

## ORIGINAL ARTICLE

**A Survey to Assess the Prevalence of Stress and Stressors among Medical Students**MOHI UD DIN<sup>1</sup>, KOMAL AHSAN<sup>2</sup>, WARDA ASLAM<sup>3</sup>, UMER SIDDIQUE<sup>4</sup>, SANA MAJEED<sup>5</sup>, AIZAZ MUJAHID<sup>6</sup><sup>1</sup>Assistant Professor Community Medicine, Aziz Fatimah Medical and Dental College, Faisalabad<sup>2,3</sup>4<sup>th</sup> Year MBBS Student, Aziz Fatimah Medical and Dental College, Faisalabad<sup>4</sup>Registrar Nephrology, Mohiud din Medical College, Mirpur AJK<sup>5</sup>Lecturer Physiology, Islamic International Medical College, Riphah International University, Rawalpindi<sup>6</sup>Army Medical College, RawalpindiCorrespondence to Dr. Mohi Ud Din, Email: [dr.md89@outlook.com](mailto:dr.md89@outlook.com), Cell: 03434128392**ABSTRACT****Background:** Stress has an effect on the cognitive performance of medical students, which leads to poor health and burnout.**Aim:** To figure out how much stress medical students perceive and what the likely stressors are.**Methods:** This cross-sectional study was conducted in medical colleges of Faisalabad. Study duration was 4 months (October 2021 to January 2022). A sample size of 380 was taken. The inclusion criteria included medical undergraduate students and who gave consent while those who didn't give the consent and who were not medical students were excluded. Non-probability convenient sampling technique was used for collection of study participants. Data was collected from medical students. Time required to complete the questionnaire was 5 - 10 min. A questionnaire titled "The Perceived Stress Scale (14 items)" was used.**Results:** Majority of the students were having moderate stress. The mean perceived stress score of participants was 29.79±5.3. Mean perceived stress score of males and females was 29.56±5.41 and 29.94±5.18 respectively. Class 2<sup>nd</sup> year MBBS showed the highest mean of perceived stress score as 31.79±6.39 than other classes. Also, younger age group perceived more stress. Among the stressors, academic and psychosocial stressors played significant role as compared to environmental stressors.**Conclusion:** The perceived stress is higher among younger age group, class 2<sup>nd</sup> year MBBS students and females. Academic and psychosocial stressors were more common in participants than environmental. Personal and institutional initiatives are urgently required to keep medical students from becoming distressed. Medical students must be taught coping mechanisms and self-care practices. It is critical to underline that, in complement to teaching students, it is also critical to consider the students' well-being during their years of medical study. These things can be applied to community as well and with help of this study, their stress factors can be assessed and coping mechanisms can be advised.**Keywords:** Academic, psychological, medical, prevalence, students, stress, stressors**INTRODUCTION**

Stress is described as an undesirable combination of physical, mental, and emotional states. Stress, on the other hand, refers to the body's general response to demands or stresses placed on it or its surroundings<sup>1</sup>. A stressor is defined as a condition that has the potential to cause a stress response in a person. When connections between person and the environment are seen as surpassing their emotional regulation and negatively affecting their well-being, stress occurs<sup>2</sup>.

Worldwide, there is concerning issue that learning process places a significant amount of stress on students, impacting their entire well-being<sup>3</sup>. Study load, extended periods in hospitals, and a busy class schedule have a severe impact on life style, exposing students to unfavourable behavioural changes.<sup>4</sup> Medical students, on average, have high stress, which may be attributable to common stressors as well as the additional pressure of academic demands, an absence of recreational time, and repeated evaluations<sup>5</sup>. A small amount of pressure is useful since it allows the learner to be more active and do well. Excessive stress, on the other hand, can lead to a variety of psychosocial problems<sup>6</sup>. It is critical to recognize stress and the causes of stress since it has negative consequences for students' well-being<sup>7</sup>.

Due to the challenging atmosphere, the young student population is exposed to the pressure of advanced professional learning.<sup>8</sup> When examining the level of stress of medical and non-medical students, it has been observed that medical students are more stressed. The student has very little time to relax and recreate due to the huge amount of knowledge. Anxiety and stress have long been correlated with negative psychosomatic consequences<sup>9</sup>.

Regional observational studies on psychosocial, educational, physiological, and emotional distress in undergraduate medical students in Pakistan is sparse, and research on stress and its many origins in medical students in Pakistan is lacking.

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The current study was undertaken among Faisalabad undergraduate medical students to assess the frequency of stress and to identify the primary stressors impacting medical students.

**METHODOLOGY**

This cross-sectional study was conducted in medical colleges of Faisalabad. Study duration was 4 months (October 2021 to January 2022). A sample size of 380 was taken. The inclusion criteria included medical undergraduate students and who gave consent while those who didn't give the consent and who were not medical students were excluded. Non-probability convenient sampling technique was used for collection of study participants. Data was collected from medical students. Time required to complete the questionnaire was 5 - 10 min. A questionnaire titled "The Perceived Stress Scale (14 items)" was used. It consisted of three sections; demographic data; sources of stress as academic, environmental, psychosocial and perceived stress scale (PSS-14) which is a self-reported questionnaire that analyses how stressful conditions in the respondent's life have been in the previous month. It has five options for each question as never, almost never, sometimes, fairly often and very often with scoring as 0, 1, 2, 3, 4, 5 respectively. Following questions of PSS – 14 4, 5, 6, 7, 9, 10, and 13 are scored in reverse direction. The data was analysed using IBM SPSS Statistics Version 25. Frequencies and percentages were calculated. Permission was granted by Institutional Ethical Review Board.

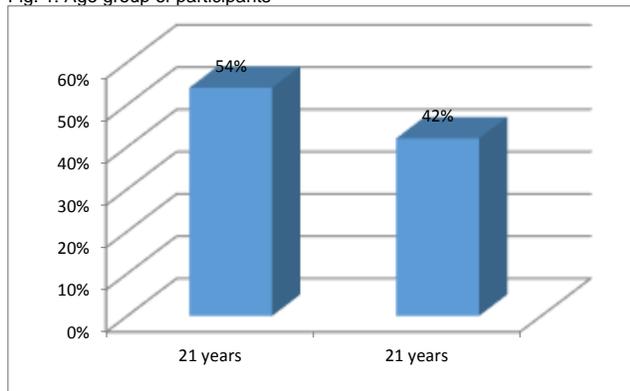
**RESULTS**

Total sample size was 380. Most of the participants age group was more than 21 years as shown in figure 1.

There were 64 (16.8%) students from 1<sup>st</sup> year, 72 (18.9%) from 2<sup>nd</sup> year, 80 from 3<sup>rd</sup> year (21.1%), 89 (23.4%) from 4<sup>th</sup> year and 75 (19.7%) students from final year MBBS. Mostly study participants were from urban areas i.e. 308 (81.1%) and day scholars i.e. 256 (67.4%). There were different sources of stress

which play as stressors in student's life like academic, environmental and psychosocial. Table I shows the different sources of stress of participants.

Fig. 1: Age group of participants



Study participants included females more as compared to males as shown in figure 2.

Fig. 2: Gender distribution of participants

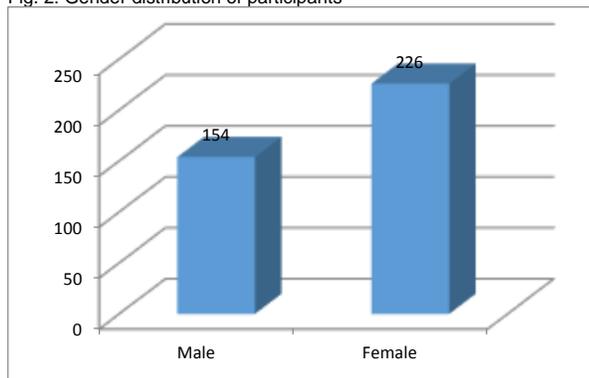


Table II: Perceived stress scale (PSS 14)

In the last month, how often have you	Never	Almost never	Sometimes	Fairly often	Very often
Been upset because of something that happened unexpectedly?	36	45	187	54	58
Felt that you were unable to control important things in your life?	32	52	173	64	59
Felt nervous and "stressed"?	28	41	175	78	58
Dealt successfully with irritating life hassles?	45	71	197	43	24
Felt that you were effectively coping with important changes that were occurring in your life?	42	55	184	75	24
Felt confident about your ability to handle your personal problems?	44	66	160	75	35
Felt that things were going your way?	19	44	208	54	55
Found that you could not cope with all the things that you had to do?	14	61	204	55	46
Been able to control irritations in your life?	23	45	199	92	21
Felt that you were on top of things?	26	26	165	103	60
Been angered because of things that happened that were outside of your control?	32	52	177	56	63
Found yourself thinking about things that you have to accomplish?	30	47	175	83	45
Been able to control the way you spend your time?	12	52	192	76	48
Felt difficulties were piling up so high that you could not overcome them?	25	59	212	45	39

Table III: Perceived stress scale scoring

Stress categories	Frequency	Percent
Low	7	1.8
Moderate	345	90.8
High	28	7.4

## DISCUSSION

Majority of the students were having moderate stress followed by high and low categories. Females and students of 2<sup>nd</sup> year MBBS perceived more stress. Among the stressors, academic ones were most common among students and academic curriculum vastness and fear of failure were on top. Among environmental stressors,

Table I: Sources of stress

Sources of stress	Number of respondents	
	Yes (%)	No (%)
<b>Academic stressors</b>		
Academic curriculum vastness	329 (86.6%)	51 (13.4%)
Constant schedule of examination	278 (73.2%)	102 (26.8%)
Competing with your colleagues	187 (49.2%)	193 (50.8%)
Worried of failing or doing poorly in an exam	310 (81.6%)	70 (18.4%)
Dearth of entertainment	248 (65.3%)	132 (34.7%)
<b>Environmental stressors</b>		
Travelling between home and college	182 (47.9%)	198 (52.1%)
Other than home accommodation	188 (49.5%)	192 (50.5%)
Food quality in the mess/at home	151 (39.7%)	229 (60.3%)
Hostel/home living circumstances	158 (41.6%)	222 (58.4%)
Keeping along with your roommates/neighbours	127 (33.4%)	253 (66.6%)
<b>Psychosocial stressors</b>		
High expectations from parents	231 (60.8%)	149 (39.2%)
Family problem	185 (48.7%)	195 (51.3%)
Loneliness	186 (48.9%)	194 (51.1%)
Relationship with opposing gender	133 (35%)	247 (65%)
Financial problem	119 (31.3%)	261 (68.7%)

The mean perceived stress score of participants was  $29.79 \pm 5.3$ . Mean perceived stress score of males and females was  $29.56 \pm 5.41$  and  $29.94 \pm 5.18$  respectively. Class 2<sup>nd</sup> year MBBS showed the highest mean of perceived stress score as  $31.79 \pm 6.39$  than other classes. Table II shows the answers of students of 14 item perceived stress scale. Mostly participants answered 'sometimes' in every question of stress scale. Item numbers 4, 7, 8, 9, 13, 14 were answered by more than half number of participants as 'sometimes'. Option 'Never' and 'Almost never' were selected mostly in item 4 i.e. 'Dealt successfully with irritating life hassles'; option 'Sometimes' was selected mostly in item 14 i.e. 'Felt difficulties were piling up so high that you could not overcome them'; option 'Fairly often' was selected mostly in item 10 i.e. 'Felt that you were on top of things' and option 'Very often' was selected mostly in option 11 i.e. 'Been angered because of things that happened that were outside of your control'.

Table III shows that majority of the students were having moderate stress as per scoring of the Perceived Stress Scale.

away from home accommodation was most common although less than half percentage of participants chose stressors as environment ones. In case of psychosocial stressors, high expectations from parents were selected by students mostly.

A study done in India showed that about 1/3<sup>rd</sup> of participants have score of  $> 28$  as per PSS-14. In case of stressors related to academics, following were most commonly selected by participants i.e. doing poorly in exams, dearth of entertainment, curriculum vastness and constant examinations and assessments<sup>10</sup>. These results are similar to our results of study in case of academic stressors where students also considered these as stressors but PSS 14 score showed that more than half percentage of our

participants had score of more than 28. It showed the severity of academic stressors among them.

A research done in a private medical college in Saudi Arabia showed that as compared to females, males showed more stress and stress was perceived by almost half of the study participants<sup>11</sup>. These results are similar to our study where stress was perceived by almost more than half percentage of participants but differs in case of gender distribution of stress as in our study, females were having more stress as compared to males. A study done in another medical college showed that as per PSS-14, mild stress was found in majority of participants i.e. in 61.6% participants while moderate and severe stress was in 36.6% and 1.8% of participants.<sup>12</sup> These results are in contrast to our study where moderate stress was found in 90.8% while mild and severe stress was found in 7.4% and 1.8% of participants.

Another study done in a medical college showed that students have high level of stress with an average of 45.5<sup>13</sup> which is much higher as compared to our study where students have high level of moderate stress i.e. in more than 90% of students. A study done by Saba Tariq in a private medical college showed that students major stressors were psychosocial and academic and they had high levels of stress<sup>14</sup> as compared to moderate stress which our participants had but academic and psychosocial were also the major stressors in our study. Similarly, a study done on medical students in a medical college of Saudi Arabia showed that academic ones were the main stressors and participants reported higher levels of stress which is similar to our study<sup>15</sup>.

It is critical to recognize stress in students early on. We can provide good guidance to pupils and advise them alternative coping methods to handle stress if we diagnose stress early. In order for them to perform better, it is critical to establish ways for dealing with stress and to offer a positive atmosphere for pupils. Students should learn how to cope with stress in a constructive way and parents, teachers and institutions can all assist.

## CONCLUSION

The perceived stress is higher among younger age group, class 2<sup>nd</sup> year MBBS students and females. Academic and psychosocial stressors were more common in participants than environmental. Personal and institutional initiatives are urgently required to keep medical students from becoming distressed. Medical students must be taught coping mechanisms and self-care practices. To make this less burdensome for students, it may be necessary to reconsider the assessment system. Counselling cells for both students and parents might be built. It is critical to underline that, in

complement to teaching students, it is also critical to consider the students' well-being during their years of medical study.

**Author contribution:** MUD: Study design, data analysis, final drafting, final approval, KA: Study design and concept, questionnaire design, WA: Introduction, study design and data collection, US: Data analysis, SM: Study design and concept, Final drafting, AM: Study design and concept, Final drafting

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## REFERENCES

1. Russell G, Lightman S. The human stress response. *Nature Reviews Endocrinology*. 2019;15(9):525-34.
2. Hill MR, Goicochea S, Merlo LJ. In their own words: stressors facing medical students in the millennial generation. *Medical education online*. 2018;23(1):1530558.
3. Lazarevic B, Bentz D. Student perception of stress in online and face-to-face learning: the exploration of stress determinants. *American Journal of Distance Education*. 2021;35(1):2-15.
4. Erschens R, Herrmann-Werner A, Keifenheim KE, Loda T, Bugaj TJ, Nikendei C, et al. Differential determination of perceived stress in medical students and high-school graduates due to private and training-related stressors. *PLOS ONE*. 2018;13(1):e0191831.
5. Menon P, Chaudhury S, Saldanha D, Sahu S, Singh V, Pathak V. Stress levels and its association with self-harm and risk-taking behavior in medical undergraduates. *Industrial psychiatry journal*. 2018;27(1):41.
6. Frazier P, Gabriel A, Merians A, Lust K. Understanding stress as an impediment to academic performance. *Journal of American College Health*. 2019;67(6):562-70.
7. Ramli NH, Alavi M, Mehrihezad SA, Ahmadi A. Academic stress and self-regulation among university students in Malaysia: Mediator role of mindfulness. *Behavioral Sciences*. 2018;8(1):12.
8. Garriott PO, Nisle S. Stress, coping, and perceived academic goal progress in first-generation college students: The role of institutional supports. *Journal of Diversity in Higher Education*. 2018;11(4):436.
9. Lönnfjord V, Hagquist C. The association of self-reported schoolwork pressure, family factors and self-efficacy with psychosomatic problems. *European Journal of Social Work*. 2021;24(4):603-16.
10. Rebello CR, Kallingappa PB, Hegde PG. Assessment of perceived stress and association with sleep quality and attributed stressors among 1(st)-year medical students: A cross-sectional study from Karwar, Karnataka, India. *Ci Ji Yi Xue Za Zhi*. 2018;30(4):221-6.
11. Atwa HS, Bugshan TF, Alkaf MA. Perceived stress among undergraduate medical students at a private medical college in Saudi Arabia: prevalence and inducing factors. *Int J Med Dev Countries*. 2019;3(12):37-43.
12. Vagdevi H. To evaluate and compare perceived stress among preclinical vs paraclinical students of private medical college in Shivamogga. 2020.
13. Hammad A, Naeem M, Usmani SY, Hussain W. Educational stress and coping strategies among medical students. *The Professional Medical Journal*. 2020;27(08):1575-81.
14. Tariq S, Tariq S, Tariq S, Jawed S. Perceived stress, severity and sources of stress among female medical students in a private medical college in Pakistan. *JPMA*. 2020;2019:162-7.
15. Gazzaz ZJ, Baig M, Al Ahendi BSM, Al Suliman MMO, Al Ahendi AS, Al-Grad MSH, et al. Perceived stress, reasons for and sources of stress among medical students at Rabigh Medical College, King Abdulaziz University, Jeddah, Saudi Arabia. *BMC medical education*. 2018;18(1):29.