

Medical Student Wellbeing: Breaking the Cycle of Stress in Medical School



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Date Submitted: February 10, 2025

Date Accepted: April 30, 2025

Date Published: December 9, 2025

DOI: <https://doi.org/10.18192/UOJM.V15i2.7377>

Keywords: *medical education, burnout, coping strategies, medical school stress cycle*

ABSTRACT

Medical students encounter a high level of academic rigor with an expectation to learn a vast amount of information in short periods of time. The constant high pressure can often produce increased stress, burnout, anxiety, and depression. The proposed Medical Student Stress Cycle describes a behavioral pattern that begins with having an overwhelming course load, setting unattainable study goals, falling behind, leading to last-minute cramming, followed by only brief relief after exams. This cycle can lead to long-term mental and physical repercussions. This article outlines each stage of the stress cycle and suggests interventions, like active learning strategies and organized scheduling, to mitigate them, fostering a supportive plan for student success.

RÉSUMÉ

Les étudiants en médecine rencontrent un niveau élevé de rigueur académique avec une attente d'apprendre une grande quantité d'information en peu de temps. La pression constante peut souvent entraîner une augmentation du stress, un épuisement professionnel, de l'anxiété et une dépression. Le cycle de stress des étudiants en médecine proposé décrit un comportement qui commence avec une charge de cours écrasante, des objectifs d'études irréalisables, des retards dans le travail, conduisant à des bachotages de dernière minute, suivis seulement d'un bref soulagement après les examens. Ce cycle peut avoir des répercussions mentales et physiques à long terme. Cet article décrit chaque étape du cycle de stress et suggère des interventions, telles que des stratégies d'apprentissage actif et une planification organisée, afin de les atténuer et de favoriser un plan de soutien à la réussite des étudiants.

INTRODUCTION

Medical students face a rigorous academic environment with a vast degree of information to learn in a short duration of time. The constant high pressure can often produce increased stress, burnout, anxiety, and depression. In a systemic review, approximately 37% of medical students were found to be experiencing burnout, a condition that is defined by exhaustion, depersonalization, and reduced feelings of personal accomplishment.¹ When managing this magnitude of stress, students adopt ambitious objectives, then inadvertently foster anxiety and perfectionism tendencies. Students develop feelings of guilt and imposter syndrome as a result of lagging behind their study schedules.^{3,11} Despite their efforts, students develop feelings of guilt and imposter syndrome as a result of falling behind schedule.² To make up for lost time, students often resort to cramming—studying a subject intensively within a short period of time for an imminent exam—sacrificing essential self-care such as sleep and socialising. A routine like this not only hinders studying efficiency but can also negatively impact a student's overall well-being.¹⁵ This commentary proposes a cyclical pattern of behaviour in medical school while introducing several strategies to mitigate and break this cycle.

PROPOSED MEDICAL STUDENT STRESS CYCLE

Medical students often encounter a recurring pattern of stressors that adversely affect their academic performance and overall well-being, including mental and physical health.²⁰ This article introduces the Medical Student Stress Cycle as a conceptual model proposed by the author, synthesizing common patterns described in the literature into a single framework. This section will delve into the various stages of this proposed stress cycle and offer practical solutions to mitigate its impact on academic performance and overall well-being (**Figure 1**).

1. OVERWHELMED BY VOLUME OF INFORMATION

Medical school exposes students to a rich and complex curriculum that requires the assimilation of vast amounts of information within a limited timeframe, which can become quite overwhelming. In most cases, high cognitive loads lead to heightened stress, imposter syndrome, and self-doubt, causing students to question their abilities even after performing well in exams and assessments.³

To manage such a challenge, students can apply active

learning strategies, such as spaced repetition, which fortifies recall through review at optimal times.⁴ Additionally, another technique known as concept mapping, a visual method that illustrates connections between key ideas to deepen comprehension.⁵ These approaches help students move beyond rote memorization toward meaningful understanding and clinical application. A well-structured study routine that prioritizes high-yield topics and the most relevant information maximizes efficiency. By integrating these strategies, students can establish a sustainable study plan that enhances recall while reducing overall stress.

2. SETTING UNREALISTIC STUDY TARGETS

In response to feeling overwhelmed, many medical students set study targets that are overly ambitious, expecting to master vast amounts of material in an unrealistically short timeframe.⁶ Overexerting oneself can generate anxiety, perfectionism, and criticism, especially when students cannot meet such high standards.⁷ Overstudying, at the cost of sleep and proper care, can induce a state of tension and decrease productivity.⁷ Student distress, lowered motivation, and burnout have been shown to occur in part due to unrealistically high academic goals.⁸

A more efficient model is one in which SMART (Specific, Measurable, Achievable, Relevant, and Time-bound) goals are set, which provide clarity and structure to study plans.⁹ By breaking down big tasks into bite-sized actions, students make progress easier to track and accomplish toward their study goals. Incorporating balanced study habits, such as utilizing the use of the Pomodoro Technique,¹⁰ which involves working in short, timed intervals (typically 25 minutes) followed by brief breaks, students prevent mental overload and maximize recall. Recognizing that complete mastery of all material is unrealistic, and that learning occurs incrementally, helps students manage expectations and reduce unnecessary stress. By adopting a cumulative learning approach—gradually building knowledge over time through consistent review—students can replace unrealistic study targets with more achievable goals. This shift reduces unnecessary stress while enhancing their confidence in the long-term retention and application of medical knowledge.

3. FALLING BEHIND

Even with meticulous planning and diligent study routines, unexpected setbacks—such as interpersonal issues,



Figure 1. Medical Student Stress Cycle Model

unplanned academic difficulties, or an increased workload—can cause medical students to fall behind their own schedule. This can lead to feelings of guilt, frustration, and imposter syndrome, where students may perceive that they are not capable, not qualified, and are constantly behind.¹¹ Overwhelming anxiety about not keeping up with classmates, not mastering critical information, can lead to heightened tension.¹¹ Medical students often feel perpetually behind, struggling to catch up, rather than achieving the sense of control and preparedness they believe they should ideally have.¹²

One of the most effective strategies for overcoming this challenge is fostering adaptability in study routines, enabling students to adjust their plans when faced with unexpected obstacles. Recognizing setbacks as an inherent part of the learning process helps reduce stress and maintain motivation.¹⁵ Seeking early intervention with classmates, mentors, or instructors can reveal new insights, break down challenging information. Finally, reframing setbacks as a chance for improvement and not a reflection of one's ability helps build resilience and encourages continuous improvement.¹⁵ By having a growth mindset, which is the belief that abilities can be developed through effort and learning, and maintaining a focus on continuous improvement over perfection, students can navigate academic obstacles with confidence and determination.

4. COMPRESSING WORK

In an attempt to compensate for lost study time, many medical students resort to cramming, sacrificing important

self-care activities such as sleep, exercise, and socializing. Such a practice proves effective in a short-term capacity, it pays decreased dividend, with sleep loss and mental exhaustion impairing cognitive function, recall, and overall efficiency in studying.¹³ Studying while stressed can even amplify anxiety, and students become less concentrated and less effective in recalling information.¹⁴ Neglecting one's self-care not only exacerbates stress but even impacts academic performance, producing burnout and overwork syndrome.¹⁵

A more effective approach involves prioritizing evidence-based studying techniques with high retention and less cramming. As described earlier, active recall where students test themselves rather than passively reviewing notes, has been proven to have a significant impact in long-term memory. Similarly, the tactic of interleaving,¹⁶ in which students switch between subjects in one study session, promotes problem-solving and adaptability. Besides studying techniques, proper sleep, nutrition, and exercise contribute to peak mental function.¹⁷ Incorporating planned breaks and prioritizing self-care optimizes retention, mental clarity, and overall performance, underscoring the importance of a balanced and sustainable study routine for students.¹⁸ By appreciating the benefits of such routines, students can preserve their mental and physical well-being.

5. INCREASED STRESS, BURNOUT, AND EMOTIONAL EXHAUSTION

The relentless cycle of overexertion, high academic pressure, and inadequate self-care often culminates in emo-

tional exhaustion and burnout among medical students. Burnout is a state of persistent exhaustion, depersonalization, and a reduced sense of accomplishment undermines both academic performance and clinical practice.¹⁹ Left unaddressed, burnout may lower empathy, increase dropout rates, and contribute to long-term mental health disorders in students.²⁰

To combat such an issue, engaging in regular physical activity has been shown to regulate stress responses and support both mood and cognitive function.²¹ Mindfulness practices, such as meditation and breathing exercises, can help medical students develop emotional resilience and maintain focus under pressure. It is also crucial for medical students to enjoy their hobbies and interests outside of medicine.

Another pivotal aspect of burnout prevention is creating peer support systems. Having a supportive group of classmates and mentors can become a key platform for information exchange, normalizing struggles, and exchanging practical coping strategies. Social support generates a sense of community and reduces feelings of loneliness, both of which are common precursors to emotional distress.²² Lastly, access to mental health interventions, including therapy and counseling programs, can allow students to gain expert guidance in managing stress, anxiety, and emotional concerns.^{22,23} By combining these strategies, medical students can protect their well-being, sustain motivation, and build resilience for the demands of their future careers.

6. TEMPORARY RELIEF AFTER AN EXAM OR BREAK

While stress levels may temporarily decrease following major exams or during short breaks, medical students often find themselves quickly returning to the same stress-inducing patterns once the next academic challenge arises. The post-exam transient comfort brings a state of seeming restoration, but without long-term strategies to manage workload and emotional well-being, students fall into a recurring cycle of over-stressing and cramming that ultimately leads to burnout. This cycle results in chronic exhaustion and declining motivation, which over time undermine academic achievement as well as long-term career fulfillment. To break such a cycle, students will have to make an effort towards creating long-term habits for dealing with stress that extend beyond examination periods. Effectively utilizing one's time, such as scheduling study sessions in a real-

istic format and prioritizing work in terms of urgency, keeps long-term wellness and productivity in check. Approaching medical school as a marathon and not a sprint allows students to pace themselves, rather than procrastinate and prevent the burnout that comes from chronic overexertion.

An essential component of balancing medical training is developing techniques for resilience, such as flexible coping strategies. By acknowledging and working through each stage of the medical student continuum of stress, students can implement real, evidence-based techniques for both enhancing well-being and academic success, enabling them to flourish in medical school.

CURRICULUM REFORM TO END THE CYCLE OF MEDICAL STUDENT STRESS

While medical schools play a critical role in addressing stress—through wellness programs, academic counseling, and peer-support initiatives—proactive curriculum modifications can help prevent the cycle before it begins. One of the most critical strategies is reducing content overload by consolidating clinically relevant content and incorporating competency-based learning rather than rigid memorization-based curricula. Merging coursework to focus on foundational principles rather than exhaustive detail allows students to focus on long-term knowledge retention rather than short-term cramming.

Furthermore, providing flexible due dates for exams and assignments can reduce unnecessary stress. Providing staggered due dates for significant tests and projects guarantees that students are not disproportionately loaded with excessive work within short time frames. Schools can also integrate low-stakes formative assessments, like pass/fail exams or interactive case studies, to promote learning without inducing excessive stress.

Curriculum redesign to include inherent wellness programs—such as mandatory self-care training, breaks, and formal reflection periods—foster a healthier educational environment. Encouraging medical students to develop sustainable study habits through the provision of faculty-led workshops on stress management and time management can allow them to maintain balance throughout their training. Ensuring that mental care is accessible encourages students to seek care when in need, and reduces mental care-related stigma. Medical schools can make such care accessible in terms of therapy, counseling sessions, and

groups targeted for medical students' specific issues.

Another possible reform is personalized learning pathways that enable students to learn at their own pace, supporting various learning styles and eliminating the pressure of keeping up with inflexible schedules. Institutions that implement such reforms foster an academic environment that is concerned about student well-being and long-term success in the future and therefore more resilient and capable future physicians.

CONCLUSION AND CALL TO ACTION

The medical student stress cycle can be broken through greater awareness, deliberate planning, and strong institutional support. Recognizing how it progresses— from initial overwhelm and unrealistic goals to cramming and eventual burnout— provides a framework for effective solutions. Schools must provide wellness programs, mentorship, and mental health resources, while students adopt balanced study habits and self-care.²⁵ Prioritizing well-being ensures future physicians are not only skilled but also compassionate, benefiting both their careers and patient care.

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Conflicts of Interest Disclosure

There are no conflicts of interest to declare