Mistreatment and the Learning Environment: A Mixed Methods Approach to Assess Knowledge and Raise Awareness Amongst Residents

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OBJECTIVE: Trainee mistreatment, either intentional or unintentional, negatively affects the learning environment. This study was undertaken to evaluate the impact of an educational intervention about mistreatment and the learning environment on general surgery residents.

DESIGN: Video-based modules were developed and added to the residency curriculum. Modules provided definitions and examples of active and passive mistreatment and components of positive and negative learning environments. A mixed-methods approach was used to assess the impact of this intervention. Residents completed a previously validated pre and post-test of related knowledge and attitudes (Abuse Sensitivity Questionnaire). Wilcoxon Signed Rank test was used to compare test results. During video-review sessions, discussion was prompted amongst residents using a semistructured interview guide. Immersion crystallization method was used to identify dominant themes.

SETTING: Beth Israel Deaconess Medical Center, an academic tertiary care facility located in Boston, Massachusetts.

PARTICIPANTS: All general surgery residents in our institution ($n = 58$) were invited to complete a survey at 3 time points.

RESULTS: Fifty-eight residents (55% male) responded to the survey (100% response rate). Mean age was 30.2 year (SD 3.9). Perception of nicknames related to personal identifiers ($p = 0.0065$) and name-calling ($p = 0.02$) changed significantly postintervention (Table 1). Regarding standards of behavior, 42 (72.4%) residents considered yelling not to be abusive unless it occurred frequently or constantly; 15 (25.8%) residents considered swearing (not directed at a person) as "not abuse"; 6 (10.3%) considered constructive criticism to be abusive if it was frequent or constant; and 24 (41%) residents feel powerless to intervene in these scenarios. Multiple themes emerged regarding resident-student interactions: (1) resident perception that description of behavior as mistreatment depends on medical student sensitivity; (2) neglect of medical students avoids trouble (e.g., being labeled as active mistreatment); (3) failure to integrate students into the surgical team may occur due to perceived lack of student interest; and (4) communication with the medical student is key. Residents reported that discussion along with video review was more effective than video review alone.

CONCLUSIONS: The video-based curriculum on mistreatment and the learning environment created awareness amongst residents about this important topic. Knowledge and attitudes about mistreatment changed in some areas postintervention. These findings suggest a need for development of complementary curricula to

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improve resident awareness and understanding of components of a positive learning environment and definition/examples of mistreatment. (J Surg Ed 76:305−314.

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INTRODUCTION

Although mistreatment has been documented over the last 30 years, little progress has been made to determine an effective way to improve these interactions significantly.[1] According to the last Graduation Questionnaire from the Association of American Medical Colleges, approximately 20% US medical students report mistreatment annually during their training.[1] Mistreatment can have adverse effects on the well-being of students and hinder their education.[2] In addition, it is associated with student burnout and can discourage medical students from pursuing an area of medical interest as well as cause symptoms of posttraumatic stress.[2-7]

During clerkship rotations, attending physicians and residents have been identified as the most common source of mistreatment.[1,3,6,8] Some studies have shown mistreatment to be more prevalent in specialties like surgery,[6] with residents frequently being recognized as the primary source.[3,6,8] Prior work from our group reported that despite all surgical team members perceiving mistreatment as a threat to the learning environment and the individual learning process, it was often difficult to recognize during daily practice.[9] Furthermore, passive mistreatment (student neglect), unclear expectations for medical students, and failure to integrate students into the surgical team also impacted the learning environment.[9] Several programs and policies have been implemented in recent years focused on decreasing the incidence of mistreatment in medical schools.[5,8,10,11] However, few interventions are known to have been implemented within surgery departments.[12-14] Moreover, despite residents being the main perpetrators, previously described interventions have only been directed towards medical students.

To address the paucity of interventions at the resident-level, we created a video-based curriculum to be integrated within the general surgery residency program. This curriculum was built to create awareness of mistreatment and increase recognition of positive and negative aspects of the learning environment from the perspective of a surgical resident. The primary aim of this study was to assess the impact of this video-based educational intervention on general surgery residents' knowledge and sensitivity towards mistreatment.

MATERIAL AND METHODS

Participants

All clinical surgical residents in our institution for the 2016-2017 academic year were eligible for inclusion in this study. Participation in the curriculum itself was mandatory; however, resident participation in the surveys was voluntary. This study was reviewed and deemed as exempt research by the Institutional Review Board at the Beth Israel Deaconess Medical Center.

Educational Intervention

Video-Based Modules

We developed video modules geared toward residents to provide a visual representation of mistreatment and examples of a positive learning environment, including interactions between all key stakeholders in the surgical team. The video material was created de novo based on relevant themes previously identified by our group.[9] The video content includes simulated situations involving medical students relating to unclear expectations, passive mistreatment, active mistreatment, attitudes towards medical students' lack of knowledge, team integration, and various positive learning environment examples. These videos were divided into 3 modules, with each module containing several scenarios. Key learning points, conclusions, and examples of appropriate interactions are shown after each scenario.

Implementation

Residents were divided by postgraduate year into 3 groups: interns, junior residents (PGY 2-3), and senior residents (PGY 4-5). This was done to avoid senior residents influencing the responses of more junior residents, to encourage open discussion and to determine if results varied based on postgraduate year. The video-based modules were shown during orientation week to interns and during educational sessions through the early part of the academic year to junior and senior residents. A minimum of 4 residents was required for an educational session to take place. The academic sessions were coordinated with residents within each group for the reasons previously described. For the video presentations, residents were scheduled for a 2-hour session. Prior to starting the session, all participating residents were given a survey to determine their baseline knowledge about mistreatment

and the learning environment. After the questionnaire, the residents were shown the video modules. During the session, the videos were paused after every scenario and discussion was prompted among residents. Members of the research team were in charge of guiding the discussion. Using a semistructured discussion guide, the residents were encouraged to discuss their thoughts on the scenario, how they experienced similar situations, what they did to resolve them, and the barriers they encountered. All discussions during the sessions were audio recorded, transcribed, and deidentified. Residents were contacted 1 month and 6 months after the session to invite them to complete the survey again.

Survey

Our primary outcome was to measure the change in resident awareness of mistreatment (amongst different members of the surgical team) after a video-based educational intervention. We used a previously validated survey related to knowledge and attitudes towards mistreatment (Abuse Sensitivity Questionnaire).[10] The survey included different scenarios representing everyday exchanges and learning situations in teaching hospitals between medical students, residents, and attending physicians. Participants were asked to determine if these behaviors were appropriate using a 5-point Likert scale. The second part of the survey included realistic standards of behavior (yelling, swearing, constructive criticism, and name calling). Residents were asked to rate these using a 5-point Likert scale of acceptability towards the behavior either constituting abuse or not. Demographic data were also collected. The survey was completed at 3 time-points to assess the change over an academic year. The residents completed the survey (1) before participating in the video-based curriculum, (2) 1 month after participating in the video-based curriculum, and (3) 6 months after participating in the video-based curriculum. The survey at the three time-points was voluntary for all residents.

Data Analysis

A mixed-methods approach was used to assess the impact of this intervention. Likert scale responses and other categorical variables were presented as whole numbers and percentages. Continuous variables were presented as means and standard deviation (SD). Wilcoxon Signed Rank test was used to compare test results at the 3-time points (pretest, post-test at 1 month and at 6 months). The change was measured comparing pretest versus post-test results after 1 month and comparing pretest versus post-test results at 6 months. Data were analyzed using STATA version 14.0 (Statacorp, College Station, Texas). To enrich the quantitative findings, we qualitatively analyzed the data collected from the discussions using the immersion/crystallization method. Two researchers (MAC and AAW) individually read and coded the transcripts from the discussions in the sessions. The researchers then met multiple times to discuss their independent analyses, build a final codebook and together identify emerging themes and, finally, develop their interpretation of the data. Thematic saturation was reached when no new themes emerged. After themes were identified, transcripts were reviewed to select quotes that would illustrate each theme. Atlas.ti 8 (Scientific Software Development, GmbH, Berlin) software facilitated the organization of the data.

RESULTS

Participant Demographics

During the 2016-2017 academic year, a total of 58 clinical surgical residents (both preliminary and categorical) participated and completed the video-based curriculum. All residents responded to the survey (100% response rate) before and 1 month after the intervention. Forty-three (74%) residents completed the survey 6 months after the intervention. Of the remaining 15 residents, 8 were preliminary residents that proceeded to their advanced positions, 6 residents went to their dedicated research time, and 1 resident switched to another specialty. For all the participants, the mean age was 30.2 years (SD 3.9) and 26 (44.8%) were female. The group was comprised of 17 (29.3%) interns, 23 (39.6%) junior residents, and 18 (31.1%) senior residents. There were no significant differences in demographics between the total population and those lost to follow-up.

Survey Results

Throughout the 4 scenarios that could be categorized as abusive, there was no significant change in the responses after the implementation of the curriculum ($p > 0.05$) (Table 1). Due to our small sample size, we collapsed the 5-point Likert scale responses into 3 categories.

In scenario 1 (being called incompetent), at baseline, 60% of residents considered this situation to be inappropriate and abusive, and at 6 months after implementation (post-test), 74% considered the scenario abusive or inappropriate; however, this increase was not significant ($p = 0.09$). Half of the residents considered scenario 2 (sent to complete scut work) to be appropriate without any changes after the intervention. In scenario 3 (perceived favoritism associated with getting more cases), even though there was a statistically significant change after 1 month of the implementation (24% considered it abusive baseline vs 43%, $p = 0.0065$), this did not remain significant after 6 months ($p = 0.40$). Almost 90% of residents considered scenario 4 (nicknames based on race,

TABLE 1. Comparison of Pre- and Post-Tests of General Surgery Residents (*N* = 58 for Post-Test at 1 Month and *N* = 43 for Post-Test at 6 Months)

Response	Pretest, *n* (%)	Post-Test – 1 month, *n* (%)	p* value	Post-Test – 6 Months, *n* (%)	p** Value
SCENARIO 1: **The attending asks you for your differential on a patient. You inadvertently start talking about the wrong patient. The attending calmly and seriously tells you that you are incompetent.**					
What do you think about the behavior?					
Appropriate	5 (8.6)	4 (6.9)	0.13	2 (7.0)	0.09
Inappropriate, but not abusive	18 (31.1)	15 (25.9)		8 (18.6)	
Inappropriate and Abusive	35 (60.3)	39 (67.2)		32 (74.4)	
What would you be most likely to do about it?					
Ignore it	46 (79.3)	42 (72.4)	0.25	31 (72.1)	0.16
Discuss it with the attending who called you incompetent	11 (19.0)	9 (15.5)		8 (18.6)	
Report the behavior to the attending's boss or to another person in authority	1 (1.7)	7 (12.1)		4 (9.3)	
SCENARIO 2: **You are rushing to get to noon conference on time when your senior pages you to handle a discharge for him. This has happened 3 times in the last 2 weeks.**					
What do you think about the behavior?					
Appropriate	31 (53.5)	21 (36.2)	0.05	18 (41.9)	0.15
Inappropriate, but not abusive	15 (25.8)	23 (39.7)		11 (25.6)	
Inappropriate and Abusive	12 (20.7)	14 (24.1)		14 (32.5)	
What would you be most likely to do about it?					
Ignore it	43 (56.9)	27 (46.6)	0.08	24 (55.8)	0.72
Discuss it with the senior who keeps asking you to do discharges	24 (41.4)	28 (48.3)		15 (34.9)	
Report the behavior to the senior's attending or to another person in authority	1 (1.7)	3 (5.1)		4 (9.3)	
SCENARIO 3: **You have noticed that your Attending seems to be preferentially giving another resident more opportunities to perform procedures than she is giving you. It is almost as if she doesn't trust or like you.**					
What do you think about the behavior?					
Appropriate	8 (13.8)	9 (15.5)	**0.0065**	5 (11.6)	0.40
Inappropriate, but not abusive	36 (62.1)	24 (41.4)		23 (53.5)	
Inappropriate and Abusive	14 (24.1)	25 (43.1)		15 (34.9)	
What would you be most likely to do about it?					
Ignore it	15 (25.9)	15 (25.9)	0.20	13 (30.2)	0.85
Discuss it with that attending who is assigning the procedures to others	39 (67.2)	33 (56.9)		24 (55.8)	
Report the behavior to the attending's boss or to another person in authority	4 (6.9)	10 (17.2)		6 (14.0)	
SCENARIO 4: **Your attending has nicknames for each resident based on race, gender or sexuality.**					

(continued on next page)

TABLE 1 (*CONTINUED*)

SCENARIO 4: **Your attending has nicknames for each resident based on race, gender or sexuality.**					
What do you think about the behavior?					
Appropriate	0	1 (1.7)	0.11	1 (2.3)	1.0
Inappropriate, but not abusive	7 (12.1)	8 (13.8)		5 (11.6)	
Inappropriate and Abusive	51 (87.9)	49 (84.5)		37 (86.1)	
What would you be most likely to do about it?					
Ignore it	8 (13.8)	5 (8.6)	0.87	5 (11.6)	0.55
Discuss it with that attending who uses the nicknames	4 (6.9)	3 (5.2)		0	
Report the behavior to the attending's boss or to another person in authority	46 (79.3)	50 (86.2)		38 (88.4)	

* p value of the comparison between pretest and 1-month post-test.
** p value of the comparison between pretest and 6-month post-test.

gender or sexuality) to be abusive and this was consistent after the intervention.

Residents were also asked to determine how powerful or powerless they felt in situations such as the previously described scenarios (Table 2). Sixty-five percent of interns, 35% of junior residents and 28% of senior residents felt they would be powerless to act when facing similar situations. Only 15% of senior residents felt powerful to intervene in these scenarios.

Regarding standards of behavior, multiple episodes of yelling were required for residents to consider it abusive. There was no significant change at 1 month after the intervention. However, after 6 months, more residents (79%) tolerated episodes of yelling before categorizing it as abuse ($p = 0.0011$). Similarly, constant episodes of swearing were required to be considered abusive, with a trend towards more residents tolerating this behavior at 6 months after the intervention. The majority of residents did not consider constructive criticism abusive and this remained consistent over time. Before the intervention, 76% of residents considered name-calling constituted abuse. Interestingly, the tolerance to this behavior significantly increased at 1 month and 6 months after the intervention ($p = 0.02$; Table 3).

Open Discussions During Sessions

All residents participated in the open discussions during the sessions. Thematic saturation was reached. Multiple themes emerged regarding resident-student interactions and illustrative quotations can be found in Table 4.

Resident perception that description of behavior as mistreatment depends on medical student sensitivity: Some residents stated that even though certain actions or comments are categorically considered mistreatment, there are some behaviors that fall in a gray area where the sensitivity of the medical student will play a role in determining if it is mistreatment. A few residents remarked their caution when interacting with medical students due to this perceived gray area in the definition of mistreatment.

Neglect of medical students avoids trouble: Residents reported that sometimes it is better to ignore the medical student and avoid any interaction due to this fear of being pointed out as a perpetrator of mistreatment. For example, they stated that even though they consider scut work to be educational, they may not assign it to the medical students because of possible repercussions (being accused of mistreating the student).

Failure to integrate students into the surgical team may occur due to perceived lack of student interest or presence: The majority of residents reported that when they perceived the student to lack interest in the rotation, it was very difficult to integrate them into the team.

TABLE 2. Residents' Perception of Having Power to Intervene

At This Point in Time in Your Career, How Powerful or Powerless Do You Feel in Situations Such as the Scenarios Described Above? Response	Interns	Junior Residents	Senior Residents
Very powerless	3 (17.6)	1 (4.4)	2 (11.1)
Powerless	8 (47.1)	7 (30.4)	3 (16.7)
In the middle	6 (35.3)	15 (65.2)	10 (55.5)
Powerful/very powerful	0	0	3 (16.7)

Residents remarked that it was even more difficult with students who had a different specialty of choice other than surgery and who appeared disengaged. Moreover, residents complained that due to the structure of the current curriculum (assigned time away from the surgical team for longitudinal clinic or other didactics), it was difficult to predict the presence of the medical students in the service, which impaired the ability to give them tasks or to assign them the care of selected patients.

Adequate communication with the medical student is key: Some residents stated that better communication with the medical students should improve the learning environment. For example, it might help to tell the medical students that the operation is anticipated to be difficult, and there may be times when they are not included and ought not ask questions, but that the team can address questions afterward. Furthermore, residents reported that setting expectations with the medical student would make the rotation a more positive experience.

DISCUSSION

This study assessed the impact of a video-based resident curriculum focused on creating awareness of mistreatment and improving the learning environment in the student surgical rotations. Overall, the survey results showed no lasting impact of our intervention on resident perception of what constitutes abuse or mistreatment, with the exception of one scenario where an attending seemed to preferentially give another resident more opportunities for more procedures. Even this difference did not remain significant at 6 months. Furthermore, there was a tendency for clearly abusive standards of behavior to be more tolerated and be classified as less abusive at 1 month and 6 months after the intervention. However, our qualitative analysis indicated that residents felt more aware of mistreatment as an issue and that discussing the modules as part of the curriculum helped them internalize the concepts. The finding that the majority of residents felt powerless to intervene in situations described as abusive and that surgical residents failed to identify as abusive scenarios intended to represent abuse, provides insight into this complex problem. Additionally, these findings may help guide next steps to increase the impact of curricula like this one on learning environments beyond simply increasing awareness of the problem.

Despite multiple efforts to decrease mistreatment towards medical students, it is still a prevalent issue, especially in surgical rotations.[8,10,15] Efforts including multilevel approaches and targeting key participants (students, residents, attendings, and nurses) have failed to solve this problem.[8,10,11,16-20] Angoff et al. ran workshops with medical and nursing students centered on analyzing power dynamics within the medical system and the impact of power abuse.[15] Smith-Coggins et al. implemented a comprehensive medical student mistreatment prevention program at their institution, which included "Power Hour" sessions for students to discuss pitfalls in the learning environment and residents attending "Resident as teacher sessions".[21] A few studies included short sessions tailored to resident physicians. For example, Fried et al. included a 30-minute training session focused on professionalism in the workplace during resident orientation.[8] Moreover, Dorsey et al. specifically targeted attendings through successful direct feedback by the dean of the school of medicine to the faculty that were reported as unprofessional. However, these policies and programs were very general and not particularly targeted to resident physicians, and most of these interventions were focused on empowering medical students.

Resident physicians have been pointed out as the main perpetrators of mistreatment towards medical students. Moreover, prior studies have shown that resident misbehavior manifests early and it is very likely to recur. Resnick et al. found that the mean PGY level of first complaint was 2.2 years.[22] Leisy and Ahmad even found that the main perpetrators of resident mistreatment were fellow resident physicians of higher hierarchical power.[23] This strongly suggests that residents are one key population to start addressing this important issue. However, residents may need not just further education or intervention regarding mistreatment, but also to be empowered to speak up

TABLE 3. Standards of Behavior as Perceived by General Surgery Residents. ($N = 58$ for Post-Test at 1 Month and $N = 43$ for Post-Test at 6 Months)

Response	**Pretest, *n* (%)**	**Post-Test - 1 Month, *n* (%)**	**p* Value**	**Post-Test – 6 Months, *n* (%)**	**p** Value**
At what point would yelling (loud voice, directed at you) constitute abuse in your view?					
One or 2 episodes	21 (36.2)	15 (25.9)	0.18	8 (18.6)	**0.0011**
Frequent/constant episodes	36 (62.1)	42 (72.4)		34 (79.1)	
It is never abusive	1 (1.7)	1 (1.7)		1 (2.3)	
At what point would swearing (profanity, not directed at a person) constitute abuse in your view?					
One or 2 episodes	11 (19.0)	10 (17.3)	0.70	5 (11.6)	0.94
Frequent/constant episodes	33 (56.9)	33 (56.9)		31 (72.1)	
It is never abusive	14 (24.1)	15 (25.8)		7 (16.3)	
At what point would constructive criticism constitute abuse in your view?					
One or 2 episodes	0	0	0.50	0	0.97
Frequent/constant episodes	5 (8.6)	7 (12.1)		5 (11.6)	
It is never abusive	53 (91.4)	51 (87.9)		38 (88.4)	
At what point would name calling ("You are an idiot.") constitute abuse in your view?					
One episode	44 (75.9)	40 (69.0)	**0.02**	25 (58.2)	**0.02**
One or 2 episodes	14 (24.1)	18 (31.0)		18 (41.8)	
Frequent/constant episodes	0	0		0	

*p value of the comparison between pre-test and 1-month post-test.

**p value of the comparison between pre-test and 6-month post-test.

TABLE 4. Illustrative Quotes of Themes Identified

Themes	Illustrative Quotations
Resident perception that description of behavior as mistreatment depends on medical student sensitivity	"Whenever I interact with a medical student, I am always afraid the student is going to complain if I ask too many questions or else . . ." – PGY 2 "I can see as a resident how I can be scary and my comments can be interpreted as mistreatment. . ." – PGY 5
Neglect of medical students avoids trouble	"Feeling part of the team is important. . .it is the scut work that helps, but since it can be considered as mistreatment. . . we try to avoid it" – PGY 2 "A big problem is that students are not 'supposed' to do scut work which I consider to be educational, but you are afraid to let them do it because of the repercussions" – PGY 1
Failure to integrate students into the surgical team may occur due to perceived lack of student interest or presence	"When I try to teach practical skills, some students tell me it is not why they are here" – PGY 5 "We don't know when students are on or off in the rotations and that makes it hard to give education work to them" – PGY 4
Adequate communication with the medical student is key	"It is the reaction to the correct or wrong answer. There is a difference between 'No, you try again' and a bad reaction" – PGY 2 "I think a lot comes back to expectations, I don't think it takes a lot to talk to the student and set them up from the beginning. It changes the rotation completely" – PGY 3 "I try to warn the medical student when I am about to box the out and I tell them 'I just need to be focused on the surgery'. . ." – PGY 5 "It is important to create an atmosphere where there is no fear of being wrong" – PGY 4

when they are experiencing or witnessing abusive situations. Furthermore, our findings indicate that surgical norms may differ from commonly accepted ones in terms of what constitutes abuse. This issue warrants further investigation as well.

Similar to our video-based curriculum, prior studies have used clinical vignettes and videos to create awareness about mistreatment.[24,25] Several studies have shown that case vignettes are an effective method to study complex scenarios where subjectivity plays an important role in determining the presence of an issue.[26,27] Kulaylat et al. found that the combination of clinical vignettes and facilitated discussions improved participants' self-awareness and environmental awareness of mistreatment.[25] They also found that incoming trainees from surgical specialties were less likely to perceive mistreatment when the vignettes were presented,[25] similar to our findings in this study. Even though the methodology used in our curriculum seems to be an appropriate modality to address issues such as mistreatment, our results were not favorable in that residents failed to adjust their personal definitions of what constitutes abuse. Moreover, we showed that certain abusive behaviors were normalized 6 months after the intervention being classified as abusive by a lower percentage of residents. A factor that might have played a role for these results is that our curriculum was applied at the beginning of the academic year. By the time the follow-up assessments were taken, 1 month and 6 months into the academic year had already passed. We hypothesize that residents, particularly interns, got accustomed to the prevailing surgical culture, which plays a key role in tolerating mistreatment in this specialty. Prior qualitative work from our work identified the culture as a major theme and cause of mistreatment in surgery.[9] We strongly suggest that this was a key contributor to the negative results in our study. Furthermore, within this framework, we found that more than 40% of residents (independent of PGY level) felt powerless to act if they witness mistreatment and this included 27% of senior residents. These results confirmed the prevailing surgical culture. Our study also showed that during the facilitated discussions, residents emphasized that mistreatment might depend on the sensitivity or perception of the medical student rather than on standard definitions. Bursch et al. found preliminary evidence that medical students who perceive mistreatment are not simply overly sensitive.[24] This demonstrates the need to create awareness and behavioral change amongst resident physicians.

Other studies have found more favorable results using role-playing amongst residents. Heru et al. reported that residents gained insight into the issue after playing an abused medical student in role-playing exercises and it helped them learned how to handle these situations more efficiently.[11,28] Incorporating these exercises during the facilitated discussions in our curriculum could increase the effect of our intervention. Additionally,

changes that were statistically significant after the intervention were no longer significant at 6 months. This emphasizes the need for refreshers throughout the residency program, the frequency for which has not been determined. In addition, further efforts to understand how to impact power dynamics within surgical culture are critical. This video-based curriculum has been incorporated into the residency program and it is currently given at the beginning of each academic year for all residents. We are evaluating the possibility of a refresher in the middle of the academic year. Finally, in order to change the standard definitions and modify the prevailing culture, all stakeholders need to be actively involved in the process. In our institution, policies have been implemented to protect and empower medical students. This study shows our efforts to create awareness on resident physicians. Next steps include a curriculum tailored to faculty in order to promote change using a top-down approach.

There are limitations to consider in our study. First, even though the video-based modules were developed based on themes rigorously identified by prior qualitative work of our group, these are not validated instruments. Moreover, despite having a discussion guide that was validated previously by our team, there could have been a selection bias introduced by residents with prior mistreatment experience. Our qualitative results are not generalizable due to the nature of the research. Finally, this was a single institution study and the results might not be applicable to other institutions.

CONCLUSIONS

Our study shows that the implementation of a curriculum tailored to residents is feasible. Even though there was no demonstrated lasting impact on resident knowledge of definitions of abuse, and interpretation thereof, the study did indicate an increased awareness of the problem of mistreatment, as well as the power struggle residents may face in these situations and that ongoing, multifocused educational efforts are warranted. Future efforts will be directed toward incorporating role-playing exercises in our curriculum and include modules in communication, leadership skills, emotional intelligence, and conflict management. Furthermore, in order to change the culture, we will focus too on creating a program tailored to faculty and staff.

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SUPPLEMENTARY INFORMATION

Supplementary data associated with this article can be found in the online version at doi:10.1016/j.jsurg.2018.07.019.