

Research Article

**Prevalence of stress among medical students of Pakistan and its effect
on their academic performance**

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ABSTRACT

Introduction: Medical education is inherently stressful and demanding. Overwhelming burden of information leaves a minimal opportunity for the student to relax and recreate. Stress and depression have been consistently linked to mental and physical health effects. **Objectives** of the study: To determine the relationship of stress and academic performance in medical students and to identify sources of stress. **Study Design:** Mixed method sequential. **Place and Duration of Study:** Quaid-e-Azam Medical College, Bahawalpur from Nov 2017 to Feb 2018. **Methodology:** Survey questionnaire was carried out in the 3rd year, 4th year and final year students with their consent. One hundred students were surveyed. Non-probability purposive sampling was employed for both types of data collection. SPSS version 20 was used. **Results:** Non stressed students were **17 %** and stressed students were **83 %**. There is moderate negative and significant ($p < 0.01$) correlation between academic performance and sources of stress. There was strong positive and significant ($p < 0.01$), correlation between stress level and number of stress sources. **Conclusion:** The study showed a diversity of stress sources and a high level of stress in the medical students of Pakistan. The results also show that higher level of stress is associated with poor academic performance.

Key words: Medical, students, stress, academic.

INTRODUCTION

Medical education is inherently stressful and demanding. Overwhelming burden of information leaves a minimal opportunity for the student to relax and recreate. Stress and depression have been consistently linked to mental and physical health effects. An optimal level of stress enhances learning while excess of stress can cause health problems. This results in reduction of students' self-esteem and affects their academic

achievement. A high level of stress may have negative effect on cognitive functioning and learning of students in medical school.¹ The young student population is vulnerable to stress of higher professional education due to competitive environment. Comparing stress between medical and non-medical student, literature review shows that medical students perceive higher stress. Canadian and US based studies suggest high

prevalence of depression, anxiety and psychological distress among medical students than in general population. Stress sources include curriculum, personal competence, endurance and time outside medical school. Increase in concerns correlated with an increase in depression and anxiety.² The rationale of this study was to identify sources, level of stress in medical students, coping strategies employed by students and its effect on their academic performance in a local context. The objectives of this study were to determine the relationship of stress and academic performance and to identify different sources, levels of stress and relevant coping strategies among second year and third year medical students.

The correlation between hours worked in a week and GPA seems obvious. The more time spent at work, the less time a student spends studying. Having to hold down a job and still be a college student is a constant source of stress.⁴ Also, mentally juggling the two roles of workplace and college student can itself be stressful. Finding the time to work a full or part time job and take it as seriously, and also maintain focus on academic studies can be perceived as stressful. Being exhausted from working the night before can cause a poor attendance record and also give a student less time to study, resulting in a poor academic performance.⁵

Objectives of the study

The main objectives of our study are:

1. To determine the prevalence of stress among medical students and its relation with different factors.
2. To determine the effect of stress on the academic performance of medical students.

Methodology of the study

We used descriptive form of study for the collection of data. Data was collected from 100 students from 3rd year, 4th year & final year MBBS and this study was conducted at Quaid-e-Azam Medical College, Bahawalpur. A questionnaire was developed by keeping objectives of study in view and questions were

directed to assess the prevalence of stress in medical students. Questionnaire was pretested before use for study.

Sampling Technique: Simple Random Sampling Inclusion Criteria

1. Both sexes (Male & Female)
2. Age (19-25 years)
3. Medical students
4. Willing to participate

Exclusion Criteria

1. Age (Below 19 years and above 25 years)
2. Non-medical students

Data analysis

Data entry and analysis was done through SPSS IBM 20 (statistical product and service solutions international business machine version 20)

Ethical clearance

All the subjects were explained the purpose and process of study. They were explained the benefits of study. Assurance was given to protect the life, health, privacy, dignity and privacy of the human study subjects.

Analysis and Results

Prevalence of Stress among Medical Students

Total students participating in research= 100

Stressed students= 83%

Non-stressed students= 17%

There were 100 complete responses from the total of 120 sampled students with the participation rate of 96.4%. Age of respondents ranged between 18 and 30 years with the mean of 23.02 (SD = 2.074) years. Frequency distribution according to sex is different. 85.7% female students are stressed and 76.6% males feel stress (table 01).

Table 01: Frequency distribution according to sex of students

Sex	Total	Stressed		Non-stressed	
Female	70	60	85.7%	10	14.3%
Male	30	23	76.6%	07	23.4%

According to analysis results of different stressed and non-stressed participants are clearly described below: (Table 03, 04, 05).

Table 02: Frequency distribution according to living of students

	Total	Stressed		Non-stressed	
Hostellite	88	8	88.6%	10	11.4%
Day scholar	12	5	41.6%	07	58.4%

Table 03: Frequency distribution according to family monthly income

Family income	Total	Stressed	Non-stressed
<50,000	65	57 87.7%	08 12.3%
50,000-1,00,000	28	21 75%	07 25%
>1,00,000	07	05 71.4%	02 28.6%

Table 04: Relationship of student's stress with their attendance

Attendance	Frequency	%age
>75%	11	13.5%
60-75%	22	26.5%
<60%	50	60%

Table 05: Effect of stress on the academic performance in last professional examination

Marks	Frequency	%age
>70%	12	14.4%
60-70%	28	33.8%
<60%	43	51.8%

DISCUSSION

Majority of the students were identified in stress category. This is similar to studies from Portugal and Saudi Arabia about stress prevalent in medical students. Distinct and separate studies from Iran and Saudi Arabia show prevalence of stress, depression, anxiety amongst medical students.^{6,7} A study from Pakistan indicates presence of depression, anxiety and stress amidst medical students. Another study from Pakistan focuses on stressors arising from academic and psychosocial domains indicating that the stress phenomenon is not bounded by cultural and societal factors. Overall this is aligned with the global perception of stress as associated with medical education.⁸

The sources of stress that were found to be common for both the male and the female students were course content, worrying about law and order situation, general security within the city as well as in the country, teacher's attitude and possible career change.⁹ This means that the students identify stress to be stemming out of these sources uniformly regardless of their gender. The other sources of stress pertaining to curricular content and teacher's responses are not different as reported in studies from other countries. Students in the in-depth interview revealed that

they were not facing stress due to high tuition fees being paid by other students in private colleges of the country. The medical students who have higher levels of debt worry about their finances and experience higher levels of stress.¹⁰

The students showed stress related to personal life events like death and major personal or family illness. Stress of the students is also related to their living styles. Students who live in hostels are more stressful because of isolation from family. Students who belong to rural areas are more stressed than urban because of lack of modern facilities. Students whose parents have low level of literacy rate are more stressed than others.¹¹

The results of the send up examination of the participants showed that despite the stress, majority of the students passed the examination but with poor grades. The students failing in the examination exhibited severe level of stress. Different studies show different impact of stress on academic performance. This study reveals that too much stress negatively interfered with student's preparation, concentration and performance while positive stress (stress that is under the good control of student and stimulate him to study) helps student achieve peak performance.¹³

The limitations of the study include students being of same institution. The sources of stress and coping strategy were also limited. The sample size also limited data collection as well as some of the student's decision not to respond to the questionnaire. The structured interviews may have resulted in less flexibility limiting the students' responses and analysis of this qualitative data was interpretive so it is less accurate representation and may have been influenced by students not sharing some factual information. Therefore, it is difficult to generalize and apply the results of this study to all medical students of different medical colleges of different countries.¹⁴⁻¹⁷

CONCLUSION AND RECOMMENDATIONS

This study illustrates that prevalence of stress among MEDICAL students is very high. There is a moderate, negative and significant relationship

between sources of stress, levels of stress on the academic performance of a student. The study also reveals that there is a strong, positive and significant relationship between stress levels and sources of stress. The results also show that higher level of stress is associated with poor academic performance.

Recommendations

1. Students should try to view stressful situations from a more positive perspective. Rather than fuming about a traffic jam, look at it as an opportunity to pause and regroup, listen to their favorite radio station, or enjoy some alone time.
2. Perfectionism is a major source of avoidable stress. Students should stop setting themselves up for failure by demanding perfection. Set reasonable standards for themselves, and learn to be okay with “good enough”.
3. Poor time management can cause a lot of stress. When students are stretched too much and running behind, it’s hard to stay calm and focused. But if students plan ahead and make sure they don’t overextend themselves, they can alter the amount of stress they are under.

Contribution of authors

All the authors contributed equally. Dr. Hafiz Irshad Ahmed conceived of the presented idea and do all the lab work and carried out the experiment with other co-authors. Dr. Hafiz Muhammad Nadeem developed the theory and performed the computations. Dr. Eusha supervised the findings of this work and Dr. Hafiz Irshad and Dr. Usha developed the theoretical formalism, performed the analytic calculations and performed the numerical simulations. All the authors contributed to the final version of the manuscript.

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