

## A study of prevalence of perceived Stress in first year medical students

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### Abstract

**Introduction:** Stress is defined as a force of deleterious nature external or internal, physical or mental that tends to disturb the organisms integrity or homeostasis. Medical education poses great amount of stress to the students, as the study of medicine is extensive and time consuming more so among the first year medical students.

**Aim and Objectives:** The present study was conducted to identify the potential stressors among students and develop strategies to help students combat stress in an effective manner.

**Materials and Method:** This cross sectional questionnaire based study was conducted among first year medical students belonging to 2015-2016 batch of Sri Siddhartha medical college, a composite college Sri Siddhartha academy of Higher Education a Deemed to be University at Tumkur.

**Results:** A total of 130 students participated in the study and their questionnaire based responses were analyzed. 76.92% of students identified examination related issues and competition among peers (76.92%) as a major source of stress among them followed by loneliness 34.61%, apprehension about teachers 43.84%, as a possible source of stress Listening to music and watching movies were the medium through which of the students sought relief from the stressors followed by spiritual activity and sports.

**Conclusion:** First year medical students are exposed to varying degrees of stress and identification of potential stressors with effective intervention by structured mentorship programs along with student counseling the students can be guided in a better way to perform well in their scholastics.

**Keywords:** Stress, Stressors, Scholastics.

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### Introduction

Stress is defined as a force of deleterious nature external or internal, physical or mental, that tends to disturb the organisms integrity or homeostasis.<sup>(1)</sup> In pursuit of seeking higher education after joining the medical school the new entrants are subjected to stress.<sup>(2)</sup> The word stress exists when the adaptive capacity of the individual is overwhelmed by events. The event may be an insignificant one objectively considered and even favorable changes requiring adaptive behavior can produce stress. For each individual stress is subjectively defined and the response to stress is a function of each person's personality and physiological endowment.<sup>(3)</sup> As the students join the course from different states of India and various other countries they come from diverse cultural, socioeconomic and educational backgrounds. These students are exposed to new learning environment, hostels along with new roommates, making new social circles and also adapting to different world during their initial days at the campus.<sup>(4)</sup>

Stress in medical education could be mainly due to long study hours, lack of peer support, competitive environment, living conditions in the hostels, vastness of academic curriculum, frequency of exams, high family expectations, insecurity regarding professional future, home sickness, lack of recreational activities,

financial problems etc. if left unattended can lead to behavioral changes in the students.<sup>(5)</sup> Higher levels of stress slowly builds up a negative attitude among students by feeling worthless and depressed due to the inability to cope up with vast curriculum that has been compounded onto their shoulders which also gets aggravated by high expectations of parents and peers. Various studies have revealed high rates of psychological morbidity often associated with anxiety, depression, reduced sleep pattern and poor academic performances.<sup>(6,7,8)</sup>

The present study was conducted to identify the potential stressors among students and develop strategies to help students combat stress in an effective manner.

### Materials and Method

A cross sectional questionnaire based study was carried out among first year undergraduate medical students of Sri Siddhartha Medical College, Tumkur after obtaining the approval of institutional ethical committee. Informed consent was taken from all the members of the study group after explaining the nature and purpose of the study. Confidentiality was maintained during the entire process of the survey. A structured questionnaire based after review of literature and feedback from students and faculty members was

administered to the students. All the 130 students of 1<sup>st</sup> MBBS were included in the study, irrespective of their social profile.

**Statistical analysis:** data was analysed using EPI INFO (version 7) and the responses were expressed in percentage.

**Results**

**Table 1:** In the present study 76.9% of the respondents were 18 years of age and 23.1% of the total respondents were 19 years of age.

**Table 2:** Shows the gender distribution where in 42.3% of the study group were females and males constituted 57.70% of respondents.

**Table 3:** Analysis of data reveals that the major source of stress was found to be examination related issues (76.92%) and the competition in studies (76.92%) among peers. The other sources of stress were varied from feeling of loneliness, apprehension about the teachers, stress of getting adjusted to the room partner's. Future career prospect along with high expectation from parents were also found to be the major source of stress among the students. A high percentage of (61.53%) felt that issues related to friends was the basis of stress and majority of significant number of students agree that they need a counselor to address their issues. Health related issues were not considered as a source of stress among majority of the respondents.

Listening to music and watching movies were the medium through which 60.76% of the students sought relief from the stressors followed by spiritual activity (20%), sports (9.23%) and 10% of the respondents resorted to addictions like substance abuse and other recreational activities.

**Table 1: Age distribution**

Characteristic	Frequency	Percentage
Age		
18 years	100	76.90%
19years	30	23.10%

**Table 2: Gender distribution**

Characteristic	Frequency	Percentage
Sex		
Female	55	42.30%
Male	75	57.70%

**Table 3: Questionnaire on students source of stress**

Characteristic	Frequency	Percentage
<b>Do you feel homesick?</b>		
Never	20	15.38%
Rare	35	26.92
Sometimes	50	3.84%
Always	25	19.23
<b>Do you feel lonely?</b>		

Never	50	38.46
Rare	30	23.07%
Sometimes	45	34.61%
Always	5	3.84%
<b>Do you stressed during the examinations?</b>		
Never	20	15.38%
Sometimes	100	76.92%
Frequently	10	7.69%
<b>Do you feel tensed regarding competition in studies?</b>		
Never	15	11.53%
Sometimes	100	76.92%
Always	15	11.53%
<b>Do you feel apprehended about the teachers?</b>		
Never	18	13.84%
Rare	35	26.92%
Sometimes	57	43.84%
Frequently	20	15.38%
<b>Do you feel stressed while co-habiting (staying) with the room-partner</b>		
Never	12	9.23%
Rare	38	29.23%
Sometimes	64	49.23%
Always	26	20%
<b>Do you feel stressed regarding future career prospects?</b>		
Never	12	9.2%
Rare	28	21.53%
Sometimes	73	56.15%
Frequently	17	13.07%
<b>Do you feel tensed regarding the high expectations of parents/ relatives from you?</b>		
Never	16	12.30%
Rare	32	0.02%
Sometimes	70	53.84%
Always	22	16.92%
<b>How often do you feel the need for a counsellor?</b>		
Never	14	0.05%
Rare	28	21.53%
Sometimes	59	45.38%
Frequently	15	11.53%
<b>Does your stress give rise to any health related issues?</b>		
Never	78	60%
Rare	12	9.23%
Sometimes	28	21.53%
Always	12	9.23%
<b>Your stress is related to what basis?</b>		
College	20	15.38%
Personal	14	10.73%
Family	16	12.30%
Friends	80	61.53%
<b>What do you do when you feel stressed?</b>		
Music/Movies	79	60.76%
Sports	12	9.23%
Spiritual activity	26	20.00%

Addiction/ Recreational activities	13	10.00%
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### Discussion

Milieu interior as quoted by Claude Bernard (1783-1855) and W B Cannon (1929) who coined the term Homeostasis are renowned physiologists who discovered that the body maintains a constant internal environment in order to function normally. Selye (1959) observed any condition that threatens the homeostatic conditions is called as stress which is primarily adaptive for the organism but when it becomes severe and prolonged can lead to tissue damage and disease.<sup>(9)</sup> In the present study which focuses on the new entrants of first year medical school, it is seen that the medical students are more stressed when compared to any other professional students because of academic challenges.

Students who come to pursue their career in this profession are exposed to vast curriculum, which is extensive and they have to spend long hours to study with less duration of sleep which is highly stressful and thus has a negative impact on their scholastics, emotional status and health.<sup>(4)</sup> Students undergo stress due to competition with their peer groups, scoring up for academics like frequent class tests, internal exams in the limited time duration available where they often have difficulty in setting up priorities. In our study about 76.90% of the students have quoted exams as one of the stressors and most of them feel stressed regarding competition with their peers regarding studies. Several other factors act psychologically like loneliness, living conditions in the hostel where they have to get adjusted to new roommates, compromise on luxuries without any privacy which may lead to behavioral issues.

A study done among medical school hostelites showed that factors like child rearing and parenting had a significant influence on development stress among students. It is also seen that children coming from a family background of having a non working parent who caters to all the needs have difficulty in adjusting to the hostel environment where they are required to make independent living on the contrary students who have a working parents combat stress in a better way.<sup>(11)</sup> These factors in turn result in sleeping difficulties and nutritional derangement which could also contribute to the development of stress.

The sleep wake cycle is therefore affected and is seen as insufficient sleep duration, sleep latency and napping amidst the classes.<sup>(12)</sup> In the initial stages the body can combat and adapt itself, but Chronic stress at later stages can lead to elevated cortisol levels and increased sympathetic activity. With the activation of hypothalamo-pituitary axis, corticotrophin releasing factor (CRF) released from hypothalamus along with vasopressin released from posterior pituitary stimulate the release of ACTH leading to the release of the stress

hormone cortisol and a mineralocorticoid, aldosterone from the adrenal cortex. Sympathetic activation initiates the release of renin from the kidney which in turn triggers the activation of angiotensinogen to angiotensin and further conversion of angiotensin I to angiotensin II in the liver with the help of angiotensin convertase enzyme. Angiotensin II stimulates aldosterone secretion, fluid retention, and vasoconstriction.<sup>(13)</sup> It also stimulates the release of epinephrine and norepinephrine from the adrenal medulla. Thus both glucocorticoids and angiotensin II contributes to chronic stress which depicts as obesity and depression.

Male students who cannot cope up show early warning signs of stress like anxiety, depression, increased incidence of alcohol and drug consumption. Female students on exposure to chronic stressors develop irritability, sense of loneliness, isolation, overeating, tiredness, headache, sleep disturbances and menstrual disturbances which can lead to future behavioral issues if left unhandled. Failure of effective management of stress leads to deterioration in studies, learning abilities, lack of concentration and decision making.<sup>(14,15)</sup> Effective and appropriate coping strategies can help the students handle stress better.

Few studies have quoted that female medical students perceived more stress when compared to males as they are more competitive by nature and study more with a sense of responsibility to secure more marks female students are also more sensitive and reactive when they fair poorly in academic challenges.<sup>(16,17,18)</sup> It is seen that in our study about 61.53% of the students quote friends as to be one of the causes as a stress because of academic competition and adjusting with friends from diverse cultural background.

Studies done earlier reveal that students develop strategies to handle stress through the medium of meditation, improving communication with peers and develop healthy personal hobbies<sup>(15,18)</sup> which is consistent with our findings in the study.

### Conclusion

Our study reveals that majority of the students identified examination related issues and competition among peers as a major source of stress among them followed by loneliness, apprehension about teachers, as a possible source of stress. Listening to music and watching movies were the medium through which of the students sought relief from the stressors followed by spiritual activity, sports and few of the respondents resorted to addictions like substance abuse and other recreational activities which could possibly affect their future academic performance. First year medical students are exposed to varying degrees of stress and identification of potential stressors with effective intervention by structured mentorship programs along with student counseling the students can be guided in a better way to perform well in their scholastics.

### Limitations and Recommendations

1. There is a need for follow up of the students during their future course of study to chart out an effective structured mentorship programme.
2. It is recommended that identification of the possible stressors is done during the early part of medical education and remedial measures with structured mentorship programmes are undertaken for the benefit of student community.

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