



## STRESS LEVELS; STRESS LEVELS OF FINAL YEAR MBBS STUDENTS AND ITS EFFECT ON THEIR ACADEMIC PERFORMANCE.

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## INTRODUCTION

Stress is defined as the body's nonspecific response or reaction to demands made on it, or to distressing events in the environment.<sup>2,3</sup> Stress is not just a stimulus or a response but it is a process, to cope with environmental threats and challenges.<sup>3</sup> Personal and environmental events that cause stress are called stressors.<sup>5</sup> In short, Stress is emotional disturbance or change caused by stressors. Stress is a procedure rather than a stimulus or a response by which we recognize and cope with surrounding pressures and challenges.<sup>4</sup>

The aim of the study was to determine the stress levels among final year medical students and its effect on their academic performance. Results of this study may lead to a better understanding of

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**ABSTRACT... Objectives:** To explore the effect of pre-exam stress levels of final year medical students on their academic performance. **Study Design:** Cross sectional study. **Setting:** Students of final year MBBS class at Independent Medical College Faisalabad. **Period:** Session 2010 to 2015. **Methodology:** Medical Student Stressors Questionnaire (MSSQ) was used for this study.<sup>1</sup> All male and female students of final year MBBS class of Independent Medical College were included in the study. Collected data analyzed by using SPSS version 18. Mean stress values and chi-square tests were used to compare the levels of stress and its effect on their academic performance. **Results:** Study results indicate that students who pass were taking moderate to high degree of stress as compared to students who fail in examination were in mild to moderate degree of stress. In short, high achievers were more stressed as compared to low achievers. High achievers were more stressed with ARS (Academic Related Stressor) and TLRS (Teaching and Learning Related Stressor). Low achievers were more stressed with GARS (Group Activities Related Stressor) and SRS (Social Related Stressor). **Conclusion:** The study concludes that stress can be used as a positive factor to improve medical students' academic performance. The most important thing is that not only some stress is necessary for good performance but also students should learn how to manage well their stress levels to improve their academic performance. This study gives guidelines to other medical colleges for developing coping strategies; so that stress can be used as a positive factor to improve students' academic performance. There is a need for stress management and student support programs in medical colleges, So that students may not drop out from medical programs.

**Key words:** Stress; Final Year Medical Students; Academic Performance.

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the relationship between stress and academic performance. This understanding may inform policies and practices designed to reduce medical student stress and improve their learning and academic performance. Without this research, many academically qualified medical students may continue to have difficulty in coping with high stress levels, have difficulty in learning and have tendency to drop out from medical programs. Ultimately, the findings of the study may help to increase the quality of medical education in medical colleges in Punjab Pakistan.

## MATERIAL AND METHOD

A cross sectional study conducted at Independent medical college Faisalabad on final year medical student session 2010-15. Medical Student Stressor Questionnaire (MSSQ) was used for

this study for the collection of data.<sup>1</sup> Completed questionnaires were collected one week before examination period so that actual examination did not affect the responses of medical students. Academic performance of students was measured by using the percentage of marks obtained in examination. The passing percentage is 50%, so students were divided into two groups' i.e. pass and fail group. Informed and written consent was taken from all participants. Out of total class of 79 students, 60 students were present at the time of study, participated voluntarily and successfully completed the questionnaire.

The MSSQ used in this study is a validated instrument that comprises of 40 items/questions.<sup>1</sup> The forty questions present in MSSQ showed the possible sources of stress in medical students. Questions grouped in to six domains.<sup>1</sup>

Domain 1- Academic Related Stressor (ARS).

Domain 2- Intrapersonal and Interpersonal Related Stressor (IRS),

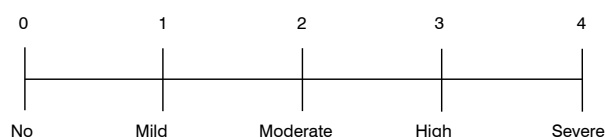
Domain 3- Teaching and Learning Related Stressor (TLRS)

Domain 4- Social Related Stressor (SRS)

Domain 5- Drive and Desire Related Stressor (DRS)

Domain 6- Group Activities Related Stressor (GARS).

The rating scale/degree of stress used to measure the stress as under:



Rating scale show four levels of stress i.e. mild, moderate, high and severe.

Hence MSSQ was scored by assigning a value zero to four for each of the respective responses. Data were analyzed using SPSS version 18. Effect of stress on performance was calculated by using chi square test at the level of significance 5% (0.05).

## RESULTS

Out of 60 students, 36 students (60%) were

female and 24 (40%) were male. Regarding the residency of the students, 34 (56.7%) students were residing in the hostel while 26 (43.3%) were resided out-campus. Out of 60 students, 38 students (63%) passed in examination and 22 students (37%) were not able to get through the examination.

Among the pass students, the stress level was moderate (47.4%) to high (47.4%) in the academic related stressor (ARS) domain where as stress level was mild (23.3%) to moderate (72.7%) among fail students. (Table-I)

Among the pass students, the stress level was moderate (28.9%) to high (35.8%) in Interpersonal Related Stressor (IRS) domain where as stress level was mild (31.5%) to moderate (63.6%) among fail students (Table-I).

Among the pass students, the stress level was high (60.5%) in Teaching and Learning Related Stressors (TLRS) domain but the stress level was mild (31.8%) to moderate (63.6%) among fail students (Table-I).

Among the pass students, the stress level was moderate (50.0%) to severe (23.7%) in Group Activities Related Stressor (GARS) domain which as stress level was mild (59.1%) to moderate (40.9%) among fail students (Table-I).

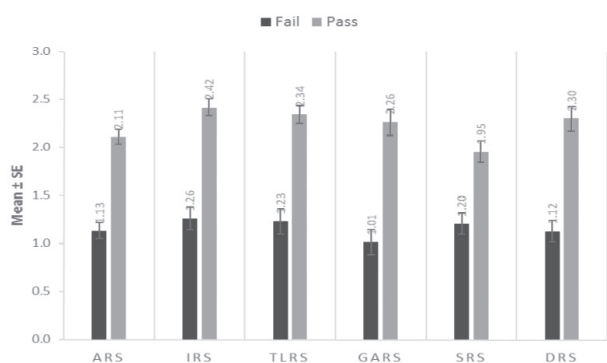
Among the pass students, the stress level was high (47.4%) in Social Related Stressor (SRS) domain but the stress level was mild (40.9%) to moderate (59.1%) among fail students (Table-I).

Among the pass students, the stress level was moderate (39.5%) to high (28.9%) in Drive and Desire Related Stressor (DRS) but the stress level was mild (59.1%) to moderate (40.9%) among fail students (Table-I).

The above result showed that there was moderate to high stress level among pass students and fail students showed only mild to moderate level of stress (Table-I).

Stressor Domains		Level of stress against individual stressor domain					Mean SE	Pearson Chi-Square	P-Value
		Mild	Moderate	High	Severe	Total			
ARS	Fail	6	16	0	0	22	1.13	23.52	0.000
	%	23.3	72.7	0	0	100			
ARS	Pass	0	18	18	2	38	2.11		
	%	0	47.4	47.7	5.3	100			
IRS	Fail	7	14	1	0	22	1.26	29.33	0.000
	%	31.5	63.6	4.5	0	100			
IRS	Pass	0	11	25	2	38	2.42		
	%	0	28.9	35.8	5.3	100			
TLRS	Fail	7	14	1	0	22	1.23	25.73	0.000
	%	31.8	63.6	4.5	0	100			
TLRS	Pass	0	14	23	1	38	2.34		
	%	0	36.8	60.5	2.6	100			
GARS	Fail	13	9	0	0	22	1.01	26.23	0.000
	%	59.1	40.9	0	0	100			
GARS	Pass	2	19	8	9	38	2.26		
	%	5.3	50.0	21.1	23.7	100			
SRS	Fail	9	13	0	0	22	1.20	17.13	0.001
	%	40.9	59.1	0	0	100			
SRS	Pass	5	14	18	1	38	1.95		
	%	13.2	36.8	47.4	2.6	100			
DRS	Fail	13	9	0	0	22	1.12	22.61	0.000
	%	59.1	40.9	0	0	100			
DRS	Pass	4	15	11	8	38	2.30		
	%	10.5	39.5	28.9	21.1	100			

Table-I. Stress level and mean of all six domains



## DISCUSSION

A cross-sectional study carried out in final year medical students to find out the stress levels and its effect on their academic performance in examination at independent medical college Faisalabad in May 2015.

With the use of MSSQ questionnaire (1), we studied six domains of stress among the students i.e. Academic Related Stressor (ARS), Intrapersonal and Interpersonal Related Stressor

(IRS), Teaching and Learning Related Stressor (TLRS), Social Related Stressor (SRS), Drive and Desire Related Stressor (DRS) and Group Activities Related Stressor (GARS).

The findings of the present study indicate that there was moderate to high stress level among pass students and fail students showed mild to moderate level of stress. The majority of students with good performance in examination having moderate to high stress indicated that stress was perceived as a positive factor in increasing student academic achievement in the examination. Those students who failed in examination showed poor performance, majority of them showed mild level of stress. Study also indicated that only a few students were in severe stress. In other words, our study indicates that when there is more stress, students show good performance. Our finding has similarity with study of Harlina H Siraj et al in 2014<sup>6</sup> at University Kebangsaan Malaysia (UKM), session 2011-2012

by using MSSQ questionnaire. There is positive relationship between stress levels and academic performance. Higher and severe level of stress experienced higher CGPA scores. Our finding had resemblance with Rifidah et al<sup>7</sup> that showed moderate degree of stress needed for satisfactory level of CGPAs. Another study by M. Kumar et al<sup>8</sup> reported that in female medical students high stress had positive consequence on academic performance. In this study, 114 undergraduate were studied for sources and level of stress and its effect on their performance by using semi structured Performa and stress scale.<sup>8</sup> This study also showed that stress was more beneficial in female students as compared to male students.

A study conducted by Department of Medical Education in 2009 at University Sains Malaysia health campus by Muhammad Saiful Bahri Yusoff et al using MSSQ questionnaire concluded that the stress levels among medical students in USM was high. Among medical students, academic related problems were the major stressors.<sup>9</sup>

A study conducted by Sajid A.<sup>10</sup> on stress in medical undergraduates students and its associations with academic performance conducted at UMD (university medical & dental college) Faisalabad. Study indicated that high achievers are less stress as compared to low achievers, which is in contrast to our study. Similarly, another study conducted at Dow University of health Sciences,<sup>6</sup> showed that there was negative association between examination stress and educational achievement – more the stress, larger the possibility of decline in educational achievement. Females experienced elevated levels of stress.

A study conducted by Stewart et al,<sup>11</sup> at University of Hong Kong indicated that stress measured before the start of classes and then after eight month and grades point taken of five assessments during first two years of medical college. It was found that academic performance of medical student in this study period was negatively related to stress level; this is contrary to our study.

In 2010, Nudrat sohail et al<sup>12</sup> conducted a study at Allama Iqbal medical college Lahore. Study

measured stress levels and its effect on academic performance of medical students. The study results showed that there was moderate degree of stress in majority of medical students that lead to their poor academic performance.<sup>12</sup> It was concluded, that most of students were stressed due to academic related stressors.

In our study, stress levels measured before study so that pre-exam stress can use as a positive factor to improve student academic performance. When there is moderate stress on student, they perform well in examination. On the other hand, their performance is not up to the mark when they are in mild or severe stress.

## CONCLUSION

It was suggested that stress can lead to positive or negative effect on academic performance that is dependent on the student's perception and ability to deal/cope with it. Those student who were able to cope successfully with stress, perform well in their academics while those who were unable to manage it effectively perform poorly. Therefore, it is important that students should learn coping strategies, which facilitate them in coping effectively with pre-examination stress so that they could perform well in their academics.

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
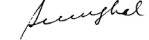
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*It is easier to forgive an enemy  
than to forgive a friend.*

– William Blake –

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#### AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author-s Full Name	Contribution to the paper	Author=s Signature
1	Uzma Kausar	Principal investigator and data collection.	
2	Sonia Ijaz Haider	Study concept and supervision.	
3	Irfan Ahmed Mughal	Statistical analysis + Proof reading	
4	M. Sohail Anjum Noor	Drafting of article	