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EMPIRICAL REPORT

An Internal Perspective: the Psychological Impact of Mistreatment

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Abstract

Objectives Student mistreatment remains a prominent issue in medical education. Mistreatment has been linked to negative mental health outcomes, including depression, anxiety, and burnout. Continued challenges in this arena include difficulties in identifying mistreatment and underreporting. The objective of this study was to better understand the nuances of individual students' reactions to mistreatment.

Methods Medical students, who had experienced mistreatment, were invited to participate in this study. Individual, semi-structured, peer-to-peer interviews were conducted with 21 students. Interview transcriptions were coded using grounded theory and inductive analysis, and themes were extracted.

Results The interviews generated 34 unique mistreatment incidents. Four major themes arose in students' reactions to mistreatment. (1) Descriptions—the student described the incident as inappropriate, unusual, or unnecessary. (2) Recognition—most students did not immediately recognize the incident as mistreatment. (3) Emotions—the student described negative emotions (negative self-views, anger, powerlessness, shock, discomfort) associated with the mistreatment incident. (4) Coping mechanisms—the student utilized avoidance and rationalization to process their mistreatment.

Conclusions Mistreatment generates complex emotions and coping mechanisms that impair the learning process. These complex emotions and coping mechanisms also make it difficult for trainees to identify mistreatment and to feel safe to report. Increasing understanding of the psychological impact of mistreatment can help peers and educators better screen for mistreatment in trainees and guide them in reporting decisions.

Keywords Student mistreatment · Reactions · Coping mechanisms

The concept of student mistreatment was first proposed by Silver in the 1980s [1]. Mistreatment is defined by the Association of American Medical Colleges (AAMC) as "any behavior, intentional or unintentional, that shows disrespect for the dignity of others and unreasonably interferes with the learning process" [2]. The prevalence of student mistreatment was 46.4% in 1985, and this rate has only modestly improved to 39.6% in 2020 [3, 4]. Mistreatment has been consistently associated with increased depression, anxiety, and burnout [5–8]. Though stress is a natural part of development for physicians, mistreatment can have long-term negative impacts on career choices, sense of clinical mastery, and sense of fulfillment in becoming a physician [7, 9, 10].

Reporting mistreatment continues to be a significant challenge. Numerous studies have investigated the reasons for the high prevalence of mistreatment and lack of reporting [4, 9, 11]. The most common barriers were being unsure if the incident warranted reporting, fear of retaliation, believing nothing would be done about the mistreatment, and believing that mistreatment is part of medical education culture [4, 9, 11]. Other studies argued that student mistreatment is often difficult to define, and that in reality, mistreatment can range from blatant misconduct to subtle unsupportive attitudes that create a negative learning environment [12, 13]. Despite the above work, only 25.9% of graduating U.S. medical students who experienced mistreatment reported it [4].

There is a gap in the literature exploring students' emotional reactions and coping mechanisms in the face of mistreatment. Many studies used psychiatric scales to measure the psychological impact of mistreatment [5, 7, 8, 14]. Though this allows

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for assessment of large sample sizes, it does not capture the details of individual experiences. The few qualitative mistreatment studies utilized focus groups and typically focused on defining mistreatment and barriers to reporting [11, 13]. Students may not feel comfortable openly discussing mistreatment experiences in a group, especially when discussing negative emotions. In addition, some studies used faculty facilitators [13]. Since fear of retaliation has often been cited as a reporting barrier, it is possible that student responses may have been affected by the power differential with the faculty facilitator.

In this study, we examined medical students' emotional reactions and responses to mistreatment. To capture the nuances of each trainee's experience and eliminate the fear of retaliation, we used a qualitative peer-to-peer interview approach. These results can help us better understand the psychological impacts of mistreatment, and perhaps elucidate the underlying reasons for why mistreatment is chronically underreported and difficult to mitigate.

Methods

In this descriptive qualitative study, individual, semi-structured interviews were conducted with medical students to understand their mistreatment experiences. The research protocol was approved by the University of Texas Health Science Center Institutional Review Board.

Participants were recruited to the study via emails sent from class presidents to the first through fourth year classes at McGovern Medical School in 2019. Students were eligible to participate if they were a currently enrolled medical student who experienced mistreatment, as defined by them. The email emphasized that interviews were to be facilitated by student researchers, and no identifying information would be given to faculty or staff. If students responded to the email expressing interest in participating, they were emailed the letter of information and link to sign up for an interview slot.

The interviews were conducted by two student researchers (AC and KM). Before the interview began, participants were asked for their verbal consent. The semi-structured interview format allowed researchers to be guided by a script of questions and ask clarifying questions when necessary. Open-ended questions were asked in order to explore the following: the mistreatment experience, experience with reporting, and the participant's opinion of the reporting process. Interview questions are available on request to the corresponding author. This paper will specifically focus on the results reflecting students' thoughts and emotions surrounding the mistreatment incident. At the end of the interview, participants completed a demographic survey, which asked for their age, gender, and year in training. Ethnicity data was not included in the initial survey but was later collected from participants through an emailed survey link.

All interviews were recorded and uploaded to a secure host. Interviews were then transcribed by student researchers. During the transcription process, all identifying information for the participant, faculty and staff members, specialty, and specific clinical sites was redacted.

Two student researchers (AC and BY) read through transcripts to develop the initial code using grounded theory and inductive analysis. They then individually coded three transcripts exhaustively until no new codes emerged. These codes were compared to further develop the code book and unify language. After developing the code book, the two researchers independently coded all transcripts. Codes were then rectified. Themes were then identified from the codes extracted from the transcripts.

Results

There were 21 interview participants. Thirteen (62%) of the participants identified as women, and eight (38%) identified as men. Ages ranged from 23 to 38 years old, with an average of 26.4 years. One (5%) of the participants was a second year medical student, nine (43%) were third year medical students, and 11 (52%) were fourth year medical students. Ten participants (48%) were Caucasian; six participants (29%) were Asian; three (14%) were Hispanic, Latino, or Spanish origin; one participant (5%) was Black or African American; and one participant (5%) was American Indian or Alaskan native. These 21 interviews generated 34 unique incidents of mistreatment. Mistreatment was perpetrated by faculty members (n = 21, 62%), residents (n = 12, 35%), and one fellow (n = 1, 3%). Incidents occurred in surgical settings (n = 14, 41%), inpatient wards (n = 13, 38%), outpatient settings (n = 6, 18%), and in one non-clinical setting (n = 1, 3%). The most common types of mistreatment were verbal abuse (85.3%), denial of educational opportunities (38.2%), and physical abuse (14.7%) (Table 1). Twelve (35.2%) experiences were formally reported to the administration as mistreatment.

Based on the thematic analysis of the interview transcripts, student reactions were classified into four main categories: (1) description, (2) recognition, (3) emotions, and (4) coping mechanisms. (1) Description—students often described the incident as inappropriate, unusual, or unnecessary. (2) Recognition—most students did not immediately recognize the incident as mistreatment. (3) Emotions—Students associated these incidents with negative emotions, including negative self-views, anger, powerlessness, shock, and discomfort. (4) Coping mechanisms—students often

Table 1 Mistreatment types

Mistreatment type	Definition	Incidence* (percentage)	Example incident**
Verbal abuse		29 (85.3%)	
General	Making derogatory statements directed towards medical students that do not have racial or gender content.	22 (64.7%)	Attending yelled at student telling them they are incompetent.
Racial	Making derogatory statements related to race.	4 (11.8%)	Attending made derogatory comments about student's ability based on ethnic stereotypes.
Gender	Making derogatory statements related to gender.	3 (8.8%)	Attending told female student it was better when women stayed at home.
Denial of educational opportunity	Denying educational opportunities that are considered standard and freely available to other students.	13 (38.2%)	Attending yelled at student to leave the OR in the middle of a case.
Physical abuse	Making uninvited physical contact with a student or intending to physically cause harm.	5 (14.7%)	Attending threw something at student.
Derogatory statements about student behind student's back	Making derogatory statements about a student to others while not in the student's presence.	4 (11.8%)	Attending made derogatory statements about student to other team members when student was not present.
Personal service	Having a student do personal errands for the perpetrator that are unrelated to education or clinical duties.	2 (5.9%)	Attending made student pick up food, in lieu of seeing patients.
Other	Includes negligence, unfair evaluation, and coercion.	3 (10.3%)	Resident gave inaccurate, poor feedback to attending regarding a student, resulting in a disproportionately negative performance evaluation

*One incident of mistreatment may fall under multiple types of mistreatment

**We have only included general descriptions of select incidents in order to maintain anonymity of study participants

utilized coping mechanisms, such as avoidance or rationalization, to deal with mistreatment.

Descriptions

Three major themes arose in the words that students used to describe their experience: inappropriate, unusual, and unnecessary. Students determined an experience as inappropriate when the behavior was unprofessional and violated boundaries. Participant A experienced racial slurs during his rotation. He stated:

> "When the wording came to race, I felt like that was something that definitely crossed the line and that was unacceptable, no matter what work environment it was."

Students described the incident as unusual when the experience differed from previous clinical experiences. Participant Q noticed her attending treated her differently than her male colleagues. Her attending would not make eye contact or interact with her or other female students during teaching sessions and would not ask her to research learning topics. She described these interactions as "weird".

Finally, students described incidents as unnecessary when the experiences were uncalled for and did not contribute any educational value. Participant D described a surgical experience with an attending:

> "Everything I did increasingly escalated with the attending cussing at me, putting me down in front of the anesthesiologist, putting me down in front of the tech . . . Anything I did it was like I was the scum of the earth. . . . it felt personal, but it felt like it was completely unnecessary. And something that kind of came out of nowhere."

Participant I assisted a resident in obtaining equipment; however, this took more time than expected. The resident berated her in front of the patient for being slow. Participant I stated:

> "I just felt it was unnecessary. I mean, you know, noth[-ing]- no harm had been done to the patient and obviously I wasn't trying to do anything wrong."

Recognition

Despite describing the incidents as inappropriate, unusual, or unnecessary, students often did not immediately identify the

incident as mistreatment. While all students in this study ultimately concluded that their experience was mistreatment, only one student labelled their experience as mistreatment in the moment. Participant G, whose attending made them run non-clinical errands, stated:

> "I'm not sure if I would consider this mistreatment, which is why I didn't report them . . . I experienced some things that I think a lot of other students experienced, which are events where you are not sure if it's mistreatment, but you know 100% it is unprofessional."

Emotions

Participants described a range of emotions during and after their mistreatment. The most common emotions described were negative self-views, anger, powerlessness, shock, and discomfort.

The majority of participants experienced negative self-views. Many said their confidence in their clinical performance decreased after the incident. Several felt embarrassed and humiliated in front of their peers and supervisors. Others expressed feeling guilty for reporting or wanting to report the incident. In the middle of a case presentation, an attending stopped Participant C from speaking and told them they did not know how to take a history and did not deserve to be there. Participant C stated:

> "So, I was also down on myself, because I was like maybe I don't know how to take a history and physical. I mean I never thought, 'oh, I don't deserve to be here.' That was too much, but I was sad and disappointed in myself."

Participants expressed that they felt very angry at the mistreatment. When Participant C did not know how to do a particular exam maneuver, an attending yelled and threw an object at them. Participant C stated:

> "But I was angry, because I'm like, you don't just get to scream at me in the middle of the [clinical location] for not knowing how to do something that I've never been taught how to do. Like this is a teaching hospital."

Many students felt powerless. They felt powerless to respond during the mistreatment because the perpetrator was their superior, who influenced their grades and careers. Some, despite voicing their concerns, felt unsupported by the administration and reporting systems. Some students also expressed that they received no support from people who witnessed their mistreatment or from their peers. Students felt they could do nothing to change these behaviors and felt they lacked support at multiple levels. Participant D, who was sworn at by a supervisor, stated:

> ". . . I felt personally targeted. I felt angry. I felt confused. . . . I realize that I am in a hierarchical system and anything I say is going to possibly backfire on me and make things even worse for me. So it kind of made me feel a little powerless in that sense."

An attending threw something at Participant F and told them they were "useless." They went through multiple channels to report this but were told that they needed to continue rotating with this attending physician. Participant F stated:

> "There's a stairwell . . . where I cried every day, and I just [felt] like, so many people on so many different levels told me there's nothing we can do about it. . . I felt really trapped."

Students also felt shock. Students did not understand the reasoning for the perpetrator's behavior, and did not know how to respond. Participant I described how she felt after an attending unexpectedly touched her:

> " . . . and so like in the moment I was just really surprised that he touched me at all."

Several students felt discomfort. They felt alienated from the team after these incidents. In reference to her attending, Participant B stated:

> "And on multiple occasions, he said some pretty derogatory things about Hispanics that made me feel uncomfortable."

While reflecting on derogatory language about women heard during her clerkship, Participant N stated:

> "And then I felt really, really out of place."

Coping Mechanisms

Students' coping mechanisms fell into two main categories: avoidance and rationalization.

Avoidance strategies included avoiding the perpetrator, future educational opportunities, and the mistreatment location. After an attending swore at Participant A, they stated:

> ". . . well I was off put by it, but I didn't really know what to do about it. So, I just kind of left it alone and

tried to actively avoid that attending for the rest of the month."

While discussing an experience of physical abuse, Participant I stated:

"I didn't try after that 'cause I was so shook by that, so I didn't participate for the rest of [didactic sessions]."

Many wanted to put the incident behind them and to stop ruminating over it. Some students chose not to report because they did not want to relive the experience multiple times. Participant C discussed her decision to not report:

"If I explain it in as much detail as possible here, then I'm gonna have to tell it then and then tell it again to the next person who asks me for clarification or whatever. And it's like, I just want to report it and move on, not like a year down the road be like, 'oh yeah this mistreatment you reported' . . . 'and I'm like, oh yeah let's talk about that again.'"

Other students attempted to rationalize the incident, using self-blame, judgments of the perpetrator and his or her intentions, and beliefs about medical education culture.

Many students blamed themselves, attributing the perpetrator's behavior to their own ineptitudes. Students felt they had done something wrong or that their judgment had been clouded during the event. Several expressed they perceived preexisting personality differences between themselves and the perpetrator that ultimately contributed to the incident. Participant E was cursed at and thrown out of the operating room after asking a reasonable clinical question. Participant E blamed himself, saying:

"Sometimes, . . . I made silly mistakes or said things that were probably tactless."

Several students also passed both positive and negative judgments on the perpetrator and his or her intentions. Many attributed mistreatment behaviors to the perpetrator being under stress. They expressed that they did not believe the mistreatment to be intentional and defended the perpetrator's positive character traits. Participant E said:

"I am sympathetic to the mistreatment that goes on. I guess I'm saying that I'm sympathetic to the circumstances under which attendings and residents, or medical students mistreat one another. . . . medicine is a high stress environment, and I don't mean to be critical of people who are better than they are in their worst moments."

Participant Q, who was treated differently than her male counterparts by her attending, stated:

"He's really nice and smart, and I don't think he means to do it. . . I just don't think he realizes that he does it."

Other students were more cynical and attributed character flaws to the perpetrator. They described the perpetrator as "malicious", "sadistic", and "selfish." Several students perceived that the perpetrator was intentionally trying to hurt trainees and had a long standing reputation of doing so. Participant E stated:

"Kind of sadistically sometimes. I really came to believe that [for] some of the attendings. . . part of their job, they enjoyed making the residents miserable."

Reflecting on the attending physician who swore at them, Participant D also stated:

"This guy had a reputation that I was not aware of before I went in and saw him. . . that kind of put everything into light for me about you know, this guy was just a d*** by nature."

Students also discussed their belief that mistreatment was an accepted part of medical education. Many described that they felt their experiences were too minor to be considered mistreatment or were not as severe as those experienced by their classmates. Participant I stated:

". . . because it was my first rotation, I was like, is this normal? Is this just what third year is going to be like, am I being dramatic by saying something?"

Discussion

The mistreatment literature has previously focused on the prevalence of mistreatment, rates of underreporting, and general impacts on mental health, career choices, sense of clinical mastery, and fulfillment in becoming a physician [5–10]. This study delves deeper into the emotional link between mistreatment and these outcomes. By analyzing the psychological impact of mistreatment, we can more clearly see why students are so severely impacted by mistreatment and why it is underreported.

To provide context, we must first discuss the concepts of psychological safety versus shame. Psychological safety is the feeling that one can safely take interpersonal risks, such as making mistakes and sharing concerns [15]. Psychological safety affords trainees a space to be vulnerable and to learn, and it is built on positive relationships and an environment

without judgment of personal character [16, 17]. In contrast, when trainees experience shame, they believe that their mistakes or supervisors' reactions reflect an intrinsic flaw about themselves [18]. Shame impairs trainees' capacity to empathize, to forgive themselves, and to grow [18]. Trainees who feel more shame and lower levels of psychological safety take less risks in the learning environment, exhibit more avoidance behaviors, and ultimately report their own errors less [19]. The concepts of decreased psychological safety and shame are reflected in the results of this study and elucidate why mistreatment impairs learning and is underreported.

For participants in this study, mistreatment made them feel useless, less confident in themselves, and unsuited for medicine. Participants internalized these feelings and coped through avoiding the perpetrator and disengaging from learning opportunities for fear of further abuse. Paralyzed by shame, students did not feel safe to make mistakes or take risks, ultimately impairing the learning process. Several participants also ascribed negative character flaws to the perpetrator in order to cope with the mistreatment. This impairs the supervisor-trainee relationship, a relationship that is fundamental to creating psychological safety.

The challenge remains that in order to tackle student mistreatment, administrators must know about these incidents. However, reporting rates remain low [4]. While many barriers to reporting have been described [11], this study sheds light on how students' emotions can impact reporting. First, students often do not immediately identify the experience as mistreatment. Given that they described these incidents as "unusual, inappropriate, or unnecessary", they perceived that something was wrong but did not know how to label it. Their hesitation to label incidents as mistreatment may be due to complex emotions, including the negative self-views, anger, shock, and discomfort, and the resulting coping mechanism of rationalization. In addition, participants described feeling "hopeless" and "powerless." In many situations, neither peers nor supervisors supported the trainee. This further invalidated the experience and lended credence to the belief that mistreatment is a normal part of medical education. This makes it difficult for students to accurately assess if they have been mistreated, particularly when the perpetrator is their superior—someone who is more powerful and expected to exemplify professionalism. Second, after determining that an incident is mistreatment, students must then make the decision to report or not. Reporting itself requires a level of psychological safety, as participants must describe the incident to someone else, acknowledge they were a victim, and overcome fear of repercussions. While all participants ultimately concluded their experience was mistreatment, only 35.2% of incidents were reported at the time of this study. These compounded emotions and coping mechanisms reflect students' complex thought processes that may ultimately lead them to not report.

The implications of this study for educators and learners are multifold. First, institutions must strive to create psychological safety for their trainees or risk blunting their growth. Second, educators and learners must understand that identifying mistreatment is not always clear cut. Victims of mistreatment experience complex emotions that trigger self-blame and rationalization, impairing their ability to recognize mistreatment. When screening for mistreatment, we can expand our radar to include experiences that students label as "inappropriate" or made them feel unproductive negative emotions. End of course evaluations could ask, "Have you had an experience during this rotation that felt inappropriate?" or "Did you have an experience that made you feel ashamed?" Though these descriptions and emotions do not solely define mistreatment, they can act as red flags for incidents that need to be further explored. In addition, if trainees can develop insight into mistreatment's psychological impacts, they can better assess for mistreatment experienced by themselves and by their peers. Finally, the lack of hierarchy and individual nature of the interviews in this study facilitated participants to discuss mistreatment that was not formally reported. This could imply that a peer reporting option may be helpful in capturing more mistreatment incidents.

There are limitations to this study. This study utilized a convenience sample at a single institution, and the sample size was limited. All the incidents were self-reported. This study did not capture the perspectives of faculty or post-graduate trainees, who may be accused of mistreatment or be the subject of mistreatment themselves. Nearly 50% of the participants were Caucasian, and there was a notable lack of underrepresented racial minority students. This may have impacted the rates of reported racial verbal abuse and also may suggest additional barriers to recognizing and reporting mistreatment in this population.

In conclusion, this study grants us a view into the psychological impact of mistreatment on students and its implications. Mistreatment generates complex emotions and coping mechanisms, which decrease learning and impair trainee's ability to identify and report mistreatment. Though the learning process cannot and should not be devoid of negative emotions and stress, the learner needs to ultimately understand that mistreatment is not their fault and that it is a negative experience that does not contribute to their growth as clinicians. As medical educators and trainees, we need to effectively identify mistreatment and be cognizant in the way we teach and provide feedback to create a psychologically safe learning environment that fosters growth.

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Declarations

Disclosures On behalf of all authors, the corresponding author states that there is no conflict of interest..

References

1. Silver HK. Medical students and medical school. JAMA. 1982;247(3):309–10. https://doi.org/10.1001/jama.1982.03320280029024.
2. Hisashi Y, Haviland MG, Werner LS, Sabharwal RK. Recent trends in the reporting of student mistreatment. Anal Brief. 2006;6(4).
3. Silver HK, Glicken AD. Medical student abuse: incident, severity, and significance. JAMA. 1990;263(4):527–8. https://doi.org/10.1001/jama.1990.03440040066030.
4. Association of American Medical Colleges. Medical school graduation questionnaire: 2020 all schools summary report (Internet). 2020. Available from: https://www.aamc.org/media/43786/download. Accessed 10 Feb 2021.
5. Richman JA, Flaherty JA, Rospenda KM, Christensen ML. Mental health consequences and correlates of reported medical student abuse. JAMA. 1992;267(5):692–4. https://doi.org/10.1001/jama.1992.03480050096032.
6. Haglund MEM, aan het Rot M, Cooper NS, Nestadt PS, Muller D, Southwick SM, et al. Resilience in the third year of medical school: a prospective study of the associations between stressful events occurring during clinical rotations and student well-being. Acad Med. 2009;84(2):258–68. https://doi.org/10.1097/ACM.0b013e31819381b1.
7. Frank E, Carrera JS, Stratton T, Bickel J, Nora LM. Experiences of belittlement and harassment and their correlates among medical students in the United States: longitudinal survey. BMJ. 2006;333:682. https://doi.org/10.1136/bmj.38924.722037.7C.
8. Cook AF, Arora VM, Rasinski KA, Curlin FA, Yoon JD. The prevalence of medical student mistreatment and its association with burnout. Acad Med. 2014;89(5):749–54. https://doi.org/10.1097/ACM.0000000000000204.
9. Kassebaum DG, Cutler ER. On the culture of student abuse in medical school. Acad Med. 1998;73(11):1149–58. https://doi.org/10.1097/00001888-199811000-00011.
10. Haviland MG, Yamagata H, Werner LS, Zhang K, Dial TH, Sonne JL. Student mistreatment in medical school and planning a career in academic medicine. Teach Learn Med. 2011;23(3):231–7. https://doi.org/10.1080/10401334.2011.586914.
11. Chung MP, Thang CK, Vermillion M, Fried JM, Uijtdehaage S. Exploring medical students' barriers to reporting mistreatment during clerkships: a qualitative study. Med Educ Online. 2018;23(1). https://doi.org/10.1080/10872981.2018.1478170.
12. Mazer LM, Merrell SB, Hasty BN, Stave C, Lau JN. Assessment of programs aimed to decrease or prevent mistreatment of medical trainees. JAMA Netw Open. 2018;1(3):e180870. https://doi.org/10.1001/jamanetworkopen.2018.0870.
13. Gan R, Snell L. When the learning environment is suboptimal: exploring medical students' perceptions of mistreatment. Acad Med. 2014;89(4):608–17. https://doi.org/10.1097/ACM.0000000000000172.
14. Heru A, Gagne G, Strong D. Medical student mistreatment results in symptoms of posttraumatic stress. Acad Psychiatry. 2009;33(4):302–6. https://doi.org/10.1176/appi.ap.33.4.302.
15. Edmonson A. Psychological safety and learning behavior in work teams. Adm Sci Q. 1999;44(2):350–83. https://doi.org/10.2307/2666999.
16. Tsuei SH, Lee D, Ho C, Regehr G, Nimmon L. Exploring the construct of psychological safety in medical education. Acad Med. 2019;94(11S Association of American Medical Colleges Learn Serve Lead: Proceedings of the 58th Annual Research in Medical Education Sessions):S28–35. https://doi.org/10.1097/ACM.0000000000002897.
17. Torralba KD, Jose D, Byrne J. Psychological safety, the hidden curriculum, and ambiguity in medicine. Clin Rheumatol. 2020;39(3):667–71. https://doi.org/10.1007/s10067-019-04889-4.
18. Bynum WE, Goodie JL. Shame, guilt, and the medical learner: ignored connections and why we should care. Med Educ. 2014;48(11):1045–54. https://doi.org/10.1111/medu.12521.
19. Bynum WE, Haque TM. Risky business: psychological safety and the risks of learning medicine. J Grad Med Educ. 2016;8(5):780–2. https://doi.org/10.4300/JGME-D-16-00549.1.