

## Relationship between resilience and personality traits of students in undergraduate medical programmes

Haiqa Imran<sup>1</sup>, Fatima Binte Arif<sup>2</sup>, Khadija Qamar<sup>3</sup>, Aneesha Rashid<sup>4</sup>, Muhammad Ali Qadeer<sup>5</sup>, Mariam Sohail<sup>6</sup>, Mujtaba Bashir Memon<sup>7</sup>

### Abstract

**Objective:** To assess the effect of personal factors on resilience in undergraduate medical students.

**Method:** The analytical, cross-sectional study was conducted from June to August 2023 among medical and dental students at 5 public and private medical colleges in the Punjab and Sindh provinces of Pakistan. Students from Army Medical College (AMC) Rawalpindi, Ghulam Muhammad Mahar Medical College (GMMMC) Sukkar, Rawalpindi Medical College (RMU) Rawalpindi, Foundation University School of health Sciences (FUSH) Islamabad, and Baqai Medical University (BMU) Karachi were included in the study, after approval from the ethics review board of Army Medical College, Rawalpindi, Pakistan. Data was collected using Google Forms based on Medical Professionals Resilience Scale and Big Five Inventory questionnaires aimed at determining the relation between resilience and personality. Data was analysed using SPSS 26.

**Results:** Of the 5 medical institutions, 3(60%) were from Punjab and 2(40%) were from Sindh, while 3(60%) were from the public sector (AMC, GMMMC, RMU) and 2(40%) were from the private sector (FUSH, BMU). Of the 356 students with mean age  $21.18 \pm 1.67$  years, 204(57.3%) were females and 152(42.7%) were males, while 345(96.9%) were medical and 11(3.1%) were dental students. There were 80(22.5%) students from AMC, 33(9.3%) from GMMMC, 145(40.7%) from RMU, 59(16.6%) from FUSH and 39(11%) from BMU. Resilience had a positively weak to moderate correlation with Agreeableness ( $r=0.156$ ) and Conscientiousness ( $r=0.206$ ). Extraversion ( $r=-0.288$ ), Neuroticism ( $r=-0.194$ ) and Openness ( $r=-0.303$ ) had a negative correlation with Resilience. GMMMC showed a weakly negative correlation between Resilience and all personality traits, while BMU showed a significantly positive correlation of Resilience with Extraversion. Public-sector students (AMC, GMMC and RMU) demonstrated relatively higher mean resilience score than private-sector students (FUSH and BMU).

**Conclusion:** Medical institutions should develop programmes that foster resilience by targetting key personality traits. Personalized educational strategies, mental health support, and resilience training should be integrated into the curriculum to address individual differences.

**Keywords:** Relationship, resilience, personality traits, undergraduate medical program.  
(JPMA 76: 477; 2026) DOI: <https://doi.org/10.47391/JPMA.22910>

### Introduction

It is possible to view the idea of resilience from moral, ethical, sociological and psychological angles. Therefore, resilience is defined as a flexible quality that enables individuals to flourish in challenging situations in the right social and private settings<sup>1</sup>, or the ability to adjust to difficulties and modifications. Resilience is positively

predicted by psychological wellbeing.<sup>2</sup> Resilient people typically bounce back from failures or distress, and exhibit a shared collection of traits that enable them to deal with life's contests.<sup>3</sup> Resilience is multifactorial, and studies have suggested that resilience can be taught and learned.<sup>4</sup> More significantly, resilience can be fostered in people, leading to improved mental and physical conditions.<sup>5</sup>

There are particular difficulties and pressures that medical students face beyond their academic curriculum. Medical students and residents face a variety of pressures in addition to a heavy workload, such as rigid work schedules, lack of sleep, depression and burnout<sup>6</sup>, in addition to one's own and society's expectations. Medical residents and students are particularly vulnerable to low self-esteem and compassion fatigue, reduced mental health and a general decline in life quality. Some literature

.....  
<sup>1,2,4,5,7</sup>Final Year MBBS Student, Army Medical College, Rawalpindi, Pakistan. <sup>3</sup> Department of Medical Education, Army Medical College, Rawalpindi, Pakistan. <sup>6</sup>Department of Medical Education, Fazaia Medical College, Islamabad, Pakistan.

**Correspondence:** Khadija Qamar. Email: [colkhadijaqamar@gmail.com](mailto:colkhadijaqamar@gmail.com)

**ORCID ID:** 0000-0002-6152-0435

**Submission complete:** 10-12-2024 **First Revision received:** 22-04-2025

**Acceptance:** 03-12-2025

**Last Revision received:** 02-12-2025

suggests that Generation Z (Gen-Z) medical students today are more likely to experience anxiety, sadness and insecurities.<sup>7</sup> The research on good coping with trauma and the determinants of health<sup>8</sup> highlights resilience as a crucial element of wellbeing.

Research indicates that medical students have high prevalence rates of despair, distress and suicidal thoughts, indicating a great deal of psychological pressure that could be affected by resilience levels. For instance, a study stated that 41.1% of medical students in the Middle East were facing and dealing with depression.<sup>9</sup> A study in Karachi concluded that depression affects medical students far too often, and that 26% of the students considered committing suicide.<sup>10</sup> Likewise, a study in Punjab reported that the prevalence of suicidal thoughts, distress and dejection among medical students was 22.9%, 63.1% and 27.8%, respectively.<sup>11</sup> Therefore, in order to lessen and manage the negative impacts of their stressors, medical students must prioritise developing resilience.

It has been proposed that personality type influences resilience.<sup>12</sup> Generally, consistent thought, belief and action patterns are examples of personality qualities.<sup>13</sup> The "Big Five" are one of the most popular methods for characterising personality traits. According to Costa et al. in 1992, there are five broad attribute assessments that can be used to represent personality: Neuroticism, Agreeableness, Extroversion, Openness and Conscientiousness. A stable emotional state is said to be the antithesis of Neuroticism, which is marked by instability. Agreeableness is symbolised by cooperation, trust and good humour. Extroversion is characterised by vigour, communication and assertiveness. The qualities of creativity, inquisitiveness and inventiveness define Openness. Finally, reliability, accountability and discipline are traits of Conscientiousness. A dynamic personality framework incorporates the Big Five personality traits, as per the five-factor theory of personality.<sup>13</sup>

Few researches have looked at personal characteristics and their relationship with resilience in medical students studying in environments with conditions and cultures that differ from those in the West.<sup>14</sup> In the context of undergraduate medical and dental education in Pakistan, the literature recording the relationship between resilience and personality traits is, to our knowledge, scarce.

The current study was planned to fill the gap in literature by assessing the effect of personal factors on resilience in undergraduate Pakistani medical students.

## Materials and Methods

The analytical, cross-sectional study was conducted from June to August 2023 among medical and dental students at 5 public and private medical colleges in the Punjab and Sindh provinces of Pakistan. After approval from the ethics review board of Army Medical College, Rawalpindi, Pakistan, the sample size was calculated using the World Health Organisation (WHO) calculator with 95% confidence interval (CI), 5% margin of error, and 7% dropout rate on the basis of a previous study.<sup>15,16</sup>

The sample was raised using quota sampling technique from among the students of the medical institutions; AMC, GMMMC, RMU, FUSH, BMU in proportion to their total student populations. Within each quota, participants were selected using convenience sampling.

Data was collected using Google Forms, which included a brief explanation of the study's objectives, and an informed consent form. The main section of the form included socio-demographic details, Medical Professionals Resilience Scale (MeRS) for resilience measurement, and 10-item Big Five Inventory (BFI-10) for determining personality traits.

The MeRS was validated by Rehman et al. and defines resilience as a dynamic phenomenon having four domains; control, resourcefulness, involvement and growth.<sup>17</sup> MeRS is a 4-point Likert scale with 37 total items having a Cronbach's alpha score of 0.89.<sup>17</sup>

The Big Five personality traits — Extraversion, Agreeableness, Conscientiousness, Emotional stability and Openness — were measured on the BFI-10 adapted from the 44-item inventory (BFI-44).<sup>18</sup> which could predict about 70% of the variance of BFI-44. This was demonstrated by the Fisher-Z-corrected overall mean correlation between the BFI-10 and BFI-44 dimensions ( $r=0.83$ ). To measure the score of each personality trait of the respondents, the BFI-10, a 5-point Likert scale was employed. Five questions (Nos: 1, 3, 4, 5 and 7) had reverse coding.

After exporting data to Excel sheet, it was analysed using SPSS 26. Categorical variables were expressed as frequencies and percentages, while numerical variable were reported as mean  $\pm$  standard deviation. Independent t-test was used to assess gender difference in resilience and personality traits. Analysis of variance (ANOVA) was used for comparing means of resilience and personality traits across institutions, and Pearson correlation coefficient was used to determine impact of personality traits on the resilience level of medical students, with  $r<0.01$  being taken as significant.

## Results

Of the 384 individuals approached, 369(96%) responded, and, of them, 13(3.5%) responses were discarded for being incomplete. Of the 5 medical institutions, 3(60%) were from Punjab and 2(40%) were from Sindh, while 3(60%) were from the public sector (AMC, GMMMC, RMU) and 2(40%) were from the private sector (FUSH and BMU). Of the 356 students with mean age  $21.18 \pm 1.67$  years, 204(57.3%) were females and 152(42.7%) were males, while 345(96.9%) were medical and 11(3.1%) were dental students. There were 80(22.5%) students from AMC, 33(9.3%) from GMMMC, 145(40.7%) from RMU, 59(16.6%) from FUSH and 39(11%) from BMU (Table 1).

The highest mean score was for Agreeableness  $3.65 \pm 0.76$ ,

**Table-1:** Demographic characteristics of the participants (n=356).

Parameters		Frequency (%)
Gender	Male	152 (42.7%)
	Female	204 (57.3%)
Disciplines	MBBS	345 (96.9%)
	BDS	11 (3.1%)
Institute	AMC	80 (22.5%)
	GMMMC	33 (9.3%)
	RMU	145 (40.7%)
	FUSH	59 (16.6%)
	BMU	39 (11.0%)
Mean Age in Years		$21.18 \pm 1.67$

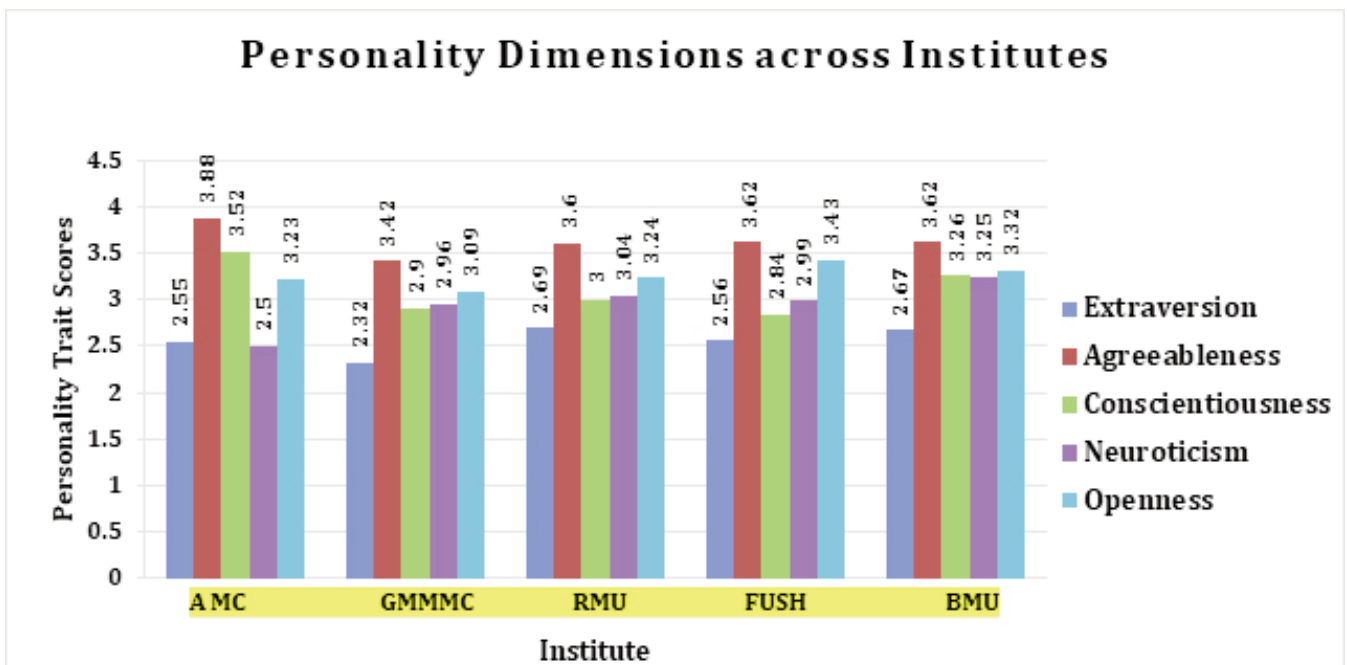
followed by Openness ( $.26 \pm 5.82$ , Conscientiousness  $3.11 \pm 0.74$ , Neuroticism  $2.92 \pm 0.92$  and Extraversion  $2.60 \pm 1.67$ ).

No significant difference was found between gender and resilience ( $p=0.829$ ), and between gender and personality traits ( $p=0.927$ ).

A significant difference was seen in the traits of Agreeableness ( $p=0.026$ ), Conscientiousness ( $p<0.001$ ) and Neuroticism ( $p<0.001$ ) across the medical institutions, while Extraversion and Openness were comparable ( $p>0.05$ ) (Table 2, Figure 1).

Overall, all medical students had high levels of Resilience, with total mean score being  $107.25 \pm 20.64$ . Significant difference was found in the levels of Resilience across the institutions ( $p=0.039$ , with the highest levels seen in students of AMC, followed by FUSH, GMMMC, BMU and RMU (Table 3, Figure 2). Students of public-sector medical colleges (AMC, GMMMC, RMU) had relatively higher mean levels of Resilience than those in the private-sector colleges (FUSH and BMU) (Figure2).

Resilience had a significant relationship with each of the five personality traits ( $p=0.014$ ). The correlation was positively weak to moderate for Agreeableness ( $r=0.156$ ) and Conscientiousness ( $r=0.206$ ), while Extraversion ( $r=-0.288$ ), Neuroticism ( $r=-0.194$ ) and Openness ( $r=-0.303$ ) showed a negative correlation with Resilience (Figure 3).



**Figure-1:** Comparison of personality dimension with respect to medical institutions.

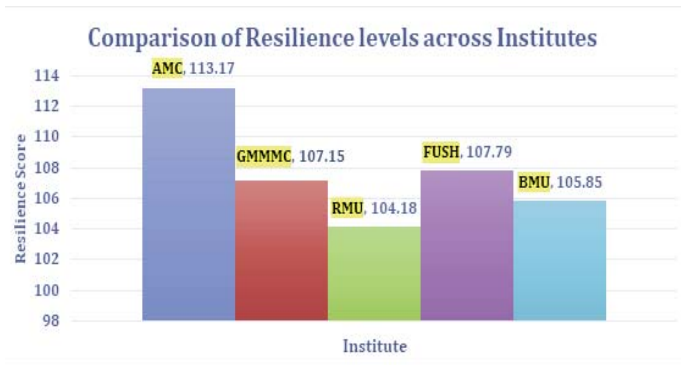


Figure-2: Comparison of Resilience levels across medical institutions.

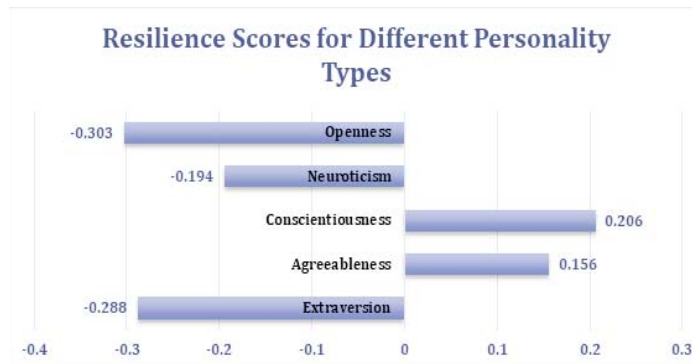


Figure-3: Correlation between Resilience scale and personality traits.

Table 3: Comparing Resilience score across medical institutions.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4267.157	4.000	1066.789	2.548	0.039
Within Groups	146971.068	351.000	418.721		
Total	151238.225	355.000			

ANOVA test was applied; p=0.039

possess a considerable capacity for resilience. This resilience may be attributed to the tough selection criteria for admission into medical institutions, along with cultural factors, such as community and familial support systems<sup>19</sup>, which emphasise perseverance and resilience in the face of adversity. Moreover, the intrinsic motivation to pursue a career in medicine, driven by a sense of purpose and altruism, may bolster students' resilience and commitment to overcoming challenges.

While literature has identified certain gender-based trends in personality traits, with females scoring higher on Conscientiousness<sup>20</sup> and males on Agreeableness<sup>21</sup>, the current study did not find any significant differences in personality traits between male and female medical students. This could be explained by the homogenising effects of medical education, which foster comparable behavioural expectations and coping strategies in all students. These results imply that professional pressures

Table-2: Comparing personality dimensions with respect to medical institutions.

		Sum of Squares	df	Mean Square	F	Sig.
Extraversion	Between Groups	4.46	4	1.115	1.197	0.312
	Within Groups	326.84	351	0.931		
	Total	331.3	355			
Agreeableness	Between Groups	6.397	4	1.599	2.792	0.026
	Within Groups	201.01	351	0.573		
	Total	207.407	355			
Conscientiousness	Between Groups	21.802	4	5.451	11.157	0.000
	Within Groups	171.476	351	0.489		
	Total	193.278	355			
Neuroticism	Between Groups	20.594	4	5.149	6.462	0.000
	Within Groups	279.65	351	0.797		
	Total	300.244	355			
Openness_1	Between Groups	2.919	4	0.73	2.185	0.07
	Within Groups	117.23	351	0.334		
	Total	120.149	355			

ANOVA test applied; p=0.026 for Agreeableness, p < 0.001 for Conscientiousness and p < 0.001 for Neuroticism

## Discussion

Despite the demanding nature of medical education and the high prevalence of burnout<sup>6</sup>, medical students

and the academic setting may have a greater impact on medical students' personality development than gender alone.

The positive correlation observed between Agreeableness and Conscientiousness with resilience aligns with previous research.<sup>7</sup> Conversely, the negative correlations of Extraversion, Neuroticism and Openness with Resilience underscore the nuanced relationship between personality traits and resilience.

Agreeableness is characterised by traits such as cooperativeness and empathy. It may facilitate effective coping strategies and social support-seeking behaviours, contributing to resilience. These individuals tend to be optimistic and trust others easily. Thus, this personality trait leads these people not to exploit others, and consequently refrain from sparking conflicts with others.<sup>22</sup>

Conscientiousness was also in a significantly positive correlation with Resilience among medical students. This personality trait was similarly reported positive and significant in other studies.<sup>23</sup> Conscientiousness, reflecting traits such as organisation and self-discipline, may enable students to better manage stressors and maintain focus on academic goals. Conscientious individuals consider stress as a problem-solving issue or challenge that can have a strong relationship with resilience.<sup>23</sup>

Neuroticism, characterised by emotional instability and susceptibility to negative affect, is observed to predispose individuals to heightened stress responses and maladaptive coping mechanisms, thereby undermining resilience.<sup>24</sup> Neurotic individuals being exposed to anxiety, irritability and anger toward others also have little ability to control impulses and manage stress.<sup>22</sup>

The negative correlation observed between Extraversion and Resilience in the current study can be attributed to the potential challenges faced by extraverted individuals in managing stress and adversity within the tough context of medical education. Extraverted traits, such as sociability and seeking external stimulation, may lead to higher sensitivity to stressors, dependence on external validation, and tendencies to overextend oneself, all of which can contribute to lower the levels of resilience. Additionally, the social comparison and expectations within competitive academic environments may further impact the ability of extraverted individuals to effectively cope with challenges and setbacks.

Openness, as a personality trait, entails a willingness to experience emotional and cognitive complexity and new experiences<sup>25</sup>, which can potentially increase vulnerability to stressors. The constant exposure to novel experiences and the pursuit of high ideals may lead to

increased vulnerability to stress, self-criticism, and difficulties in maintaining stable coping strategies. All of these factors can ultimately impact their resilience levels.

However, the negative correlations observed in the current study of Extraversion, Neuroticism and Openness with Resilience warrant further exploration. It is well-established that resilience can go beyond personality traits, and it can be associated with multiple other factors, such as demographic profile, cultural contexts, an individual's past experiences as well as current life context<sup>26</sup>, societal expectations, peer support and educational systems. Therefore, the current study has added valuable insights specific to undergraduate medical students in Pakistan, calling for further studies on understanding the concept of resilience from multicultural perspectives, especially in non-Western settings.

The significant differences in certain personality traits (Agreeableness, Conscientiousness and Neuroticism) across the participating institutions can be attributed to the different demographics that each of these institutions attract. People from different socioeconomic backgrounds tend to show differences in personality traits.

The current findings have implications for medical education practices and curriculum development. Recognising and accommodating diverse personality profiles can enhance the effectiveness of educational interventions and support systems. The significant difference in resilience levels between students in public and private medical colleges warrants further exploration. This disparity may reflect differences in institutional resources, support systems, and academic environments. Students studying in private colleges tend to come from a privileged background with more facilitation at every step of their growth and education. Meanwhile, students in public-sector colleges of Pakistan have to compete in a much more rigorous environment, relying more on themselves than on external factors, which could potentially help develop a greater degree of resilience as they go through adolescence. Furthermore, resilience is a multifactorial trait influenced by factors ranging from socioeconomic background to life experiences, and these factors can play a role in this regard.<sup>27</sup>

The current study has several limitations. The cross-sectional design limits the ability to establish causality or assess changes in resilience over time. Additionally, the use of convenience sampling technique employed for participant selection in each quota may have introduced selection bias, and the generalisability of the findings to

other populations or contexts should be considered cautiously. Future research should employ longitudinal and qualitative designs to examine the dynamic nature of resilience and its relationship with personality traits. Longitudinal studies can elucidate how these factors evolve throughout medical education, and how they influence students' academic performance, mental health outcomes, and professional development. Furthermore, qualitative studies could provide a deeper understanding of the mechanisms underlying the observed correlations, exploring students' experiences, coping strategies, and perceptions of resilience within the medical education environment. Other variables such as occurrence of negative events in childhood, social support, and growth after trauma could be investigated in future studies as variables in predicting the levels of resilience. Also, the self-reporting of the data by the participants may have produced bias rather than objective assessment. The short-form BFI-10 was used, but BFI-44 has greater validity. However, the administration of the longer form would have required a lot of time and significant cooperation from the participants, which were not possible for the research team.

## Conclusion

There were positive correlations of Resilience with Conscientiousness and Agreeableness. Slight variations in the relationship were observed across the five colleges. It is critical to understand individual differences in personality when addressing resilience in medical education. Certain personality traits can be predictive of resilience, suggesting that interventions aimed at cultivating these traits may enhance students' capacity to cope with academic and personal challenges. Medical institutions should develop programmes that foster resilience by targeting key personality traits, such as Conscientiousness and Agreeableness. Personalised educational strategies, mental health support, and resilience training should be integrated into the curriculum to address individual differences.

**Disclaimer:** The text was presented at Rawalpindi Medical University International Conference, 14th Annual Shifa Tameer-e-Millat University Scholars Day, 11th Annual Symposium, Army Medical College (AMC), and 1st Wah Medical College Students' Symposium..

**Conflict of Interest:** None.

**Source of Funding:** None.

## References

- Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The brief resilience scale: assessing the ability to bounce back. *Int J Behav Med* 2008;15:194-200. doi: 10.1080/10705500802222972.
- Mayordomo T, Viguer P, Sales A, Satorres E, Meléndez JC. Resilience and Coping as Predictors of Well-Being in Adults. *J Psychol* 2016;150:809-21. doi: 10.1080/00223980.2016.1203276.
- Aburn G, Hoare K, Adams P, Gott M. Connecting theory with practice: Time to explore social reality and rethink resilience among health professionals. *Int J Nurs Pract* 2020;26:e12893. doi: 10.1111/ijn.12893.
- Walsh P, Owen PA, Mustafa N, Beech R. Learning and teaching approaches promoting resilience in student nurses: An integrated review of the literature. *Nurse Educ Pract* 2020;45:102748. doi: 10.1016/j.nepr.2020.102748.
- Osório C, Probert T, Jones E, Young AH, Robbins I. Adapting to Stress: Understanding the Neurobiology of Resilience. *Behav Med* 2017;43:307-22. doi: 10.1080/08964289.2016.1170661.
- Raj KS. Well-Being in Residency: A Systematic Review. *J Grad Med Educ* 2016;8:674-84. doi: 10.4300/JGME-D-15-00764.1.
- Eckleberry-Hunt J, Lick D, Hunt R. Is Medical Education Ready for Generation Z? *J Grad Med Educ* 2018;10:378-81. doi: 10.4300/JGME-D-18-00466.1.
- West CP, Dyrbye LN, Sinsky C, Trockel M, Tutty M, Nedelec L, et al. Resilience and Burnout Among Physicians and the General US Working Population. *JAMA Netw Open* 2020;3:e209385. doi: 10.1001/jamanetworkopen.2020.9385.
- Gold JA, Hu X, Huang G, Li WZ, Wu YF, Gao S, et al. Medical student depression and its correlates across three international medical schools. *World J Psychiatry* 2019;9:65-77. doi: 10.5498/wjpv.v9.i4.65.
- Qureshi MF, Mohammad D, Sadiq S, Abubaker ZJ, Kumari U, Devnani J, et al. A comparative cross-sectional analysis on prevalence of depression and associated risk factors among medical students and doctors of Karachi, Pakistan. *Middle East Curr Psychiatry* 2020;27:2-6. Doi: 10.1186/s43045-020-00066-5.
- Sarwar A, Waris H, Khan H, Umar MH, Ashraf MA, Khan R, et al. Suicidal Ideation, Psychological Distress and Depression in Medical Students of Pakistan: Surviving or Thriving. *Am J Psychiatry Neurosci* 2024;12:59-66. Doi: 10.11648/j.ajpn.20241203.12.
- Houpy JC, Lee WW, Woodruff JN, Pincavage AT. Medical student resilience and stressful clinical events during clinical training. *Med Educ Online* 2017;22:1320187. doi: 10.1080/10872981.2017.1320187.
- Thompson G, McBride RB, Hosford CC, Halaas G. Resilience Among Medical Students: The Role of Coping Style and Social Support. *Teach Learn Med* 2016;28:174-82. doi: 10.1080/10401334.2016.1146611.
- Peng L, Zhang J, Li M, Li P, Zhang Y, Zuo X, ET AL. Negative life events and mental health of Chinese medical students: the effect of resilience, personality and social support. *Psychiatry Res* 2012;196:138-41. doi: 10.1016/j.psychres.2011.12.006.
- World Health Organization (WHO). STEPS sampling and sample size calculator. [Online] [Cited 2025 December 12]. Available from URL: <https://www.who.int/teams/noncommunicable-diseases/surveillance/systems-tools/steps/planning-sampling>
- Froutan R, Mazlom R, Malekzadeh J, Mirhaghi A. Relationship between resilience and personality traits in paramedics. *Int J Emerg Serv* 2018;7:4-12. doi: 10.1108/IJES-12-2016-0028.
- Rahman MA, Yusoff MSB, Roslan NS, Mohammad JA, Ahmad A. Development and validation of the medical professionals resilience scale. *BMC Health Serv Res* 2021;21:482. doi: 10.1186/s12913-021-06542-w.
- Rammstedt B, Kemper CJ, Klein MC, Beierlein C, Kovaleva A. A short scale for assessing the big five dimensions of personality: 10 item big five inventory (BFI-10). *Methoden Daten Anal* 2013;7:233-49. DOI: 10.12758/mda.2013.013.

19. Thakur H, Cohen JR. Short-Term and Long-Term Resilience Among At-Risk Adolescents: The Role of Family and Community Settings. *J Clin Child Adolesc Psychol* 2022;51:637-50. doi: 10.1080/15374416.2020.1756296.
20. Tariq NA, Saeed Awan BA, Hussnain A, Ejaz M, Iftikhar E, Sehar H, et al. Association between Sociodemographic Characteristics and Big Five Personality Traits of Undergraduate Medical Students in Pakistan: A Cross Sectional Analytical Study. *Pak Armed Forces Med J* 2024;72(Suppl-4):s761-6. doi: 10.51253/pafmj.v72iSUPPL-4.9652
21. Abouzeid E, Fouad S, Wasfy NF, Alkhadragey R, Hefny M, Kamal D. Influence of Personality Traits and Learning Styles on Undergraduate Medical Students' Academic Achievement. *Adv Med Educ Pract* 2021;12:769-77. doi: 10.2147/AMEP.S314644.
22. McCrae RR, Costa PT Jr. The structure of interpersonal traits: Wiggins's circumplex and the five-factor model. *J Pers Soc Psychol* 1989;56:586-95. doi: 10.1037//0022-3514.56.4.586.
23. Campbell-Sills L, Cohan SL, Stein MB. Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behav Res Ther* 2006;44:585-99. doi: 10.1016/j.brat.2005.05.001.
24. Schneider TR. The role of neuroticism on psychological and physiological stress responses. *J Exp Soc Psychol* 2004;40:795-804. Doi: 10.1016/j.jesp.2004.04.005
25. Zell E, Lesick TL. Big five personality traits and performance: A quantitative synthesis of 50+ meta-analyses. *J Pers* 2022;90:559-73. doi: 10.1111/jopy.12683.
26. Lepore SJ, Revenson TA. Resilience and posttraumatic growth: Recovery, resistance, and reconfiguration. In: Calhoun LG, Tedeschi RG, eds. *Handbook of posttraumatic growth*, 1st ed. England, UK: Routledge, 2014; pp 24-46.
27. Huey CWT, Palaganas JC. What are the factors affecting resilience in health professionals? A synthesis of systematic reviews. *Med Teach* 2020;42:550-60. doi: 10.1080/0142159X.2020.1714020.

#### AUTHOR'S CONTRIBUTION:

**HI:** Synopsis writing, data collection, introduction writing, data interpretation, review, final approval and agreement to be accountable for all aspects of the work.

**FBA:** Synopsis writing, data collection, methodology writing, data interpretation, final approval and agreement to be accountable for all aspects of the work.

**KQ:** Synopsis writing, data analysis, review, final approval and agreement to be accountable for all aspects of the work.

**AR:** Data collection, methodology writing, drawing conclusion,

recommendation, final approval and agreement to be accountable for all aspects of the work.

**MAQ:** Data collection, discussion writing, data interpretation, review, final approval and agreement to be accountable for all aspects of the work.

**MS:** Synopsis writing, data analysis, review, final approval and agreement to be accountable for all aspects of the work.

**MBM:** Data collection, discussion writing, data interpretation, final approval and agreement to be accountable for all aspects of the work.