

Stress among medical students: A short communication on prevalence, sources, and implications

Ruffeel R^{1*}, Pathberiya MD², Rajantheran L³, Cheong V⁴, Nursham AF⁵

***Corresponding author:**

Raashidhah Ruffeel

MBBS student, Quest International University, Perak, Malaysia

Email: raashidhahruffeel@gmail.com [ORCID](#)

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ABSTRACT**Background**

Stress among medical students is a global concern with implications for academic performance, psychological well-being, and future professional competence. Research indicates a consistently high prevalence of stress across diverse educational settings, while coping strategies adopted by students vary considerably, thereby influencing outcomes. This short communication integrates current evidence regarding prevalence, determinants, and—most importantly—coping strategies adopted by medical students. Enhancing adaptive coping strategies and bolstering the institutional support framework could mitigate negative outcomes and cultivate resilience in medical training.

Keywords

Medical students; stress; prevalence; major stressors; coping mechanisms; institutional support

Background

Medical education is widely acknowledged as both intellectually demanding and emotionally challenging. As perceived academic and psychosocial demands surpass an individual's coping capacity, stress arises. Throughout medical training, it is linked that anxiety, anhedonia, sleep disturbances, compromised academic efficiency, and burnout are a result of constant exposure to stress [1, 2]. The prevalence of stress varies across regions, influenced by cultural and methodological differences; however, it remains persistently elevated worldwide [1-3]. In addition to identifying stressors, gaining insight into students' coping strategies is vital for developing effective interventions.

Prevalence and major stressors

Numerous cross-sectional studies clearly illustrate that medical students experience significant levels of stress. Academic factors, such as rigorous curriculum, frequent assessments, high performance expectations, and competitive environment, are consistently recognized as the primary source of this stress [1-3]. Additional contributors include financial constraints, uncertainty regarding future career prospects, interpersonal conflicts, and limited recreational time [2]. Sleep disturbances have also been strongly associated with elevated stress levels, suggesting a bidirectional relationship between academic burden and physiological dysregulation [4]. Although not universally consistent, research indicates that female students experience higher perceived stress. [5]. While it is important to identify stress prevalence, addressing coping mechanisms provides a more constructive framework for intervention.

Coping mechanisms among medical students

Coping strategies refer to cognitive and behavioral efforts used in stress management to reduce levels of perceived stress and improve the psychological environment. These strategies may be broadly categorized into problem-focused, emotion-focused, and maladaptive coping.

Problem-focused coping

Problem-focused coping involves active addressing of the source of stress. Medical students frequently report:

- Structured time management
- Strategic academic planning
- Seeking academic clarification
- Engaging in peer-assisted learning

An association has been shown between planning and active coping with lower perceived stress levels and better psychological adjustment [2, 6]. Students who adopt structured study schedules and set realistic goals demonstrated improvement in academic confidence and reduction in anxiety levels.

Another important adaptive strategy is peer support, which can come in the form of collaborative study groups and shared learning environments. These enhance emotional reassurance and reduce isolation during demanding academic periods.

Emotion-focused coping

Emotion-focused strategies aim to regulate emotional responses rather than directly altering the stressors. Common approaches include:

- Religious or spiritual coping
- Acceptance and positive reframing
- Mindfulness and relaxation practices
- Seeking emotional support from family and friends

Asian settings have reported religious coping and acceptance as frequently utilized adaptive strategies. [2, 6]. Positive reframing is a Cognitive Behavioural Therapy (CBT) technique that involves shifting the perspective on challenges and stressful scenarios, viewing them as opportunities for growth and strength. This technique has been linked to the development of resilience.

In addition, mindfulness-based stress reduction—which involves meditation, yoga, and mindfulness practices—and reflective practices are increasingly recognized as beneficial in medical syllabi. These approaches improve emotional regulation and reduce the severity of perceived stress.

Maladaptive coping

It is also vital to realize that not all coping mechanisms are beneficial. Some of the maladaptive coping strategies include avoidance behaviours, denial, social withdrawal, and substance use. Avoidant behaviour commonly occurs when individuals avoid distressing or difficult situations, such as by physically avoiding the people or place involved, procrastinating on their work, or suppressing their emotions. In addition to that, substance abuse and reduced social interactions also stem from anxiety and stress. While these strategies may temporarily reduce emotional discomfort, they are still linked to higher long-term stress, poorer academic performance, and increased psychological morbidity [2].

Therefore, it is essential to identify maladaptive coping patterns as early as possible to prevent their progression to burnout and mental health disorders.

Institutional role in strengthening coping

It is evidenced that effective support systems provided by the institution can significantly influence stress outcomes. Recommended measures include:

- Structured mentoring programs
- Academic counselling services
- Stress management workshops

- Curriculum reforms to reduce unnecessary overload
- Promoting work–life balance initiatives

Early incorporation of resilience training in medical curricula can cultivate adaptive coping strategies in students before their stress becomes overwhelming. Other important protective factors against chronic stress include faculty awareness and supportive educational climates [7]. Although stress is highly prevalent among medical students on a global scale, outcomes are not solely shaped by exposure to stressors but rather by the coping strategies adopted. Students who utilize adaptive, problem-focused, and emotion-focused strategies exhibit improved psychological adjustment and academic performance. Conversely, depending on avoidance or denial strategies associated with poorer outcomes.

Therefore, medical education systems must shift from simply documenting stress prevalence to prioritizing and implementing structured coping enhancement programs. Further longitudinal research is warranted to evaluate the effectiveness of resilience-building interventions within medical training.

Conclusion

Stress among medical students remains a significant concern worldwide. The central stressor is academic demands, but coping mechanisms play a critical role in mediating outcomes. Adverse effects of high stress can be mitigated by promoting adaptive coping strategies, such as active planning, seeking emotional support, positive reframing, and mindfulness. To sustain student well-being and professional development, institutions must commit to structured psychological support and resilience training.

Authors' contribution

- a. Study planning: RR, LR, VC
- b. Manuscript writing: RR, MDP, LR, VC, AFN
- c. Manuscript revision: RR, MDP, LR, VC
- d. Final approval: RR, MDP, LR, VC, AFN
- e. Agreement to be accountable for all aspects of the work: RR, MDP, LR, VC, AFN

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Author information

¹Raashidhah Ruffeel, MBBS student, Quest International University, Perak, Malaysia.

²Michelle Disansa Pathberiya, MBBS student, Quest International University, Perak, Malaysia.

³Laavanya A/P K.Rajantharan, MBBS student, Quest International University, Perak, Malaysia.

⁴Vivian Cheong, B.Sc. Biomedical Sciences, Customer advocate, IGT solutions Pvt. Ltd

⁵Ahmad Firdaus Bin Azlan Nursham, MBBS student, Quest International University, Perak, Malaysia.

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