



## PREVALENCE OF STRESS AMONG FIRST YEAR UNDERGRADUATE MEDICAL STUDENTS

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**ABSTRACT** Stress is the state of the individual that result from the interaction of the individual with the environment which is perceived as threat to the well being. Medical education is highly stressful, particularly first year undergraduates are more prone. Our study was conducted among first year medical students of Government Tuticorin medical college. Stress was assessed using Cohen's perceived stress scale (PSS-10) questionnaire. A Total of 150(n) students answered the questionnaire. Among them, 62 (41.3%) were males and 88 (58.7%) were females. Mean PSS score for females was 19.55 (SD 5.14) while for males it was 17.98 (SD 6.36). Of the 150 participants, 28 (18.6%) were under low perceived stress, 109 (72.6%) under moderate perceived stress and 13 (8.6%) under high perceived stress. Thus our study has demonstrated moderate level of stress among students predominantly. This is the right time to adopt preventive measures to prevent it from rising.

**KEYWORDS :** Medical, Undergraduates, Perceived, Stress

**INTRODUCTION:**

Stress is the state of the individual that result from the interaction of the individual with the environment which is perceived as threat to the well being. It is an external constrain which directly upsets the individual both mentally and physically. A stressful situation may influence his or her mental ability to carry out on-going tasks<sup>1</sup>. Medical education is highly stressful compared to other professional courses and these students are more prone for stress compared to their peer groups studying other courses. The vast syllabus, peer competition for academic performance, continuous evaluation and long duration of training are the most common precipitating factors<sup>2</sup>.

Particularly first year medical students along with medical school demands they meet provide a perfect platform for inducing stress. During first year, the students study anatomy, physiology and biochemistry for which they are assessed at the end of the year. During the period of one year they are subjected to series of written and practical tests to ensure their competency. The scores in these tests will be taken into account for the final exams. If they fail to maintain minimum average score in these tests, they do not become eligible to appear for final examinations. In our country, the first year MBBS students enter college directly from high school. Thus compared to older students in the advanced stage of study, the skills required to deal with new environment may not be developed for them. Also there are students from different states of our country. These students come from diverse cultural, socioeconomic and educational backgrounds. All these students are exposed to new learning environment and are forced to adapt to this new world in the institution. This may be a stressful experience especially during the first year of course. The scarcity of information relating to the studies of stress in first year medical students in our state and considering the severity of limited results available encouraged the conduct of this study. So this study was aimed at assessing the prevalence of stress among first year undergraduate medical students.

**MATERIALS AND METHODS:**

First year medical students of Government Tuticorin medical college, Tamilnadu formed the study sample. This study was performed after getting approval from Institutional ethical committee. Written informed consent was obtained from all the students. It was a cross sectional study conducted 6 months after the admission of the students in the first year using a self administered questionnaire. Students were explained about

the purpose of study and the questionnaire. The students were also assured of confidentiality of information and were given the option of refusal to participate in the study. The questionnaire was distributed to

the students and

collected by the administrator's after sometime. The questionnaire consisted of 2 parts – demographic information and Cohen's Perceived Stress Scale (PSS-10).

Demographic data included personal information of students such as age, gender, home town, staying place, and medium of past education (whether regional language or English). These questions were intended to know about the background of each student. Stress was assessed using PSS-10 questionnaire, which is a validated and reliable tool for the study of stress in college students. The PSS-10 anticipates student's life as a whole and not just pertaining to academics.

The score ranges from 0 to 40. The answers were graded on a 5-point Likert scale ranging from never = 0, almost never = 1, sometimes = 2, fairly often = 3, to very often = 4. Positively framed questions 4, 5, 7 and 8 are reverse scored, that is never = 4 to very often = 0 and the scores are summed up, with higher scores indicating more perceived stress. The levels of stress were divided as follows: low perceived stress: 0-13, moderate perceived stress: 14-26 and high perceived stress: 27-40. The levels of stress division were selected in accordance to a similar study from SRM medical college<sup>3</sup>.

**DATAANALYSIS:**

The data was analyzed using statistical package for social sciences (SPSS) software 22 which included descriptive statistics and unpaired't' test. All data are presented as mean and standard deviation. All categorical data as number and percentage. The data are further analyzed according to age, sex and educational background. P value less than 0.05 is considered to be statistically significant.

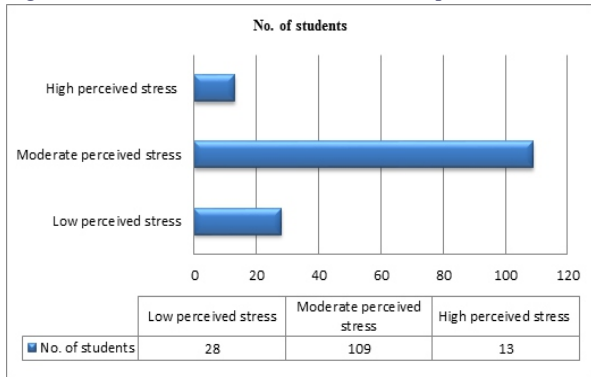
**RESULTS:****a. DEMOGRAPHICS AND PSS SCORES:**

The demographic details of the students are given in table 1. A Total of 150(n) first year medical students answered the questionnaire. Thus the response rate was 100%. The mean age of the students was 17.95 (SD = 1.76) with a range of 17-23. Among them 62 (41.3%) were males and 88 (58.7%) were females. Nearly 121 (19.19%) students had attended English medium school whereas only 29 (17.68%) students had gone to regional language medium schools (28 Tamil medium and 1 Hindi medium). Of the 150 participants, 28 (18.6%) were under low perceived stress, 109 (72.6%) students were under moderate perceived stress and 13 (8.6%) were under high perceived stress. Figure 1 shows the number of students in various levels of perceived stress.

**TABLE 1: Demographic details of the students:**

Variables	Subdivision	PSS scores		
		Low	Moderate	High
Age(years)	17	9 (6%)	42 (28%)	1(0.06%)
	18	17 (11.3%)	45 (30%)	8 (5.3%)
	19	0	15 (10%)	3 (2%)
	20	1 (0.06%)	5(3.3%)	0
	21	0	2 (1.3%)	1 (0.06%)
	22	0	0	0
Gender	Male	16 (10.6%)	41 (27.3%)	5 (3.3%)
	Female	12 (8%)	68 (45.3%)	8 (5.3%)
Medium of teaching in school	English	20 (13.3%)	89 (59.3%)	12 (8%)
	Regional language	8 (5.3%)	20 (13.3%)	1 (0.06%)
Residence	Hostler	27 (18%)	89 (59.3%)	12 (8%)
	Dayscholar	1 (0.06%)	20 (13.3%)	1 (0.06%)
Motivation to study medicine	Own decision	24 (16%)	73 (48.6%)	6 (4%)
	Parents compulsion	3 (2%)	18 (12.6%)	4(2.6%)
	Random choice	1 (0.06%)	18 (12%)	3 (2%)

Figure 1: Number of students in various levels of perceived stress



**b. RESPONSES AND PSS SCORES:**

Figure 2 shows the mean PSS scores between males and females. The mean PSS score in the study population was 18.9 (SD 5.71). The minimum score was 7 and the maximum score was 40. Mean PSS score for females was 19.55 (SD 5.14) while for males it was 17.98 (SD 6.36). Thus females had a higher mean PSS scores compared to male but the difference was not found to be statistically significant (p=0.097). Table 2 shows the response of students to various questions in the perceived stress scale score sheet.

Figure 2: Mean PSS scores between males and females

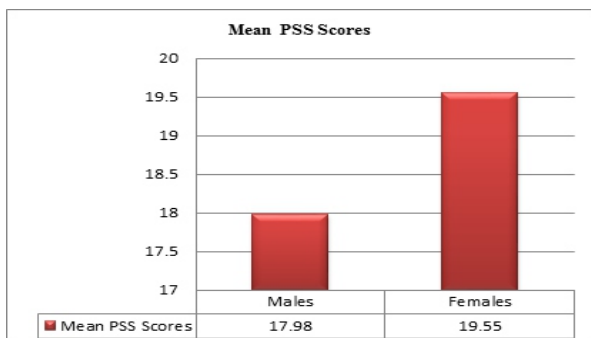


TABLE 2: Medical student's responses to the perceived stress scale

Statement	Never	Almost never	Sometimes	Often	Very often
1. In the last month, how often have you been upset because of something that happened unexpectedly?	26 (17.3%)	22 (14.6%)	61 (40.6%)	25 (16.6%)	16 (10.6%)
2. In the last month, how often have you					

felt that you were unable to control the important things in your life?	39 (26%)	36 (24%)	37 (24.6%)	18 (12%)	20 (13.3%)
3. In the last month, how often have you felt nervous and stressed?	18 (12%)	27 (18%)	44 (29.3%)	32 (21.3%)	29 (19.3%)
4. In the last month, how often have you felt confident about your ability to handle your personal problems?	14 (9.3%)	17 (11.3%)	56 (37.3%)	29 (19.3%)	34 (22.6%)
5. In the last month, how often have you felt that things were going your way?	30 (20%)	27 (18%)	48 (32%)	29 (19.3%)	16 (10.6%)
6. In the last month, how often have you found that you could not cope with all the things that you had to do?	36 (24%)	26 (17.3%)	50 (33.3%)	22 (14.6%)	16 (10.6%)
7. In the last month, how often have you been able to control irritation in your life?	17 (11.3%)	13 (8.6%)	49 (32.6%)	46 (30.6%)	25 (16.6%)
8. In the last month, how often have you felt that you were on the top of things?	35 (23.3%)	26 (17.3%)	51 (34%)	22 (14.6%)	16 (10.6%)
9. In the last month, how often have you been angered because of things that were outside your control?	23 (15.3%)	26 (17.3%)	53 (35.3%)	28 (18.6%)	20 (13.3%)
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	28 (18.6%)	36 (24%)	46 (30.6%)	29 (19.3%)	11 (7.3%)

**DISCUSSION:**

The overall mean PSS score was 18.9 (SD = 5.71). The stress score was slightly lower compared to the study done in Bangalore medical college in which the mean PSS score among the first year MBBS students was 20.29 (SD = 6.24)<sup>4</sup>. In our study totally 81.2% students were under stress – 72.6% under moderate stress and 8.6% were under severe stress. A similar study conducted in Government Medical College, Maharashtra reported that 85% first year medical students had stress and another study performed in Seth G.S. Medical College at Mumbai showed that 73 % had perceived stress<sup>(5,6)</sup>.

In this study we had 62 (41.3%) males and 88 (58.7%) females. Mean PSS score for females was 19.55 (SD 5.14) while for males it was 17.98 (SD 6.36). Thus females had a higher mean PSS scores compared to males, however the difference was not statistically significant (p=0.097). In a study conducted in SRM medical college, the mean PSS score in males was slightly higher than females and the difference was not statistically significant<sup>3</sup>. Another study has shown that the mean PSS for females was 31.94 and that of males was 28.60 in which females had higher PSS score<sup>7</sup>.

Many studies previously had shown that depression among medical students is similar to general population while entering, but thereafter it increases disproportionately over the years. The most frequent cause of stress among medical students is academic. In a study by Solanky et al, the factors responsible for stress in first year students were increased load towards exams, vast syllabus, not getting expected marks and less time for repeated learning<sup>8</sup>. There are several other factors also like high expectation from parents, sleep deprivation, eating and physical activity habits, loneliness and broken relationships apart from academic stressors<sup>7</sup>.

Stress has profound effects on the future of the students. It could result in burnout, lack of empathy towards patients, personal family conflicts and sometimes even to suicides. Our study has also demonstrated high levels of perceived stress. Hence there is a need to initiate urgent corrective measures in medical college training.

Focused group discussions can be conducted to talk to each student individually about the challenges they face both professional as well as personal<sup>4</sup>. This may help to identify the students during their initial state of stress and provide counseling and therapy accordingly and help them to alleviate their stresses.

#### **CONCLUSION:**

Our study has demonstrated moderate level of stress among students predominantly. This is the right time to adopt preventive measures to prevent it from rising. Training can be provided to the students to cope up with the vast syllabus, frequent examinations and learning process. Counselors can be appointed who can help to identify students in the early stage of stress. Students should be encouraged to participate in some form of stress relaxing activities. Regular monitoring of students, involving in social circles and participating in extra-curricular activities might help them. Further studies should be conducted to identify the risk factors and various stressors among the students.

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