to develop interventions and strategies within medical education that are tailored to addressing the concerns and values of medical students. Programs should continue to harness the feedback from their student body to ensure their ongoing safety, welfare, and education. Student insight during these unprecedented times can help continue to guide response efforts for present and future public health crises. As the pandemic enters its second wave and conversations about vaccine distribution begin, programs can better address these emerging topics by including medical students in the conversation.

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Purpose: The COVID-19 pandemic has and continues to greatly disrupt medical education in the United States and may negatively impact the well-being of medical students, a population that already experiences high levels of baseline mental distress. 1-3 While research suggests that disaster situations can exacerbate mental distress in health care workers, medical student experiences are not well understood. 4 We conducted a national, cross-sectional survey of U.S. medical students during the COVID-19 pandemic to (1) understand student experiences and concerns and (2) identify priority areas to inform development of student support services.

Methods: From May to June 2020, we electronically surveyed enrolled students at 22 U.S. Liaison Committee on Medical Education-accredited medical schools regarding their pandemic experiences. Likert responses were dichotomized, and t-tests, chi-square tests, 1-way ANOVA, and unadjusted odds ratios were used to compare results across subgroups. Analyses were conducted using R (v.3.6.1). The R Foundation, Vienna, Austria.

Results: Of 12,389 students, 3,826 responded (31%). The most common pandemic experiences were limited access to physical activity and outdoor spaces (68%), tension between personal safety and professional duty (38%), and financial strain (30%). Black and Hispanic students were 2.3 times as likely to experience financial strain compared to other racial groups (P < .0001).

Students’ top 3 concerns were a loved one getting sick (70%) and COVID-19 impacts on society (44%) and their clinical training (35%). Only 17% reported personal health as a top concern. Most (54%) felt stronger in their resolve to be a physician, and only 14% were now more likely to choose a frontline specialty.

Over half (54%) were satisfied with access to school support, but Black and other racial minority students reported lower satisfaction (P = .004). While most were satisfied with mental (51%) and student health (43%) access, those living in the same state as their school during the pandemic were more satisfied than those living out of state (53% vs 46%, P = .001 and 44% vs 36%, P = .0001, respectively). Additionally, Black and Asian students reported lower satisfaction with mental (P < .0001) and student health (P = .0005) access than other racial groups. Nearly half (47%) were satisfied with academic advising, with no differences by race or in-state status.

Notably, 17% reported a family member being diagnosed with COVID-19, 4% were diagnosed with COVID-19 themselves, and 4% experienced a COVID-19-related death of a loved one. Black and Hispanic students were 1.8 times as likely to report these personal experiences with COVID-19 compared to other racial groups (P < .0001). Students reported an increase in self-care (41%), negative coping mechanisms (41%), and caregiver stress (24%). There were no significant differences across sex, race, or marital status.

Discussion: This is the first national study to describe U.S. medical student experiences during a global pandemic or national emergency. Students were more concerned about their loved ones’ health and the societal impact of COVID-19 than their own personal health. Additionally, the pandemic reaffirmed most students’ decision to pursue medicine. Interestingly, while students reported an increase in negative coping mechanisms and caregiver stress, they also reported increased self-care, possibly related to additional time gained from removal from clinical responsibilities. Moving forward, these disparate experiences with financial strain, caregiver stress, COVID-19 illness, and school support resources must inform how medical schools develop programming to support all students, with special attention to racial minorities and out-of-state students who may be disproportionately affected.

Significance: The COVID-19 pandemic continues to bring out unprecedented changes to U.S. medical student education and well-being. This study highlighted racial differences in experiences with financial strain and COVID-19 diagnoses that may reflect socioeconomic inequalities exacerbated by the pandemic. Given the ongoing pandemic, medical schools are tasked with adapting resources to support these unique experiences and vulnerable groups.

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Creating Psychological Safety in the Learning Environment: Straightforward Answers to a Longstanding Challenge

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Purpose: Psychological safety refers to the perception that a learning environment is safe for interpersonal risk taking, exposing vulnerability, and contributing perspectives without fear of negative consequences.1,2 The 3 core components of psychological safety are: set expectations, invite participation, and respond productively. The presence of psychological safety has also been tied to wellness,1 retention,2 and inclusiveness.3

The medical education literature suggests that psychological safety frees learners from image management, enables learners to concentrate on the current tasks, and reduces fear of asking questions.4 However, national data demonstrate that many of the fundamental components of psychological safety are lacking in our current learning environments.3

While we have evidence for those behaviors that create psychological safety in traditional work environments, these behaviors have not been well elucidated for clinical undergraduate medical education settings. Therefore, we sought to understand how psychological safety is created, destroyed, and rescued in the clinical learning environment.

Methods: This was a multicenter, cross-sectional qualitative study of fourth-year medical students from 2 institutions using semistructured interviews. In keeping with a theoretical and purposeful sample approach to recruitment, all fourth-year medical students were invited to participate in an 1-hour interview via zoom. Verbatim transcripts of the interviews underwent constant comparison and iterative data reduction and analysis by all 3 authors. Analysis continued beyond thematic sufficiency and counter examples were purposefully explored.

Results: Twenty students participated in 1-hour interviews. Students described key themes related to the creation, destruction, and restoration of psychological safety in the clinical learning environment. They described clear expectations, self-efficacy, team engagement, autonomy, and frequent feedback as important to establishing a psychologically safe learning environment. They reported educator disininterest in students, dismissal of questions, lack of autonomy, and unclear expectations as destructive of a psychologically safe learning environment. Most students were unable to describe a time psychological safety was restored if lost. Early impressions of individual learning environments and establishment as “safe” or “unsafe” were durable and rarely changed. Behaviors such as acknowledging and apologizing for team member misbehavior were among the few that did improve the learning experience once safety was lost.

Discussion: Our findings demonstrate that while it is difficult to repair an atmosphere that is psychologically unsafe, there are several simple actions that can be put into motion early on to ensure the learning environment is safe and remains so. Early and intentional demonstrations of investment in learners and their growth are critically important to build psychological safety. Creating safe and inclusive learning environments for students is a high priority with inherent merit, and it will also likely create progress toward larger goals in academic medicine such as fostering and supporting workforce diversity. Future research should investigate whether faculty development targeted to build specific skills and observable behaviors can improve the learning environment for students and other trainees and whether these changes ultimately impact larger issues of importance such as patient care, workforce diversity, and physician and trainee well-being.

Significance: Building a psychologically safe environment has been shown to be foundational to supporting diversity, inclusion, and well-being of employees across business and general educational fields. If we fail to identify behaviors that promote psychological safety in medical education, we risk these domains for our learners. This study is the first to identify behaviors that promote safety in clinical undergraduate medical education settings specifically and offers themes for future research and interventions to construct psychologically safe clinical teaching environments.

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