



A STUDY OF PERCEIVED STRESS AMONG UNDERGRADUATE MEDICAL STUDENTS IN A GOVERNMENT MEDICAL COLLEGE IN MUZAFFARPUR DISTRICT OF BIHAR.

Community Medicine

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ABSTRACT

Background: There is a growing concern about stress during undergraduate medical training. Medical education is perceived as being stressful, and a high level of stress may have a negative effect on cognitive functioning and learning of students in a medical school. **Aims & Objective:** To (a) assess the perceived stress among medical undergraduate students, (b) identify the sources of stress, and (c) find an association of perceived stress with sociodemographic characteristics and various stressors. **Methods and Materials:** A cross-sectional study was conducted among medical undergraduate students in a Government medical college in Muzaffarpur district of Bihar. A total of 360 medical students from 1st year to 3rd year were invited to participate in the study. Self-administered questionnaire was used to collect data regarding sociodemographic profile, perceived stress using perceived stress scale-14 and academic, psychosocial and environmental stressors. **Result:** The overall response rate was 87.22% (314 out of 360 students). The mean perceived stress score was 34.55 ± 5.22 . Higher age-group, year of studying bachelor of medicine and bachelor of surgery, vastness of academic curriculum, fear of poor performance in examination, lack of recreation, loneliness, family problem, and accommodation away from home were important determinants of perceived stress. **Conclusion:** The perceived stress was higher among higher age group and third year medical students. Academic, psychosocial, and environmental stressors are associated with perceived stress.

KEYWORDS

Medical College, undergraduate students and perceived stress.

INTRODUCTION

The aim of medical education is to produce competent, physically and mentally strong health professionals, as they are going to be the pillars of future health care system. The term "stress" was first used in the 1930s by the endocrinologist Hans Selye [1]. Stress is defined as "a physical or psychological stimulus that can produce mental or physiological reactions that may lead to illness." The university environment is very stressful since responsibilities and workload in universities are very demanding [2,3]. Moreover, the study of medicine is life-long, boundless, extensive, time-consuming, and highly stressful. It has been described as a path that never ends and places the student under heavy stress and burnout [4]. The estimated prevalence of psychological stress reported in different studies among the medical students was higher than that in the general population [5]. A systematic review of 40 studies concluded that the levels of psychological distress and prevalence rates of depression and anxiety in medical students are higher than nonmedical students or age-matched peers from the general population [6]. This stress can have negative academic, emotional, and health outcomes potentially leading to psychological morbidity as several studies have demonstrated [7,8]. Stress can either be positive or negative. Positive stress is called eustress and negative stress is called distress. Eustress triggers body alarm and improves concentration and execution [5]. Negative or excessive perceived stress is a result of a person's inability to cope with his/her surroundings. It can affect both physical and psychological health and it can have adverse effects on cognitive functioning and comprehension of medical students causing a negative impact on the students learning ability and academic performance [7,9]. The World Health Organization defines a stressor as any stimulus that evokes a stress response. Stressors may be real or imagined (perceived), and internal or external [5]. Of the teaching systems in institutes of higher education, the medical curriculum has been described as one of the most stressful academic curricula [10]. Stress during medical training is increasingly reported in the published literature recently. Previous studies have shown depression [11,12] and even suicide thoughts [13,14] among medical undergraduates. The potential negative effects of emotional distress on medical students include impairment of functioning in classroom performance and

clinical practice, stress-induced disorders, and deteriorating performance [15,16]. Perceived stress has also been linked to current mental distress [17] and forthcoming health problems [18]. Students are subjected to the pressure of academics with an obligation to succeed, an uncertain future and difficulties of integrating into the system. They also face social, emotional, physical and family problems which may affect their learning ability and academic performance [19,20]. The World Health Organization defines a stressor as any stimulus that evokes a stress response. Stressors may be real or imagined (perceived), and internal or external [5]. Hence, this study was carried with the following aims and objectives.

Aims and Objective

To (a) assess the perceived stress among medical undergraduate students, (b) identify the sources of stress, and (c) find an association of perceived stress with sociodemographic characteristics and various stressors.

MATERIAL AND METHODS

A cross-sectional study was conducted among medical undergraduate students in SKM Government Medical College, Muzaffarpur, Bihar from December 2022 to July 2023. A total of 360 bachelor of medicine and bachelor of surgery (MBBS) students from 1st year to 3rd year were studying in this college. Institutional ethical clearance was obtained. All the undergraduate medical students from 1st year to 3rd year MBBS were invited to participate in the study. The purpose of the study was explained to the participants, and an informed consent was obtained. The students who consented to participate in the study were included and were asked to complete self-administered questionnaire consisting of the following sections: (a) sociodemographic profile (b) perceived stress scale (PSS) developed by Cohen et al. [11] The PSS was designed to measure the degree to which individuals perceive their lives as unpredictable, uncontrollable, and overwhelming. The PSS is a 14-item scale that includes questions about participants' stressful thoughts or feelings related to situations in their life within the last month. Each item is rated on a 5-point answer scale ranging from 0: "never" to 4: "very often." The total PSS scores were computed by reversing the scores on the seven positive items and then adding the responses to all

14 items for each participant. The PSS scores ranged from 0 to 56, with the higher scores indicating higher levels of perceived stress and the lower scores indicating lower levels of stress. Moreover, the scale items are quite general in nature and hence relatively free of content specific to any event and subpopulation. In this study, we decided to take the median perceived stress score.

Study Design and Participants

A cross-sectional survey was done targeting medical students with prior approval from the ethics committee of the institute. A structured questionnaire was designed to know the factors inducing stress (stressors) and their intensities, how students are coping with the stress, and institutional factors that could help in reducing the stress. The questionnaire was peer reviewed by 4 faculty members of Institutional Medical Education Unit (IMEU) before actual survey. Students were briefed about the purpose of study and the questionnaire. Informed written consent was obtained from all participating students. They were assured about the anonymity and confidentiality of responses given through questionnaire.

Samples Of The Study- A total of 360 participants of 1st, 2nd and 3rd year medical students were involved.

Study Duration: 8 months duration from December 2022 to July 2023.

Inclusion Criteria

1. 1st year to 3rd year medical students
2. Age 17 to 24 years.

Exclusion Criteria

1. Age more than 25 years
2. Final year medical students

Statistical Analysis

Data entry was made in excel sheet in codes and analysis was done using SPSS software version 21.0. Descriptive statistics were used to describe the sociodemographic characteristics, perceived stress, and sources of stress. Sociodemographic characteristics and sources of stress were expressed in percentages. The mean scores of perceived stress were calculated. A $P < 0.05$ was considered as statistically significant.

RESULT

Demographics

Out of 360, 175 students with (48.61%) male and 185 (51.38%) female students participated in the study. The non-participants were mainly absentees on the day of survey. Amongst these students, 90 (25%) were local students and 268 (74.44%) were hostel residents. As regards choice, 284 (78.8%) students opted for medical education as their first choice and for the rest, it was an alternative. The age of students ranged between 17 and 24 years with a mean of 18.5 years and standard deviation of 0.84 years. All participating students completed and returned the questionnaire, resulting into 87% response rate.

Level of Stress

It was observed that out of 360 students, 114 (31.6%) were under stress with a median score of at least 3.0. The proportion of stressed male and female students was 24.86% and 27.29%, respectively. This difference was statistically insignificant. The proportion of students who completed past education from rural places were more stressed (26.88%) as compared to those from cities or metros (22.67%), and the difference in proportions was statistically insignificant.

Coping Strategies

The yes/no response to each coping strategy given by students was used to evaluate which strategies are the most preferred ones for managing stress. It is evident that nearly 75% of students use internet or listening music to get rid of stress. This emerged out as the most dominating coping strategy, which is equally preferred by males and females. Following this, 'Interaction with friends and use humor' was the next preferred coping strategy adopted by nearly 73% of the students. This strategy was also equally chosen by males and females. This was somewhat more practiced amongst hostel students (72%) as compared to locals (66%).

Institutional Stress-Reducing Factors

The institutional factors contributing to stress reduction were rated by students on 5-point Likert scale.

DISCUSSION

In this study, we identified the causes of stress, their intensities; the most frequently adopted coping strategies, and institutional stress-relieving factors as perceived by first year medical students. A study from MCOMS, Nepal has also reported higher level of psychological morbidity in first year students as compared to second year (28.4% against 16.3%) among basic science students [21]. There are some other reported studies with overall proportion of stressed students ranging between 40% and 70% [22, 21, 23-26]. The stress was higher in females compared to males. In Indian scenario, higher stress in females could be because of their sensitive nature and the way of reacting to stressful situations. Out of the six dominating stress-inducing factors identified through study, three factors viz. 'Competition for post-graduate seats,' 'Examination and grades,' and 'Fear of failure in exams' are in common with some of the previous studies [22, 24-26, 27]. 'Fear of failure,' which is a very serious concern to medical students, is mainly because of the enormous syllabus to be covered in a limited time. Many parallel academic activities make it difficult for students to manage their time effectively, which adds to their stress level. Besides, there is continuous flooding of information and knowledge in medical science, which indirectly adds to the stress level of students. Above all, the new environment, teaching faculty, and expectations from parents create social stress on students leading to fear of failure.[17] Students staying in hostel have more concern about the hostel environment, friends, and food facilities as compared to locals. Females get more stressed because of poor food quality compared to males.

The identified academic stressors speak about anxiety of students about their professional future. Previous studies have also shown that academics is the common stress element among medical students [22,24,26,27]. This is an indicator to educationist and policy makers to revisit the examination process to make it less stressful. The physical and social factors induce lesser stress as perceived by students.

CONCLUSION

In this study, an attempt has been made to identify the stress profile of medical students. The study confirmed the findings of other studies, that the prevalence of perceived stress was high among medical students. Academic-related problems, such as low GPA, were the greater perceived stressors. The level of stress was more among the students of the 3rd years. Fears of exams was linked to increased anxiety and sometimes panic at the exam, which made the students always under stress and, also, leads to lower scholastic achievement.

REFERENCES

1. Selye H. The stress of life. Hans Selye. MD New York: McGraw-Hill Book Company, Inc; 1956. p479.
2. Barikani A. Stress in medical students. J Med Educ. 2008;11(12):41-4.
3. Yusoff MSB, Rahim AFA, Yaacob MJ. Prevalence and sources of stress among Universiti Sains Malaysia medical students. Malays J Med Sci. 2010;17(1):30-7.
4. Fares J, Al Tabosh H, Saadeddin Z, El Mouhayyar C, Aridi H. Stress, burnout and coping strategies in preclinical medical students. N Am J Med Sci. 2016;8(2):75-81. <https://doi.org/10.4103/1947-2714.177299>
5. Sani M, Mahfouz M, Bani I, Alsomily A, Alagi D, Alsomily N, et al. Prevalence of stress among medical students in Jizan University, Kingdom of Saudi Arabia. Gulf Med J. 2012;1(1):19-25.
6. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. Acad Med. 2006;81(4):354-73. <https://doi.org/10.1097>
7. Firth J. Levels and sources of stress in medical students. Br Med J (Clin Res Ed). 1986;292(6529):1177-80. <https://doi.org/10.1136/bmj.292.6529.1177>
8. Al Sunni A, Latif R. Perceived stress among medical students in preclinical years: a Saudi Arabian perspective. Saudi J Health Sci. 2014;3(3):155-9. <https://doi.org/10.4103/2278-0521.142324>
9. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: a cross-sectional study. Med Educ. 2005;39(6):594-604. <https://doi.org/10.1111/j.1365-2929.2005.02176>
10. Saeed AA, Bahmassy AA, Al-Hamdan NA, Almuhaibery FS, Alyahya AZ. Perceived stress and associated factors among medical students. J Family Community Med. 2016;23(3):166-71. <https://doi.org/10.4103/2230-8229.189132>
11. Dahlin M, Joneborg N, Runeson B. Stress and depression among medical students: A cross-sectional study. Med Educ. 2005;39:594-604.
12. Zoccolillo M, Murphy GE, Wetzel RD. Depression among medical students. J Affect Disord. 1986;11:91-6.
13. Tyssen R, Vaglum P, Grønvald NT, Ekeberg O. Suicidal ideation among medical students and young physicians: A nationwide and prospective study of prevalence and predictors. J Affect Disord. 2001;64:69-79.
14. Tyssen R, Hem E, Vaglum P, Grønvald NT, Ekeberg O. The process of suicidal planning among medical doctors: Predictors in a longitudinal Norwegian sample. J Affect Disord. 2004;80:191-8.
15. Malathi A, Damodaran A. Stress due to exams in medical students – Role of yoga. Indian J Physiol Pharmacol. 1999;43:218-24.
16. Bramness JG, Fixdal TC, Vaglum P. Effect of medical school stress on the mental health of medical students in early and late clinical curriculum. Acta Psychiatr Scand. 1991;84:340-5.
17. Vitaliano PP, Russo J, Carr JE, Heerwagen JH. Medical school pressures and their relationship to anxiety. J Nerv Ment Dis. 1984;172:730-6.
18. Tyssen R, Vaglum P, Grønvald NT, Ekeberg O. Factors in medical school that predict

- postgraduate mental health problems in need of treatment. A nationwide and longitudinal study. *Med Educ*. 2001;35:110–20.
19. Fish C, Nies MA. Health promotion needs of students in a college environment. *Public Health Nurs*. 1996;13:104–11.
 20. Chew-Graham CA, Rogers A, Yassin N. 'I wouldn't want it on my CV or their records': Medical students' experiences of help-seeking for mental health problems. *Med Educ*. 2003;37:873–80.
 21. Sreeramareddy CT, Shankar PR, Binu VS, Mukhopadhyay C, Ray B, Menezes RG. Psychological morbidity, sources of stress and coping strategies among undergraduate medical students of Nepal. *BMC Med Educ* 2007;7:26.
 22. Supe AN. A Study of stress in medical students at GS Seth Medical College. *J Postgrad Med* 1998;44:1-6.
 23. Vaidya PM, Mulgaonkar KP. Prevalence of depression anxiety and stress in undergraduate medical students and its correlation with their academic performance. *Indian J Occup Ther* 2007;39:7-10.
 24. Sheikh BT, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N, et al. Students, Stress and Coping strategies – A case of Pakistani Medical School. *Educ Health* 2004;17:346-53.
 25. Shah M, Hasan S, Malik S, Sreeramareddy CT. Perceived stress, sources and Severity of Stress among medical undergraduates in a Pakistani Medical School. *BMC Med Educ* 2010;10:2.
 26. Saipanish R. Stress among medical students in a Thai Medical School. *Med Teach* 2003;25:502-6.
 27. Stewart SM, Lam TH, Betson CL, Wong CM, Wong AM. A prospective analysis of stress and academic performance in the first 2 years of medical school. *Med Educ* 1999;33:243-50.