



## Research Article

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### PREVALENCE OF STRESS AMONG THE UNDERGRADUATE MEDICAL STUDENTS: A CROSS SECTIONAL STUDY

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#### ABSTRACT

The present study was undertaken to assess the prevalence of stress and compare the stress among the first, second, third, fourth and fifth year medical students using Student stress questionnaire. The present cross sectional study was conducted undergraduate medical students of 18-25 years of age. Student stress questionnaire was used to assess the stress levels. In the present study, first and final year students were found to be highly stressful. Our study highlights the need of implementation of effective counseling and relaxation techniques to decrease their stress level.

**Key words:** Counseling, Stress, Medical students

#### INTRODUCTION

Stress is a condition which upsets an individual both mentally and physically, resulting from the individual interaction with the environment and is perceived as a threat to the wellbeing of the individual.<sup>1</sup> Normally, everyone needs a certain amount of pressure to perform at their best but, when pressure exceeds a person's ability to cope, it may result in stress.<sup>2</sup> Stress is a state of emotional distress. It is an emotionally unstable state that hinders one's ability to focus and function effectively on a routine basis. Medical students experience stresses due to both academic and emotional factors.<sup>3</sup> This stress may affect physiological and cognitive functions of the students. The cognitive function of the female learners was more affected by stress which impaired their cardiovascular parameters.<sup>4</sup> Medical students experienced increased symptoms of depression and anxiety associated with high levels of stress, which can lead to disruptions in both physical and mental health and may diminish the students sense of worth thus affecting his or her academic achievement.<sup>5</sup> Considerable degree of psychological morbidity has been reported among medical students ranging from stress, interpersonal problems and suicidal ideation to psychiatric distress.<sup>6</sup> Depressed and anxious students were found to experience more stress and react differently to stressors compared to non-depressed and non-anxious students.<sup>7</sup> The undergraduate medical students face a lot of stressors in the form of heavy academic load, frequent examinations, fear of failure, adjustment to new environment, prolonged day time travel in the case of day scholars, altered eating pattern, skipping of meals, increased intake of junk food and various other personal problems which may ultimately lead to high levels of anxiety and depression. Added to this, their ability to withstand and handle stress may vary individually. The present study was undertaken to assess the prevalence of stress and compare the stress among the first, second, third, fourth and fifth year medical students using Student stress questionnaire.

#### MATERIALS AND METHODS

##### Participants

This is a cross sectional study which was conducted on the undergraduate medical students of 18-25 years of age, pursuing MBBS in Saveetha Medical College. The study was started after obtaining clearance from the Scientific Review Board (SRB) and Institutional Ethics Committee (IEC) of Saveetha Medical College & Hospital. Written informed consent was obtained from the parents or guardian of all the study participants and information sheet regarding the study was given to all the participants of the study. Details of the study were explained to the study participants who were given the information sheet and informed consent was obtained from them. Basic demographic details regarding name, age, sex was collected from the study participants. Student stress questionnaire was used to assess the stress levels. ([www.gov.mu/portal/sites/suicideprevention/file/student](http://www.gov.mu/portal/sites/suicideprevention/file/student)).

##### Statistical analysis

Group differences in the total scores of the students' stress scores was analyzed using one-way analysis of variance (ANOVA; 5 X 2). The first factor was academic year of study (first, second, third, fourth and fifth year) and the second factor was gender (male or female). The focus of interest in the analysis was comparison with the academic year with the gender x weight interactions being secondary interest. In both the analysis, the significant results were followed up with post hoc comparisons using Student's t-test.

#### RESULTS

The table 1 shows stress score among the different academic years of students. One way Anova followed by Tukey HSD post hoc test. 2<sup>nd</sup> year versus 5<sup>th</sup> year is significant (P<0.01) (Data was expressed as Mean±SD) (\*P<0.05, \*\*P<0.01, \*\*\*P<0.001). First year students of age 17.58±0.758 had the stress score of 28.44±10.43. Second year students of age 19.32±0.62 had the

stress score of 24.9±9.42, Third year students of age 20.22±0.46 had their stress score of 27.8±8.01, fourth year students of age 21.32 ±0.47 had their stress score of 29.7±8.88 and fifth year students of age 22.24±0.47 had their stress score of 31.06±7.53.

Table 2 indicates the stress among the males and females according to their year of education. Stress levels among females- 1<sup>st</sup> year versus 2<sup>nd</sup> year is significant (P<0.05) and 2<sup>nd</sup> year versus 5<sup>th</sup> year (P<0.01) significant. The first year male had stress score of 27.72±11.02 and females had 29.16±9.66, second year male students had stress score of 27.4±10.56 and females had 22.4 ±7.52, third year male students had stress score of 28.08 ±8.52 and females had 27.52±7.64, fourth year male students had stress score of 31.24±11.12 and females had 28.16±5.70 and fifth year

male students had stress score of 31.64±8.46 and females had 30.48±6.58. The stress score in overall males is 29.22±10.02 and in overall females is 27.54±8.0 shown in table 3.

The table 4 indicates the stress score in males and females (year wise). The first year male students had stress score of 27.72±11.02 and female students had 29.16±10.00. The second year male medical students had stress score of 27.40±10.57 and females had score of 22.40±7.52. The third year male medical students had stress score of 28.08±8.52 and females had 27.52±7.64. The fourth year male students had stress score of 31.24±11.13 and females had 28.16±5.71. The fifth year male students had stress score of 31.64 ± 8.47 and females had stress score of 30.48±6.59.

**Table 1: Stress score among different years of students**

Parameter	1 <sup>st</sup> year (n=50)	2 <sup>nd</sup> Year (n=50)	3 <sup>rd</sup> Year (n=50)	4 <sup>th</sup> Year (n=50)	5 <sup>th</sup> Year (n=50)	P value
Age	17.58±0.758	19.32±0.62	20.22±0.46	21.32±0.47	22.24±0.47	<0.00001***
Stress score	28.44±10.43	24.9±9.42	27.8±8.01	29.7±8.88	31.06±7.53	0.010**

Data was expressed as mean ± SD. \*P<0.05, \*\*P<0.01, \*\*\*P<0.001.

**Table 2: Stress score among males and females (year wise)**

Parameter	1 <sup>st</sup> year (n=25)	2 <sup>nd</sup> Year (n=25)	3 <sup>rd</sup> Year (n=25)	4 <sup>th</sup> Year (n=25)	5 <sup>th</sup> Year (n=25)	P value
Stress score (males)	27.72±11.02	27.4±10.56	28.08±8.52	31.24±11.12	31.64±8.46	0.3859
Stress score (females)	29.16±9.99	22.4±7.52	27.52±7.64	28.16±5.70	30.48±6.58	0.0038**

Data was expressed as mean ± SD. \*P<0.05, \*\*P<0.01, \*\*\*P<0.001.

**Table 3: Stress score in overall males and females**

Parameter	Males (n=125)	Females (n=125)	P Value
Stress Score	29.22±10.02	27.54±8.0	0.1317

Data was expressed as mean ± SD. \*P<0.05, \*\*P<0.01, \*\*\*P<0.001.

**Table 4: Stress score in males and females**

Year	Males (n=25)	Females (n=25)	P value
1 <sup>st</sup> year	27.72±11.02	29.16±10.00	0.6307
2 <sup>nd</sup> year	27.40±10.57	22.40±7.52	0.0599
3 <sup>rd</sup> year	28.08±8.52	27.52±7.64	0.8078
4 <sup>th</sup> year	31.24±11.13	28.16±5.71	0.2242
5 <sup>th</sup> year	31.64±8.47	30.48±6.59	0.5912

Data was expressed as mean ± SD. \*P<0.05, \*\*P<0.01, \*\*\*P<0.001.

## DISCUSSION

The present study was taken up to learn the stress levels experienced by medical students of various years. The study has the potential of increasing the awareness of the stress levels in medical students which will further help them to plan and practice healthy intervention to increase their quality of life and practice simple strategies to cope with their stress. Students encounter intense stress circumstances in the course of their academic studies. According to Qamar et al, students experience more stress in the first and third year of the UG Medical program than in the other academic years.<sup>8</sup> The American Psychological association had stated that anxiety and stress are characterized by feelings of tension, worried thoughts and physical changes. Anxiety is more related to autonomic arousal, skeletal muscle tension and situational aspects whereas stress is related to irritability, impatience and difficulty in relaxing.<sup>9</sup> The demands and pressures of medical school and residency poses a tremendous challenge to personal wellness for physicians in training leading to high rates of anxiety, depression, burnout and personal distress.<sup>10</sup> Extensive medical curriculum, frequent examinations and fear of failure are sources of constant stress and anxiety for medical students. Psychological Stress among students may have deleterious consequences and it further leads to poor academic performance, sleep disorder, alcohol and

substance abuse.<sup>11</sup> The present study showed that the stress levels were not significantly different in males and females. The study emphasized that the academic stress, experienced by medical students will be the same in both female and male students irrespective of the genders. The stress levels were significantly higher in the final year (P<0.01) and first year (P<0.05) students when compared with second and third year MBBS students. The study also suggests that simple remedies and relaxation techniques like meditation, breathing exercise, practicing yogasanas, listening to music, playing on a swing<sup>12</sup> get together with friends and family, etc. may help to reduce the stress levels in the students.

## LIMITATIONS OF THE STUDY

This is a small pilot study. More clarity and significant data can be obtained if a similar study is done on a larger sample size in the student population of Chennai.

## CONCLUSION

Stress is a common, every day event. In the undergraduate medical students' stress is most commonly caused due to heavy academic overload, fear of failure and exposure to the new environment. In this study, it is concluded that first and final year

students were highly stressed. Therefore, proper counseling and some relaxation techniques should be initiated at the earliest to decrease their stress level.

#### REFERENCES

1. Salam A, Mahedevan R, Abdul ralman A, Abdullah N, AbdHarith AA, Shan CP Stress among first and third year medical students at university kebangsaan Malaysia. Pak J Med Sci. 2015; 31(1):169-73.
2. Eliza omareva, MdZakirulislam, Abu Syed Md. Mosaddek, MdFaizurRahman, Rini Juliet Rozario, A.F.Md. Hassan Iftekhar, et al. Prevalence of stress among medical students: a comparative study between public and private medical schools in Bangladesh. BMC Res Notes. 2015; 8:327.
3. Qamark, Khan NS Bashir Kiani MR . Factors associated with stress among medical students. J Pak Med Assoc. 2015; 65(7):753 -5.
4. Ganesh Pradhan NishithaLinet Mendinca , ManishaKar. Evaluation of examination stress and its effect on cognitive function among first year medical students. Journal Of Clinical And Diagnostic Research. 2014; 8(8):BC05-BC07.
5. Dalal Ben Loubir, ZeinebSerhier, Samir Diouny, Omar Battas, MohamedAgoub, Mohammed BennaniOthmani. Prevalence of stress in Casablanca medical students: A cross sectional study. Pan African Medical Journal. 2014; 19:149
6. ShawazIqbal, SandhyaGupta, E. Venkatarao. Stress, anxiety and depression among medical undergraduate students and their socio demographic correlates. Indian J Med Res. 2015; 141(3): 354–357.
7. Medical students experience of and reaction to stress the role of depression and anxiety. The Scientific World Journal 2014 (2014); Article ID 737382: 8 pages.
8. Khadija Qamar, Muhammad Rizwan Bashir Kiani, Aisha Ayyub, Atif Ahmed Khan, Mohammad Osama. Higher stress scores for female medical students measured by the Kessler Psychological distress scale (k10) in Pakistan Journal Of Educational Evaluation In Health Professions. 2014; 11: 27.
9. Priya P Roy Kumar Sai sailesh M A Doshi. Depression, anxiety and stress among first year undergraduate medical students. Asian Journal of Biomedical and Pharmaceutical Sciences. 2015; 5(45): 37-38.
10. Allison B.Ludwig, WILLIAM burton, Jacqueline Weingarten, FeliseMilan, DanielC. Myers and Benjamin Kligler. BMC Medical Education. 2015; 15:141.
11. Ahmed Waqas, Spogmai Khan, Waqr Sharif, Uzma Khalid and AsadAli. Association of academic stress with sleeping difficulties in medical students of a Pakistani medical school A cross sectional survey. Peer Journal. 2015; 3: e840.
12. Archana R, Kumar Sai Sailesh, Mukkadan J K. Effect of vestibular stimulation on stress and cardiovascular parameters in healthy college students. Biomedical Research. 2016; 27 (3): 985-990.

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