

## Evaluation of Factors Leading to Stress in First Year MBBS Students



### Medical Science

**KEYWORDS :** Zung Self-Rating Depression Scale, Stress, Examination, Anxiety.

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### ABSTRACT

**Background:** Medical school is recognized as a stressful environment. This stress may have unintended negative consequences on student's physical & mental health. **Objective:** The study was aimed to find out stress levels among the first year MBBS students and factors impacting it, like examination, age, gender, place of residence, no. of attempts in pre-medical entrance examination and type of diet. **Methods:** Bio-data of 199 first yr students were collected. Stress was assessed with Zung's Self Rating Depression Scale at three interventions- immediately after admission; before terminal and preliminary examinations. Data was analysed with the help of Friedman Repeated Measures ANOVA tests. **Results:** Results showed statistically significant increase in Zung's score before both the examinations with maximum increase before the terminal examination ( $p$ -value – 3.13E-07). **Conclusion:** We found that examination increases stress and hence special programmes like counseling, support groups, stress coping behavior etc. can be helpful to decrease stress levels

### Introduction:

Stress is a word used to describe experiences that are challenging emotionally as well as physiologically. Stress arouses anxiety and fear. Although, some stress is essential for personal growth, excess stress can affect the performance of a student adversely.

A major stressor for the first year medical student is the amount and complexity of material to be learned in the short period of one year and to pass in examination, seems to be very difficult and challenging task. Comparisons, parental expectations & peer pressure are major concerns for students attempting their exam. The mental health of college students is becoming great concern throughout the world as the college students are more prone to depression, anxiety & stress<sup>(1)</sup>.

Several studies have examined the relationship between the source of stress and psychological morbidity in medical students. The challenges confronting first year MBBS students can be experienced as stressful or supportive depending upon personal resources and social support available. Perceived stress can have a negative effect on success in studies, impede learning and even endanger student's health, so medical colleges should be interested in helping first year students to make a good start in their new World<sup>(2)</sup>

This study was conducted to find out stress levels among first year MBBS students and identify the stressors like examination, age, gender, place of residence, no. of attempts in pre-medical entrance examination and type of diet.

### Materials and Methodology:

The present study was conducted in Department of Physiology of a teaching medical institute and hospital in Mumbai. Ethical approval from Institute's Ethical Committee was obtained. Informed consent from the volunteers was also obtained.

### Subject selection

Total of 199 first year MBBS students comprising of 63 females and 136 males were selected.

All the students were in the age group of 17-23 years. Proforma of personal information of all students collected immediately on admission. Proforma included age, gender, place of residence (localite/hostelite), no. of attempts in pre-

medical entrance examination and type of diet (vegetarian/mixed).

Students were asked to fill Zung's Self Rating Depression scale. The first reading was taken on admission, second was taken just before terminal (first) examination and last reading was taken just before preliminary (second) examination.

### Protocol

Zung's Self Rating Depression scale was preferred to others as this tool evaluates depression in normal non-psychotic individuals<sup>(3)</sup>. This scale assesses the perceived feelings of the students regarding their emotional status. The students were not aware that the questionnaire filled by them was a depression scale. Time duration of 10 minutes was given to complete this questionnaire. The tool consisted of 20 items with scale ranging from one to four. The total score was summation of all scores and the value ranged from 20 to 80. Score of more than or equal to 40 was considered as stress.

The reading was taken on 8<sup>th</sup> day of admission and also 8 days prior to both the examinations.

### Statistical analysis

The physiological as well as psychological parameters were compared during the various stages of the medical curriculum. The data obtained was then analysed using Repeated Measure of ANOVA tests.

### Results:

(Table/Fig-1): Comparison between three readings of Zung's score			
Descriptive Statistics	Mean	SD	No.
Zung's score at admission	34.54	7.73	199
Zung's score before terminal examination	37.17	7.34	199
Zung's score before Prelim examination	36.92	8.32	199

(Table/Fig-1) show Zung's score at the time of admission, before terminal examination and preliminary examination. The score increased before both the examinations with maximum increase before the terminal examination.

(Table/Fig-2): Pair-wise Comparisons of Zung's Score (ZS)

Comparison between	Mean Difference	Std. Error	p-value	Difference is
ZS at admission v/s ZS before terminal examination	-2.63	0.48	3.13E-07	Significant
ZS at admission v/s ZS before preliminary examination	-2.38	0.58	0.00018	Significant
ZS before terminal exam v/s before preliminary exam	0.25	0.39	1.000	Not Significant

This table (Table/Fig-2) shows comparisons of Zung's Score at admission versus before terminal examination, at the time of admission versus before preliminary examination and before terminal examination versus before preliminary examination. First two comparisons show statistically significant difference.

### Discussion:

Undergraduate medical education in India in the new century is facing more challenges than ever before. Many studies in India and abroad show that undergraduates are under continuous stress and are vulnerable to go in depression. Stress is any situation that evokes negative thoughts and feeling in a person. The same situation may not be stressful for everyone.

In present study, out of 199 students, 43 students were found under stress i.e.21.6% (Zung's score  $\geq 40$ ) at the time of admission to First MBBS course. Before Terminal examination, 82 out of 199 students were under stress i.e. 41.2% and before Preliminary examination 67 out of 199 students were under stress i.e. 33.7%.

The above findings indicate that stress is present at the time of admission, which increases during examination period. The causes for stress at admission were new environment, busy schedule, changes in living conditions, difficulty in understanding new terms and for some students stress of travelling. This study also showed more number of students under stress during terminal (First) examination compared to Preliminary (Second) examination. This indicated that students get adapted, to certain levels, to the examination.

It also showed statistically significant association between Zung's score at admission versus before terminal examination and at admission versus before preliminary examination.

No correlation was found in age of students, gender, type of diet and number of attempts in pre-medical entrance test.

At the time of admission more number of localite (28.2%) student were under stress than hostelites (17.8%). Before terminal and preliminary examinations, it was evident that the stress levels were found to be higher among hostelites (43.5%) when compared to their localite counterparts (37.1%). These findings are contrary to findings of A.N. Supe wherein it was concluded that stress was not found to differ significantly on the basis of stay at hostel<sup>(4)</sup>.

Stress levels found in this study are very much similar to the findings of Yi Chun et al who concluded that academic achievement and stress are related<sup>(5)</sup>. Jenny Firth found 31.2% of fourth year medical students were under stress<sup>(6)</sup>. Vitaliano P.P. found 34%, E.A Guthrie found 36%, and Kris Henning Found 27.5% of undergraduate medical students were under stress<sup>(7,8,9)</sup>. A.N Supe found 78.5% students under stress with highest in second and third MBBS than First Year students<sup>(4)</sup>.

Shaikh B T found highest prevalence of stress of more than 90% among all the studies<sup>(10)</sup>. H M Abdulghani found 57% stress among medical students with severe stress among 19.6% of the subjects. In this, the main source of stress was found to be study (60.3%)<sup>(11)</sup>. Sergio Baldassin found that 38.2% of Medical students showed depressive symptoms<sup>(12)</sup>. Kathleen Phalen reported that 50% medical students were under stress with 11% considering suicide in the last year<sup>(13)</sup>.

### Conclusion:

The above findings indicate that examination causes significant increase in stress levels. Stress was process oriented and students get adapted to examination. Those students who did not get adapted were under severe stress and had higher vulnerability to go into depression.

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