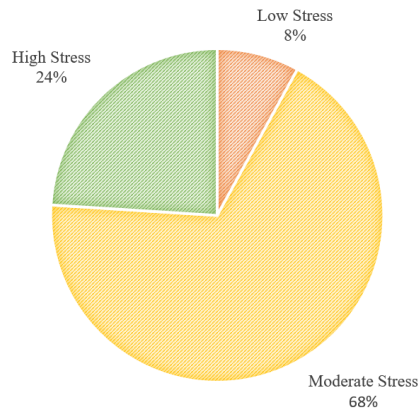


Figure 1

STRESS PREVALENCE AMONG MALES

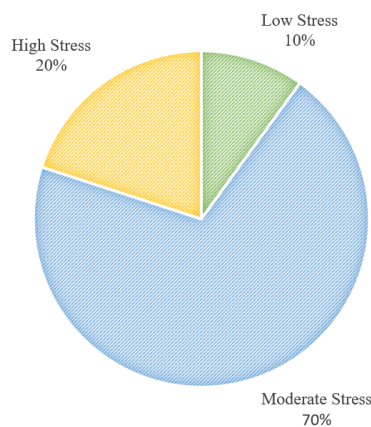


Figure 2

Table 1: Prevalence rate in different categories of stress among male and female students

	Low Stress	Moderate Stress	High Stress
Male	10.52	69.7	19.7
Female	7.57	68.18	24.24

Table 2: Mean score & standard deviation among male students

	Low Stress	Moderate Stress	High Stress
Mean score	8.37	19.82	29.23
Standard deviation	3.98	3.28	3.06

Table 3: Mean score & standard deviation among female students

	Low Stress	Moderate Stress	High Stress
Mean score	12.2	21.24	30.5
Female	0.74	3.50	2.89



DISCUSSION

In this study, it was found that among male participants 19.7%, 69% and 10.5% have got a high, moderate and low-stress prevalence respectively. Among female participants, 24.24%, 68.18% and 7.57% have got a high, moderate and low-stress prevalence respectively. Hence it was noticed that female students have got a higher stress widespread among them in their student careers. Among male participants mean stress score of high, moderate and low stress was 29.23, 19.82 and 8.37 respectively. Among female participants mean stress score of high, moderate and low stress was 30.5, 21.24 and 12.2 respectively.

In a study done in Bangladesh, it was found that the prevalence rate of stress among males and females is equal, which is contrary to our research that a similar percentage of male and female students were suffering from stress [7]. But the prevalence in the old study was 53% whereas we found it to be around 68% of the students have a moderate level of stress. The mean score and standard deviation of stress in a study done among medical students previously were shown to be 11+/-7.6 among males and 22.73+/- 10.8 among females [8] whereas, the mean score and standard deviation of moderate level of stress in our study which is approximately 19.82+/- 3.28 in males and 21.24 +/-3.50 in females. The values of the mean score and SD are not similar among males but it is quite close among females when comparing the previous and present research. Many other studies including activities related to stress were conducted wherein one of the research projects it was found that females have higher stress towards ARS. The reason could be consciousness of examination methods, assessment methods, grading methods, schedules for academics, and difficulty understanding contexts [9].

There wasn't any demarcation for the level of stress in the previous research whereas, in this work we have found the prevalence rates, mean scores and standard deviation of different levels of stress among students which makes it easier to quantify stress. Furthermore, there is a scope to find various reasons and solutions for different categories of stress based on the severity. In the previous study, many factors for stress have been noted among medical students, one among them is the examination which demands students to cope with the situation [10]. The results of the current research will set a foundation for future in-depth research work.

Limitations

The next step in the research following this is to find out the stressors causing stress among medical students at various levels. This can be done by allotment of various student and mental well-being counsellors to identify the cause at the initial stage. This will help save the students from succumbing to debilitating psychological issues which if left unseen can cause depression and anxiety-related issues among students. Following this, the institution must carry out diverse workshops to create awareness among the students about the ways to recognise the risk factors leading to stress among students and the ways to deal with it. It is unlikely to surpass the academic workload in the field of medicine however, the students should be able to manage the workload and the stress by taking the help of counsellors.

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REFERENCES

- [1] R. Shannon E, Sources of stress among college students, vol. 33, College student journal, 1999, p. 312.
- [2] p. d. Pilkington, m. b. h. yap, S. M. Ryan and A. F. Jorm, "Parental factors associated with depression and anxiety in young people: a systematic review and meta-analysis," *Journal of Affective Disorders*, vol. 156, pp. 8-23, 2014.
- [3] S. K. Jena and M. Acharya, Assessment of examination stress on working memory in medical students, vol. 7(1), *International journal of clinical and experimental physiology*, 2020, pp. 14-17.

- [4] K. Qamar, N. S. Khan and M. R. B. Kiani, "Factors associated with stress among medical students," *Journal of Pakistan Medical Association*, vol. 65, no. 7, pp. 753-755, 2015.
- [5] C. Li, J. Cao and T. M. H. Li, "Eustress or distress: an empirical study of perceived stress in everyday college life," New York, 2016.
- [6] C. S, K. T and M. R, A global measure of perceived stress, vol. 24, *Journal of health and social behaviour*, 1983, pp. 386-396.
- [7] I. Eva, E.O, M.Z, Mosaddek and A.S.M, " Prevalence of stress among medical students: a comparative study between public and private medical schools in Bangladesh," vol. 8, 2015.
- [8] B. Kumar, M. Shah and R. Kumari, "Depression, Anxiety, and Stress Among Final-year Medical Students," vol. 11, no. 3, 2019.
- [9] J. SK., "Comparative study of stress between male and female 1st year medical students," *Indian journal of applied research*, vol. 5, no. 1, pp. 376-377, 2015.
- [10] S. Jena, "Examination stress and its effect on EEG," *International journal of medical science and public health*, vol. 4, pp. 1493-1497, 2015.