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Mental health trends among medical students

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ABSTRACT

Student mental health concerns can manifest in several forms. Medical students juggling a multitude of trials (i.e., intense academic rigor, financial debt, sleep deprivation, lack of control, continual exposure to sickness and death, and training mistreatment) can help explain the higher prevalence of psychological disorders within this population. Furthermore, these mental health difficulties are not static; certain challenges move into the forefront as students face key transition points in schooling. Primary examples include the entry year of medical school, the shift from preclinical curriculum to clinical training, and the final moments prior to beginning residency. Given the existing mental health trends among medical students at baseline, it can be concluded that the COVID-19 pandemic has exacerbated the stress, anxiety, and depression associated with medical education. Solutions do indeed exist to address the moral injury medical students face, from expanded crisis management training and implementation of peer support networks to destigmatization of and improved access to professional mental health resources. It is up to the curators of the medical education system to make these solutions the new status quo.

KEYWORDS Anxiety; COVID-19; depression; medical students; mental health; moral injury; resilience training

At the time of writing this, the world is shaken with the loss of Dr. Jing Mai, a first-year resident physician who battled with depression, anxiety, and feelings of inadequacy, ultimately leading to her suicide in early September 2022. Unfortunately, the United States has a high rate of physician suicide, with 400 physicians taking their own lives each year.[1] Losing yet another bright mind has medical and nonmedical circles alike calling for change in medical training to combat barriers to mental health and wellness, starting at the level of the medical student.

Student mental health concerns can manifest in several forms. Generally, medical students carry an increased burden of depression, anxiety, and mental stress compared to nonmedical peers of the same age.[2] Stress levels between peers can differ due to variable factors such as debt burden, with studies showing a correlation between financial stress and poor academic performance.[3] On a global scale, prevalence rates of depression and anxiety among medical students are estimated to be 27% and 34%, respectively.[4,5] Data collected across several countries shows that suicidal ideation rates among medical students is an alarming 11%.[4] Medical culture breeds high-achieving and uncompromising personality types, both of which are unforgiving of mistakes and struggles, exacerbate impostor syndrome, and lead to a desire for perfectionism in trainees. It is associated with the previously mentioned mental health burdens, as well as components of burnout such as cynicism and emotional exhaustion.[6,7] The multitude of trials (i.e., intense academic rigor, financial debt, sleep deprivation, lack of control, continual exposure to sickness and death, and training mistreatment) has the potential to explain the higher prevalence of psychological disorders within the medical student population compared to age-matched peers outside of the field.[8]

These mental health difficulties are not static; certain challenges move into the forefront as students face key transition points in schooling. Primary examples include the entry year of medical school, the shift from preclinical curriculum to clinical training, and the final moments prior to beginning residency. One study indicated that students at the end of their first year of school suffer the most deterioration of mental health, most likely related to worries of staying afloat in a competency-based

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curriculum. In contrast, students in their clinical years were most likely to be plagued with increased anxiety, irritability, and emotional distress from lack of control.[2]

Given the existing mental health trends among medical students at baseline, it can be concluded that the COVID-19 pandemic has exacerbated the stress, anxiety, and depression associated with medical education. In a survey of 16 allopathic medical schools in Washington and New York during the early months of the pandemic, 70% of students reported a decline in their mental health compared to their prepandemic state. More than half of these students demonstrated depressive and/or anxiety symptoms (61% and 58%, respectively).[9] A cross-sectional study conducted at the Jundiaí Medical School in Brazil revealed an especially high burnout rate among its first-year students matriculating during the COVID-19 pandemic because of a lack of resilience training and an absence of social support networks.[10] The COVID-19 pandemic has also influenced the experiences of students further along in their training, i.e., in their clinical rotations.[11]

The term *moral injury* has been used to better understand the psychological distress caused among medical students who did their clinical rotations at the peak of the COVID-19 pandemic.[12] To appreciate its modern application to medical students, the origins of the term *moral injury* need to be first examined. This term was coined to describe the psychological burdens experienced by military veterans secondary to witnessing human violence, raw carnage, and being at war with oneself for feeling incapable of preventing such blatant injustices.[13] After Jameton initially applied the term moral injury to the healthcare field, it has since been used to explain the psychological sequelae of witnessing traumatic events as practitioners.[13,14] A pilot study conducted at the Barts and London School of Medicine and Dentistry previously established that medical students experience moral injury, which is further complicated by feelings of shame and guilt, resulting in students hesitating to seek help from their senior residents and faculty.[12] O'Byrne et al discussed the concept of inherent altruism, which is the propensity of medical students to volunteer themselves in the face of a crisis, fueled by the notion that as future healthcare workers they have the moral obligation to do so.[11] The combination of their inherent altruism and their lack of preparation for a pandemic has left medical students with unique moral injuries in the absence of strategies to manage the resulting psychological sequelae.[11] It is for this reason that O'Byrne et al emphasized the necessity of resilience training, which provides students the tools to enable them to face and better handle the psychological stressors guaranteed to come their way. Until such measures have been put in place, it is, without a doubt, illogical to expect this and more from medical students.[11]

Even though medical students are at a disproportionate risk of mental health conditions and suicidal ideation, they receive minimal training in terms of how to access support or mental health resources.[15] This is further complicated by the fact that medical students are unlikely to seek help for mental and/or emotional distress due to a variety of factors, including the perceived "invincible" role of the physician, concerns regarding being seen as unfit to practice, and fears of compromised career progression.[15] Despite the hesitancy within this population to utilize mental health resources, those who do pursue treatment have been shown to benefit in their long-term practice and well-being. In a 2020 study by the University of Cambridge evaluating 89 students referred to the Clinical Student Mental Health Service from 2015 to 2019, levels of distress, depression, anxiety, and suicide risk were all significantly reduced, while participant functioning was significantly improved.[16] However, when observing previous trends of medical student mental health interventions through direct office visits, there exists the limitations of (a) knowing that the landscape of intervention options has been affected by the COVID-19 pandemic and (b) knowing that such studies cannot capture the outcomes of students who do not pursue traditional, individualized in-person treatment due to fears of cost or career stigma.

Fortunately, students have benefited from alternatives to direct office visits as well. Telehealth, which increased in popularity during the COVID-19 pandemic, may benefit this population in particular by eliminating the travel time, travel costs, and publicity of a physical office visit.[17] Another more informal mental health intervention is the use of peer support groups. Not only can integrating peer support methodologies in the healthcare field improve the mental health of individuals, but because careers in healthcare are typically team based, it may also help improve the mental health of care teams. In a 2020 study, medical students collaborated with peer support experts from the Canadian Mental Health Association to create and deliver a peer support workshop to 27 medical students, focusing on the recognition of struggling peers and how to cooperatively implement a plan of action addressing the issues of those struggling. Students reported significantly improved proficiency in the learning objectives after the workshop, and many reported continued proficiency at 6-month follow-up.[18] However, perhaps the most notable takeaway from evaluations of telehealth and peer support mental health interventions is the expressed interest of students in these alternatives to traditional in-office visits.[17,18] Despite hesitancy in seeking individualized in-person mental health care, medical student interest in learning peer support strategies may provide one avenue of reducing mental health stigma, building peer-to-peer bonds, and alleviating the need for individual interventions by strengthening community and self-awareness. Telehealth, then, may bridge the gap in providing personalized care to those whose needs cannot be met by peer support alone but who would otherwise avoid professional assistance.

Additional tools that can be added to medical curriculum are resilience, metacognition, and mindfulness training.[11,19] The ultimate aim of resilience, metacognition, and mindfulness training is to learn how to mentally and emotionally cope with a crisis.[11] It should be highlighted that the purpose is not to decrease the number of maladaptive cognitive distortions or thoughts a student experiences but to learn how

to manage them.[19] Currently, mental health among medical students is addressed in a curative fashion, where only students who have symptoms of depression or diagnoses of depression or anxiety are treated.[19] If this model were to be optimized into one that was primarily preventative (i.e., equipping all medical students with these trainings regardless of whether or not they experience cognitive distortions), medical institutions would not only be preparing their students for the vigorous medical training ahead of them but also be giving them the capacity to successfully transition from being a medical student into a physician.[19]

However, adding these practices to the medical student toolbox is not sufficient. In a 2020 cross-sectional survey in the US of 5445 physicians (from all specialties) and 5198 nonphysician workers, utilization of the Connor-Davidson Resilience Scale indicated that physicians demonstrated greater resilience scores than the general working population.[20] Additionally, a high resilience score was inversely correlated with the score on the Maslach Burnout Inventory, such that a higher degree of resilience appears to be protective against burnout to some degree.[20] Despite the benefit of high resilience, burnout symptoms were common even among those physicians with high resilience scores, indicating that the internal emotional coping capabilities of an individual can only go so far.[20] We thus take this as evidence of a need for not only individual-focused tools such as resilience and mindfulness, but organizational and systemwide solutions as well. These solutions can include balancing workloads and improving workflow efficiency to limit overwork-related stressors, alongside building moral injury prevention into the daily structure of medical education and healthcare careers.

While the archetype of the "wounded healer" (formulated by Carl Jung, conveying that a physician's suffering allows a physician to be empathetic with his or her patients and therefore enables healing) is a powerful one, it should not be an excuse to enable complacency on behalf of medical schools, in the face of the suffering of their own students.[1,18] Jing Mai, Daksha Emson, Kevin Dietl, Kaitlyn Elkins—how many more names, how many more lives must be lost to justify reform and prioritize medical students' well-being? Solutions do indeed exist to address the moral injury medical students face, from expanded crisis management training and implementation of peer support networks to destigmatization of and improved access to professional mental health resources. It is up to the curators of the medical education system to make these solutions the new status quo.

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