

Avoiding the Chill Pill- Results from a Simulation-Based Verbal De-escalation Training for Psychiatry Residents in a Community Mental Health Center

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Abstract

Background: Potentially dangerous encounters with uncooperative, belligerent, or even violent patients in the Emergency Department and Psychiatric Inpatient Units require skilled responses and timely management of episodes of acute agitation. Lack of training and knowledge in these scenarios could compromise the safety of both staff and patients. There have been improvements in knowledge and comfort when dealing with acutely agitated patients documented in previous studies that have used simulation training for junior psychiatry residents.

Objectives: Understand the existing knowledge and skill gap and attempt to address it through simulation training.

Methods: This is an IRB exempt quality improvement project, supported with funds from the Committee of Interns and Residents. The study was conducted over 3 years (2019-2022). All psychiatry residents (N=36) participated in an online module (4hrs, JCAHO and OMH accredited) and simulation training with 3 standardized patients (actors). All residents were blind to the clinical scenarios and observed by faculty. Each incoming class (2019-2022) has been trained yearly since. Pre and post intervention surveys asked questions about knowledge, comfort, perceived competence, prior training, verbal de-escalation skills (APSP-agitated patient simulation project survey) and the validated Management of Aggression and Violence Attitude Scale (MAVAS).

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Results: Data from pre- and post- intervention APSP responses were analyzed using the student's paired t-test. Residents felt significantly more comfortable handling verbal de-escalation post training (score of 6 vs. 8, $P < 0.0001$) and more competent evaluating and managing agitated patients (6 vs. 8, $p < 0.0001$). They showed significant ($p < 0.05$) changes in attitudes around seclusion and restraints and causes of agitation on MAVAS. The most used de-escalation interventions were: Explaining the situation and process, Summarizing the content, and Identifying patient's feelings, wants and needs. Triggering behaviors included interrupting/talking over the patient, not prioritizing patient's needs, insisting on using medications.

Conclusion: This project showed simulation-based training successfully addressed an important practice and knowledge gap and lent structure to the tailored protocol-based approach for managing agitated patients, especially in busy ER settings. Residents appreciated the simulation-based training with real life scenarios – they found it useful and engaging and they welcomed the interaction with standardized patients (SPs) during the training.

Keywords: Agitation; Verbal de-escalation; Management of aggression and violence attitude scale; Standardized patients.

Introduction

Agitation is an acute behavioral emergency that requires immediate intervention to decrease the risk of injury to the patient or those around them [1]. Agitation can lead to aggression, which can lead to violence. According to a systemic meta-analysis that looked at high income countries including the U.S., almost 1 in 5 patients admitted to an acute psychiatric ward commits at least one act of violence. Physical violence against staff can lead to low morale in the workplace and high employee turnover [2]. In a nationwide survey of psychiatric residents, it was found that 36% of residents have been assaulted, while 74% have been threatened [3]. These statistics illustrate the need for clinicians to be well equipped when faced with an agitated patient.

The American Association of Emergency Psychiatry states that restraints and involuntary medications traditionally used for agitated patients should be replaced by the non-coercive approach of verbal de-escalation. Verbal de-escalation encompasses effective verbal and non-verbal

communication, which can strengthen the patient-clinician relationship. The American Association for Emergency Psychiatry De-escalation Workgroup describes 10 aspects of verbal de-escalation: 1) Respect personal space 2) Do not be provocative with your body language 3) The leader should be the first to speak to the patient 4) Use concise, simple language 5) Identify feelings and desires 6) Actively listen to the patient and confirm you understand what is being said 7) Agree or agree to disagree 8) Lay down the law and set clear limits 9) Offer choices to patient 10) Debrief both the patient and staff. According to the BETA De-escalation Workgroup Consensus, verbal de-escalation can be accomplished quickly, oftentimes in less than 5 minutes [1]. Verbal de-escalation emphasizes collaboration, in which the patient is empowered to be part of the decision-making process. By verbally interacting with the patient before any medication is given, the patient has a stronger sense of autonomy, and the clinician can have the opportunity to further assess the patient's level of agitation [4]. When a clinician is empathetic, supportive, non-judgmental, and

has a non-authoritarian manner, it helps gain the patient's trust. This leads to the patient being more likely to accept requests that help calm them down.

The patient feels understood and this reduces the perceived need for aggression [5]. Team STEPPS was developed by the Department of Defense and Agency for Healthcare Research and Quality as an evidence-based educational tool that strives to improve techniques for verbal de-escalation in aggressive patients. A recent study found that seclusion rates, as well as rate of charting aggressive behavior of patients were significantly higher before Team STEPPS was implemented [6]. Verbal de-escalation techniques can help patients avoid future episodes of agitation, and they have been found to be more effective in calming agitated patients than using seclusion [6].

Verbal de-escalation techniques can be practiced and cultivated through simulation training. Patients should always be protected and not treated as "training commodities" [7]. Simulation gives clinicians more experience, which contributes to better quality of care.

The care that is given can be focused solely on a patient's needs, without being compromised by training needs [7]. In simulated environments where real patients are not at risk, mistakes can be allowed to progress to teach clinicians the implication of their errors, while giving them the opportunity to react to them [7]. Proper debriefing of simulation activities allows professionals to discuss mistakes and adverse events in a non-judgmental productive manner, while not being responsible for any liability [7]. Vestal et al showed that simulation-based training, compared to

didactic based training, led to improvements in both knowledge and performance in the management of acutely agitated psychiatric patients [8].

In a similar study, it was found that simulation-based training with an SP, followed by debriefing, resulted in an increase in knowledge of key concepts (verbal de-escalation, safety procedures, causes of agitation, pharmacotherapy), and comfort and perceived competence in evaluating and managing agitated patients [9]. There is evidence that simulation not only improves the confidence and knowledge of clinicians, but also their skills and performance. Simulation holds a good deal of promise in making clinicians better equipped to handle difficult situations.

Recognizing the gap in trainee curricula at our Community Mental Health Center and observing promising results from simulation-based training studies, the Department of Psychiatry developed a standardized training course aimed at training psychiatric residents in verbally de-escalating agitated patients.

The current study explores the impact our training course had on knowledge, self-perceived preparation, comfort level with agitated patients, confidence level with agitated patients, as well as changes in attitudes towards agitated patients. It also qualitatively explores calming and triggering behaviors used during a simulation with an agitated patient. The broader objectives of conducting this study are to:

- Understand the existing knowledge and skill gap when working with agitated patients.

- Discover advantages of using simulation-based learning over didactics only, to improve residence competence, preparedness, skill, and confidence.
- Identify appropriate measures and techniques to foster resident and patient safety through simulation.
- Develop solutions to implement verbal de-escalation training among residents/staff in various settings.

Methods

This is an IRB-exempt prospective quality improvement study evaluating a simulation-based curriculum for training psychiatric residents in verbal de-escalation techniques. The study was supported by a “Patient Safety Initiative” grant from the Committee of Interns and residents (CIR) totaling \$4600 for the first year, and approximately \$2000 for the following 3 years since this training has been in existence.

Two phase intervention

Phase I: A 4-hour online validated Crisis Prevention and Intervention course was completed initially by all participants. This course is in alignment with Best Practices and meets and/or exceeds Accreditation standards for organizations such as Joint Commission and Department of Education. It uses interactive multimedia consisting of audio, video and visual aids combined with engaging lecture, brief practical exercises, competency checks, and a short test upon completion. The details of the topics covered can be found in Appendix 1.

Phase II: All residents participated in a simulation lab training with standardized patients on 3 common clinical scenarios of

agitation (lasting 20 minutes). The course participants were expected to use the de-escalation techniques covered during the online training to calm the simulated agitated patients portrayed by trained actors. Each session was moderated and evaluated by a faculty member and followed by de-briefing with the resident and a feedback session. The faculty checklist of calming and triggering behaviors and interventions can be found in appendix 2.

All residents completed a pre and post MAVAS (Management of Aggression and Violence Attitude Scale) and a pre and post skills and comfort assessment “Agitated Patient Simulation Project (APSP)” survey (available in appendix 3). MAVAS is a self-report assessment containing 27 statements, divided into four categories: Internal Causative Factors, External Causative factors, Situational/Interactional Causative Factors, and Management factors. MAVAS aims to assess healthcare professionals’ attitudes to the management of aggression and violence. Each item is scored on a Likert scale: 1- “strongly agree,” 2-“agree,” 3-“disagree”, 4- “strongly disagree”. The skills and comfort level survey are a subjective measure developed for this study and is not validated (APSP scale- appendix 3).

Summary of the simulation scenarios

The standardized patients (SPs) were provided with information on background of the cases, including the psychiatric symptoms and the reasons for agitation. SPs were also provided with instructions on the case progression, which outlines several principles that residents should ideally follow such as active listening and respect personal space. All SPs received training on how to provide

feedback to the residents' post-session. The scenarios targeted commonly occurring situations in the emergency room, inpatient psychiatric units and medical units as follows:

- An intoxicated patient who is in the ED after a physical altercation at a bar and now demands to leave.
- An elderly patient with dementia admitted for a fall who is refusing to shower.
- A patient with psychosis who is put on wing restriction due to elopement attempts and wants to go to another wing to attend groups.

Flow of the training

Residents presented in groups of 3 and met with the 3 faculty supervisors for an orientation to the training. Each resident was then assigned to a simulation room and provided with a brief context to the situation before starting the interaction with the SPs. Once the residents entered the room, the exercise started. Faculty observed and noted the calming or triggering behaviors used. If the resident was successful in de-escalating the SP, the scenario ended. Brief feedback was provided by the SP and a more comprehensive one by the faculty. After 20 minutes, all residents switched rooms, until all 3 scenarios were completed. If the resident was not successful in de-escalation, faculty ended the encounter after 10 minutes. If the resident triggered the SP beyond a certain previously agreed-upon threshold, the faculty could intervene and end the scenario early. All residents and faculty met as a group for a "lessons learned" and debriefing discussion after scenarios were completed.

Statistical analyses

Data were presented as means and statistical significance was evaluated with the student's paired t-test. To compare the impact of SIM training across time, pre and post measures were summarized with median and 25th-75th percentile and tested using the Wilcoxon signed-rank test. All analyses were carried out using SPSS version 20 (IBM Corp, Armonk, NY).

Results

Quantitative analyses

A total of 36 residents (all residents in the program) participated in the verbal de-escalation simulation training. Out of the total 108 interactions (36 residents × 3 scenarios each), in more than 10 cases the encounter ended early as the residents were extremely skilled at de-escalating the SP. In 3 situations the faculty had to intervene and end the encounter as the resident used too many triggering behaviors and statements and, as per previously agreed "threshold," this would have been considered an unsafe situation in a real clinical environment. One resident (the chief resident who designed this study) was asked to not complete the surveys since they were familiar with the "correct" answers and would have skewed the data. The pre and post APSP training survey was completed by 35 and 33 residents, respectively. When all questions scores were added, residents had a median score of 30 on the pre-questionnaire which increased to 36 on the post-questionnaire, with a statistical significance of $p < 0.0001$ (all results displayed in Table 1).

| | Pre-SIM training | | | | Post-SIM training | | | | P |
|--------------------|------------------|---------------|---------------|-------|-------------------|---------------|---------------|-------|---------|
| | Median | Percentile 25 | Percentile 75 | Count | Median | Percentile 25 | Percentile 75 | Count | |
| Total Score | 30 | 27 | 35 | 35 | 36 | 34 | 39 | 33 | <0.0001 |
| Sub scores | | | | | | | | | |
| Perception | 18 | 16 | 19 | 35 | 20 | 19 | 21 | 33 | 0.04 |
| Comfort | 6 | 6 | 8 | 35 | 8 | 8 | 8 | 33 | <0.0001 |
| Competence | 6 | 4 | 8 | 35 | 8 | 8 | 8.5 | 33 | <0.0001 |

Table 1. Comparison of Pre vs Post Intervention APSP Scores.

Table 2 shows the results of residents' responses to MAVAS questions. Out of the 27 statements, there were significant positive changes in residents' attitude in 5 of the statements when comparing the pre- and post-training surveys. After the training, the residents leaned more toward "agree" (lower score) on questions #1: "Patients are

aggressive because of the environment they are in," (2.091 to 1.824, p=0.035); question #3: "Patient commonly become aggressive because staff do not listen to them" (1.879 to 1.559, p=0.008) and question #15: "The practice of secluding violent patients should be discontinued." (2.971 to 2.647, p=0.037).

| | MAVAS Questions | Mean (Pre) | SD | Mean (Post) | SD | S | P |
|----------|---|----------------------------------|-------|-------------|------|----------------|-------------|
| A | Internal Causative Factors | Wilcoxon signed rank test | | | | S=556.5 | 0.05 |
| 4 | Gender mixes on the wards is important in the management of aggression | 2.515 | 0.508 | 2.441 | 0.75 | 15 | 0.52 |
| 5 | It is difficult to prevent patients from becoming violent or aggressive | 2.765 | 0.606 | 2.794 | 0.59 | -4 | 0.75 |
| 7 | Patients are aggressive because they are ill | 2.242 | 0.708 | 2.324 | 0.59 | -11.5 | 0.7 |
| 9 | There appear to be types of patients who frequently become aggressive towards staff | 2.088 | 0.514 | 2.353 | 0.73 | -42 | 0.1 |
| 14 | Patients who are violent are often restrained for their own safety | 2.088 | 0.621 | 2.412 | 0.56 | -60.5 | 0.02 |
| 17 | Aggressive patients will calm down automatically if left alone | 2.871 | 0.619 | 3 | 0.66 | -10.5 | 0.45 |
| B | External Causative Factors | Wilcoxon signed rank test | | | | S=296.5 | 0.07 |
| 1 | Patients are aggressive because of the environment they are in | 2.091 | 0.384 | 1.824 | 0.52 | 36 | 0.04 |
| 16 | Restrictive environments can contribute towards aggression | 1.839 | 0.454 | 1.939 | 0.43 | -9 | 0.29 |
| 27 | Seclusion is sometimes used more than necessary | 2.367 | 0.615 | 2.219 | 0.61 | 11 | 0.48 |

| | | | | | | | |
|----------|---|----------------------------------|-------|-------|------|----------------|-------------|
| 24 | Patient aggression could be handled more effectively on this ward | 1.839 | 0.523 | 1.545 | 0.56 | 24.5 | 0.09 |
| 25 | Prescribed medication can sometimes lead to patient aggression and violence | 1.968 | 0.482 | 2.121 | 0.6 | -16.5 | 0.18 |
| 26 | It is largely situations that contribute towards the expression of aggression by patients | 2.1 | 0.481 | 1.844 | 0.77 | 24.5 | 0.19 |
| C | Situational/Interactional Causative Factors | Wilcoxon signed rank test | | | | S=744.0 | 0.05 |
| 2 | Other people make patients aggressive or violent | 2.091 | 0.459 | 2 | 0.49 | 11 | 0.43 |
| 3 | Patients commonly become aggressive because staff do not listen to them | 1.879 | 0.485 | 1.559 | 0.56 | 57 | 0.01 |
| 6 | Patients from cultural groups are more prone to aggression | 3.176 | 0.626 | 3.162 | 0.66 | 3.5 | 1 |
| 15 | The practice of secluding violent patients should be discontinued | 2.971 | 0.521 | 2.647 | 0.65 | 50 | 0.04 |
| 20 | Expressions of aggression do not always require staff intervention | 2.613 | 0.715 | 2.667 | 0.69 | -9.5 | 0.74 |
| 21 | Physical restraint is sometimes used more than necessary | 2 | 0.577 | 1.909 | 0.52 | 7.5 | 0.79 |
| 22 | Alternatives to the use of containment and sedation to manage patient violence could be used more frequently | 1.903 | 0.473 | 2.061 | 0.75 | -15 | 0.49 |
| 23 | Improved one to one relationship between staff and patients can reduce the incidence of patient aggression and violence | 1.645 | 0.661 | 1.545 | 0.56 | 4 | 1 |
| D | Management Factors | Wilcoxon signed rank test | | | | S=275.5 | 0.49 |
| 8 | Poor communication between staff and patients leads to patient aggression | 1.588 | 0.5 | 1.324 | 0.48 | 54 | 0.06 |
| 10 | Cultural misunderstandings between patients and staff can lead to aggression | 1.794 | 0.479 | 1.559 | 0.56 | 46 | 0.09 |
| 11 | Different approaches are used on this ward to manage patient aggression and violence | 1.971 | 0.521 | 1.912 | 0.57 | 8.5 | 0.83 |
| 12 | Patients who are aggressive towards staff should try to control their feelings | 2.412 | 0.609 | 2.485 | 0.62 | -10.5 | 0.69 |
| 13 | When a patient is violent, seclusion is one of the most effective approaches | 2.559 | 0.705 | 3.029 | 0.63 | -55.5 | 0.01 |
| 18 | Negotiation could be used more effectively when managing aggression/violence | 2 | 0.643 | 1.667 | 0.69 | 40.5 | 0.11 |
| 19 | Restrictive care environments can contribute towards patient aggression and violence | 1.806 | 0.477 | 1.848 | 0.57 | -7.5 | 0.79 |

Table 2. Residents Responses to MAVAS Questions.

On the other hand, the residents leaned more toward “disagree” (higher scores) post training for question #14: “Patient who are

violent are often restrained for their own safety” (2.088 to 2.412, $p=0.024$) and question #13: “When a patient is violent, seclusion is

one of the most effective approaches" (2.559 to 3.029, $p=0.006$). Several questions did not show any statistically significant change post training. Out of these, 3 are worth noting:

Question #10: "Patients from particular cultural groups are more prone to aggression." -- Scores remained relatively unchanged- from 3.176 to 3.162 ($p=1.00$).

Question #17: "Aggressive patients will calm down if left alone." -Scores slightly increased from 2.871 to 3.000 ($p=0.452$).

Question #25: "Prescribed medication can sometimes lead to patient aggression and violence." Scores slightly increased from 1.968 to 2.121 ($p=0.183$).

Qualitative analyses

A group of 3 residents, who were also participants in the study, conducted a qualitative analysis of the comments written by the evaluators during the simulations.

Most comments were short sentences describing what the evaluator witnessed the participants of the study do when interacting with the actors. All the data were de-identified by an intern who did not partake in the study prior to the analysis of the qualitative data. Six main themes were found to be repeated in the comments; they were divided into three categories-positive behaviors, neutral behaviors, and negative behaviors. All quotations are comments written by evaluators.

Positive behaviors

"I would be upset too!"

All three evaluators wrote multiple comments commenting on the residents' ability to empathize with the patient. The most

common way residents were showing empathy is what one evaluator called "labeling emotions". The most common adjective used by residents to label a patient's emotions were "upset" "frustrating" and "difficult". An example of this is one resident telling an agitated patient: "I'm sorry to hear that, that sounds very frustrating".

"Anyone I can call?"

When faced with an agitated patient that was having difficulty communicating because of a psychotic process, intoxication or pain, multiple residents asked patients if there was anyone they could reach out to.

Neutral behaviors

"Unfortunately, I can't make this decision."

Many residents encouraged patient autonomy and gave their patients' several options to the problem they were experiencing, but some of the comments written by the evaluators showed that this was also a fine balance, because other residents were passing responsibility to the patient and not giving a clear treatment recommendation.

"Offered Medications"

The theme above regarding patient autonomy is also related to the following theme, in which multiple residents offered the patient medications. We felt this was a neutral behavior because some were offering acetaminophen to a patient in pain, others offered medications for the patient to calm down, and in one case, a resident offered medication in the form of a threat. We found this theme interesting because residents were aware that the simulation was to train them in verbal de-escalation and medications were

not to be used, but they still reflexively offered their patients medications.

Negative behaviors

“You cannot leave.”

This attitude of authoritarian rule setting was repeatedly seen in the comments. Instead of responding with empathy, several residents responded with a more paternalistic tone. Some residents repeatedly told patients they could not leave the hospital, an attitude that was not appropriate for de-escalation of acute agitation.

“Hands in pockets”

The most common comment repeated in the evaluator comments was regarding poor body language. There was a focus on hands, including “hands in pockets”, “fidgeting with hands” and “clenched fists”. Some of the body language was also dangerous-with several residents having their hands behind their backs when dealing with a paranoid patient. Many also were unaware that they crossed their arms when speaking to a patient. It is unclear why so many residents had poor body language, but one consideration is that interviewing and psychiatric evaluation training in the residency is conducted while seated, so poor body language is less obvious to faculty and residents receive less feedback.

Discussion

Given the small sample size (35 residents in total), the authors did not expect to find so many statistically significant changes post-training. The fact that both the subjectively assessed level of comfort in assessing and managing agitated patients, as well as the level of competence improved so drastically (total score of 6 pre training, increased to 8,

$p < 0.001$) is a testament to the true impact of experiential learning.

Simulation-based learning is not a new technique and has been proven to be more effective than didactic or classroom-based learning. This study demonstrates once again the tremendous impact it can have, especially in cases where in vivo learning is not possible. Residents are often called to evaluate and manage agitated patients in real clinical settings, and often, although not always, a debriefing follows the event, during which major aspects that went well, and major “mistakes” are reviewed with the team. However, what makes this simulation-based learning unique is that the residents have the undivided attention of the faculty who is observing (and who otherwise would likely be focused on the patient), as well as the rare opportunity to receive feedback on their actions from the agitated patients (the SPs) themselves. Based on the post-training debriefing all residents named this point the most useful part of the entire training.

The MAVAS survey showed a statistically significant positive change in attitude after the exercise in 5 questions, spread across all 4 domains (as listed in the results section). The potential significance of these 5 questions is to identify specific areas where the simulation-based training successfully changed clinicians’ attitude toward managing agitation. The survey showed that the training helped trainees understand causes for agitation and encouraged practice of verbal de-escalation as opposed to more coercive methods such as restraints or seclusion.

Specifically, after the training, residents better understood that the environment

where patients are in, e.g., a chaotic emergency room, could often trigger aggression. Residents learned that patients are often in restraints for other people's safety, and they recognized how simple yet effective it is to just "listen to the patients" when attempting to verbally de-escalate. Moreover, after the training, residents showed a strong tendency to agree that seclusion is not the most effective management for violence and should be discontinued whenever possible.

MAVAS statements that did not change post training are important to discuss as well. For the comment "Patients from particular cultural groups are more prone to aggression" scores remained relatively unchanged- from 3.176 to 3.162 with a $p=1.00$.

The 3 cases used in training utilized standardized patients that were Caucasian with no discernible cultural differences. Thus, the training did not give an opportunity for this topic to be explored. On one hand, answering "strongly agree" may suggest that certain cultures are more prone to aggression, reinforcing dangerous stereotypes that patients of a certain race, ethnicity, or culture are more violent. On the other hand, answering "strongly disagree" may undermine the fact that there are inherent differences in the ways that minorities are treated (i.e., non-English speaking patients may become irritable more easily due to their needs not being understood by English-only speaking staff). This uncertainty may explain why residents chose to answer the question neutrally without much change in scores.

Score on the statement "Aggressive patients will calm down if left alone." slightly increased from 2.871 to 3.000 with a $p=0.452$.

During the training, residents were encouraged to use verbal de-escalation to the best of their ability to calm the patient. While a few residents had to ultimately "leave the patient alone," this was due to the inability to successfully use verbal techniques. Additionally, in practice, patients are often not left alone when they escalate, and staff are quick to take action to ensure the safety of the patient and the unit. However, clinicians should acknowledge and offer the benefit of privacy and a quiet space as appropriate.

For the phrase "Prescribed medication can sometimes lead to patient aggression and violence" scores slightly increased from 1.968 to 2.121 with a $p=0.183$.

While patients sometimes refuse to take medications for their symptoms and may get agitated when coerced to take them, this was not one of the cases that were practiced in the training. The primary focus was to use verbal de-escalation techniques rather than resorting to medications; thus, a scenario based on medications may confound the study.

Limitations of the study

Small sample size: all residents in the program participated in the study; however, the total number still represents a small sample size. Our program has continued to train incoming PGY1 residents in this method and collect the data, which shows similar trends in improving residents' comfort and competence levels, as well as changing attitudes on the MAVAS Scale.

One of the SPs used during the subsequent years of the training was different from the initial one, therefore the study team felt it was not appropriate to combine and analyze the

data on aggregate, as the performance of the SP is a major variable.

Inter-rater reliability was not tested: the faculty who scored the residents were all trained through the same online training as the residents, and all have experience de-escalating patients in all three settings used in the scenarios. However, differences between all three faculty in style and level of experience (between 1 and 9 years) could have contributed to potential differences in how the residents were scored during their encounters. Finally, this study was funded by a grant covering the initial training for all residents, as well as initial training for all new interns for the last 3 years. It is well known that practical skills need to be refreshed; therefore, changes that are more significant might be encountered if the training were to be refreshed at least annually for the senior residents.

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Conclusion

This project successfully addressed an important practice and knowledge gap and lent structure to the tailored protocol-based approach for managing agitated patients, especially in busy ER settings. This approach utilizing a combination of online and simulation-based training can be replicated in programs across the country to standardize verbal de-escalation training.

There are several limitations that could prevent programs from utilizing similar training such as funding for simulation actors, lack of experienced actors, and lack of a simulation space. However, this study is a proof of concept that reflects significant benefits reported by residents with clear implications for the safety of staff and patients.

Appendix 1: Topics covered in the “Calm every storm” online crisis prevention and intervention program:

- Understanding Precursors to Crisis
- Motivating Persons in Crisis
- Handling Passive Non-Compliance
- Building Rapport
- Trauma Informed Care and How It Relates to Crisis Intervention
- Maintaining Your Calm during Crisis
- Recognizing When Challenging Situations Are Leading to Violence
- Interpreting body language and recognizing signs of crisis and escalation
- Effective tips for Conflict Resolution
- The 5 Steps to De-escalation™
- The SOLVE Solution™

Appendix 2: Faculty checklist for calming and triggering behaviors

Date:

Case:

Name of the resident:

Name of faculty:

Please check all that apply. Use the space at the bottom pf the page for any other comments:

| Calming behaviors: | Triggering behaviors: |
|--|---|
| <ul style="list-style-type: none"> • respects personal space • has an open and non-defensive body language • voice is calm, clear • introduces self fully • is respectful • asks patient how they want to be addressed • explains their role • is concise and uses lay terms • asks the patient how they are feeling • asks the patient what they need/ want • repeats back/ summarizes patient’s statements • agrees with the patient at least twice • explains limits clearly • does not use punishment language • offers choices • offers optimism • able to de-escalate | <ul style="list-style-type: none"> • too close/ too far • Aggressive posture (staring, clenched fists, concealed hands) • voice is loud or pressured, intense • Does not introduce self/ incomplete • is disrespectful • addresses the patient by first or last name without asking for preference • does not explain their role • is vague, gives convoluted explanations or uses medical jargon • does not identify feelings • does not identify needs/ wants • does not summarize • does not agree with the patient • does not explain limits • explains limits with punishment language • does not offer choices • does not offer optimism • not able to de-escalate |

Appendix 3:

Agitated Patient Simulation Teaching
Pre-activity Questionnaire

1. Indicate which rotations you have completed already during your residency:

- a) Emergency psychiatry: _____
- b) Emergency medicine: _____
- c) Inpatient psychiatry rotation: _____

2. Have you obtained additional training outside of clinical duties or activities organized for psychiatry residents assessing or managing agitated patients? Y / N

3. If Yes, which ones: _____

4. Please rate your understanding of each of the following in terms of what you perceive is required to be a competent general psychiatrist:

a) Safety procedures: what is routinely done on our units when a patient is agitated:
Poor Excellent

1 2 3 4 5

b) Causes of agitation
Poor Excellent

1 2 3 4 5

c) Verbal de-escalation
Poor Excellent

1 2 3 4 5

d) Use of restraints
Poor Excellent

1 2 3 4 5

e) Pharmacotherapy of agitation
Poor Excellent

1 2 3 4 5

6. Which of the following best describes your current **level of comfort evaluating agitated patients?**

Very low Very high

1 2 3 4 5

7. Which of the following best describes your current **level of comfort managing agitated patients?**

Very low Very high
1 2 3 4 5

8. Which of the following best describes your perceived **level of competence evaluating agitated patients?**

Very low Very high
1 2 3 4 5

9. Which of the following best describes your perceived **level of competence managing agitated patients?**

Very low Very high
1 2 3 4 5

If you mentioned a level of comfort <3 can you detail some barriers to feeling more comfortable?

If you mentioned a level of competence <3 can you detail what skills/ training/ help you might want to increase your competence?

Questionnaire #2

Agitated Patient Simulation Teaching
Post-activity Questionnaire

1. Compared to before you participated in this teaching activity please rate your understanding of each of the following:

f) Safety procedures: what is the best practice when a patient is agitated:
Poor Excellent
1 2 3 4 5

g) Causes of agitation
Poor Excellent
1 2 3 4 5

h) Verbal de-escalation
Poor Excellent
1 2 3 4 5

i) Use of restraints

Poor 1 2 3 4 5 Excellent

j) Pharmacotherapy of agitation

Poor 1 2 3 4 5 Excellent

2. Which of the following best describes your current **level of comfort evaluating agitated patients?**

Very low 1 2 3 4 5 Very high

3. Which of the following best describes your current **level of comfort managing agitated patients?**

Very low 1 2 3 4 5 Very high

4. Which of the following best describes your perceived **level of competence evaluating agitated patients?**

Very low 1 2 3 4 5 Very high

5. Which of the following best describes your perceived **level of competence managing agitated patients?**

Very low 1 2 3 4 5 Very high

6. Please rate the usefulness of the individual components of this activity:

a) Online training:

Very low 1 2 3 4 5 Very high

b) Simulations with actors

Very low 1 2 3 4 5 Very high

c) Debriefing by faculty

Very low 1 2 3 4 5 Very high

Was one of the above components particularly useful? Are there other skills/ training/ help you want to increase your ability to evaluate and manage agitated patients?

MAVAS survey

The purpose of this questionnaire is to obtain your perceptions of aggression and the management of aggression at this facility. For each item, please darken the circle that reflects your opinion about the statement. If you wish to change your rating, place an X completely through the circle and then darken another circle.

This is an anonymous survey. Do not write your name on this form.

The questionnaire contains 30 items and takes about 10 minutes to complete.

1. Patients are aggressive because of the environment they are in.
2. Other people make patients aggressive or violent.
3. Patients commonly become aggressive because staff do not listen to them.
4. Gender mixes on the wards is important in the management of aggression.
5. It is difficult to prevent patients from becoming violent or aggressive.
6. Patients from cultural groups are more prone to aggression.
7. Patients are aggressive because they are ill.
8. Poor communication between staff and patients leads to patient aggression.
9. There appear to be types of patients who frequently become aggressive towards staff.
10. Cultural misunderstandings between patients and staff can lead to aggression.
11. Different approaches are used on this ward to manage patient aggression and violence.
12. Patients who are aggressive towards staff should try to control their feelings.
13. When a patient is violent, seclusion is one of the most effective approaches to use.
14. Patients who are violent are often restrained for their own safety.
15. The practice of secluding violent patients should be discontinued.
16. Medication is a valuable approach for treating aggressive and violent behaviour.
17. Aggressive patients will calm down automatically if left alone.
18. The use of negotiation could be used more effectively when managing aggression and violence.
19. Restrictive care environments can contribute towards patient aggression and violence.
20. Expressions of aggression do not always require staff intervention.
21. Physical restraint is sometimes used more than necessary.
22. Alternatives to the use of containment and sedation to manage patient violence could be used more frequently.
23. Improved one to one relationship between staff and patients can reduce the incidence of patient aggression and violence.
24. Patient aggression could be handled more effectively in this ward.
25. Prescribed medications can in some instances lead to patient aggression and violence.
26. It is largely situations that contribute towards the expression of aggression by patients.
27. Seclusion is sometimes used more than necessary.

28. Prescribed medications should be used more frequently to help patients who are aggressive and violent.
29. The use of de-escalation is successful in preventing violence.

30. If the physical environment were different, patients would be less aggressive.