Original research article

# Prevalence of Stress among Medical scholars

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**Abstract**
Medical scholars are exposed to various stress throughout their university studies. Such stress comes from economic problems, health matters, social life & academic understanding. Stress can have positive or negative effect on their academic outcomes. The study aims to explore the demographic distribution of stress in medical scholars. All undergraduate medical scholars at Great Eastern Medical School & Hospital, Srikakulam, were requested to contribute in the study. The study was a cross-sectional study. After approval of the Institution Ethical Committee & informed written consent from Medical scholars, the study was conducted. K-10 Questionnaire for stress was used for the assessment of prevalence. 190 medical scholars contributed in the study. Of these, 127 (66.84%) were females and 63 (33.16%) were males. The prevalence of stress level in this study was 66.31%. As compare to males, Female scholars showed higher level of stress. Among undergraduate medical scholars, first year scholars have more stress compare to higher years.
**Keywords:** Stress and Medical scholars.

## INTRODUCTION

Stress is a usual emotion of unable to handle with precise demands and proceedings. But, it can lead to a long-lasting disorder if that individual doesn't take proper efforts to tackle it. This demands can come from social life, work, economic crisis and various other circumstances, however anything that leads to actual or perceived challenge or risk to an individual's well-being can cause stress.

Stress refers to the "sum of physical, mental and emotional strains or tensions on a person" [1]. Hans Selye an Endocrinologist designed a model of stress & was the first to coined the term stress in 1930's. This model classifies the stress as eustress & distress. Eustress is the stress which improves function, whereas distress is the chronic stress which is not resolved by managing or adjustments which may initiate depressed behavior [2]. Literature indicates that undergraduate medical scholars are exposed to stress during their university years [3,4].

**AIM AND OBJECTIVES:**
To explore the demographic distribution of stress in medical scholars.

**MATERIAL & METHODS:**
The present study was a cross-sectional study among MBBS scholars. All undergraduate medical scholars were requested to contribute in the study at Great Eastern Medical School & Hospital, Srikakulam. After approving from the Institution Committee of ethics & informed written consent from the Medical scholars, the study was conducted. Kessler Psychological Distress Scale (K-10) Questionnaire for stress was used for the assessment of prevalence [5]. MBBS students not willing to participate and absent on the day of study were excluded. Predesigned, pretested, self-administered Questionnaire was used to assemble data. Data on demography & stress was collected by using this questionnaire. In K10 questionnaire, the 5 possible responses for each question which range from 'none of the time' to 'all of the time' & were scored as 1 - 5 respectively. This gives scores ranging from 10 to 50. K-10 score of 10 - 19 likely to be well, score 20 - 24 to have a mild complaint, score 25 - 29 to have a moderate complaint and 30 - 50 to have some severe complaints. The collected data were analyzed with proper statistical methods using MS excel 2010.

**OBSERVATIONS AND RESULTS:**

**Table 1: Age and sex distribution among students:**

| Variables | | No. of students (n=190) | Percentage |
|---|---|---|---|
| Age group (years) | 18-20 | 87 | 45.78 |
| | 21-22 | 99 | 52.11 |
| | 23-25 | 04 | 02.11 |
| Sex | Male | 63 | 33.16 |
| | Female | 127 | 66.84 |

The majority of subjects were in age group 21-22 years with mean age of $20.56 \pm 1.02$ years. The maximum subjects were females (66.37%).

**Table 2: Distribution of students according to MBBS batch:**

| Batch | No. of students (n=190) | Percentage |
|---|---|---|
| 1st year | 72 | 37.89 |
| 2nd Year | 65 | 34.21 |
| 3rd Year (Part I & II) | 53 | 27.89 |
| Total | 190 | 100 |

More number of 1st year medical scholars participated in the study as compare to 2nd & 3rd year.

**Table 3: Association of stress and demographic factors:**

| Variables | | Stress | | P value |
|---|---|---|---|---|
| | | Present (n=126) (%) | Absent (n=64) (%) | |
| Age group (years) | 18-20 | 58 (46.03) | 29 (45.31) | X2=3.14; P=0.21 (NS) |
| | 21-23 | 67 (53.17) | 32 (50.00) | |
| | 24-25 | 01 (0.80) | 03 (4.67) | |
| Sex | Male | 30 (23.81) | 33 (51.56) | X2=14.23; P=0.001 (S) |
| | Female | 96 (76.19) | 31 (48.44) | |

The association of stress with age shows no statistical significant association (P>0.05), while females found with more stress compared to males with statistical significant association. (P=0.005)

**Table 4: Association of stress and demographic factors:**

| Batch | Stress | | P value |
|---|---|---|---|
| | Present (n=126) (%) | Absent (n=64) (%) | |
| 1st year | 57 (45.23) | 15 (23.43) | X2=11.01; P=0.004 (S) |
| 2nd Year | 42 (33.33) | 23 (35.94) | |
| 3rd Year (Part I & II) | 27 (21.42) | 26 (40.63) | |
| Total | 126 (66.32) | 64 (33.68) | |

First year scholars have more stress compare to higher years and the association between them was statically significant.

**DISCUSSION:**

The cross sectional study was directed to explore the demographic distribution of stress in medical scholars. An aggregate of 190 medical scholars from 1st, 2nd and 3rd MBBS participated in the study. The response rate was 100%. The majority of scholars were in age group 21-22 years with mean age of 20.56 ± 1.02 years.

The prevalence of stress level in this study (66.31%) is higher than Thai study (61.4%) [6], Egypt (43.7%) [7], Malaysian study (41.9%) [8], and a British study (31.2%) [9]. The association between stress & age was not statistical significant (P>0.05), while females found with more stress compared to males with statistical significant association (P=0.005). Misra and Castillo study which was conducted in 2004, states that both the genders responds differently for perceiving stress and giving reaction to it [10]. Female scholars display more anxiety, physiological changes and greater emotional reaction to stress when compared to male scholars [11]. Among medical scholars, in relation with stress, this gender variation is well known. Various studies also stated a greater prevalence of stress in female medical scholars [12,13] while some studies have countered this difference [14].

In this study, first year scholars have more stress compare to higher years and the association between them was statically significant. 1st year scholars are exposed to new environment, vast syllabus, various social problems may lead to high stress in them compare to higher years.

A stress of high level in medical scholars is a matter of disquiet as it can lead to impair behaviour, reduce knowledge and finally affecting patient care after they finish their studies.
When stress level increases, there is increased release of cortisol in blood. Several research has been carried out in vivo, to study the effects of corticosteroids on hippocampal neurons. Large quantity of corticosteroid receptors are found in hippocampus which leads to alterations in neuron morphology, activity, it's genesis and death. These findings may be responsible for a mechanism by which cortisol disturbs hippocampal supported memory functions.

Limitation
Some of the scholars were unwilling to contribute in the study and some did not fill the questionnaire form entirely. Others were absent or had been posted out of the campus and hence not included in the study. So information from only 50 percent of the medical scholars were analysed.

**CONCLUSION**

Among undergraduate medical scholars, first year scholars have more stress compare to higher years. It is essential educate medical scholars to handle the stress efficiently else it can adversely affect their health and studies.

Future directions

The outcomes of the study will help the institute to bring out corrective measures depending on the requirements of the scholars. Furthermore, medical scholars should be trained to manage stress by doing meditation, exercise & yoga.

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