Staff Perception of Interprofessional Simulation for Verbal De-escalation and Restraint Application to Mitigate Violent Patient Behaviors in the Emergency Department

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CE Earn Up to 7.5 Hours. See page 115.

Contribution to Emergency Nursing Practice

- The purpose of this practice improvement project was to enhance the current violence prevention program within the facility by adding interprofessional simulation as an intervention that allows staff to practice skills.
- The primary outcome of this practice improvement project was increased staff perception of knowledge, skills, abilities, confidence, and preparedness when managing violent patient behaviors. Participants had a high level of satisfaction using simulation as an educational method.
- Key implications for emergency nursing practice based on this project are (1) interprofessional education promotes effective communication and teamwork while delineating and reinforcing team member roles and responsibilities and (2) simulation promotes a safe learning environment that allows participants to reflect upon the experience and use what they have learned in everyday practice.

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J Emerg Nurs 2019;45:24-30.
Available online 17 August 2018
0099-1767

Published by Elsevier Inc. on behalf of Emergency Nurses Association.
https://doi.org/10.1016/j.jen.2018.07.001

Abstract

Problem: Violent behaviors in the emergency department are on the rise. Mitigation efforts are essential for staff and patient safety. The goal of this quality improvement project was to improve staff perception of knowledge, skills, abilities, confidence, and preparedness when managing violent patient behaviors using interprofessional simulation training and to evaluate staff learning style satisfaction and self-confidence using simulation.

Methods: Interprofessional participants received individual computer-based training and simulation training on de-escalation techniques and restraint application. The participants' perceptions were collected in a pre- and postsurvey and analyzed using Bowker's test of symmetry. Revised tools from the National League for Nursing were used, including the Simulation Design Scale and Satisfaction and Self-Confidence in Learning, and results were analyzed by one-way analysis of variance, comparing results within and between the disciplines involved.

Results: Group comparison (nursing, providers, security staff, and social services staff) using contingency tables illustrated a significant improvement ($P < 0.0001$) in knowledge (21%), skills (20%), abilities (19%), confidence (20%), and preparedness (30%). Satisfaction among nurses ($P = 0.0021$), patient care assistants ($P = 0.0134$), and security staff ($P = 0.0060$) was significantly greater than among social services staff. No significant differences were found among providers or by sex. Participants with less experience were more satisfied than those who have been in their role for 16 years or more ($P = 0.0290$).

Implications for Practice: Participants' self-reported changes in knowledge, skills, ability, confidence, and preparedness demonstrated significance for a short-term change, with preparedness having the greatest increase. Simulation debriefing allowed participants to provide feedback; satisfaction was higher for persons with less experience. The application of skills

through simulation can prepare staff to handle difficult patient encounters.

Key words: Workplace violence; Workplace aggression; Education

An escalation of workplace violence (WPV) is occurring in health care settings, with incidence rates 3.5 times higher than total private industries.[1] Each year, approximately 2.9 million nonfatal assaults occur because of WPV.[2] Although WPV can occur anywhere in the health care facility, the most frequent occurrences are in emergency departments because of a higher risk patient population.[3] The Emergency Nurses Association (ENA) reports that approximately 25% of ED staff experienced acts of physical violence.[4]

WPV is expressed as "violent acts (including physical assaults and threats of assaults) directed toward persons at work or on duty."[5] Illustrations of WPV include the intent to instigate harm, such as verbal or written threats, aggressive body language, and physical confrontations, such as hitting, pulling hair, raping, mugging, and using weapons.[5] Victims of WPV may experience a range of physical injuries and psychological trauma.[5] Undesirable consequences include low staff morale, heightened job stress, greater staff turnover, diminished trust in management, and a hostile work setting.[5]

Needs Assessment

The emergency department where this study was performed, which is located in the upper Midwest region of the United States and manages 30,000 patient visits per year, is not exempt from the national epidemic of WPV. To prepare ED staff to mitigate WPV, interprofessional simulation training was implemented. Interprofessional training is based on the core competencies of mutual respect, shared values, effective communication, teamwork, and knowledge of roles and responsibilities.[6] Simulation creates a safe learning environment and provides the opportunity for feedback, reflection, repetition, and the ability to work through realistic situations.[7,8]

The purpose of this quality improvement (QI) project was to enhance the current violence prevention program within the facility through the addition of an application-based intervention that allows staff to practice skills. The goal was to address previous survey findings, which indicated that staff did not feel prepared to manage violent patient behaviors, and to address the Violence Prevention Committee's concerns related to increases in incidence of violence. Leadership observations indicated the need for more practice with verbal de-escalation, restraint application, and interprofessional communication. The following question was used to assess project implementation: For health care staff working in the emergency department, does the addition of interprofessional simulation training—including verbal de-escalation techniques and physical restraint application—to the current classroom-based education program enhance staff learning style satisfaction, self-confidence in learning, and self-perception of knowledge, skills, ability, confidence, and preparedness when responding to violent patient behaviors?

Methods

The leaders of this QI project were 2 experienced RNs who were pursuing their Doctor of Nursing Practice degrees. A simulation scenario was developed by 12 interprofessional project team members, with representation from ED nursing staff (licensed and unlicensed), providers (physicians, physician assistants, and nurse practitioners), security, social services, and simulation center staff. Prior to development of content for this project, Institutional Review Board approval was obtained from both the health care and educational institutions, with exemption status designated.

General Educational Objectives

The objectives for staff completing this program were as follows:

1. To improve staff knowledge, skills, abilities, confidence, and preparedness in de-escalation techniques and restraint application when working with potentially violent patients
2. To promote effective communication and teamwork while delineating and reinforcing team member roles and responsibilities when managing potentially violent patients

Simulation Scenario Design and Description

The patient scenario and a standardized patient actor script were developed using the National League for Nursing (NLN) Simulation Design Template.[9] Project team member input was essential to ensure that the training was

TABLE 1
Demographics of simulation participants, $N = 96$

Characteristic	n (%)
Discipline	
Health unit coordinator	1 (1)
Provider (MD/DO/NP/PA)	9 (9)
Patient care assistant	17 (18)
Registered nurse	52 (55)
Security staff	11 (12)
Social services staff	5 (5)
Sex	
Female	67 (74)
Male	23 (26)
Years in current role	
0-1	14 (15)
2-5	31 (33)
6-10	20 (21)
11-15	12 (13)
≥16	18 (18)

DO, Doctor of osteopathic medicine; *MD,* physician; *NP,* nurse practitioner; *PA,* physician assistant.

meaningful, capturing a realistic situation faced in daily work.[10] Interprofessional involvement was crucial for creating a scenario that highlighted discipline-specific roles and responsibilities during a challenging patient encounter. Additionally, a rehearsal occurred at the simulation center with the project team members and 4 standardized patient actors of the same gender and similar age.

Participants engaged in a 20-minute scenario of a patient who presented to the emergency department with chronic low back pain. The patient had a known pain contract restricting the use of narcotics and verbalized a passive suicidal statement. As the scenario progressed, the patient showed signs of increasing agitation when requests for narcotics were denied. Eventually, the patient became hostile toward staff and made suicidal comments and gestures. Staff needed to collaborate and use teamwork to implement verbal de-escalation techniques and safely apply physical restraints when verbal techniques failed.

Implementation

Ninety-eight interprofessional ED staff that included nursing (licensed and unlicensed), providers (physicians, physician assistants, and nurse practitioners), security, and social services attended the training at a local academic simulation center partnered with the institution (see Table 1 for a breakdown of participants). Simulation training was mandatory for nursing staff and strongly encouraged for the providers, security staff, and social services staff. Participants were paid for their attendance time by their employer.

Two weeks before the simulation training, participants were asked to review an independent computer-based training in a PowerPoint format. The prelearning content entailed a review of WPV, simulation as a learning method, verbal de-escalation techniques, personal safety measures, and institutional policies and procedures for restraint application. The individual computer-based training was highly encouraged, and completion was self-reported on the preassessment survey.

Each simulation session was designed to provide an interprofessional mix of participants and allowed participation by 4 to 6 individuals to ensure fidelity. During the training session at the simulation center, the first 10 minutes were spent completing surveys, consents, and a brief orientation to the simulation experience. Next, participants received a report on the patient from the charge nurse, portrayed by a project team member. The charge nurse also facilitated questions and assisted in scenario progression. The simulation experience lasted approximately 20 minutes. A 25-minute formal debriefing session then took place, guided by a project team member who observed the experience from the control room. During debriefing, participants collectively watched short clips of the experience and had open dialogue about key learning points. Guided reflection questions facilitated the discussion and standardized the debriefing process. Subjective comments were collected to provide descriptive enhancers for the study results. The standardized patient actor, interprofessional leaders, and trained simulation debriefer were present to provide profession-specific debriefing content and expertise. The last 5 minutes allowed for completion of the postintervention surveys.

Assessment Tools

The learners' perceptions of their knowledge, skills, abilities, confidence, and preparedness to manage aggressive or violent patient behavior were collected using a 5-statement survey in a pretest-posttest format, which was developed by the authors. Cronbach's α showed high reliability of the tool in both the presurvey and postsurvey at $\alpha = 0.9648$ and $\alpha = 0.9737$, respectively. Validity of the tool was established through input of the project stakeholders and 2 experienced graduate-level professors. The participants ranked the statements on a 5-point scale from "strongly disagree" to "strongly agree." Survey packets were stapled together to

TABLE 2
Contingency table of knowledge, skills, abilities, confidence, and preparedness rating changes for all participants

Self-perception categories	Pretest rating, n		Posttest rating, n		*P* value	Change in rating (%)[a]
	SD, D, N	A, SA	SD, D, N	A, SA		
Knowledge	26	68	6	88	<0.0001	20/94 (21)
Skills	29	65	10	84	<0.0001	19/94 (20)
Abilities	30	63	12	81	<0.0001	18/93 (19)
Confidence	33	59	14	78	<0.0001	19/93 (20)
Preparedness	38	55	10	83	<0.0001	28/93 (30)

A, Agree; *D,* disagree; *N,* neutral; *SA,* strongly agree; *SD,* strongly disagree.
[a] Number of participants in each rating category before the simulation experience, after the simulation experience, and the percentage increase for those moving from a lower rating to a higher rating.

ensure matched pairs would be present without having to use a participant identification system. The pre- and postsurveys were compared using a measure of association and Bowker's test of symmetry. Bowker's test compares categorical data from 2 points in time, in this case from pretest to posttest, to examine whether a change occurred in the categories between the 2 testing points.

Evaluation of simulation design quality "objectives, support, problem solving, feedback, and fidelity" was measured using the NLN Simulation Design Scale.[11] Satisfaction and self-confidence in learning were assessed utilizing the NLN's Student Satisfaction and Self-Confidence in Learning Scale.[11] Both surveys used a 5-point scale ranging from "strongly disagree" to "strongly agree." Favorable responses included those responding with "agree" or "strongly agree." The surveys were revised for an interprofessional audience and violent patient behaviors with permission from the NLN. After revisions, Cronbach's α demonstrated that the tools were reliable with $\alpha = 0.9747$ for the Simulation Design Scale Revised and $\alpha = 0.9644$ for the Student Satisfaction and Self-Confidence in Learning Revised. A P value < 0.05 established statistical significance.

Results

Participants were primarily RNs (n = 52, 55%), female (n = 67, 74%), and had more than 5 years of experience in their current role (n = 50, 52%). Bowker's test of symmetry revealed that the presurvey, postsurvey change for the total group (nursing, providers, security staff, and social services staff) was statistically significant for the 5 categories of knowledge, skills, ability, confidence, and preparedness ($P < 0.0001$). RN results were also statistically significant in all 5 categories ($P < 0.01$). Statistically significant changes were noted in the number of participants who changed their rating from "strongly disagree," "disagree," or neutral before the intervention to "agree" or "strongly agree" ratings after the intervention. Tables 2 and 3 illustrate the contingency tables for total group and RN comparison. Preparedness had the greatest impact, with 28 out of 93 total

TABLE 3
Contingency table of knowledge, skills, abilities, confidence, and preparedness rating changes for RN participants

Self-perception categories	Pretest rating, n		Posttest rating, n		*P* value	Change in rating (%)[a]
	SD, D, N	A, SA	SD, D, N	A, SA		
Knowledge	17	34	3	48	0.0018	14/51 (27)
Skills	21	30	7	44	0.0016	14/51 (27)
Abilities	20	31	7	44	0.0097	13/51 (25)
Confidence	21	28	10	39	0.0054	11/49 (22)
Preparedness	23	27	6	44	0.0003	17/50 (34)

A, Agree; *D,* disagree; *N,* neutral; *SA,* strongly agree; *SD,* strongly disagree.
[a] Number of RNs in each rating category before the simulation experience, after the simulation experience, and the percentage increase for those moving from a lower rating to a higher rating.

participants (30%) and 17 out of 50 RN participants (34%) moving from lower to higher ratings.

Satisfaction, self-confidence in learning, and satisfaction with simulation design were analyzed using one-way analysis of variance. When comparing results of the Satisfaction with Learning Revised scale between disciplines, nurses ($P = 0.0021$), patient care assistants ($P = 0.0134$), and security staff ($P = 0.0060$) were significantly different from social services staff. Self-confidence in Learning Revised scale results were also significantly different when comparing nurses ($P = 0.0283$) and security staff ($P = 0.0310$) with social services staff. When comparing results of different disciplines from the Simulation Design Scale Revised, nurses ($P = 0.0473$) and security staff ($P = 0.0060$) differed from social services staff in satisfaction with problem solving, because this group rated lower than the other disciplines. The provider group was not significantly different from any other interprofessional group for satisfaction, self-confidence in learning, and simulation design. No significant differences were found between genders. The Simulation Design Scale Revised showed that satisfaction with feedback in the simulation design was significantly different between participants according to the number of years in their role, with 6 to 15 years of experience and more than 16 years of experience ($P = 0.0290$). Participants with less experience were more satisfied with the feedback provided in the simulation experience compared with participants who have been in their role for 16 years or more.

Discussion

The outcomes of this QI project validate the importance of simulation-based staff education in preparing staff to manage challenging patient behavior, including the necessity for physical intervention. Participants' self-reported changes in knowledge, skills, ability, confidence, and preparedness demonstrated significance for a short-term change based on the pre- and postsurvey analysis. Staff ranked their postsurvey ratings higher across all 5 categories. Preparedness had the largest change, indicating that the application of skills through simulation does improve overall staff perceived preparedness to handle difficult patient encounters.

Staff value interprofessional simulation training because it resembles a realistic response to violent patient behaviors.[8] Standardized patient actor usage increases fidelity and recreates experiences similar to the practice environment.[8] In this project, nurses, patient care assistants and security staff had high satisfaction with simulation as the learning method. Specifically, debriefing provided real-time, valuable feedback on the simulation experience and was anecdotally appreciated by staff. Comments from staff included "I thought this training was fabulous," "The post-discussion was excellent," and "Having community actors as the patient added value and realism to the experience." Positive attributes of simulation include the ability to provide constructive feedback, utilize a controlled learning environment, and improve confidence.[7]

Interprofessional simulation can potentially improve patient care and safety for ED staff who work with violent patients. A subjective analysis of the reflections of the participants revealed an abundance of practice implications for managing violent patients. One observation was that staff often become desensitized to verbal abuse and threats. Staff were encouraged to maintain situational awareness and use limit setting with clear consequences for inappropriate behavior. Any patient at any time can become violent, regardless of their behavioral health history. An interprofessional contingency safety care plan is highly recommended for patients who have known risk factors for escalating. Discussing potential elopement, reaction plans, and environmental considerations based on the patient's diagnosis, demographic data, legal considerations, and available personnel are crucial for prioritizing patient and staff safety. These findings are similar to those of prior studies.[12,13]

Staff had the opportunity to choose their team when signing up for their simulation training time. Scenario progression was faster for teams that frequently worked together in professional practice. Additionally, these team interactions were intrinsic in nature and efficient regardless of the presence or absence of a formal leadership role. However, when sessions were randomly mixed with participants, organic teamwork was not always present. Participants were hesitant to react when a clearly defined leader role was not present, thus delaying patient care and safety. Teams that received direction from an identified leader safely restrained the patient in a timely manner.

Limitations of this project were related to unequal sizes of the 4 disciplines participating in the simulation training. Every attempt was made to ensure that each simulation training was interprofessional; however, fewer providers ($n = 9$), security staff ($n = 11$), and social services staff ($n = 5$) were present compared with nursing staff ($n = 69$). Therefore, each simulation session did not have all roles present. When a security staff, provider, or social services staff were absent, fidelity was perceived to be decreased. Participants remarked in debriefing that the lack of typical resources changed their response. On 4 occasions, project team members filled a vacant role to make the experience

more meaningful to the participants. Fidelity also may have been affected by the prebrief section, in which the objectives for the simulation training, including restraint application, were discussed. Participants stated that they moved to restraint application more quickly in the simulation than they would have in real life because an objective for the simulation stated application of restraints. Surveys were completed immediately after debriefing; no long-term measurements were gathered.

Implications for Emergency Nursing

The identification of practice gaps during debriefing provided departmental leadership with potential process improvement opportunities. Staff voiced the desire for additional education for documentation requirements. Calling for additional help early was best when a patient required application of physical restraints, because they were difficult to apply even in controlled situations. Restraint application should be practiced often in a realistic, controlled environment to maintain staff competency, confidence, and preparedness in addition to didactic and high-fidelity simulation training.

Recommendations

Evaluating sustainment of staff members' self-perception of knowledge, skills, ability, confidence, and preparedness over time could explore long-term effects. Measurements for application to daily practice were not assessed; long-term measures should be taken to evaluate if the simulation training changed staff behaviors in the practice environment over time. Anecdotal responses during debriefings provided richness to the project. A future recommendation is to formally record debriefing sessions to allow for full qualitative analysis of emerging themes. An area requiring further study is utilizing simulation as a performance assessment measure and evaluation.

Conclusions

As evidenced by this QI project, interprofessional simulation as a method of educational delivery yields improvement in staff knowledge, skills, ability, confidence, and preparedness and should be incorporated into staff education. Training should encompass all direct care team members who are potentially involved, particularly those who do not specialize in applying restraints. The simulation environment allows for the hands-on application of restraints that traditional classroom and online settings cannot offer. Moreover, interprofessional simulation promotes effective communication and teamwork while delineating and reinforcing team member roles and responsibilities.

Acknowledgments

We acknowledge the following persons for their contributions in making this project possible: William Hall, MSN, RN; Benjamin Knutson, MD; Erik Odegard; Tina Riley, LICSW; Jolene Tietz, CNS, RN; Pamela Wolters, BSN, RN; Lynn Kuechle; Colleen Royle, EdD, MSN, RN; Angela Sargent, MS; Brant Deppa, PhD; and Jane Foote, EdD, MSN.

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