

STRESS AND COPING SKILLS AMONG UNDERGRADUATE MEDICAL STUDENTS- A CROSS SECTIONAL STUDY

KAINAT JAVED¹, ABSAR NAZIR², ZEESHAN MALIK¹

¹University College of Medicine & Dentistry, The University of Lahore,

²Fatima Jinnah Medical University/ Ganga Ram Hospital, Lahore

ABSTRACT

Objective: This study aims to assess the stress and coping skills among undergraduate medical students.

Methods: A quantitative cross-sectional study conducted from September to November 2022, in University College of medicine and dentistry, UOL. The participants were MBBS students of 1st year until final year. The data was collected by using three questionnaires: demographic form, suanprung stress test and COPE inventory and was analyzed by using SPSS25. Associated factors of stress were analyzed by Kruskal-wallis and chi square test.

Results: Data was collected from 675/780 undergraduate medical students with a response rate of 86.5%. Female students responded (53%) in majority as compared to males (47%). According to the association between general demographic characteristics and coping strategies, gender, scores, religion, and illness have been found to have significant correlation with adaptive coping strategies. These demographic characteristics may influence how an individual responds to stress and may affect their ability to use adaptive coping strategies.

Conclusion: Usually medical students have flexible coping skills. Adaptive coping mechanisms were significantly correlated with gender, education, religion, and health problem.

Keywords: undergraduate; medical; stress; coping skills

How to cite this article: Javed k, Nazir A, Naqvi N. Stress and Coping Skills Among Undergraduate Medical Students- A Cross Sectional Study. Pak Postgrad Med J 2023;34(2): 73-76

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/3.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

DOI: <https://doi.org/10.51642/ppmj.v34i01.488>

Correspondence to: *Kainat Javed*
Assistant Professor, DME, University College of
Medicine & Dentistry, The University of Lahore,
Pakistan.

Email: drkainatjaved@hotmail.com

INTRODUCTION

Stress is a response to a perceived threat or challenge and a wide range of events or situations can trigger it. When an individual feels that they lack the resources to cope with a situation, whether it is in the past, present, or future, their body and mind respond with a "fight or flight" response.¹

This response is a natural and adaptive mechanism that helps us to cope with danger, but when it becomes chronic, it can have negative effects on our physical and mental health. Stress can manifest in different ways such as physiological changes, cognitive changes, emotional changes and behavioral changes. Stress can be both positive and negative, it can push people to achieve their goals but when it becomes excessive, it can affect an individual's quality of life and well-being.²

Medical students often experience high levels of stress due to the demanding nature of the medical education and training. Factors that contribute to stress among medical students include academic demands, financial concerns, and the pressure to succeed. Additionally, the exposure to

illness and suffering in clinical settings can also contribute to emotional stress. Medical students may also experience stress related to uncertainty about their future careers and the responsibilities that come with being a physician. Coping strategies that are commonly used among medical students include exercise, relaxation techniques, time management, and social support. Studies have shown that medical students who engage in regular physical activity, practice mindfulness, and maintain positive relationships with friends and family are less likely to experience stress and burnout.^{1,3}

Response to stress can be of different types like

- Physiological response: This includes changes in heart rate, blood pressure, breathing rate, and the release of stress hormones such as cortisol and adrenaline.
- Cognitive response: This includes changes in how we think, such as increased worry, rumination, and negative thinking.
- Emotional response: This includes changes in how we feel, such as increased anxiety, irritability, sadness, and depression.
- Behavioral response: This includes changes in how we act, such as withdrawing from social interactions, engaging in risky behaviors, or struggling to focus and complete tasks.

It is important to note that the response to stress can vary from person to person; some people may experience more physiological response while others may experience more emotional response that is more emotional. In addition, people may use different coping strategies to deal with stress; some may use problem-focused coping strategies while others may use emotion-focused coping strategies.⁴

METHODS

This study was conducted in University College of medicine and dentistry from September 2022 until November 2022. The study was approved by the Ethical Review Board, University College of Medicine & Dentistry, The University of Lahore, vide reference No. ERC/01/23/01 Dated 17.01.2023. This study explored the stress in undergraduate medical students, their coping skills and the factors associated with stress. Students of 1st year MBBS until final year took part in the study. Table 1 shows the year wise data of students. The data was collected via google form; link of the form was distributed in the WhatsApp group of the students. Questionnaire was divided into three components, 1) demographic data of the students, 2) suanprung stress test (20 items) and 3) the brief COPE inventory (28 items). The data was analyzed using SPSS 25 and the associated factors of stress were assessed by using kuskalwallis test and chi square test.

RESULTS

675 undergraduate students with a response rate of 86.5% filled out the questionnaires. 53% students were female and 47% students were males, mean age was 20.2±1.5

years, with mean cumulative GPA of 3.8 ± 0.2. Demographic data mentioned in table 1.

Table 1- Demographic data of undergraduate medical students

Demographic Characteristics		
n=675		
Gender		
Female		358(53%)
Male		317(47%)
Year		
1st year MBBS		142(21.03%)
2nd year MBBS		139(20.5%)
3rd year MBBS		140(20.7%)
4th year MBBS		125(18.5%)
Final year MBBS		129(19.11%)
Underlying Disease		
No		536(79.4%)
Yes		139(20.5%)
Unreported		0
Psychiatric Illness		
No		625(92.5%)
Yes		50(7.4%)
Unreported		0

Figure 1 shows that most of the students showed moderate to high level stress (48% and 33.8% respectively).

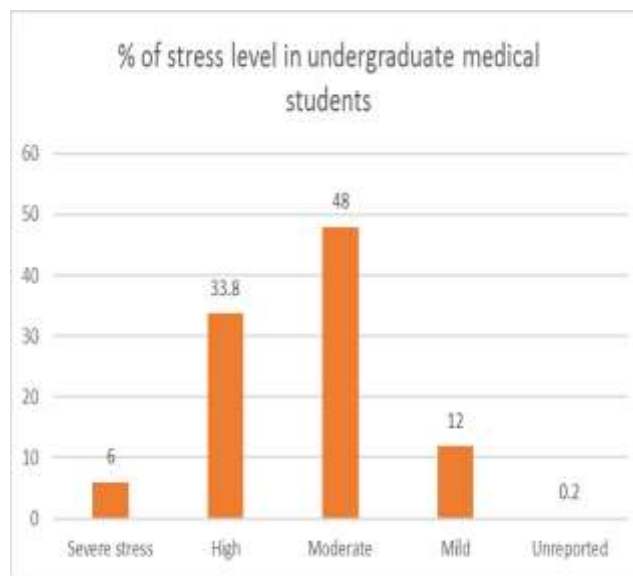


Figure: 1 - Percentage of stress in undergraduate students

Medical students commonly use adaptive coping strategies such as acceptance, active coping, and positive reframing to manage stress. They do not typically use maladaptive strategies like denial or support. Means of the coping strategies are shown in figure 2.

(Mean score interpretations: 2.00 = have not been doing this at all, 2.01 to 4.00 = have been doing this a little bit,

4.01 to 6.00 = have been doing this a medium amount, 6.01 to 8.00 = have been doing this a lot)



Fig-2: Coping strategies mean score of undergraduate students (n=675)

In this study, we found a significant relationship between gender, GPA, and medical condition and the usage of adaptive coping techniques for controlling stress levels. Females and those with a high GPA (3.5) were shown to use adaptive coping mechanisms more frequently than men and those with a low GPA (3.5), respectively. The usage of adaptive coping mechanisms was influenced by medical disease, as well. The application of both healthy and problematic coping mechanisms was not significantly different between pre-clinical and clinical medical undergraduate students, according to this study. Additionally, it was discovered that medical students typically used adaptive coping mechanisms when they suffered from a medical condition (such as allergies, GERD, or headaches).

Only the variable referring to the academic year of medical study (pre-clinical and clinical year) was significantly connected to stress levels, according to the analysis of the relationship between demographic features and stress levels (p 0.001). Pre-clinical medical students were found to experience high to severe stress levels more frequently than clinical medical students did. (Fig 3)

DISCUSSION

A Cross-Sectional Study" conducted by Dyrbye et al. This study aimed to examine the relationship between perceived stress and burnout among medical students and found a significant association between the two.⁵

Stress and coping among medical students: a systematic review" conducted by Afshar et al.⁶ This study reviewed the literature on stress and coping among medical students and found that academic demands, financial concerns, and

the pressure to succeed were the most common stressors among medical students. "The effectiveness of mindfulness-based interventions on symptoms of stress, anxiety, depression, and burnout: A meta-analytic review" conducted by heinen et al.⁴

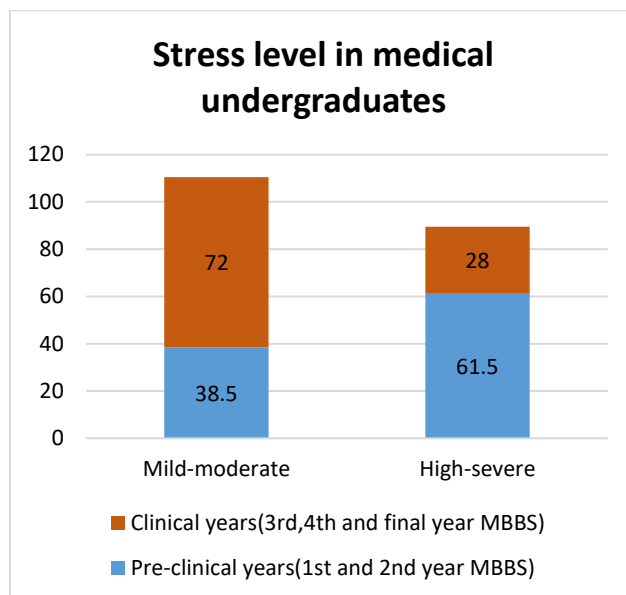


Fig 3: Stress level in medical undergraduates (pre-clinical and clinical years)

This study assessed the effectiveness of mindfulness-based interventions in reducing symptoms of stress, anxiety, depression, and burnout and found that mindfulness-based interventions were effective in reducing symptoms of stress, anxiety, and depression.

"The role of social support in coping with stress among medical students: a systematic review" conducted by sattar et al. who discussed the role of social support in coping with stress among medical students and found that social support was a protective factor against stress and burnout among medical students.⁷

It is possible that this finding could be because clinical medical students are more likely to have a better understanding of the medical field and the demands of the profession, which may help them to better cope with stress. Additionally, the hands-on experience that clinical medical students gain in patient care may help them to develop better coping strategies and feel more prepared for their future careers.⁸

In addition, clinical medical students may have more opportunities to put into practice what they have learned in the classroom and to see how their skills and knowledge can help patients. This may give them a sense of purpose and fulfillment, which can help to reduce stress.⁹ On the other hand, pre-clinical medical students may experience more stress due to the increased academic demands and pressure to succeed. They may also feel more uncertainty about their future careers and the responsibilities that come with being

a physician.¹⁰ It is also worth noting that stress can vary greatly between individuals, and this study may not generalize to all pre-clinical and clinical medical students. Further research would be needed to confirm these findings and investigate the underlying mechanisms.

There is evidence to suggest that high levels of stress may be associated with the use of maladaptive coping strategies. Maladaptive coping strategies refer to coping strategies that are ineffective or may even exacerbate the stressor, such as substance abuse, avoidance, or aggression.¹¹

Studies have shown that individuals who experience high levels of stress are more likely to engage in maladaptive coping strategies, such as overeating, smoking, or withdrawing from social interactions. These strategies may provide temporary relief from stress, but they often have negative consequences in the long term and can lead to increased stress and mental health issues.¹²

On the other hand, adaptive coping strategies, such as problem-solving, seeking social support, and engaging in physical activity, have been shown to be effective in reducing stress and improving mental health.¹³ It is important to note that coping strategies can vary depending on the person and the situation, and what works for one person may not work for another. In addition, stressors and coping mechanisms are complex, and it is possible that maladaptive coping mechanisms could lead to high level of stress; it is not just a one-way relationship.¹⁴

CONCLUSION

The findings of this study suggest that it is important to focus on medical students' stress and coping strategies in order to prevent the harmful effects of stress on health and academic performance. This could involve providing support and resources for stress management, such as counseling, relaxation techniques, and physical activity programs, and encouraging medical students to use adaptive coping strategies. The study also found that certain factors such as gender, GPA, academic year and medical illness were significantly correlated with coping strategies. For example, female students were more likely to use adaptive coping strategies than male students were, while students with higher GPAs were more likely to use maladaptive coping strategies.

Ethical Approval: Submitted

Conflict of Interest: Authors declare no conflict of interest.

Funding Source: None

REFERENCES

1. Karaman MA, Lerma E, Vela JC, Watson JC. Predictors of Academic Stress Among College Students. *J Coll Couns.* 2019;22(1):41–55.
2. Dalky HF, Gharaibeh A. Depression, anxiety, and stress among college students in Jordan and their need for mental health services. *Nurs Forum* [Internet]. 2019;54(2):205–12. Available from: <http://dx.doi.org/10.1111/nuf.12316>
3. Xu P, Peng MY-P, Anser MK. Effective Learning Support Towards Sustainable Student Learning and Well-Being Influenced by Global Pandemic of COVID-19: A Comparison Between Mainland China and Taiwanese Students. *Front Psychol.* 2021;12(June):1–13.
4. Heinen I, Bullinger M, Kocalevent RD. Perceived stress in first year medical students - associations with personal resources and emotional distress. *BMC Med Educ* [Internet]. 2017;17(1):1–14. Available from: <http://dx.doi.org/10.1186/s12909-016-0841-0848>
5. Wassif G, Gamal-Eldin D, Boulos D. Stress and Burnout Among Medical Students. *J High Inst Public Heal.* 2019;0(0):189–197.
6. Afshar K, Wiese B, Stiel S, Schneider N, Engel B. Perceived stress and study-related behavior and experience patterns of medical students: a cross-sectional study. *BMC Med Educ* [Internet]. 2022;22(1):1–9. Available from: <https://doi.org/10.1186/s12909-022-03182-03184>
7. Sattar K, Yusoff MSB, Arifin WN, Mohd Yasin MA, Mat Nor MZ. A scoping review on the relationship between mental wellbeing and medical professionalism. *Med Educ Online* [Internet]. 2023;28(1):2165892. Available from: <https://doi.org/10.1080/10872981.2023.2165892>
8. Talib N, Zia-Ur-Rehman M. Academic performance and perceived stress among university students. *Educ Res Rev* [Internet]. 2012;7(5):127–132.
9. Asif S, Mudassar A, Shahzad TZ, Raouf M, Pervaiz T. Frequency of depression, anxiety and stress among university students. *Pakistan J Med Sci.* 2020;36(5):971–q976.
10. El-Masry R, Ghreiz S, Helal R, Audeh A, Shams T. Perceived stress and burnout among medical students during the clinical period of their education. *Ibnosina J Med Biomed Sci.* 2013;05(04):179–188.
11. D. Ryan S, J. Magro M, H. Sharp J. Exploring Educational and Cultural Adaptation through Social Networking Sites. *J Inf Technol Educ Innov Pract.* 2011;10:001–16.
12. Imran N, Jawaid M. E-Professionalism: challenges of being social in social media in health profession. *Heal Prof Educ J.* 2021;4(1):7–8.
13. Norphun N, Pitanupong J, Jiraphan A. Stress and coping strategies among thai medical students in a southern medical school. *Siriraj Med J.* 2020;72(3):238–244.
14. Triyanto. The Academic Motivation of Papuan Students in Sebelas Maret University, Indonesia. *SAGE Open.* 2019;9(1). 1-7.

AUTHOR'S CONTRIBUTIONS

KJ: Manuscript writing, data collection, data analysis

AN: Data collection, proof reading

ZM: Data collection, references