

Perceived Stress and Sources of Stress Among Medical Undergraduates of Fatima Jinnah Medical University, Lahore, Pakistan

Perceived Stress and Sources of Stress Among Medical Students

Rabia Javed, Maryam Nawaz and Samina Asghar

ABSTRACT

Objective: To find out level of perceived stress and the probable stressors.

Study Design: Observational / descriptive / cross-sectional survey Study

Place and Duration of Study: This study was conducted at the Department of Obse and Gynae, Fatima Jinnah Medical University, Lahore during the period of one month of March 2016.

Materials and Methods: Using convenient sampling, 387 medical students completed the PSS-10 and a 30 item stress questionnaire. The data was analyzed with SPSS-22 software. ANOVA techniques were used to analyze differences in mean perceived stress score amongst different classes. Binary Logistic Regression Analysis was performed to determine core stress factors. P-Value was set at 0.05.

Results: The total response rate was 99.25%(397/400). The total mean PSS was 20.84 (SD=6.44) and was significantly highest amongst 1st year students with a score of 23.54 (SD=7.04). The prevalence of academic, psychological and health related stressors were 39%, 30% and 31% respectively.

Conclusion: A high level of perceived stress was noted among fresh enrolling MBBS students. Academic stressors were the most frequent stressors. It is important for medical educators to appreciate the level of stress and its various causes among medical undergraduates. So, we suggest early guidance and regular assessments of stressors which will help prepare students for stressful career of a health professional.

Key Words: Perceived Stress, Medical Students, Academic Stressors

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INTRODUCTION

Perceived stress is the perception of a person that his/her workload exceeds the ability to handle. It is a growing concern worldwide that medical education puts considerable stress on students affecting the overall quality of life¹. The quality of life is adversely affected by the pressure of studies, hectic lecture routines and long hospital stays that leaves the students with negative behavioral changes, few good social contacts and poor psychosocial well-being^{2,3}. The medical professionals strive for better life quality of their patients while their own life routines contradict the definition of a healthy ideal lifestyle⁴. Various stressors are reported among medical students which include types and frequency of assessments, living conditions in hostel, substandard nutrition, learning environment, working relationships etc.^{3,5}. The students who are more stressed show poor academic performance which eventually leads to them becoming less competent doctors⁶.

Exposure to various stressors causes depression which affects the mental functioning of medical students and eventually leads to ill health, burnouts and suicidal thoughts among them⁷. There is a dangerously high percentage of medical students who have attempted or have thought of attempting suicide⁸. It is therefore important to assess stress and its various causes because if these are not dealt with immediately, it may lead to disastrous results. Studies have been carried out in different countries like UK, USA, Sweden, Germany, New Zealand, Brazil and India on prevalence of stress. Varying degrees of stress were reported because these researches were carried out using different instruments to calculate stress or it could be a real difference due to different socio-demographic backgrounds^{9,10,11,12,14}. Different Studies carried out in India, Bangladesh, Greece and Pakistan has used Perceived stress Scale (PSS) to assess levels of stress^{11,12,13,15,19}. It is a globally used scale to measure perception of psychological stress¹⁵. According to a research conducted in CMH, Lahore, Pakistan, a mean PSS score of 30.84 was calculated¹⁶. Local epidemiological data about academic, social, psychological and health problems among medical undergraduate students is very negligible in number and there is relative deficiency of information about stress and its various sources among medical undergraduates in Pakistan. To the best of author's knowledge, no such study has been carried out in Fatima Jinnah Medical University (FJMU). The

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current study, therefore, was carried out among medical undergraduates of FJMU to find out the prevalence of perceived stress among the medical students and to identify the major stressors affecting medical students.

- Hypothesis:**
1. There is positive correlation between perceived stress and initial academic years
 2. Majority of probable stressors affect the academic performance of the medical students.

MATERIALS AND METHODS

It was an observational descriptive cross-sectional survey study carried out during the month of March in 2016 in FJMU after ethical committee approval. A sample size of 390 was calculated (78/year) for the study with anticipated response rate of 90%. Randomized non-probability convenient sampling was done. The participants were requested to fill 2 questionnaires - PSS-10 and a 30 item stressor questionnaire listing potential stressors. PSS-10 contains 10 statements which are rated on a 5-pointlikert scale and the responder has to tell whether they had these thoughts ranging from never, almost never, sometimes, fairly often and very often (0, 1, 2, 3, 4 respectively) during the past month. The scores are calculated by summing up the responses giving a maximum score of 40. Items 4, 5, 7, and 8 are positively stated and their scores are calculated by reverse coding the items (0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0). The stress questionnaire has been taken from a similar research conducted in Nepal by Sreeramareddy et al after little modification [21]. A total of 30 potential stressors were enlisted. They were divided into three different categories namely academic, psychosocial and health related. For each potential stressor, the occurrence frequency was categorized as ‘rarely/never’, ‘sometimes’ and ‘always/often’ and given score of 0, 1 and 2 respectively using a Likert scale (1-10).

All the participants were told about the purpose and objectives of the study. Confidentiality was guaranteed. Participants were given option of either acceptance or refusal of participation in the research survey. Questionnaires were given to students and the completed questionnaires were collected by the researchers.

The data was analyzed using SPSS-22 software. Mean perceived stress score was calculated and also the percentage frequency of occurrence for each potential stressor. ANOVA techniques were used to analyze differences in mean perceived stress score amongst different classes. Binary Logistic Regression Analysis was performed in general to specific approach to determine core stress factors. P-Value was set at 0.05.

RESULTS

Demographic Characteristics: Out of 400 students, 397 completely filled and returned the research

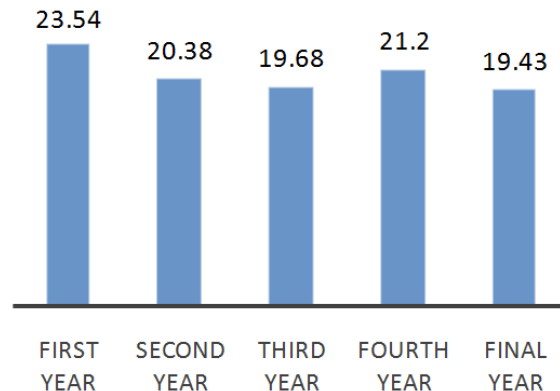
questionnaire giving a total response rate of 99.25%. (98.74% for 1st, and 97.5% for 2nd and 100% for 3rd, 4th and final years). The mean age of the responders was 20.43 (SD=0.81) with 18.45(SD=0.78), 19.51 (SD=0.85), 20.71(SD=0.80), 21.63(SD=0.93), 22.54 (SD=0.69) for 1st, 2nd, 3rd, 4th and final year respectively. All the respondents were female as FJMU is an all women university.

Table No 1: Differences in Mean Perceived Stress Score amongst Different Classes (By ANOVA Technique)

Year of Study		Mean Difference
First Year	Second Year	3.423*
	Third Year	4.133*
	Fourth Year	2.608*
	Fifth Year	4.383*
Second	First	-3.423*
	Third	.710
	Fourth	-.815
	Fifth	.960
Third	First	-4.133*
	Second	-.710
	Fourth	-1.525
	Fifth	.250
Fourth	First	-2.608*
	Second	.815
	Third	1.525
	Fifth	1.775
Fifth	First	-4.383*
	Second	-.960
	Third	-.250
	Fourth	-1.775

(By using ANOVA Technique)

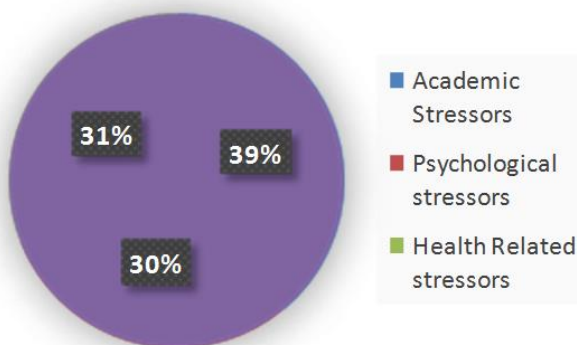
Perceived Stress: The total mean perceived stress score was 20.84 (SD = 6.44) with a median of 21.20 (Graph 1). Stress amongst 1st year medical students was significantly higher and different from other years (Table 1). Hence our hypothesis that undergraduates from initial years are more stressed was proved.



Graph No 1: Mean Perceived Stress Score of Individual Years

First year medical students showed highest level of stress

Most Potential Stressors: Most potential stressors were related to the academic domain with an overall prevalence of 39% followed by health related stressor with a prevalence of 31%. Psychological stressors accounted for 30% prevalence rate (Graph 2). The potential stressors were ‘Performance In Examinations’, ‘Frequency Of Examinations’, ‘Accommodation Away From Home’, ‘Nutrition’, ‘Sleeping Difficulties’, ‘Satisfaction With Quality Of Food In Mess’. The most potential stressors in each year were all related to the academic domain. Hence our hypothesis that most potential stressors are related to academic domain was proved. (Table 2)



Graph No 2: Prevalence of Most Potential Stressors:

Table No. 2: Most Potential Stressors (year wise)

Year of	Stressor	P-
1 st year	Frequency of	.008
	Lack of time for	.010
2 nd Year	Frequency of	.011
	Class Attendance	.020
3 rd Year	Frequency of	.001
	Performance in	.001
4 th Year	Performance in	.027
	Frequency of	.015
Final Year	Performance in	.003
	Frequency of	.009

(Using step-wise Binary Logistic Regression Analysis)

DISCUSSION

The perceived stress among year 1-5 of MBBS students of FJMU was evaluated and the sources of stress were identified. Perceived stress was calculated using Perceived Stress Scale-10 (PSS-10) questionnaire¹⁵. This scale was chosen for the present research because of its documented reliability and viability¹⁷. The total mean perceived stress score in our study was 20.84 (SD=6.44). Various studies have been done to assess perceived stress among medical students using PSS-10.

A PSS score of 29.58 was calculated in India¹¹ and 30.84 in CMHMC, Pakistan¹⁶. The stress level was significantly higher than that calculated in our study. A comparative research study was conducted in Bangladesh to assess differences in the mean perceived stress between public and private medical institutions. The overall prevalence of perceived stress was calculated to be 54% and there was a statistically significant difference in the level of stress between public and private medical schools¹³. The limitation of our study is that it only involves a single institution. The future studies should focus on assessing stress levels among multiple institutions in order to address this problem on a larger scale.

A number of other studies have been done on stress using different scales. Varying degrees of stress were reported because these researches were carried out using different instrument or it could be a real difference due to different socio-demographic backgrounds^{9,10,11,12}.

We also calculated the PSS scores among individual classes and differences were assessed. Stress amongst 1st year medical students was significantly higher and different from other years. A plausible reason maybe that there is a sudden transition from pre-medical course to medical course and students find it very difficult to cope with the undue pressure of increased study load, changed learning environment and being away from home. The Teachers are not very helpful, supportive or facilitating like those in school days and there is lack of counselors in the university. An interesting result of the current study was that the degree of stress lessened by advancing year. Researches carried out in India and Canada showed similar results^{11,18}. Opposite results were seen in Germany which might be due to different socio-demographic backgrounds⁶.

In our study, academic factors were reported as most prevalent stressors with regards to severity and frequency. Thus our second hypothesis that majority of probable stressors affect the academic performance of the medical students was proved. Among them ‘Poor Performance in Examination’ and ‘Frequency in Examination’ are the most stressful events.

Various academic stressors were identified in researches conducted in India and Pakistan [9, 11, 20]. Both the researches showed that ‘increased frequency of examination’ is the most common academic stressor around the world. The medical educationists should work in this domain and try to overcome this major problem faced by students.

The most potential stressors related to psychosocial and health related stressors were ‘Living Away From Home’, ‘Bad Nutrition’, ‘Lack of Sleep’, ‘Low Quality Food in Mess’. The studies reported in different countries show similar results. The social life of students is so much affected that they find it very

difficult to interact with people and mostly spend their time alone^{2,3,12}. Sleeping disorders have significantly risen among students in the past couple of years. According to a research carried out in a medical college in Pakistan, stress badly affects the sleep quality of medical students and they end up taking sedative pills to overcome their sleep disorders.²⁰

Our research only involves the female undergraduate medical students as FJMU is an all women institution. So a comparison of stress between both genders is unavailable. Other researches have assessed the differences in stress levels amongst female and male medical student. A research conducted in KSA showed that the prevalence of stress was higher ($p < 0.5$) among females (75.7%) than among males (57%)²². Future studies should involve multiple institutions to make such comparisons.

It is suggested that the medical educators should guide the students in stressful times so as to direct them on right path. This can be done by more student teacher interactions in healthy activities like sports, conferences and seminars and co-curricular activities where students get time to express themselves and overcome their complex.

CONCLUSION

The study showed a high level of perceived stress among fresh enrolling MBBS students. Academic stressors were the most frequent stressors affecting the overall performance of medical students. It is important for medical educators to appreciate the level of stress and its various causes among medical undergraduates. We suggest early guidance and regular assessments of stressors which will help students to overcome academic derailments that may lead to dropout in medical education and prepare students for stressful career of a health professional.

Author's Contribution:

Concept & Design of Study:	Rabia Javed, Maryam Nawaz
Drafting:	Rabia Javed, Maryam Nawaz
Data Analysis:	Rabia Javed
Revisiting Critically:	Rabia Javed, Samina Asghar, Maryam Nawaz
Final Approval of version:	Rabia Javed, Samina Asghar

Conflict of Interest: The study has no conflict of interest to declare by any author.

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