

STRESS;

A CROSS SECTIONAL STUDY AT ISLAMIC INTERNATIONAL MEDICAL COLLEGE (IIMC), RAWALPINDI

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Article Citation:

Siddiqui FR, Sabih F, Danish KF, *Bhatti MA*. Stress; A cross sectional study at Islamic International Medical College (IIMC), Rawalpindi. Professional Med J Sep 2009; 16(3): 395-399.

ABSTRACT... **Objectives:** To assess different level of stress and reaction to those stressors among undergraduate medical students and also observe an association between different academic years, if any exists. **Design of the study:** Cross-sectional study. **Settings:** Islamic International medical college- a private medical college in Rawalpindi. **Period:** From 2006 to 2007. **Material & methods:** Questionnaire used was a stress inventory called students life stress inventory. It was distributed to all registered MBBS students at IIMC in years 1- 5 who voluntarily participated. 403 out of 500 students completed the questionnaire with response rate 81.6%. **Results:** Data was analyzed through SPSS by applying different statistical tests, which were ANOVA, and t test. Results reveal that 21.53% students were mildly stressed, 39.12% students were moderately stressed and 12.64% students were severely stressed. Significant gender differences were found on almost all the sub-scales. The findings reveal that females face more stressors especially conflicts, emotional and behavioral ($p < .01$), stress was more significant between boarders as compare to non-boarders. One Way Analyses of variance (ANOVA) was computed to check the significance of differences on mean scores. An analysis of variance on Student Life Stress Inventory is significant, $F = (3.774)$, $p < .01$. Mean difference indicates that prevalence of stress is higher in first year and final year MBBS students. **Conclusion:** This study presents pragmatic evidence regarding the psychological health of students in our college. These findings suggest that high levels of stress exist in our students especially significant during first and final years of their course. It is important for us to know the prevalence and causes of student stress, which not only affects their health, but also their academic achievement. Information from this study can be used to develop appropriate intervention programs for medical students, in order to decrease their stress levels.

Key words: Medical Student, Stress, reaction to stressors, Islamic International medical college.

INTRODUCTION

Medical undergraduate training is extensive and emotionally exhausting. It is commonly observed that medical students undergo tremendous amount of stress during various stages of the MBBS course. Several studies have documented that medical students experience a high incidence of psychological distress during different stages of their undergraduate course¹⁻³

High levels of stress may have a negative impact on

Article received on:	16/02/2009
Accepted for Publication:	25/02/2009
Received after proof reading:	10/06/2009
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different aspects of student's life which may lead to poor physical health and emotional well being and disturb the cognitive functions⁴.

The high prevalence of stress amongst medical students is a growing concern and it has been revealed by previous studies in different countries which reported prevalence of stress up to 61.4%^{5,6}.

Stress can also affect the memory and learning skills of students. Although an optimal level of stress can add to learning⁷, too much stress can cause physical and mental health problems. It reduces students' self-esteem and affects their academic achievements⁸. Earlier studies have found a strong association between stress and comorbid factors like anxiety and depression, interpersonal conflicts^{9,10}, lower academic and clinical performance¹¹. Some studies also reported evidence of medical student suicide and drug abuse^{12,13}. Stress can also lead to reduced attention, poor concentration, and impaired decision making ability. It affects students' abilities to develop good doctor-patient relationship which may result in inadequate clinical practice in the future¹⁰.

There are many contributing factors which lead to stress and academic environment is one of them. In majority of medical schools it is mainly based on dictatorial and rigid system, which doesn't facilitates co-operation between the learners. It is not just undergraduate study period which brings the stress but it may continue later in internship, postgraduate study period and later in physicians' practical life^{14,15} and it may reach to burnout level¹⁶.

It is not only the psychological health which is affected by stress various Physiological studies have confirmed that stress can affect the blood cell parameters, can influence on the endocrine, hemopoietic and immune systems¹⁷. One study carried out in Pakistan showed that examinations in medical schools are stressful enough to produce changes in blood cells parameters¹⁸. In the long term it may have negative impact on students' health, patients' lives and in turn on the community's health.

The present study is intended to explore different levels of stress in medical students. The study also examines different stressors and reactions to these stressors experienced by medical students. Very few researches have been conducted on this subject in our set up. As a health care professional it is our responsibility to know the prevalence of stress among medical students early in their training and to identify the relevant contributing factors also. This will help us in devising specific health education programs which can be tailored according to their personal needs empowering them to deal with the stress and its causes.

METHOD AND MATERIAL

Study design

Cross-sectional survey

Study Population

Questionnaire was administered to all the registered MBBS students at IIMC 403 students filled the questionnaire.

Inclusion criteria

All MBBS students studying at IIMC during 06-07 have been included in study.

Exclusion criteria

Students of other disciplines and other medical colleges have not been included in study.

Study Tool

Closed-Ended Questionnaire was used called students life stress inventory. It was divided in three sections.

Demographic profile

Stressors

Reaction to Stressors

Stressors

It includes sub-scale like Frustrations, Conflicts, Pressures, Changes and Self-Imposed Stressors

Reactions to the Stressors

It has following sub-scale Physiological, Emotional, Behavioral, and Cognitive as perceived by the students.

Data analysis

Data was analyzed through SPSS by applying different statistical tests. Statistical tests used were ANOVA, and t test.

RESULTS

The overall prevalence of stress was 73% among IIMC students. For different level of stress please see Fig 1

Table-I. Mean, SD, and t-value of Male and Female IIMC Students on the Scores on Subscales of Students Life Stress Inventory (N = 403)

Subscales	Gender (Male Students) (n = 149)	Gender (Female Students) (n = 254)	t
	Meas ±SD	Meas ±SD	
Frustrations	15.00±5.45	15.38±3.81	1.335*
Conflicts	7.12±4.06	7.81±2.93	.601**
Pressures	11.37±3.93	11.82±3.58	-1.175*
Changes	7.18±3.78	7.52±2.93	-1.015
Self-imposed	20.56±5.37	21.81±4.48	-2.516**
Physiological	27.90±9.47	28.81±8.03	-.574*
Emotional	10.65±4.89	11.88±3.76	-2.832**
Behavioral	16.24±6.13	15.67±4.23	1.114*
Cognitive	6.60±2.25	6.91±2.08	-1.379

*df = 401, *p < .05, **p < .01*

Fig-1. Distribution of Stress Level among IIMC Medical Students

Distribution of stress level

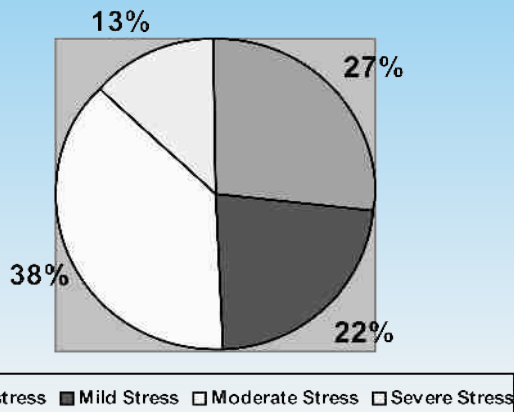


Table II presents the difference on the mean scores of IIMC medical students (boarders and non-boarders). The result shows significant difference on the subscales of Student Life Stress Inventory which indicates boarders face more stress especially frustrations.

Table-II. Mean, SD, and t-value of Boarders and Non-boarders IIMC Students on the Scores on Subscales of Students Life Stress Inventory (N = 403)

Subscales	Residence (Boarders) (n = 195)	Residence (Non-Boarders) (n = 207)	t
	Meas ±SD	Meas ±SD	
Frustrations	14.55±5.06	12.68±3.89	.273**
Conflicts	8.36±4.13	7.22±3.63	404*
Pressures	11.97±3.92	11.04±3.13	.092*
Changes	7.95±3.63	7.15±2.89	1.538*
Self-imposed	20.74±5.35	21.89±4.29	-2.384
Physiological	29.33±9.10	28.00±8.04	1.565
Emotional	11.87±4.10	11.12±3.69	1.183*
Behavioral	15.99±5.10	15.02±4.35	.384*
Cognitive	6.72±2.17	6.96±2.13	-.659

*df = 401, *p < .05, **p < .01*

Table-III. Means, standard deviations and F values of IIMC Students from First Year to Final Year (N = 403)

Year of study						
	First year (n=92)	2 nd year (n=80)	3 rd year (n=65)	4 th year (n=81)	Final year (n=85)	F
Scale	Mean±SD	Mean±SD	Mean±SD	Mean±SD	Mean±SD	
Student life stress Inventory	131.07±21.73	127.63±24.89	123.37±26.93	118.96±20.29	129.33±21.33	3.774**
<i>df = 399, **p < .01</i>						

Table III indicates the mean scores and standard deviations along with F values of the IIMC medical students from first year to final year. One Way Analyses of variance (ANOVA) was computed to check the significance of differences on mean scores. An analysis of variance on Student Life Stress Inventory is significant, $F = (3.774)$, $p < .01$. Mean difference indicates that prevalence of stress is higher in first year and final year.

DISCUSSION

This study is first initiative in its type and unique in nature as this area of research has been lacking behind. In western countries lots of research have been done and in the light of their findings a variety of programmes and strategies have been developed to combat this issue. In developing countries like ours this area has been ignored and not considered as an important area to be explored, but now its time to give especial attention on mental health of our medical students as it is as important as physical health.

This study shows that most of students in medical school experience high level of stress. The level of stress varies in nature and severity but a significant prevalence of stress is found. Female students experience more stress. Not only their experience of stressors is different but they also differ in reactions to stressors. Females show more emotional responses; rather behavioral responses are expressed by males. Various studies suggest that females experience high levels of stress as compared to males^{19,20,21}. The possible reasons could be that females are more prone to stress and have tendency to over report medical and psychological symptoms²².

Level of stress also varies with the year of study. A study

conducted in Pakistan showed that prevalence of anxiety and depression was high among newly entered students as compared to subsequent years²³. In present study highest prevalence was present in first year. It has been supported by other studies also²⁴. This could be due to stress of new environment. Stress is decreasing as the year of study is increasing but again there is increase in final year which shows more burdens in that class and purely clinical work which demands more attention and energy.

Boarders face more stressors as compared to non-boarders. The students who are away from their homes are more prone to psychological disturbances as change of environment, home sickness, adjustment in new environment are different issues which are faced by boarders.

Stress has a very high cost to individual as well as society. As a health care professional it is our responsibility to monitor stress among our medical students and help them to cope with it by instituting different effective interventions.

RECOMMENDATIONS

Regular Students counseling
Ongoing lectures/workshops on Stress management
Improvement in teacher-student relationship.
Future surveys to monitor stress levels and to further explore the causes of stress and stress coping strategies of students.

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