

Medical College is a Stressful Environment for Students

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Abstract: *Stress is very common now- a-days and most of the persons suffer from stress. Chronic stress causes disturbances in both physical and mental health. The aim and objective of this study was to find out stress on medical students. The cause of stress in medical students was mismatching of time and academic carrier and associated factors. In this study 400 students were selected randomly from 1st year to 5th year in V.S.S Medical College in the session 2012-2013. Students divided into different groups according to gender, curricular year and choosing profession and stress was analyzed by Mann-Whitney U and Kruskal Wallis test. From this study it was found that (1) Females have more stress than males, (2) Induced students have more stress than students chose the profession self and (3) Preclinical and Clinical year students have more stress than Paraclinical year students. Therefore medical study is highly stressful and the students should get relief from stress for self as well as the benefit of the society.*

Keywords: Stress, Gender, Curricular year, choosing profession

1. Introduction

Stress is a term in Psychology and Biology, borrowed from Physics and Engineering. According to Physics and Engineering "Stress refers to internal distribution of a force exerted on a material body resulting in strain". The term stress was first employed in a biological context by endocrinologist **Hans Selye** in **1930s**. Stress refers to the consequence of the failure of an organism – human or other animal - to respond adequately to mental, emotional or physical demands whether actual or imagined. Many people suffer from stress in their everyday life, while there is a close relationship between stress and mental health. . Acute stress affects an organism in short term while chronic stress affects in long term [1]. Stress also can increase social and economic loss and decrease country's competitiveness [2]. Chronic stress has been found to be associated with abnormal autonomic nervous system functioning [3]-[4]. So no doubt, stress is one of the major factors contributing to chronic disorders [5]-[6]. The aim and objective of this study is to findout stress in medical students.

2. Literature Survey

Stress is emotional disturbance or change caused by stressors. Some stress in medical school training is needed for learning [7]. Stress which can promote and facilitate learning is called 'favorable stress' and stress which can inhibit and suppress learning is called 'unfavorable stress' [7]. The same stressors may be perceived differently by different medical students, depending on their cultural background, personal traits, experience and coping skills. Studies have revealed an association of unfavorable stress level with lowered medical students' self-esteem [7], difficulties in solving interpersonal conflicts, increased alcohol and drug consumption [8], anxiety and depression [9], cynicism, decreased attention, reduced concentration and academic dishonesty [10], sleeping disorders[11]. Unfavorable stress is also associated with inhibition of students' academic achievement and personal growth development [7]. As a result, medical students may feel inadequate and unsatisfied with their career as a medical practitioner in the future. Therefore many researchers have

stated the importance of early diagnosis as well as effective psychological services, which can prevent possible future illnesses among medical students.

3. Material and Methods

The study was conducted in the Department of Physiology V.S.S. Medical College, Burla. The simplest method to asses stress is questionnaire method. So for this study MSSQ (Medical Students Stress Questionnaire) was used. MSSQ is a validated instrument to identify stressors among medical students. It comprises of 40 items which are grouped into six domains or stressor groups i.e. Academic Related Stressors (ARS), Intrapersonal and Interpersonal Related Stressors (IRS), Teaching and Learning Related Stressors (TLRS), Social Related Stressors (SRS), Drive and Desire Related Stressors (DRS), Group Activities Related Stressors (GARS).It is a self reporting questionnaire and each item represents a particular stressor. The items are rated under 5 categories i.e.0, 1, 2, 3 and 4 to indicate intensity of stress.

Students were explained regarding the study and a written consent was taken from each student. Questionnaires were distributed among the students and they were instructed to respond to each item by encircling any one number from 0 to 4. The time limit was 15 minutes to fill the MSSQ and then questionnaires were collected from the students. Those returned questionnaires were analyzed and students having any chronic disease or psychiatric disease were excluded from the study and 400 students were selected for this study. Students were divided into following groups;

- a) Gender (400) – Male (232) and Female (168)
- b) Choosing profession (400) – Induced (246) and By choice (154)
- c) Curricular year (400) - Preclinical (80), Paraclinical (180), Clinical (140)

4. Results / Discussion

Statistical analysis was done by Mann-Whitney U test and Kruskal Wallis test with the help of statistical software SPSS version 16. The P value < 0.05 was considered to be

significant. Microsoft Excel and word were used to generate tables and graphs.

Table 1: Comparison of stress between male and female

Grouping variables	n	Mean rank	Sum of ranks	Mann-Whitney U	Z	P
Male	232	172.28	39968	1.294E4	-5.74	0.000
Female	168	239.48	40232			

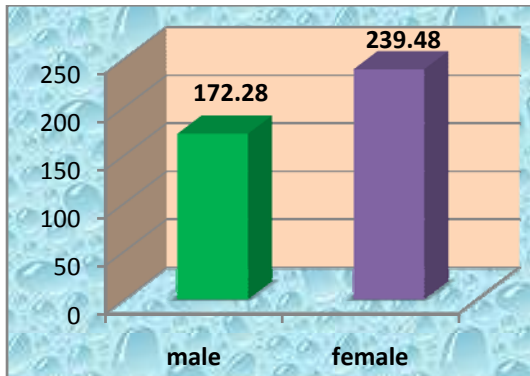


Figure 1: Comparison of Mean rank between male & female

Table 1 and Figure 1 shows the comparison of stress between male and female students. The statistical test used was Mann-Whitney U Test. It compares the mean rank of two grouping variables and the mean rank of female is more than male. The p value associates with Mann-Whitney U of 1.294E4 is < 0.001 means the difference is significant and females experience more stress than males. **Dahlin M et al [12]** in a cross sectional study on “Stress and depression among medical students” found that female medical students were suffering from more stress than male medical students. So this study correlates with the study of Dahlin M et al. Female students are more concerned regarding ARS, SRS and GARS in this study which may be the possible cause of more stress experienced by them.

Table 2: Comparison of stress between by choice and Induced group\

Grouping variables	n	Mean rank	Sum of ranks	Mann-Whitney U	Z	P
Induced	246	275.71	67824	441	-16.46	0.000
By choice	154	80.36	12376			

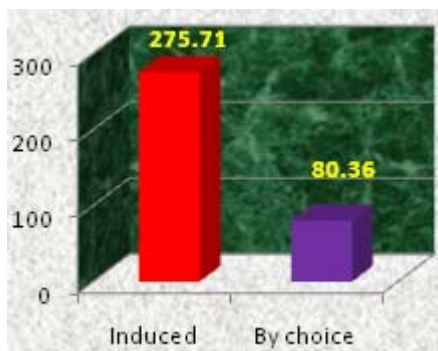


Figure 2: Comparison of mean rank between by choice and Induced group

Table 2 and Figure 2 shows the comparison of stress between the students who have entered into this profession by choice and induced by parents or others. The statistical

test used was Mann-Whitney U Test. It compares the mean rank of two grouping variables and the mean rank of induced group is more than the choice group. The p value associates with Mann-Whitney U of 441 is < 0.001 means the difference is significant and induced group experience more stress than choice group. **G.M. Koochaki et al [13]** done a cross sectional study on “Prevalence of stress among Iranian medical students” and came to a conclusion that, the students joined this profession by motivation, experienced more stress than the students entered by choice. They are not interested in this curriculum but entered to this curriculum as induced by others or to fulfill the wish of their parents. This unwillingness or lack of interest towards the medical curriculum may be the possible cause of stress.

Table 3: Comparison of stress between Preclinical, Paraclinical and Clinical year students

Grouping variables	n	Mean rank	Kruskal-Wallis Chi-square	df	P
Pre-clinical	80	198.80	16.73	2	0.000
Para-clinical	180	177.65			
Clinical	140	230.85			

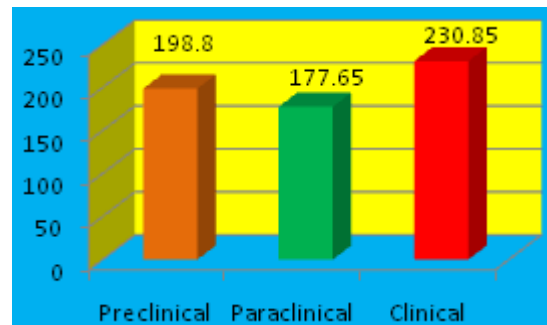


Figure 3: Comparison of mean rank between Preclinical, Paraclinical and Clinical year students

Table 3 and Figure 3 shows the comparison of stress between these three groups. The statistical test used was Kruskal-Wallis Test. These mean ranks are compared using a form of chi-square test. The p value is <0.001 with chi-square value of 16.73 and the difference in mean rank is statistically significant. **G.M. Koochaki et al [13]** did a research on stress among medical students and compared the level of stress among preclinical, paraclinical and clinical year students. He found no significant difference in the level of stress among these three phases of study. But in this study it was found that preclinical and clinical year students suffer from more stress than paraclinical year students. These different phases of study are stressful in different ways. In preclinical year there is stress of coping with a new course, adjusting to the demands of high academic work load and fears of lagging behind. In Clinical Years the stress may be due to dealing with patients, diagnosis of disease, suffering of patients, etc.

5. Conclusion

Contrary to popular belief, stress is not always bad. We need some stress to stimulate and strengthen us. A certain level of stress is beneficial. Body provides defense mechanism to stressors. A stress response is a healthy defense mechanism, which involves release of different hormones. However continued release of the hormones in chronic stress has

detrimental effect on health. Medical curriculum is highly stressful. As the medical students are future doctors of the society they should be relieved from these adverse situations arise from stress. So different measures like meditation, yoga should be practiced by the students to relieve from stress.

6. Future scope

Further research may be done regarding stress on medical students and stress can be confirmed by different biosignal channels like EEG, Heart Rate Variability, Skin Conductance Response, etc. A limitation of study is only the students of a single college were selected for this study. Further work may be done by taking students from different colleges.

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