Original Research Article

A cross sectional study of sources and severity of stress in first year undergraduates in a medical college of Shivamogga

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A R T I C L E   I N F O

A B S T R A C T

Nowadays a lot of awareness about stress and its effects on mental health is being spread among people. We being medical fraternity should think about stress our undergraduates are going through. Medical education being the toughest academics puts the students in stress. So this study was designed with following objectives: 1. To explore the sources and level of stress in first MBBS students 2. To compare the levels of stress in different groups.
Materials and Methods: The study was conducted in Subbaiah institute of medical sciences, Shivamogga in April 2019. We included 150 first year medical students (2018-19 batch) of both the sexes after getting approval from institutional ethical clearance committee. We used pre formed questionnaire which had demographic details and MSSQ (medical student stress questionnaire) questions.
Statistical Analysis: statistical analysis was done using independent student t test. Mean ± SD was calculated.
Results: academic related stressor (ARS) was higher than all other stressors. Females had more ARS. Urban background students had more ARS compared to rural background students. We found moderate stress in ARS.
Conclusion: ARS is the major stressor perceived, hence measures should be taken to decrease the burden of academic stress in the students.

1. Introduction

Stress is a state of physical and mental tension resulting from adverse situations. In this rapidly advancing era, everyone seems to have stress. Medical education, till now is the most sought after branch in the field of education. In India medical profession is considered as noble profession. Every Indian parent dreams of making his/her daughter/son a doctor. It takes a lot of hard work and dedication to get through the competitive exams and enter into medical college. In the last few years, violence against doctors is alarmingly raising. Violence leading to grievous injury or death of the doctor is making headlines in the newspapers. The respect towards doctors is slowly decreasing in our society. In spite of these incidents and issues in our society passion towards medical field is still high among students. Some choose MBBS because of self-interest and some because of family pressure. It is a known fact that students nowadays are in lot of stress. Medical education is the most stressful academics worldwide. The stress in first year medical students can be attributed to vast syllabus, new environment, new peer group, financial crisis, staying away from home and parents, poor communication skills and many more.

This stress will slowly lead to decreased concentration, poor academic performance, social inhibition, decreased self-confidence and suicidal tendencies. Many studies have been done across the world to find out the level of stress and its effect in medical students.[1–5] Most of these studies have used perceived stress scale and Kessler Psychological

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Distress Scale (K10). We planned to use MSSQ (medical student stress questionnaire)[6,7] in this study.

Stress in first year students should be identified at the earliest and suitable measures to be taken. This will help the students to regain their confidence and to face the upcoming hurdles in their future studies, so this study was planned to find out the level of stress among first year students.

2. Objectives

1. To explore the sources and level of stress in first MBBS students.
2. To compare the levels of stress in different groups.

3. Materials and Methods

The present study was undertaken in Subbaiah institute of medical sciences, Shivamogga. This was a descriptive cross sectional study. Study was done in April 2019. A study population of 150 first year medical students (2018-19 batch) of both the sexes were included in the study. Approval from institutional ethical clearance committee was obtained before starting the study. Written informed consent was obtained from the participants after briefly explaining the procedure. They were assured about the confidentiality of the data. Students who were willing to participate in the study were enrolled. Students not willing to participate and those who were absent were excluded from the study. A pre formed questionnaire was given to all the participants. It had two aspects- demographical details and MSSQ questions.

Relevant demographic details like age, gender, mother tongue, state, local address, language of study, rural background, merit status was collected by a structured form.

3.1. MSSQ Questionnaire

It is a validated instrument to identify sources of stress. 40 items are there in MSSQ which represent the possible sources of stress in medical students. They are Grouped into six main domains.

1. Academic related stressorss.
2. Intrapersonal and interpersonal related stressors.
3. Teaching and learning related stressors.
4. Social related stressors.
5. Drive and desire related stressors.
6. Group activities related stressors.

The questionnaire was distributed among the students in lecture hall. They were asked to fill up the question within half an hour. The questions were never revealed to the students before so as to prevent any bias. Participants were asked to rate each question themselves by choosing from five responses: causing no stress at all, causing mild stress, causing moderate stress, causing high stress and causing severe stress. The MSSQ is scored by assigning a value of zero to four for each of the respective responses. For example, students were asked to choose zero for events which cause no stress at all and assign four to events causing severe stress. 40 questions were divided into section A contains 20 items, and section B contains 20 items respectively. Total score of A and B of each domain was divided by following and results were interpreted.

1. Academic related stressors = 13
2. Intrapersonal and interpersonal related stressors = 7
3. Teaching and learning related stressors = 7
4. Social related stressors = 6
5. Drive and desire related stressors = 3
6. Group activities related stressors = 4

3.2. Interpretation

1. 0.00– 1 0– mild stress
2. 1.01- 2.00 – moderate stress
3. 2.01 – 3.00 – high stress
4. 3.01- 4.00 – severe stress

3.3. Statistical analysis

The data was analysed by using SPSS software version 21. Student independent t-test was applied. Mean $\pm$ SD was calculated. P value is less than 0.05 was considered as significant.

4. Results

Table 1: Distribution of stressors among males and females:

	Male	Female	P value
Academic Related Stress	1.69	1.95	0.2
Intrapersonal & interpersonal related stress	0.86	0.9	0.66
Teaching and learning related stress	1.2	1.12	0.5
Social related stress	1.04	1.15	0.27
Drive and desire related stressors	0.64	0.59	0.68
Group activities related stressors	1.15	1.34	0.16

Table 1 shows comparison of different stressors among male and females. In our study we found that ARS, IRS, and GRS were higher in females than males. Females have more ARS (1.95) followed by GRS (91.34) and SRS (1.15).

Table 2 shows comparison of different stressors among rural and urban background students. From the table it is evident that rural background students have higher IRS, TLRS, SRS and DRS Compared to urban students. Urban background students have more ARS (1.86), followed by GRS (1.27). However, there is no statistical significance among both the groups.

Table 2: Distribution of stressors among rural and urban background students:

	Rural	**Urban**	**P value**
Academic Related Stressors	1.7	1.86	0.22
Intrapersonal & interpersonal related stressors	1	0.85	0.22
Teaching and learning related stressors	1.17	1.15	0.92
Social related stress	1.13	1.09	0.78
Drive and desire related stressors	0.91	0.53	0.07
Group activities related stressors	1.17	1.27	0.52

Table 3: Distribution of stressors among merit and payment students

	Merit	**Payment**	**P value**
Academic Related Stress	1.79	1.9	0.31
Intrapersonal & interpersonal related stress	0.78	1.07	0.06
Teaching and learning related stress	1.12	1.21	0.44
Social related stress	1.06	1.18	0.26
Drive and desire related stressors	0.58	0.68	0.44
Group activities related stressors	1.15	1.42	0.05

Table 3 shows comparison of different stressors among merit and payment students. We found out that payment students in our study have higher stress level in all the 6 stressor groups compared to merit students. No statistical significance among both the groups.
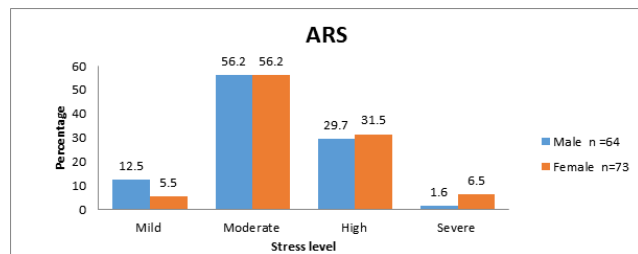

Fig. 1: Percentage of stress level in academic related stressor

Figure 1 shows levels of academic related stressor in males and females. According to table both genders have moderate stress in ARS.

Figure 2 shows levels of Intrapersonal & interpersonal related stress among males and females. Both genders have mild stress in IRS.

Figure 3 shows levels of teaching learning related stressor among males and females. Both genders have mild stress in TLRS.
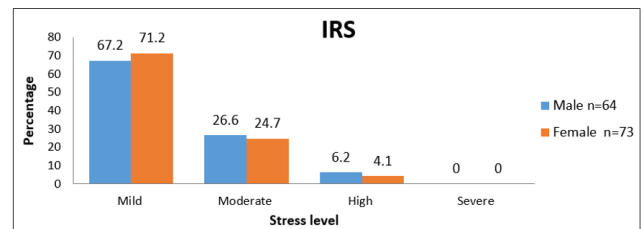

Fig. 2: Percentage of stress level in Intrapersonal & interpersonal related stressor
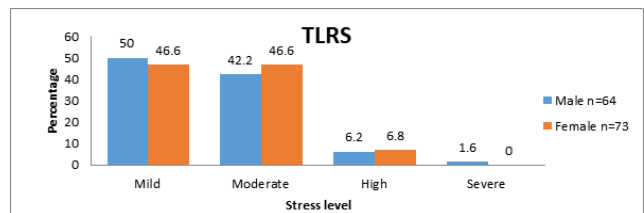

Fig. 3: Percentage of stress level in teaching and learning related stressor
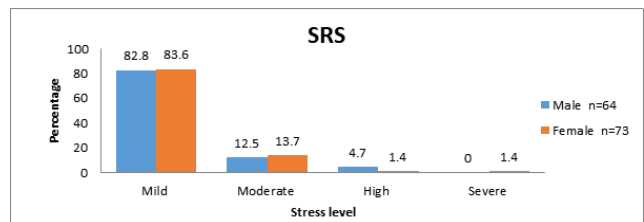

Fig. 4: Percentage of stress level in social related stressor

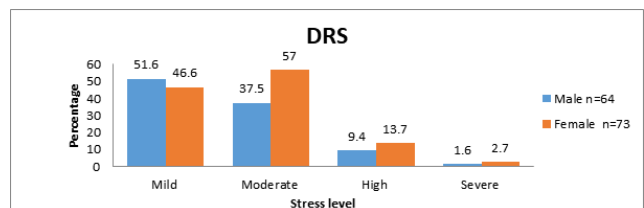Figure 4 shows levels of social related stressor among males and females. Both have mild stress in SRS.

Fig. 5: Percentage of stress level in drive related stressor

Figure 5 shows levels of drive related stressor among males and females. Males have mild stress and females have moderate stress in DRS.

Figure 6 shows levels of group activity related stressor among males and females. Both genders have mild stress in GARS.

5. Discussion

In our study subjects, among all the six domains of stress, varying levels of stress were seen. This study gives evidence
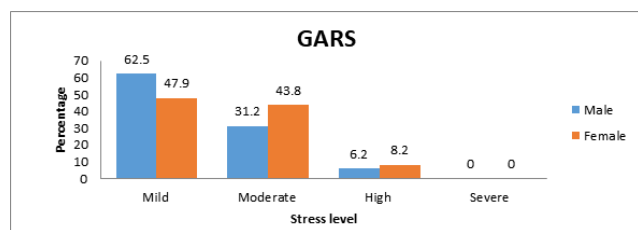
Fig. 6: Percentage of stress level in group activity related stressor

to show that stress is common in medical students.

Different medical students perceive the same stressor differently depending upon their family background, personality and coping up skills.

howsthat ARS, IRS and GRS were higher in females than males. Females have more ARS (1.95) followed by GRS (91.34) and SRS (1.15). More ARS in our study is in accordance with other studies. [8–11]

Our study included students of 1st MBBS only. Debashree et al. [8] study also included 1st year students. Whereas Shelke Umesh et al. [11] study included 3rd year students, Hemant et al. [10] study included 1st and 2nd year students and Kishore et al [9] study included 2nd and 3rd year students.

From Table 2 it is evident that rural background students have higher IRS, TLRS, SRS and DRS compared to urban students, which in accordance with other study in which non English medium rural background students had more IRS, TLRS and SRS. [8] Urban background students have more ARS (1.86), followed by GRS (1.27) in our study whereas study done in Raipur, India showed more ARS in rural background. [8]

We also found out that payment students in our study have higher stress level in all the 6 stressor groups compared to merit students. Medical education needs passion and hard work towards subject and perseverance. This could be the reason behind increased stressors in payment students. Most of the payment students in our study group were forced to select medical field by their parents.

Academic related stressor refers to any educational related event which causes stress in student like tests/ examinations. Not enough study material, heavy workload, falling behind in reading schedule, high-self expectation to do well in studies competition, difficulty in understanding. This study shows that females have more ARS compared to male students. Urban background students and payment seat students have higher ARS compared to others. Both male and female students have moderate stress (56.2) in ARS.

Our study showed mean $\pm$ SD of ARS 1.82 $\pm$ 0.67 which is lower compared to other studies. Debashree et al. [8] study showed mean ARS of 3.10 $\pm$ 0.74, Hemant et al [10] study showed 2.00 with SD of 0.61, Kishore et al [9] study showed 2.96 $\pm$ 0.7, and study by Shankar et al [12] showed mean ARS

of 2.24.

Mean TLRS and SRS of our study is 1.76 $\pm$ 0.64 and1.61$\pm$ 0.59 respectively which is lower than other studies. [8,9]

Mean IRS and DRS of our study is 0.88 $\pm$ 0.61and 0.93 $\pm$ 0.67 respectively. Both values are lower than other studies. [8–10]

Our study showed mean GRS of 1.82 $\pm$ 0.77, which is higher than other studies. [8,10]

Study done in Rural medical college, Ahmednagar, Maharashtra compared the levels of different stressors in males and females and showed that both genders have moderate stress in all the stressors. [12] Whereas our study showed moderate stress in ARS and mild stress in all other stressors.

6. Conclusion

Our study concludes that medical education is stressful. There is a need for measures to cope up stress in medical education. Clinical psychologists should be appointed to deal with stress related problems of students. Students should be periodically counselled. Recently medical education syllabus has been changed. Teachers as mentors could help students to deal with their problems. Stress management workshops should be conducted as soon as the medical student joins the college. Colleges should implement relaxation techniques like meditation, yoga and outdoor sports. For those students who are not from English medium and have difficulty in understanding English should be taught in language class's. Active participation in extracurricular activities should be encouraged.

7. Limitations

Mental status of the students was not assessed by clinical psychologist or psychiatrist. Only first year students were enrolled in the study.

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