

RESEARCH ARTICLE

Assessment of stress and anxiety in the first year MBBS student in tertiary care hospital in rural area

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ABSTRACT


Background: Stress is actually the wear and tear that our bodies experience as we adjust to our continually changing environment; it affects both physically and emotionally. When students appraise their education as a challenge, stress can bring them a sense of competence and enhance the learning process. When education is seen as a threat by the student, stress can elicit feelings of helplessness and leads to poor academic performance. **Aims and Objectives:** 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 study was a cross-sectional study carried on the 1st year MBBS students. After the approval of ethical committee, stress was measured by asking students to rate each item of medical student stressor questionnaire. 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). **Results:** It was found that there was a statistical difference between males and females. The stress in female participants was highly significant than male participants ($P < 0.05$). There was a statistical difference in weight of female and male participants ($P < 0.05$). There was no significant difference seen in the anxiety score in male and female participants. **Conclusion:** The present study showed that the stress among the 1st year undergraduate medical students was highly prevalent and the stress among female participants was significantly more than the male participants. There was no significant difference in male and female participants in the anxiety score.

KEY WORDS: Stress; Anxiety; Academic; Medical Students

INTRODUCTION

The term stress was first employed in the 1930s by endocrinologist Hans Selye 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

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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 year medical students stress is related more to the academic factors than social factors.^[7] These students get exposed for the 1st time to a new academics 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. The students get exposed to a huge syllabus after their 12th standard for the 1st time. Many of the students are from vernacular medium so they find it difficult to understand English language teaching in the medical institution. All these may cause many new challenges and threatening situational demands among the 1st year medical students. 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 students getting admission to the college in rural area not only get exposed to a vast syllabus for the 1st time after their high school but also have to adapt to a different lifestyle. They have to face problem of local language and the less facilities available in the rural areas. As there is no study done on medical students in college in the rural area, this cross-sectional study was thus planned to evaluate the level of stress and anxiety in the 1st year medical students. The aim of this study was to assess the level of stress and anxiety experienced by the 1st year MBBS students and to find out the sources of stress among the student and their stress coping mechanism.

MATERIALS AND METHODS

Study Design

This cross-sectional study was conducted in a tertiary hospital in rural area from the duration of April 2018 to March 2019.

Ethical Consideration

Ethical Committee approval was taken before the start of the study (REF: PIMS/IEC-DR/2018/70) and written 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 200 students participated in the study, written 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 pro forma of questionnaire. Stress was measured using 27-item medical students stressor questionnaire (MSSQ)^[10] 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).^[11]

Statistical Analysis

The data were statistically analyzed using Mann–Whitney U-test with GraphPad InStat software version 3.06.

RESULTS

A total of 200 students participated in the study. Out of these participants, there were 108 males and 92 females. The students responded to all items in the scale which was 100%. Demographic details of the participants are shown in Table 1.

There was a significant difference seen in weight of the study participants ($P < 0.05$) and no difference was seen in age and height of the participants. It was found that there was a statistical difference between males and females when stress was compared. The stress in female participants were highly significant than male participants ($P < 0.0045$) and no significant difference seen for mild-to-moderate stress between female and male participants, as shown in Table 2.

The anxiety score is extremely high in 42% of the participants with no significant difference in male and female participants before the first internal examination, as shown in Table 3.

The coping strategies used by the participants for minimizing their stress [Figure 1]. Those are as follows: (1) Share

Table 1: Demographic details of the study participants

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

Statistically significant*

Table 2: 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

Statistically significant*

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

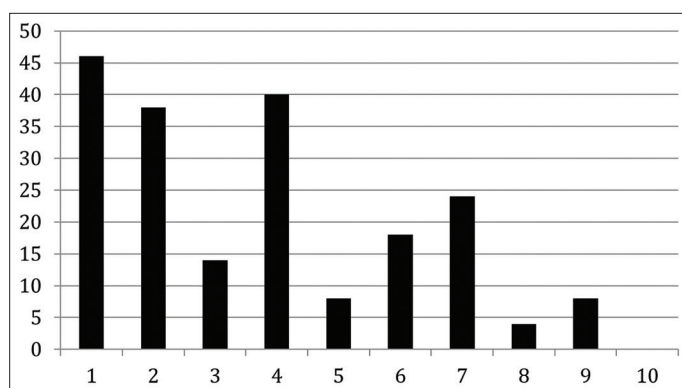


Figure 1: Coping mechanism: (1) Share with friend and family; (2) watch movies on mobile phone; (3) taking rest and sleep; (4) singing and listening songs; (5) net surfing; (6) reading story books and diary writing; (7) playing indoor and outdoor games; (8) eating; (9) meditation and yoga; (10) smoking and taking other sedative drugs

with friend and family (23%); (2) watch movies on mobile phones (19%); (3) taking rest and sleep (7%); (4) singing and listening songs (20%); (5) net surfing (4%); (6) reading story books and diary writing (9%); (7) playing indoor and outdoor games (12%); (8) eating (2%); (9) meditation and yoga (4%); and (10) smoking and taking other sedative drugs (0%). About 78% (156) of the participants think that their coping strategies effectively reduce stress, but 22% (44) think that it does not work.

DISCUSSION

The results of the present study confirm that a substantial number of medical students, especially females, feel stressed and psychologically burdened. A total of 200 students participated in the study of which female participants were more stressed than the male participants and the difference between male and female participants was statistically significant ($P = 0.00458$). There was no significant difference seen in female and male participants in mild-to-moderate stress and anxiety score. It was found that academic stress

was more than the interpersonal stress in the present study. In the present study, the different coping mechanisms utilized by the participants in the descending order are as follows: Sharing with friend and family (46, 23%); watching movies on mobile phones (38, 19%); singing and listening songs (40, 20%); watching movies on mobile phones (38, 19%); playing indoor and outdoor games (24, 12%); and reading story books and diary writing (18, 9%) while meditating and yoga were the least. Eight out of 11 participants play video games as indoor games to cope up with stress. Majority of participants 156 (78%) think that their coping strategies effectively reduce stress, but 22% (44) think that it does not work.

The finding of the present study is similar to the outcome of other studies. The study done by Eva *et al.* indicated that the overall prevalence of stress is higher in medical students. The study was conducted on medical students from two public and six private colleges. Out of 990 participated students, they found stress in 54% of population, 53% of male and 55% of female. The present finding is similar to this study with stress more in female students than male students. The study done by Rahman *et al.* is similar to the present study. In this study, they found stress in 50% of their study population. The reason mentioned in this study for stress was uncomfortable hostel environment, social problems, poor networking at the hostels and campus, as well as lack of facilities.^[12] Studies conducted in Malaysia^[13] and in Southeast Asia showed similar findings.^[12,14,15] A number of reports concluded that positive emotional disorders exist in medical students.^[16,17] Most of the previous literature showed a positive relation of stress with medical students. A study done by Goswami *et al.* showed that video game playing in medical students had a positive effect on the well-being of the students.^[18]

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. 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. Along with the academic stress, the student needs to adjust with the social environment of the rural area. The main reason provided by participants (22%) for the failure of coping mechanism to reduce stress is the increased anxiety to complete large syllabus within a short time before the first internal examinations and less adaptation to the new academic and institutional environment. Majority of participants were able to manage their stress before examinations by means of their coping strategies and do not want to adopt new coping strategies. In the present study, the yoga and meditation were the least preferred coping mechanism. A study had showed positive effect of yoga on the health of the participants more

than the aerobic exercise.^[19] The present study showed that the stress was highly prevalent among the 1st year medical students. This study will help the medical institute to deal with the stress of the students by means of various orientation, stress programs, and recreational programs in the form of yoga training or meditation program and will thus help the students to deal with their academic burden in future.

Limitation of the Study

This cross-sectional study was done on a small sample size and just before the first internal examination. This research 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.

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