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International Journal of Pharmaceutical and Clinical Research 2023; 15(1); 1180-1185

Original Research Article

A Study on Evaluation of Stress and Anxiety in the First Year Undergraduate Medical Student

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Received: 05-10-2022 / Revised: 24-11-2022 / Accepted: 27-12-2022 Corresponding author: Dr. Shailesh Kumar Pankaj Conflict of interest: Nil

Abstract

Aim: The study was carried out to assess the level of stress and anxiety experienced by the 1st year undergraduate medical students and to find out the sources of stress in these students and also to assess their stress coping mechanism.

Methods: The present study was conducted at Department of Physiology, NMCH, Patna, Bihar, India for the period of one year. Informed consent was obtained from the participants.

Results: A total of 100 students participated in the study. Out of these participants, there were 60 males and 40 females. The students responded to all items in the scale which was 100%. Among various grades of anxiety, and stress, the majority of students were found to be in the mild to moderate level. Very few students were in severe to extremely severe levels of anxiety, and stress. The anxiety score is extremely high in 40% of the participants with no significant difference in male and female participants before the first internal examination.

Conclusion: The present study showed that the stress among the 1st year undergraduate medical students was highly prevalent. There was no significant difference in male and female participants in the anxiety score.

Keywords: Stress; Anxiety; Academic; Medical Students.

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Introduction

The term stress was first employed in the 1930s by endocrinologist Hans Selve who published model of stress. [1] Stress is actually the wear and tear that the body experiences to adjust to the changing environment; it can affect both physically and emotionally and thus can create positive or negative influence on us. [2] Stress includes financial problems, health problems. social issues or academic difficulties. information and input overload, and lack of leisure time. Stress sometimes is favorable and can facilitate learning. It can also inhibit and suppress learning. [3] When students appraise their education and the new atmosphere in the medical institution as a challenge, stress can bring them a sense of competence and can enhance the learning process. When education is seen as a threat by the student, stress can elicit feelings of helplessness which leads to poor performance and emotional distress and may lead to serious social consequences in subsequent years. [4,5] Stress is found to be associated with other psychiatric symptoms such as depression. [6] Most of the studies indicate that the 1st vear medical students stress is related more to the academic factors than social factors. [7] Few studies have also shown the negative effect of stress on immune system. [8] Studies have shown the various coping mechanism used by medical students and had determined whether stress has a positive or negative influence. Ineffective stress coping mechanism such as problem avoidance, cynical thinking, social withdrawal, and self-criticism has negative consequences and can lead to depression, anxiety, and poor mental health. [9]

First year medical student in particular has moved from the cocooned just environment of his home and college to the unknown, competitive world of medicine. With such changes in the life of a medical student and the immense pressure to perform, there is bound to be huge amounts of stress. This leads to a vicious cycle of poor academic performance, low self-esteem, anxiety, panic attacks and depression. [10] An optimal level of stress, earlier known as 'favorable stress' can enhance learning, but excessive stress can lead to physical and mental health problems reducing the self-esteem of the students. [11,12]

These students get exposed for the 1st time new academics to а and social environment. Much of the 1st year medical students are not the native of the place where they get admission into the medical colleges. Few studies have also shown the negative effect of stress on immune system. [8] Studies have shown the various coping mechanism used by medical students and had determined whether stress has a positive or negative influence. Ineffective stress coping mechanism such as problem avoidance, cynical thinking, social withdrawal, and self-criticism has negative consequences and can lead to depression, anxiety, and poor mental health. [9]

The study was carried out to assess the level of stress and anxiety experienced by the 1st year undergraduate medical students and to find out the sources of stress in these students and also to assess their stress coping mechanism.

Materials and Methods

The present study was conducted at Department of Physiology NMCH, Patna, Bihar, India for the period of one year. Informed consent was obtained from the participants.

Inclusion Criteria

The first year MBBS students were included in the study.

Exclusion Criteria

The students with the history of any psychiatric illness or taking any medicine for the same were excluded from the study.

Study Procedure

A total of 100 students participated in the study. informed consent was obtained from the participants before the start of the study. Information about demographic details such as name, age, sex, height, weight, body mass index, native, lifestyle, and social support was collected using a proforma of questionnaire. Stress was measured using 27-item medical students stressor questionnaire (MSSO)¹³ and anxiety was measured using Westside Test Anxiety Scale during the internal examination since it was the first examination going to be faced by the students after entering into the professional course. Stress was measured by asking students to rate each item of MSSQ by choosing from five responses, strongly disagree, disagree, neither disagree nor agree (neutral), agree, and strongly agree (e.g., if one item is a strong stressor, marked it as strongly agree; if not a stressor, marked it disagree). The scoring method was assigned marks from 1 (strongly disagree) to 5 (strongly agree). Anxiety was measured using Westside Test Anxiety Scale by assigning a value of

1 (not at all/never true) to 5 (extremely/always true).¹⁴

Results

Variables	Male (Mean±SD)	Female (Mean±SD)	P-value
Age	19±1.362	19±2.531	0.9999
Weight	47±8.615	45±7.543	0.0139
Height	155±8.614	154±5.21	0.1609

Table 1: Demographic details of the study participants

A total of 100 students participated in the study. Out of these participants, there were 60 males and 40 females. The students responded to all items in the scale which was 100%.

Table 2: Levels of anxiety, and stress among first-year medical students and Gende	r
difference of high and mild stress score	

Levels	Anxiety	Stress	
Normal	40 (40)	55 (55)	
Mild to Moderate	35 (35)	35 (35)	
Severe to Extremely Severe	25 (25)	10 (10)	
Gender difference of high and mild stress score in the study participants			
Variables	High stress score (Mean±SD)	Mild stress score (Mean±SD)	
Female	98.278±9	60.689±8.325	
Male	91.550±10.018	57.911±7.675	
P-value	0.00458	0.0884	

Among various grades of anxiety, and stress, the majority of students were found to be in the mild to moderate level. Very few students were in severe to extremely severe levels of anxiety, and stress.

Table 3: Comparison of anxiety score in the study participants

Variables	Female	Male	P-value
Mean±SD	4.140±0.2011	4.045±0.06876	0.4091

The anxiety score is extremely high in 40% of the participants with no significant difference in male and female participants before the first internal examination.

Table 4: Sociodemographic characteristics and stressors of medical students with

anality and stitess			
Variables	Anxiety n=50	Stress n=50	
Gender			
Male	25 (50)	24 (48)	
Female	25 (50)	26 (52)	
Living conditions			
Hostel	45 (90)	43 (86)	
Outside	5 (10)	7 (14)	
Academic stress			
Yes	35 (70)	38 (76)	
No	15 (30)	12 (24)	
Hectic lifestyle			
Yes	15 (30)	18 (36)	

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No	35 (70)	32 (64)
Family problems		
Yes	3 (6)	4 (8)
No	47 (94)	46 (92)

The majority of students who had either anxiety, or stress reported academic stress as their common stressor is mentioned in the above table.

Discussion

Stress is a state of emotional or mental strain resulting in a number of normal bodily reactions to retain self-preservation. [15] Medical education is taken as being stressful. Medical students face multiple anxieties as they transform from an insecure student to a young knowledgeable physician. The stress in medical training is a growing concern these days. [16] Many studies have shown that medical students face high rate of psychological morbidity at various stages of their taming, especially at the beginning during first year. [17,18]

In our study, the overall prevalence of anxiety, and stress among first-year medical students were found to be 50%, and 50% respectively. A study conducted among first-year medical students in an Egyptian Public University reported the prevalence of anxiety, and stress to be 78.4%, and 57.8% respectively which is higher compared to our study. [19] On the other hand, a study conducted among medical students in two medical colleges reported the prevalence of anxiety, and stress to be 41.1%, and 27% respectively which is lower than the finding of our study. [20]

The burden of depression among medical students is significantly higher in Asian countries compared to a western study in the United States of America. [21] These conflicting findings with our study may be due to differences in academic curriculum, help-seeking behavior, mental health awareness, and stress coping strategies among medical students. In our study, students reported academic stress as one of the common stressors. This could indicate the mental health of medical students might improve after implementing a student-friendly curriculum, better learning techniques, and alternative ways to alleviate academic stress without hindering the objective of the medical curriculum. Two other studies conducted among medical students also reported academic-related stressors as considerable distress among them. [22,23]

The probable reason for the high prevalence of stress in medical students in this study is academic and curricular overload, fear of completing vast syllabus in a short period; many of the students are from vernacular medium. They are unable to understand English language teaching in medical institutions which lead to stress in these students. [24] Other contributing factors of stress were related to lack of coping strategy, parent income status, and lack of recreational facilities in rural area. Most of the students live in hostel, so there are less discussion and involvement of parents during academic and university sessions. This cross-sectional study was done on a small sample size and just before the first internal examination. This study provides only a snap shot of the problems suffered by medical students and their coping mechanism on a short term, on joining the medical institution. It becomes the limitation of the study on its own as it is not able to understand the stress in a medical student during their whole professional course.

Conclusion

The present study showed that the stress among the 1st year medical students is highly prevalent and the stress among female participants was significantly more than the male participants. The anxiety score was extremely high in the participants with no significant difference in male and female participants before the first internal examination. The different coping mechanism was adopted by the participants to relieve stress. Majority of the participant thinks that their coping strategies effectively reduce stress, but only few thinks that it does not work.

References

- 1. Selye H. Stress and the general adaptation syndrome. British medical journal. 1950 Jun 6;1(4667):1383.
- Behere SP, Yadav R, Behere PB. A comparative study of stress among students of medicine, engineering, and nursing. Indian journal of psychological medicine. 2011 Jul; 33(2):145-8.
- Guthrie E, Black D, Bagalkote H, Shaw C, Campbell M, Creed F. Psychological stress and burnout in medical students: a five-year prospective longitudinal study. Journal of the Royal Society of Medicine. 1998 May;91(5):237-43.
- 4. Spiegel DA, Smolen RC, Jonas CK. An examination of the relationships among interpersonal stress, morale and academic performance in male and female medical students. Social Science & Medicine. 1986 Jan 1;23 (11):1157-61.
- 5. Vaz RF, Mbajiorgu EF, Acuda SW. A preliminary study of stress levels among first year medical students at the University of Zimbabwe. The Central African journal of medicine. 1998 Sep 1;44(9):214-9.
- Sherina MS, Rampal L, Kaneson N. Psychological stress among undergraduate medical students. Medical Journal of Malaysia. 2004 Jun 1;59(2):207-11.
- Coburn D, Jovaisas AV. Perceived sources of stress among first-year medical students. Academic Medicine. 1975 Jun 1;50(6):589-95.

- Qureshi F, Alam J, Khan MA, Sheraz G. Effect of examination stress on blood cell parameters of students in a Pakistani Medical College. Journal of Ayub Medical College Abbottabad. 2002;14(1).
- Eva EO, Islam MZ, Mosaddek AS, Rahman MF, Rozario RJ, Iftekhar AF, Ahmed TS, Jahan I, Abubakar AR, Dali WP, Razzaque MS. Prevalence of stress among medical students: a comparative study between public and private medical schools in Bangladesh. BMC research notes. 2015 Dec;8(1):1-7.
- 10. Jafari N, Loghmani A, Montazeri A. Mental health of medical students in different levels of training. International journal of preventive medicine. 2012 Mar;3(Suppl1):S107.
- Kaplan HI, Saddock BJ. Sypnosis of Psychiatry: Behavioral Sciences/ Clinical Psychiatry. 8th ed. Philadelphia: Lippincott Williams and Wilkins; 2000 Learning Theory; pp. 148–54.
- 12. Niemi PM, Vainiomäki PT. Medical students' academic distress, coping, and achievement strategies during the preclinical years. Teaching and learning in medicine. 1999 Jul 1;11(3): 125-34.
- Sathidevi VK. Development of medical students stressor questionnaire. Kerala Medical Journal. 2009 Sep 24; 2(3):69-75.
- Driscoll R. Westside Test Anxiety Scale validation. Online submission. 2007 Mar 1.
- 15. Sharma B, Prasad S, Pandey R, Singh J, Sodhi KS, Wadhwa D. Evaluation of Stress among Post-graduate Medical and Dental Students: A pilot study. Delhi Psychiatry Journal. 2013 Oct;16 (2):312-6.
- 16. Australian Bureau of Statistics (ABS): Information Paper: Use of the Kessler Psychological Distress Scale in ABS health surveys, Australia, 2001.

- 17. Firth J. Levels and sources of stress in medical students. Br Med J (Clin Res Ed). 1986 May 3;292(6529):1177-80.
- Miller PM, Surtees PG. Psychological symptoms and their course in first-year medical students as assessed by the Interval General Health Questionnaire (I–GHQ). The British Journal of Psychiatry. 1991 Aug 1;159(2):199-207.
- 19. Roy PP. Depression, anxiety and stress among first year undergraduate medical students. Asian J Biomed Pharm Sci. 2015;05(45):37-8.
- 20. Kunwar D, Risal A, Koirala S. Study of depression, anxiety and stress among the medical students in two medical colleges of Nepal. Kathmandu Univ Med J. 2016;14(53):22-6.
- 21. Goebert D, Thompson D, Takeshita J, Beach C, Bryson P, Ephgrave K, et al.

Depressive symptoms in medical students and residents: A multischool study. Acad Med. 2009;84(2):236–41.

- 22. Pokhrel NB, Khadayat R, Tulachan P. Depression, anxiety, and burnout among medical students and residents of a medical school in Nepal: A crosssectional study. BMC Psychiatry. 2020;20(1):1–18.
- Basnet B, Jaiswal M, Adhikari B, Shyangwa PM. Depression among undergraduate medical students. Kathmandu Univ Med J. 2012; 10(39): 56–9.
- 24. Hays P. Evidence Basis for Pharmacogenetic Testing in Psychiatry. Journal of Medical Research and Health Sciences. 2022; 5(3): 1838–1859.