

# Pattern of Stress and Stressors in The Undergraduate Medical Students: A Cross Sectional Study

Allah Bachayo Rajar<sup>1</sup>, Abdual Manan Soomro<sup>2</sup>, Amjad Azam<sup>3</sup>, Aqeela Memon<sup>4</sup>, Gulzar Usman<sup>5</sup>, Washin Das<sup>6</sup>

- <sup>1</sup> Professor, Department of Community Medicine, Muhammad Medical & Dental College, Mirpurkhas Pakistan  
*Conception, data acquisition and designed the first draft*
- <sup>2</sup> Associate Professor, Department of Community Medicine, Peoples University of Medical & Health Sciences for Women, Nawabshah Pakistan  
*Study design, statistical analysis and manuscript review*
- <sup>3</sup> Assistant Professor, Department of Community Medicine, Muhammad Medical & Dental College, Mirpurkhas Pakistan  
*Literature searches and manuscript editing*
- <sup>4</sup> Senior Lecturer, Department of Community Medicine, Muhammad Medical & Dental College, Mirpurkhas Pakistan  
*Contribution in data acquisition and manuscript writing*
- <sup>5</sup> Associate Professor, Department of Community Medicine, Liaquat University of Medical & Health Sciences, Jamshoro Pakistan  
*Manuscript preparation and editing*
- <sup>6</sup> Demonstrator, Department of Community Medicine, Muhammad Medical & Dental College, Mirpurkhas Pakistan  
*Contribution in data acquisition and manuscript writing*

## CORRESPONDING AUTHOR

Prof. Dr. Allah Bachayo Rajar  
Professor, Department of Community Medicine,  
Muhammad Medical & Dental College,  
Mirpurkhas Pakistan  
Email: drabrajr@gmail.com

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## ABSTRACT

**Background:** Students in medical colleges are exposed to a higher level of stress, which can have a detrimental impact on their cognitive performance as well as their learning ability. **Objective:** To determine the level of stress and the frequency of different stressors among undergraduate medical students. **Study Design:** Cross-sectional study. **Settings:** Conducted on undergraduate medical students at Muhammad Medical College, Mirpurkhas Pakistan. **Duration:** July 2019 to August 2019. **Methods:** All the medical undergraduates from the first to final-year MBBS batches of either gender, were included. There were 30 students selected from each class (first year to 5<sup>th</sup> year). All the study participants were interviewed regarding demographic information, stress, and the factors responsible for their stress in a friendly atmosphere. All the information was collected using a questioner-based study proforma, and the data was analyzed using SPSS version 26. **Results:** A total of 150 medically undereducated students were studied regarding stress, and most of the students 80.0% were aged more than 20 years old. Out of all females were 53.3% and males were 46.7%. Out of all, 48.0% had mild stress, 38.7% had moderate stress, and 13.3% had perceived stress. Most of the students were stressed due to the academic curriculum, high parental expectations, loneliness, accommodation away from home, quality of food in the mess/canteen, living conditions in the hostel, adjustment with a roommate, sleeping difficulties, and class attendance. The severity of stress was significantly linked to the 3<sup>rd</sup> to 5<sup>th</sup> years of education ( $p < 0.001$ ), while being statistically insignificant according to age and gender ( $p > 0.05$ ). **Conclusion:** As per the study conclusion, stress among medical students was observed to be frequently high. Academic curriculum, high parental expectations, loneliness, accommodations outside of the home, food quality in the mess/canteen, living conditions in the hostel, adjustment with a roommate, and sleeping difficulties were observed to be the most common responsible factors, and it was positively correlated with years of education.

**Keywords:** Stress, Factors, Medical Students, MMC.

## INTRODUCTION

The medical profession has seen a significant transformation as a result of global educational achievements, which have increased the relevance of learning and education to social requirements.<sup>1,2</sup> It is predicted that advanced medical education would satisfy the needs of both local and global communities.<sup>1,3</sup> Pakistan seems to be a lower and the middle socioeconomic nation, thus its institutions have

significant gaps in terms of science and technology and make only little contributions to the global archives of research.<sup>4</sup> As a result, there is an increasing need to consider the development of literary attitudes amongst medical students, as well as identify and remove any obstacles that they face.<sup>4</sup> There in process of becoming qualified doctors, medical students are susceptible to a range of challenges that might have a stressful adverse effect on their health and academic performance.<sup>5</sup> Stress

seems to be a constant component of life for medical students and can affect one's physical, psychological, or emotional health. Numerous publications have demonstrated that medical students have various levels of stress during their period of study, which may be related to concerns with their social networks, academic challenges, money worries, health complications, etc.<sup>6,7</sup> Although the latest developments in the medical education in underdeveloped nations are mostly influenced by the West, and might not always take into consideration the contextual factors, despite the fact that health and education could be highly contextualized.<sup>1</sup> Medical undergraduates who are emotionally uncomfortable may find it difficult to focus in class and during clinical training, get stress-related ailments, and see a reduction in academic performance.<sup>8,9</sup> Academic pressure, the need to achieve, an unclear future, and challenges incorporating into the system are all factors that students must deal with. Additionally, they experience family, economic, psychological, and physical issues that could impair their educational outcomes and capacity to learn.<sup>8,10</sup> Pakistan's medical education requires a lot of work on the part of the students. There has been noted that the settings in developing countries medical schools are exceedingly stressful and have caused individuals to attempt suicide. Medical students' cognitive performance and understanding may suffer from high levels of stress, which is thought to be stressful for medical education.<sup>8</sup> After taking above concerning points and inadequate local data, this study has been done to evaluate the level of stress and the frequency of different stressors among undergraduate Medical Students of Muhammad Medical College MirpurKhas.

## METHODS

This cross-sectional study was conducted on undergraduate medical students of Muhammad Medical college MirpurKhas, from July to August 2019. All the medical undergraduates from the first to final-year MBBS batches of either gender, were included. Students who did not agree to participate in the study were excluded. A verbal informed consent was taken from each student once they were informed regarding the study's purpose. There were 30 students selected from each class (first year to 5<sup>th</sup> year). All study participants were interviewed in a friendly environment about demographic information, stress, and the factors causing their stress, and they were assured that all of their information would be kept confidential. A demographic form was used to collect demographic information, including age, gender, and year of study, and a stress questions-based questionnaire was utilized in another section to determine the level of stress and stressors. All the information was collected

using a questioner-based study proforma, and the data was analyzed by using SPSS version 26.

## RESULTS

A total of 150 medically undereducated students were studied regarding stress, and most of the students 80.0% were aged more than 20 years old. Out of all females were 53.3% and males were 46.7%. Most of the students 87.3% were hostlers. As per the father's education, mostly were graduates and postgraduates, while a few had higher secondary education. In accordance to the level of stress, 48.0% had mild stress, 38.7% had moderate stress, and 13.3% had perceived stress. Table 1

**Table 1: Demographic characteristics and level of stress in medical students (n=150)**

Variables		Descriptive Statistics	
Age groups	<20 years	30	20.0%
	>20 years	120	80.0%
Gender	Male	70	46.7
	Female	80	53.3
Year of education	1st year	30	20.0
	2nd year	30	20.0
	3rd year	30	20.0
	4th year	30	20.0
	5th year	30	20.0
Residence	Day scholar	19	12.7
	Hostler	131	87.3
Father's education	Higher secondary	28	18.7
	Graduate	56	37.3
	Post graduate	66	44.0
	Total	150	100.0
Level of stress	low stress.	72	48.0
	Moderate stress	58	38.7
	Perceived stress	20	13.3
	Total	150	100.0

In this survey, the majority of the students were stressed due to the academic curriculum, high parental expectations, loneliness, accommodations outside of the home, food quality in the mess/canteen, living conditions

in the hostel, adjustment with a roommate, sleeping difficulties, and class attendance, as shown in table 2.

**Table 2: Estimated stressors linked to stress in medical students (n=150)**

Factors	Never	Rarely	Some time	Often	Always
Performance in examinations	36	32	26	32	24
Academic curriculum	21	13	44	34	38
Dissatisfaction with class lectures	45	23	33	39	10
Lack of learning materials adequately	16	21	51	37	25
No time for recreation	25	38	45	25	17
Competition with peers	40	27	37	20	26
Inadequate special guidance by faculty	26	28	54	25	17
High parental expectations	24	11	45	23	47
Loneliness	30	28	36	19	37
Family problem	43	23	37	24	23
Accommodations out of home	32	16	33	28	41
Political situation in the country	57	31	27	20	15
Relation with opposite sex	83	25	23	15	04
Quality of food in mess/canteen	36	18	31	20	45
Inabilities to socialize with peers	33	38	45	18	16
Living conditions in the hostel	34	22	33	25	36
Adjustment with roommate	42	23	27	24	34
Sleeping difficulties	25	16	47	29	33
Class attendance	22	17	36	27	48
Alcohol/drug abuse/smoking	107	13	21	1	08

The severity of stress was significantly linked to the 3rd to 5th years of education (p<0.001), while the severity of stress was statistically insignificant according to the age and gender of the students (p= >0.05). Table.3

**Table 3: Level of stress as per age, gender and year of education (n=150)**

Variables		Level of Stress			P-value
		low stress	Moderate stress	Perceived stress	
Age groups	≤20 years	16 10.7%	10 6.7%	4 2.7%	0.870
	>20 years	56 37.3%	48 32.0%	16 10.7%	
Gender	Male	34 22.7%	31 20.7%	5 3.3%	0.088
	Female	38 25.3%	27 18.0%	15 10.0%	
Year of education	1st year	16 10.7%	11 7.3%	3 2.0%	0.001
		19 12.7%	11 7.3%	0 0.0%	
	3rd year	14 9.3%	15 10.0%	1 0.7%	
		12 8.0%	13 8.7%	5 3.3%	
	5th year	11 7.3%	8 5.3%	11 7.3%	

**DISCUSSION**

Undergraduate medical students' cognitive function and ability to learn may be negatively impacted by high levels of stress, which are believed to be challenging throughout medical education. Everywhere throughout the world, medical students experience this well-known phenomenon.<sup>11</sup> This study has been done to evaluate the level of stress and the frequency of different stressors among undergraduate medical students, and a total of 150 medically undereducated students were studied regarding stress. and most of the students, 80.0%, were older than 20 years old; females were 53.3% and males were 46.7%. Consistently, Surwase K *et al*<sup>12</sup> reported that the students' mean age was 20.17 years and females were in the majority, with 125 compared to male students' 119, out of total 249 subjects. On the other hand, Anuradha R *et al*<sup>8</sup> also conducted the study evaluate the level of stress felt by undergraduate medical students and they also found females in majority 59.43%. In the line of this study, James T *et al*<sup>6</sup> also reported that the mean age of the undergraduate medical students was 21.24 ±1.74 years

and female students were in majority 73%, while males only 27%.

In this study, in accordance to the level of stress, 48.0% had mild stress, 38.7% had moderate stress, and 13.3% had perceived stress. Similarly, Daud SE *et al*<sup>13</sup> conducted the study to evaluate the amount of stress and the risk factors for it among medical students, and they found almost all of the students had stress, particularly as mild stress was in 100(29%) of the undergraduates, moderate stress was in 147(43%) of the students, while severe stress was in 95(28%) of the undergraduate medical students. In the comparison of this study Ahmed M *et al*<sup>14</sup> also reported that the 20% of the students had mild stress, most of the students 74% had moderate stress, while severe stress was observed only in 6% of the cases. On the other hand, a study conducted at Imam Abdulrahman Bin Faisal University to evaluate and compare the levels of psychological stress amongst first year to final year medical undergraduates, as well as the factors that contribute to it, and they found 32% students had no stress, mild stress was in 24% of the medical students, 22% medical students had moderate stress, while 21.8% of the medical students had severe stress in their study.<sup>14</sup> Overall, medical students experience a higher level of stress, which may be brought on by regular life pressures and additional academic pressure, an absence of rest time, the complexity and breadth of the material they must learn, and the frequent summative and formative exams they must take in a setting of competition.<sup>15</sup>

In this survey, the majority of the students were stressed due to the academic curriculum, high parental expectations, loneliness, accommodation away from home, quality of food in the mess/canteen, living conditions in the hostel, adjustment with a roommate, sleeping difficulties, and class attendance. While Gazzaz ZJ *et al*<sup>15</sup> reported that the examination frequency, practical performance, feeling unhappiness during lectures in the class, lack of medicinal interest, academic length of curriculum/syllabus, fear more regarding future and frequent performances of the examinations were the most common stressors. On the other hand, Daud SE *et al*<sup>13</sup> reported that there was a numerous academic pressures have a significant negative influence on medical students' well-being, including major subject changes, with the instructor serious arguments, college changes, missed class in large quantity, fail in major subjects, lower grades getting as compared to the expectations, multiple class dropping, in the class outstanding achievements and raised load of work at college were the commonest academic stressors. For the medical undergraduates, moving into medical college and sleeping in a hostel for the first time can be highly stressful also.<sup>17</sup> Furthermore, a number of studies have discovered a clear correlation between higher levels of

stress and anxiety and a decline in student engagement, clinical practice, and general substandard academic performance.<sup>18-20</sup>

In this study, the severity of stress was significantly linked to the 3<sup>rd</sup> to 5<sup>th</sup> years of education ( $p < 0.001$ ), while the severity of stress was statistically insignificant according to the age and gender of the students ( $p > 0.05$ ). These findings were almost similar to the study by Daud SE *et al*<sup>13</sup> as there was no evidence of a significant relationship between gender and level of stress, while, the stress levels of medical students were significantly influenced by age and year of study. A high rate of stress among medical students is concerning because it could affect their conduct, their ability to learn, and ultimately how patients are treated once they graduate. The present study comprises several limitations, including a limited study sample size, private medical single-center study. Additionally, stress was assessed among undergraduates using a self-structured questionnaire based proforma, that may have been biased due to students' unreliable statements. Therefore, multicentral and large-scale studies in both the government and private sectors should be done to support the findings.

## CONCLUSION

As per the study conclusion, stress among medical students was observed to be frequently high. Academic curriculum, high parental expectations, loneliness, accommodation away from home, quality of food in the mess/canteen, living conditions in the hostel, adjustment with their roommates, and sleeping difficulties were observed to be the most common responsible factors, and it was positively correlated with years of education. It is important to develop stress prevention strategies for medical students and put policies in place that will provide them with the tools they need to deal with their stress.

## LIMITATIONS

Small sample size and single-centre, private medical survey. Moreover, stress amongst undergraduates was measured using a proforma-based self-structured questionnaire.

## SUGGESTIONS / RECOMMENDATIONS

The observations should be supported by multicentral and extensive research in the public and private sectors.

## CONFLICT OF INTEREST / DISCLOSURE

None.

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