SILKENRAY | PHOTO

The Emotional Plight of the Medical Student

An introduction to mental health struggles and to the necessity of system-wide changes.

BY LUCAS MORGAN AND NICHOLAS HEITKAMP

Studies reveal a high prevalence of mental health struggles amongst medical students; levels of anxiety, depression, and general distress are significantly greater in U.S. and Canadian medical students compared to those of the general population and age-matched peers by the later years of training.[1] In a larger context, the global pooled prevalence of clinically-significant anxiety for medical students is 33.8%.[2] Global depression and/or depressive symptom prevalence is at 27.2%, with suicidal ideation present in 11.1% of all med students.[3] While our conversation will revolve around U.S. students, it is important to realize that the issue is universal.

A question comes to mind: are the students entering medical school already suffering in their mental health? Brazeau and her colleagues would suggest not – that compared to matched college graduates, matriculating medical students in the U.S. have higher scores on quality of life measures, as well as fewer symptoms of depression.[4]

Thus it would appear that there is a correlation between medical school and distress, with few solutions to confront the issue.

Many medical schools have fantastic advertisement for mental health services; they are encouraged to "(i) provide better links between the university and external mental health providers" and to "(ii) increase students' awareness of existing support services within and external to the university".[5] While such encouragement is incredibly valuable, as is supportive resource availability, why do we seek to mitigate the result rather than neutralize the problem? It's like treating headaches – if they are consistent and distressing, we focus on prophylaxis, not just abortive therapy. So, let's focus on the sources of anxiety, depression, and distress in order to provide prophylaxis. There are many things within the medical education program which are integral and may be less conducive to alterations, but we should seek both acknowledgment of the flaws and efforts of change.

A Source of Stress

Yerkes and Dodson, as early as 1908, realized the limiting nature of stress on performance (**Figure 1**).[6,7] There is an obvious decline in productivity at a certain level of anxiety, demonstrated in both mice and the slightly more sophisticated species, humans. Medical schools promote the mental health of students, yet continue to perpetuate the culture of competition and perfection. The high rates of anxiety demonstrate that students are being shoved to the right side of the Yerkes-Dodson bell curve for unnecessary reasons, which are discussed in the following section. It seems that many students are stressed beyond the optimal performance peak, and carry-over effects may influence the efficacy of practice as a resident and physician.

In response to grievances with the system, students hear counters of "I know it's tough - we all have to go through it." The intensity of med school is treated as a rite of passage. But why should emotional lability be a required part of the curriculum? Medicine comes with its own humanitarian emotions, such as dealing with loss and with responsibility, but there are avoidable stressors in the medical school curriculum, including 1) excessively challenging academic measures, 2) subjective evaluations from preceptors, and 3) minimal control over schedules.

Curricular Issues

On Evaluations

Would you rather your doctor have spent time learning how to please their preceptor in the 3rd year of medical school, or have spent time learning the material and interacting with patients to better their future practice? Med students resort to chasing an evaluation and are distracted from key material and clinical skills. Yet it is for good reason – up to 50% of their final grades are dependent on these evaluations, and grades play a role in competitiveness for residency placement.

Furthermore, what merit the evaluations hold is dissolved if some evaluators are tougher than others. They become an arbitrary assessment, based on where the medical school places the student for a rotation and what physician is on duty that month. In addition, not all preceptors are the ideal model whom medical students should be looking to for emulation and guidance, thus what is their authority in evaluating students?

There is much left wanting in the evaluation system.

On Academic Measures

Med students tend to have type A personalities, or are at least high achievers. The standards of medical school exams/assignments often curve toward the student with exceptional performance - not simply the well-prepared, hardworking student who has all the qualifications of a future physician. Therefore, averages are often low on assessments. While this may be intended to motivate the student and to encourage improvement, for most students, it has the opposite effect. There is either emotional distress or annoyance at the seemingly impossible standards. Feelings of inadequacy and/or shock yield an immediate mental barrier, which is not conducive to student learning.

Some grading systems use a scale that includes the gambit of 1st-4th year expectations, with the assumption that students will improve steadily over the course of their schooling and that they will be satisfied to see a score in the range of their year's expectations. However, as high achieving individuals, medical students push themselves to get top scores. While this may not be the intention of the grading system, the conclusion is the same: students are anxious that they are not obtaining the best results.

On a more specific note, one grading issue involves the history and physical documentation. There is such a range in severity of grading, and again, as with evaluations, a student's final grade is dependent on who they happen to have marking their documentation. The scores become arbitrary, especially when there is such grand variation in the characteristics and quality of practicing physicians' notes.
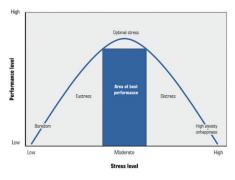
On Autonomous Control

A simple conundrum, though tough to fix, is the lack of control that some schools allow students in deciding their schedules. The first two years are fairly regimented, with little choice for the types of classes and minimal exposure to clinics/hospitals. Students must then zoom through 3rd year rotations (many of which are core/required) and are expected to find a career path, with little time for autonomous exploration. Yes, shadowing is a possibility, but the amount of time for that amidst studying and clinical duties is minimal.

A New Model

A state-wide study in Florida looking at the stressors of medical students found that, in addition to concerns over time management, finances, and health, students were also concerned about medical school administrative failures, lack of assistance with career planning, and assessment-related performance pressure.[8] As Hill and her colleagues expressed so well, "though individually focused interventions have demonstrated some success, medical students self-report stressors that may be better addressed through system-level changes".[8]

St Louis University School of Medicine, in an effort to institute such system-level changes, created a model that included a pass/fail system for pre-clinical courses, reduction of contact hours and unnecessary detail, and longitudinal electives for first and second year students which allowed them to explore their interests in addition to completing required coursework.[9] The school also established learning communities (service and advocacy, research, global health, wellness, and medical education) with a combination of passionate faculty and students that investigated opportunities for education and outreach, allowing for more autonomous expedition of the medical world.[9]

In further rounds of change, the school 1) implemented a resilience and mindfulness program (just 6 hours over the semester) to address cognitive distortions, cultivate mindfulness, and diminish stress, and 2) reduced the amount of performance information given to students, by only showing the median score and 75th percentile of each exam. Lastly, the med school dean instructed anatomy professors to create a test with a higher mean score so that students would

Figure 1. Depiction of Yerkes-Dodson law.

feel less at risk of failing.[9]

Data analysis revealed improvement in depression and anxiety levels of medical students with the new curriculum compared to the old, but was limited in its applicability due to a lack of comparison groups and longitudinal measures.[9] That being said, these alterations appear to be the promising start to a new and improved medical education system.

Discussion

There are many issues with current medical education; evaluations, grades, and lack of schedule control are amongst the most prevalent. In observing the alterations made by St Louis SoM, we see improvements to the system that may benefit the mental health of medical students. With this in mind, we have considered potential implementations based on the most pressing issues, some of which mimic the St Louis model.

On Evaluations

Preceptor evaluations are necessary to assure that a student is well-rounded and is able to interact empathically with patients - to build rapport and trust. However, the worth of the evaluations makes their quality and honesty all the more important. We suggest a scaled score based on the trends of each preceptor's evaluations; some tend to score students high and some low, so a balance is required. In addition, a more rigorous screening of preceptor caliber must be implemented, based on teaching skills, quality of patient interactions, and willingness to participate in student learning. Schools should not enroll someone as a preceptor simply to have enough preceptors - this is unjust for students' education and their futures.

On Academic Measures

As mentioned, there is often a scale to assess performance which includes a range of expectations for all 4 years of medical school. The simple question is, why do we need a scale such as this? Why not create a separate scale for each year? In other words, assess 3rd years with a scale for 3rd years. We assess whether students are where they need to be for that year, in the grand scheme of progress.

As for tests and quizzes, a simple and effective way to combat mental health challenges for students is to write slightly more straightforward assessments with intention to raise averages. The effect is the same - students are stratified based on knowledge and preparation. Yet the numbers are less powerful in yielding distress. This is not a way to "coddle" students; these are intelligent women and men, and mental health is a pressing issue in their world. If there is resistance to altering assessments, professors should, at the least, consistently reinforce that students are not always expected to be in the 80s, 90s, or 100s - that the tests are intentionally created to push students' learning strategies.

The issue of variability in note assessment is more difficult to solve. Each physician was trained differently and has their own interpretation of what notes should look like. One solution is to have more standardized grading, with fewer physicians assessing the notes and each one given the agreed-upon expectations of what a note should look like. Another solution is to create an elaborate, standardized rubric that mentions all key components. This may involve specifics, such as "includes comment on rhythm and rate of heart in cardiovascular physical exam." With a laid-out rubric, there is less room for preceptor interpretation.

On Autonomous Control

Lack of control yields anxiety. More control over schedules allows time for students to find what they enjoy; there is less rush to "figure everything out." Our suggestion is to offer more clinical time, in areas of the students' choice, during the first 2 years of school. This could be something as simple as reserving 2 hours each week for "career exploration," with administration helping to find community physicians for exposure to specialties. Our second suggestion is to allow more free time for 3rd year electives. For example, instead of having just one month (which may also be available as a vacation), protect 2 months during the year for electives amongst the required clerkships.

We have a few suggestions for the redistribution of time during medical school's first two years to allow more clinical exploration. Firstly, for schools that do not already, the anatomy course material should be integrated into systems-based courses (i.e. cardiology, neurology, etc.); the information will be more applicable and memorable in the setting of clinical problem-solving. This alone will free up time for more electives, and will minimize anatomical detail that students will likely not use in their careers. Secondly, much of the time in clinical foundation courses can be streamlined. The curriculum of such courses can allow autonomous exploration and focus on identifying interests in addition to mastering clinical skills.

Conclusion

The journey to become a physician is a difficult one, with long hours of studying, minimal autonomy, and numerous assessments. The end goal is to be a compassionate, well-informed, and hard-working provider; the medical school environment often impedes students from doing so, by chipping away at mental health. Administrations and the education system as a whole must be aware of student struggles and work to implement curricular changes that will shape a more empathetic, healthy, and content student.

References

1. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. Acad Med, 2006 Apr;81(4):354-373. doi:10.1097/00001888-200604000-00009.
2. Quek TT-C, Tam WW-S, Tran BX, Zhang M, Zhang Z, Su-Hui Ho C, Chun-Man Ho R. The global prevalence of anxiety among medical students: meta-analysis. Int J Environ Res Pub Health, 2019 Aug;16(15):2735. doi: 10.3390/ijerph16152735.
3. Rotenstein LS, Ramos MA, Torre M, Segal JB, Peluso MJ, Guille C, Sen S, Mata DA. Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: a systematic review and meta-analysis. JAMA, 2016 Dec;316(21):2214-2236. doi: 10.1001/jama.2016.17324.
4. Brazeau CM, Shanafelt T, Durning SJ, Massie FS, Eacker A, Moutier C, Satele DV, Sloan JA, Dyrbye LN. Distress among matriculating medical students relative to the general population. Acad Med, 2014 Nov;89(11):1520-5. doi: 10.1097/ACM.0000000000000482.
5. Storrie K, Ahern K, Tuckett A. Systematic review: students with mental health problems – a growing problem. Int J Nurs Pract, 2010 Feb;16(1):1-6. doi: 10.1111/j.1440-172X.2009.01813.x.
6. Aguzzoli C, De Santi AM. Stress: how to help patients? CMI, 2018 Jun;12(1):43-48. doi: 10.7175/cmi.v12i1.1359.
7. Diamond DM, Campbell AM, Park CR, Halonen J, Zoladz PR. The temporal dynamics model of emotional memory processing: a synthesis on the neurobiological basis of stress-induced amnesia, flashbulb and traumatic memories, and the Yerkes-Dodson law. Neural Plast, 2007;2007:60803. doi: 10.1155/2007/60803.
8. Hill MR, Goicochea S, Merlo LJ. In their own words: stressors facing medical students in the millennial generation. Med Educ Online, 2018 Dec;23(1):1530558. doi: 10.1080/10872981.2018.1530558.
9. Slavin SJ, Schindler DL, Chibnall JT. Medical student mental health 3.0: improving student wellness through curricular changes. Acad Med, 2014 Apr;89(4):573-577. doi: 10.1097/ACM.0000000000000166.

Lucas Morgan and Nicholas Heitkamp are fourth year medical students. Morgan is an aspiring child neurologist, and Heitkamp is interested in pursuing pediatrics. All opinions are their own.