CALMER Conflict: A Novel Curriculum for Graduating Medical Students to Manage and Defuse Patient-Provider Conflict

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ABSTRACT

BACKGROUND: Workplace violence disproportionately affects healthcare workers and verbal aggression from patients frequently occurs. While verbal de-escalation is the first-line approach to defusing anger, there is a lack of consistent curricula or robust evaluation in undergraduate medical education.

AIM: To develop a medical school curriculum focused on de-escalation skills for adult patients and evaluate effectiveness with surveys and an objective structured clinical examination (OSCE).

SETTING: We implemented this curriculum in the "Get Ready for Residency Bootcamp" of a single large academic institution in 2023.

PARTICIPANTS: Forty-four fourth-year medical students

PROGRAM DESCRIPTION: The curriculum consisted of an interactive didactic focused on our novel CALMER framework that prioritized six evidence-based de-escalation skills and a separate standardized patient practice session.

PROGRAM EVALUATION: The post-curriculum survey (82% response rate) found a significant increase from 2.79 to 4.11 out of 5 ($p \leq 0.001$) in confidence using verbal de-escalation. Preparedness improved with every skill and curriculum satisfaction averaged 4.79 out of 5. The OSCE found no differences in skill level between students who received the curriculum and those who did not.

DISCUSSION: This evidence-based and replicable de-escalation skill curriculum improves medical student confidence and preparedness in managing agitated patients.

KEY WORDS: de-escalation; conflict resolution; OSCE; curriculum

J Gen Intern Med 40(1):253–7
DOI: 10.1007/s11606-024-08975-5

Prior Presentations *Curriculum presented as a workshop at the Annual Meeting of the Society of General Internal Medicine, Boston, MA, May 2024.*

Received February 5, 2024
Accepted July 23, 2024
Published online August 5, 2024

INTRODUCTION

Healthcare workers are five times more likely to experience workplace violence than the average American worker with verbal aggression from patients being a common occurrence.[1] While the highest prevalence is found in the emergency department and psychiatry units, aggression against physicians can occur in any clinical setting. Repeated negative exposures can lead to decreased job satisfaction, elevated psychological stress, and increased job turnover for providers.[2] For patients, aggressive behavior is associated with higher likelihood of needing restraints, longer hospital stays, and poorer outcomes.[3] These types of extreme situations tend to worsen during times of crisis when anxiety, fear, and uncertainty are heightened,[4] partially explaining why workplace violence increased globally during the COVID-19 pandemic.[5]

Verbal de-escalation is the first-line approach to defusing patient aggression.[6] Many de-escalation training programs exist for healthcare providers, although the majority focus on education for nurses, emergency providers, and psychiatric staff.[7,8] The Joint Commission endorses three models for de-escalation; however, they can be complex to learn and contain skills, such as restraint tactics, that focus on outdated material.[9] With inconsistent training during medical education, physicians and medical students are often unprepared to address these situations effectively. Since the most junior physicians on the team are often the first providers called to the bedside of agitated patients, it is imperative to develop a simple, effective framework for verbal de-escalation.

AIM

To our knowledge, no widely accepted tools exist in medical education to teach communication skills for de-escalating agitated patients. We aimed to develop a curriculum that adapted six specific evidence-based verbal de-escalation skills for adult patients and evaluate its effectiveness with pre- and post-surveys and an objective structured clinical examination (OSCE).

SETTING AND PARTICIPANTS

The curriculum consisted of an interactive didactic and a separate standardized patient (SP) practice session delivered during the "Get Ready for Residency Bootcamp" for fourth-year medical students at our large academic institution in the summer of 2023. This required, month-long course allows students to select a track (internal medicine (IM), emergency medicine, anesthesia, OBGYN, pediatrics, psychiatry, or surgery) to receive specialty-specific content. Of the 127 fourth-year medical students who participated in bootcamp, 44 students selected the IM track and received the curriculum while the remaining students did not receive the curriculum. While 36 of 44 (82%) attended the didactic and 42 of 44 (95%) attended the SP session, no students missed both sessions.

PROGRAM DESCRIPTION

Content Development

A team composed of a palliative care physician with expertise teaching communication skills (RC), a psychiatry clerkship director with expertise teaching verbal de-escalation (NS), the medical director of the SP program (RV) and two general internal medicine clinician educators (AD, JS) collaboratively developed a novel framework for verbal de-escalation. Six evidence-based skills were chosen from the literature that aligned with an existing validated de-escalation scale and the American Association of Emergency Psychiatry's 10 domains of de-escalation.[6,10,11] These skills, Calm, Acknowledge, Listen, Mirror, Empower, and Responsibility, were ordered into the mnemonic, "CALMER," that served as the curriculum's framework. Three cases were developed: two for the SP practice session and one for the OSCE. Case 1 described a patient's family member demanding a procedure for their parent; Case 2 was a medically stable patient declining hospital discharge; and Case 3 described a patient with chest pain requesting to leave against medical advice (Appendix A).

Checklist Development

Prior to delivering the curriculum, we created a checklist from a modified version of an existing, validated rubric.[10] The items included all six CALMER skills, a skill for maintaining safety, and an overall impression. Items were graded on a 3-point scale: 1 (performs incorrectly), 2 (performs, but partially correct), or 3 (performs correctly).

Didactic Structure

Students began the 90-min didactic with self-reflection on prior experiences with agitated patients. Next, we reviewed the differential diagnosis of potential triggers for patient anger, the importance of maintaining personal safety, and the evidence supporting verbal de-escalation. The CALMER skills were then described with sample phrases. In small groups using practice cases, students brainstormed potential responses to an agitated patient using the CALMER skills and shared their responses with the large group.

SP Practice Session

Following the didactic, students underwent a 90-min SP session. Small groups were made consisting of 4–5 students, one faculty facilitator, and one SP. Each student conducted a 10-min interview with SPs portraying an agitated patient while the group observed. Students could "time out," at which point the group brainstormed ideas on the learner's self-identified learning opportunity. The learner then re-entered the interview to try one suggested idea. The facilitator debriefed the encounter with real-time feedback from the observing students and the SP and assisted the learner in making a teaching point.

OSCE Session

At the completion of the bootcamp, all 127 students were randomly assigned to one of three OCSEs (delivering serious news, disclosing medical error, and de-escalating patient anger). Forty-three students were randomized to the verbal de-escalation case (21 curriculum students and 22 non-curriculum students). One student's audio was faulty and could not be graded, so we evaluated 20 curriculum students and 22 non-curriculum students. The OSCE was a 12-min, video-recorded encounter portraying a patient aggressively requesting to leave the hospital against medical advice using physical gestures (standing, finger pointing), pacing, and shouting. The SP debriefed the student after each encounter and submitted written feedback. The cases and SPs were different between the practice session and the OSCE, ensuring students were not biased by seeing the same SP or the same case twice.

Data Collection and Analysis

Curriculum students ($n = 44$) completed a baseline survey prior to the didactic that assessed their attitudes and confidence toward the material and their preparedness using de-escalation skills. Non-curriculum students ($n = 83$) completed the baseline survey prior to the OSCE cases at the conclusion of bootcamp (without having received any relevant content in the course). Curriculum students also received a post-curriculum survey measuring their opinions on overall curriculum value and effectiveness. Responses were assessed on a 5-point Likert scale and compared pre vs post among curriculum students and between groups using linear mixed-effects models assuming non-informative missingness, accounting for repeated measures, and

incorporating data from all IM participants regardless of post-survey completion.

Given the high emotional intensity of the cases, SPs did not complete summative checklists. Two study authors with expertise in de-escalation (RC and NS) reviewed the video-recorded sessions after OSCE completion and graded performance with the checklists while blinded to which students had received the curriculum. OSCE performance was compared per each individual item using Wilcoxon rank sum tests given non-normal distributions of scores. Multivariable regression modeling assessed overall performance, as defined by the total checklist score, and differences in overall performance between groups.

PROGRAM EVALUATION

Student Demographics

A total of 39 of 44 fourth-year medical students who received the curriculum (89%) and 71 of the remaining 83 students who did not receive the curriculum (86%) completed the baseline survey. Both groups were primarily younger than 29 years old (77%) with a nearly equivalent number of males and females. The majority of curriculum students had matched into IM residency or an IM preliminary year while the majority of non-curriculum students were planning on a surgical or procedural specialty (Table 1).

Baseline Survey Results

From the baseline surveys, there were no significant differences between curriculum and non-curriculum students in attitudes towards the material. One hundred four (97%) of all students agreed or strongly agreed that "verbal de-escalation should be taught during medical school," and 103 (96%) agreed or strongly agreed that "it is important to use verbal de-escalation with agitated patients." Compared to the curriculum students at baseline, the non-curriculum students were significantly more confident with using verbal de-escalation (3.65 vs 2.79, $p < 0.001$) and felt more prepared using 5 out of the 6 CALMER skills (all p-values < 0.05).

Table 1 Basic Demographic Characteristics for the Entire Study Population of Students Are Shown with Patients Stratified by Age, Gender, and Anticipated Post-graduation Specialty

Variable	Curriculum students	Non-curriculum students	Total
N	39	71	110
Age (25–28)	30 (77%)	46 (65%)	76
Age (29 or older)	9 (23%)	25 (35%)	34
Male	19 (49%)	33 (46%)	52
Female	20 (51%)	33 (46%)	53
Non-binary/3rd gender	0	2 (3%)	2
Prefer not to report gender	0	3 (4%)	3
Post-graduation specialty			
Internal medicine	23 (59%)	0	23
Surgery	0	27 (38%)	27
Anesthesia	0	13 (18%)	13
OGBYN	0	10 (14%)	10
Pediatrics	0	10 (14%	10
Emergency medicine	0	7 (10%)	7
Psychiatry	0	2 (3%)	2
Preliminary year	9 (23%)	2 (3%)	11
Other	7 (18%)	0	7

Post Survey Results

Thirty-six students (82%) who received the curriculum completed the post-survey. Compared to baseline, confidence using verbal de-escalation increased from 2.79 to 4.11 out of 5 ($p \leq 0.001$), worry when confronting agitated patients decreased from 4.1 to 3.31 out of 5 ($p < 0.001$), and feelings of preparedness improved for every individual skill (all p-values < 0.01) (Table 2). Overall curriculum satisfaction averaged 4.79 out of 5.

OSCE Results

Analysis of the OSCEs, which compared 20 encounters with curriculum students to 22 encounters with non-curriculum students, found that while curriculum students consistently received slightly higher observed scores, no significant differences in skill utilization were found between groups. The SPs from all 42 OSCE encounters (100% response rate), submitted written feedback for each student.

DISCUSSION

The results of this novel curriculum taught to 44 fourth-year medical students support existing evidence that a short-term training can improve learner confidence and preparedness using verbal de-escalation. This 3-h intervention is replicable in terms of didactic content and SP session by other academic medical institutions with SP programs. Faculty trained in communication skills can easily teach verbal de-escalation skills using the CALMER framework.

We identified that the IM-specific bootcamp students felt less confident and less prepared using verbal de-escalation at baseline than their peers interested in other specialties. This difference may speak to different personality types, variable experiences during clinical rotations, and/or student perceptions about how necessary verbal de-escalation will be early in their clinical careers. This supports our finding that curriculum students were less confident in their conflict resolution skills than their procedurally oriented colleagues.

We found no measurable differences in the OSCE between curriculum and non-curriculum students. While one hypothesis for this finding is that skill acquisition may not have transferred to practice, we believe two other hypotheses are more likely. First, we suspect that our checklist was likely not sensitive enough to discriminate true differences. Our scale ranged from 1 to 3; however, only a small minority of

Table 2 Baseline vs Post-Curriculum Confidence and Preparedness Scores in Curriculum Students. Mean Survey Scores for Curriculum Students Comparing Baseline to Post-curriculum Confidence with Using Verbal De-escalation Skills and Feelings of Preparedness with Each Individual Skill. Confidence Measured on a Likert Scale From 1 (Strongly Disagree) to 5 (Strongly Agree) and Preparedness Measured on a Likert Scale From 1 (Very Unprepared) to 5 (Very Prepared)

	Baseline ($N=39$)	Post-curriculum ($N=36$)	P
Survey prompt: please select the response that best reflects your level of agreement with the following statements about verbal de-escalation with agitated patients			
I feel confident with using verbal de-escalation when talking with agitated patients	2.79	4.11	<0.001
I worry I won't know what to say when confronting agitated patients	4.1	3.31	<0.001
Survey prompt: during an encounter with an agitated patient, how well prepared do you feel with the following skills?			
Respecting the patient's personal space	3.79	4.25	0.004
Staying calm during the encounter	3.58	4.25	<0.001
Acknowledging the patient's concerns	3.76	4.25	0.001
Providing empathy to the patient	4.0	4.44	<0.001
Using reflective listening statements to uncover the underlying emotions	3.74	4.28	0.001
Offering reasonable choices to find a solution	2.92	4.11	<0.001
Closing out the encounter	2.68	4.03	<0.001

scores received a 1, effectively resulting in a binary scale. The checklist also lacked a mechanism to measure SP reactions. Second, our institution's already robust interviewing curriculum that includes advanced communication skills training with SPs in the first 3 years likely led to high baseline scores for everyone. Both factors led to a ceiling effect that blunted the ability to differentiate smaller differences.

The SP's written comments provided insight not reflected on the checklist into why students occasionally struggled to effectively de-escalate their anger. SPs perceived a lack of authenticity when some students used an ingenuine tone or spoke like they were reading off a checklist. Nonverbal and paraverbal (tone, pitch, and pace) communication such as standing too close to the SP, having arms crossed, speaking quickly, or nervous laughter were an obstacle to de-escalation. There was also a perception that some students excessively relied on empathy by only focusing on the SP's emotions without addressing their actual concerns. The SP impression may provide richer insight than checklists alone can provide, supporting existing data that patient perception and a provider's intention can differ, even if the "right" words are used.[12]

This curriculum had several limitations. This was a small, single-center study with a bootcamp and SP program unique to our institution. Our two student groups were not fully comparable at baseline, the checklist was likely not sensitive enough to detect true differences in skill and the lack of a pre-curriculum OSCE to compare to the post-curriculum OSCE limited the ability to measure temporal change. However, the easily replicated didactic teaches skills that can be practiced with drills or role play to be generalizable for any institution without access to SPs.

Existing evidence supports de-escalation training to help staff manage violent and aggressive incidents through increased knowledge, confidence, and skills.[13] While our intervention improved learner confidence and preparedness, more work is needed to assess the impact of the intervention on skill transfer and patient-provider outcomes. To bridge this gap, we plan to disseminate and evaluate the curriculum with residents and faculty at our institution as well as other academic medical centers.

Supplementary Information *The online version contains supplementary material available at https://doi.org/10.1007/s11606-024-08975-5.*

Acknowledgements: *We thank the SP Program at the University of Pittsburgh School of Medicine as well as the faculty of the General Internal Medicine Fellow and Faculty Award Committee at the University of Pittsburgh.*

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Funding *This project was supported by a grant from the Thomas H. Nimick, Jr. Competitive Research Fund, UPMC Shadyside Hospital.*

Data Availability: *The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.*

Declarations

Conflict of Interest *The authors declare that they do not have a conflict of interest.*

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