Impact of Crisis Prevention Training on Student Confidence in Patient Encounters

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Abstract

Background: The Health of People Everywhere (HOPE) Clinic is a student-run free triage and urgent care clinic that has operated in a Duluth, Minnesota homeless shelter since 2008. More than 100 University of Minnesota medical and pharmacy students volunteer at the clinic annually. The unpredictable nature of clinical interactions have highlighted the need to better prepare students on preventing escalation of difficult patient situations to crises.

Methods: HOPE Clinic student leaders developed a Crisis Prevention Training Module around the themes of drug-seeking behavior, suicidal ideation and sexual harassment. A didactic presentation was followed by role-playing scenarios utilizing Theater Arts students as patients. A pre-training email survey was sent out to all 120 medical students and 180 pharmacy students on campus to evaluate students' confidence to handle difficult patients. Medical students (n=60) and pharmacy students (n=116) who volunteer at the free clinic then had the chance to participate in crisis prevention training through the school. A post-training survey was sent out to all medical and pharmacy students on campus to compare the change in student confidence among students who participated in the training and students who did not.

Results: On the pre-training survey, 40% of medical students and 17% of pharmacy students reported receiving previous crisis-prevention training (p=0.023). ANOVA of post-training survey results revealed a significant increase in student confidence to prevent a crisis compared to the pre-training survey among pharmacy students (p=0.001), but not among medical students.

Conclusions: Pharmacy students perceived that crisis-prevention training increased their confidence to prevent uncomfortable patient interactions from escalating to a crisis.

Introduction

The Health of People Everywhere (HOPE) Clinic, a free triage and urgent care clinic staffed by University of Minnesota Medicine and Pharmacy students and faculty, has operated in a Duluth, Minnesota homeless shelter since October, 2008.[1] Student volunteers include first and second-year Doctor of Medicine students in the Rural Academy of Leadership (RAL) elective, and pharmacy students from the first three years of the Doctor of Pharmacy program in the Community Outreach elective. The HOPE Clinic provides free medical care to medically-underserved residents in the Duluth (MN)–Superior (WI) Twin Ports area, and refers patients to area primary care providers.

The clinic operates three hours each week on Tuesday afternoons year-round, seeing 2-3 patients each week on average. HOPE Clinic offers point-of-care laboratory tests, blood pressure checks, health exams and advice, and referrals for chronic care, social services or health care access. A limited number of non-prescription medications are dispensed from the clinic. The HOPE Clinic pays for prescription medications dispensed through a partner pharmacy. All HOPE Clinic services are provided at no charge to the patient.

Crisis Prevention Intervention

A crisis situation in health care is "a moment in time when an individual in your charge loses rational, and at times even physical, control over his

or her own behavior.[2] "In an email survey of 263 emergency medicine residency programs, 75% of respondents reported being verbally threatened at least once during the previous year.[3] The Joint Commission considers violence in the healthcare setting a sentinel event, and encourages training for healthcare professionals to prevent patient interactions from escalating to potentially violent situations.[4,5] The Occupational Safety and Health Administration's (OSHA) voluntary guidelines for preventing workplace violence in healthcare settings cites de-escalation training as a "best practice".[6] Although OSHA neither provides such training nor recommends specific training programs, OSHA's guidelines do outline the characteristics of such training.

Many students are first introduced to patients at free clinics such as the HOPE Clinic. Medical practice at free clinics can often be categorized as "crisis management," the environment being as unpredictable as the patients. Verbal de-escalation is a first-line intervention for managing tense situations, the stress for those intervening being reduced through crisis prevention training.[7,8] Such training among emergency department nursing staff reduced the number of incidents requiring security team intervention.[9]

Although deemed an essential skill for future healthcare professionals, few reports in the literature describe crisis prevention training for health professions students.[10] A systematic review of the emotion-skills training literature among medical students from 1980-2005 (including de-escalation techniques) identified only 26 English-language articles.[11] Similarly, a systematic review of the nursing literature yielded only five studies describing de-escalation training for nursing students.[12]

Nursing students who participated in a three-day aggression/de-escalation training module reported increased confidence to deal with uncomfortable patient situations.[13,14] This increased confidence persisted for up to three months while the students provided care in patient units.[13] Nursing students who had completed de-escalation training also performed better in simulated patient care situations than students lacking such training.[15]

At the HOPE Clinic, students are occasionally faced with uncomfortable situations they feel unprepared to handle. Although not inspired by any particular incident, to address this general need student leaders on the HOPE Clinic Executive Board developed a Crisis Prevention Intervention (CPI) Training Module. The remainder of this paper describes the development, implementation and evaluation of a CPI Training Module for preventing crises in simulated clinical situations.

Research Questions

The research questions for this project were:

1) What impact would a Crisis Prevention Intervention Training Module have on medical and pharmacy student confidence to prevent an uncomfortable patient encounter from escalating into crisis?

2) What impact would a Crisis Prevention Intervention Training Module have on medical and pharmacy student confidence to prevent an uncomfortable patient encounter from escalating into crisis compared to classmates who did not participate in the training?

Methods

A 17-item Qualtrics questionnaire was created to survey students' prior experience in patient care settings, their confidence to prevent a crisis in the clinical setting, their attitudes towards receiving crisis prevention training as part of their professional schooling, and student demographics. HOPE Clinic faculty advisors (RC, RW and TPS) assessed survey items for face and content validity. No other psychometric analyses of survey items were undertaken.

A few days before conducting the crisis prevention training module, the survey was e-mailed to all 120 first and second-year Duluth medical students and to all 180 first, second and third-year Duluth pharmacy students.

Crisis Prevention Intervention Training Module

The crisis prevention intervention (CPI) training module developed for this project was based on materials received from the Crisis Prevention Institute (http://www.crisisprevention.com/). This training program has been found to effectively reduce the frequency of crisis situations in different care settings.[16–20]

The learning objectives for the CPI training module were to: (1) Clarify the HOPE Clinic protocol for dealing with uncomfortable patient encounters, (2) identify behavior levels as a crisis develops, (3) use both verbal and non-verbal techniques to effectively intervene at different behavior levels, and (4) demonstrate crisis prevention intervention techniques. HOPE Clinic board mem-

bers facilitated the training and faculty advisors attended to answer questions exceeding facilitators' expertise.

The training session began by reviewing the HOPE Clinic protocol for dealing with uncomfortable patient encounters. Next, a 15-minute presentation adapted from the Crisis Prevention Institute focused on strategies to diffuse escalating situations (Online Appendix). Finally, role-playing exercises were conducted, as described below.

CPI Training Sessions

The 60 medical students enrolled in the RAL elective and the 116 pharmacy students enrolled in the Community Outreach elective were invited to attend crisis prevention training. Space limitations and the inability to accommodate different academic schedules between Medicine and Pharmacy precluded students from both programs participating in a single interprofessional crisis prevention training session at the same time.

Medical student CPI training was held in an interactive teaching classroom with seating arranged in clusters of eight. Following the PowerPoint presentation, three students from the University of Minnesota Duluth Theater Arts department portrayed patients in three different vignettes: (1) drug-seeking behavior, (2) sexually-explicit behavior, and (3) threat to self or others. In each vignette, a HOPE Clinic board member portrayed the healthcare professional.

HOPE Clinic board members demonstrated what could happen if improper CPI techniques were utilized. After each scenario, a five-minute discussion regarding proper CPI technique was held among students in their small groups. Following these discussions, the actors/actresses performed the same vignette, but this time an RAL student portrayed the healthcare professional employing proper CPI technique to diffuse the situation.

Pharmacy student training was held in a classroom with theater-style seating. Following the same 15-minute presentation used for the medical students, the same three vignettes were acted out. However, unable to schedule actors for the pharmacy student training session, HOPE Clinic board members portrayed both the patient and the healthcare professional in each opening performance rather than drama students portraying patients. Similar to the medical student training session, a five-minute small group discussion session

(4-6 students) was held following each scenario. Following the small-group discussion, pharmacy student volunteers were called upon to demonstrate proper CPI technique to diffuse the situation as the healthcare professionals, with HOPE Clinic board members portraying the patients.

Post-training Survey

Immediately following each CPI training session, a 15-item anonymous Qualtrics survey was e-mailed to all 120 Duluth medical students or to all 180 Duluth pharmacy students, respectively. The same questions were used as in the pre-training survey, although two pre-training survey questions rendered moot by participating in the training session were dropped from the post-training survey. Session participants also evaluated the training module itself. Survey respondents who had not participated in the training session served as controls.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences 20.0; an alpha value of <0.05 was used to determine statistical significance. Dichotomous survey data were analyzed using Fisher's Exact Test. Ordinal data were analyzed using the Mann-Whitney U Test. Means and standard deviations were calculated for ordinal data to conduct pre and post-training comparisons using two-way analysis of variance (ANOVA).

Ethics Review

The University of Minnesota institutional review board determined that the research protocol for this project was exempt from review.

Results

Pre-training Survey Results

Table 1 shows that 64 medical students submitted responses (86% enrolled in the RAL elective), as did 37 pharmacy students (84% enrolled in the Community Outreach elective). Among medical student respondents, 56% were female and 44% were male; among pharmacy students, 57% were female and 43% were male.

Table 1. Pre-Training Survey Response Rates

Student Status	Female (%)	Male (%)
MS1*	14 (50)	14 (50)
MS2	22 (61)	14 (39)
Total Medical Students	36 (56)	28 (44)
PD1**	13 (56)	10 (44)
PD2	6 (86)	1 (14)
PD3	2 (29)	5 (71)
Total Pharmacy Students	21 (57)	16 (43)
All Students	57 (56)	44 (44)

*MS=Medical student (year in program); **PD=PharmD student (year in program)*

Approximately 2 of every 3 respondents reported having at least 1 year of patient care experience. Both medical students and pharmacy students reported having previously experienced uncomfortable patient situations, 51% and 62% respectively (p=0.30). Forty percent of medical students reported having received crisis prevention training previously, compared to 17% of pharmacy students (p=0.023).

Students rated their confidence to deal with patient conflict in the clinical setting, using a six-point forced-choice scale with 1 indicating the lowest level of confidence and 6 indicating the highest level of confidence. As shown in Figure 1, medical students felt more confident to deal with conflict at baseline than pharmacy students, reporting a mean ± standard deviation of 4.14 ± 1.06 compared to 3.27 ± 0.902 (Mann Whitney U=625.5; df=100;p<0.001).

Post-training Survey Results

Following CPI training, the same 1 to 6 scale from the pre-training survey was used to measure change in student-reported confidence to deal with conflict. Post-training, medical student participants reported a mean ± standard deviation rating of 4.56 ± 0.727, and pharmacy students 5.26 ± 0.656. A statistically-significant increase in confidence ratings occurred among all students following the training: Pre-CPI, all students reported a mean confidence rating of 3.82 ± 1.08; Post-CPI workshop participants reported a mean rating of 5.00 ± 0.756 (Mann Whitney U=1995; df=178; p<0.001; ANOVA, F=48.29; df=1,140; p<0.001). However, when analyzed by profession, only pharmacy students showed a statistically-significant increase in reported confidence.

Figure 1. Surveys Pre- and Post-CPI Training
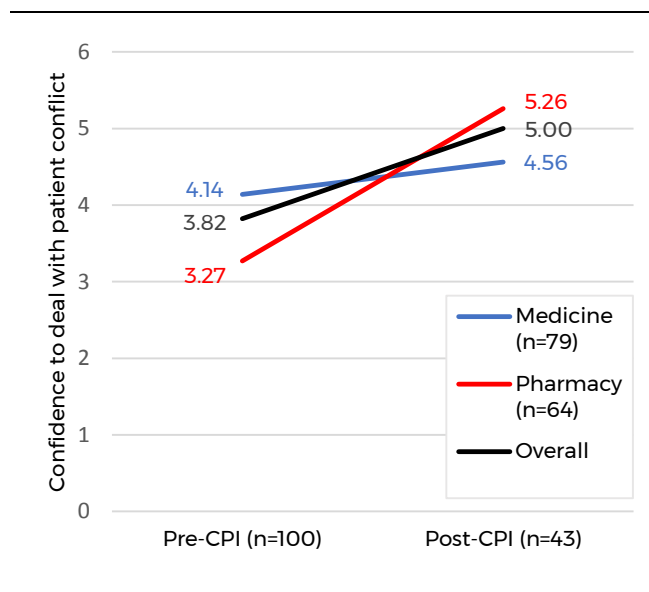
How confident are you to manage patient conflict?
ANOVA: Main effect (Δ confidence), F(1,140) = 48.29, p < 0.001; Interaction (profession), F(1,140) = 5.52, p = 0.020

Among students who participated in the CPI training module, 96% reported the training to be at least somewhat helpful. All pharmacy students and 98% of medical students participating in the training session responded that CPI training would be valuable to include as part of their regular curricula.

Discussion

This study confirmed that both medical and pharmacy students are susceptible to experiencing uncomfortable patient situations (51% and 62%, respectively) and that crisis prevention training increases student confidence to manage such

occurrences (31% increase in confidence rating overall). Additionally, students overwhelmingly agreed that receiving training in professional school to deal with difficult patient situations would be valuable, and that the CPI training in which they participated was helpful.

A statistically-significant 61% increase in student confidence occurred among pharmacy students following training; however, among medical students this increase was only 10% (not statistically significant). While 40% of medical students reported receiving de-escalation training previous to the CPI session, only 17% of pharmacy students did so. This difference may have contributed to medical students reporting a higher baseline confidence level compared to pharmacy students. In addition, medical students with previous de-escalation training may not have perceived that they learned much more through the CPI training module. Alternatively, pharmacy students completing the training may have over-estimated their confidence to prevent a crisis situation.

A disconnect exists between the needs of health professions students and increasingly-packed curricula delivered to these students. "Dealing with Difficult Patient Situations" does not occur until the third and fourth years of the medicine curriculum. On the pharmacy side, working with difficult patients is not addressed until fourth-year clinical rotations. Although time constraints leave few opportunities to address topics like crisis prevention in the earlier years of either curriculum, CPI training is now required of all students newly volunteering at HOPE Clinic.

Questions about crisis prevention training remain that have not been addressed either in the literature or by the current study:

1) What is the ideal time in a student's program to deliver CPI training? A training session in pre-clinical years allows students to safely practice de-escalation skills in a simulated environment under preceptor supervision. But how early is too early?

2) What is the optimal length of time for CPI training? Training sessions range from one hour in the current study to 40 hours.[8] The length of training depends on many factors, including the amount of time that can be devoted to the program (either in the classroom or at the workplace).

3) Is CPI training optimized in a profession-specific or an interprofessional learning environment? While uncomfortable patient care ex-

periences among pharmacy students primarily involved drug-seeking behaviors, medical students encountered a greater diversity of behavioral issues. Sharing these differing experiences with the other profession may have enhanced the training session.[21]

4) Is using trained actors as patients optimal for the role-play scenarios instead of using health professions students? The differing delivery approaches used in the two trainings may have contributed to the differential impact between professions. Another role-play approach would have been for students within their groups to conduct a brief improvisational session for each vignette.[22]

5) What type of classroom is optimal to conduct training sessions? While the medical students met in a purpose-designed active learning center with circular tables, pharmacy students met in a conventional theatre-style room using movable seating.

6) Can students implement the skills learned when confronted with a real-world patient situation in the clinic? Students are able to transfer crisis prevention skills to simulated patient care settings, and student confidence to manage uncomfortable patient situations has been documented to remain stable for at least three months following training.[13,15] But would these findings hold true for students who might not participate in clinic for several months following training?

Limitations

The small number of third-year pharmacy students who participated in the surveys precluded determining if students with more clinical experience felt more prepared to deal with crisis situations before training from having more real-world clinical experience during internships. Moreover, less real-world patient care experience might have led newer pharmacy students to feel over-confident in their crisis management skills following training, inflating their post-survey results.

The training module may have better prepared students for one particular type of crisis situation (e.g. drug-seeking) than others highlighted in the module. Student confidence was not measured for each vignette.

The drama students were more "aggressive" actors in the medical student session than were the HOPE Clinic board members in the pharmacy student session. This may have given the pharmacy students a false sense of confidence, as board

member actors may not have pushed the acting envelope as far as the drama students.

Conclusion

Crisis prevention is an important skill that students often need prior to the clinical years of their curricula. The training sessions created an engaging environment where students worked together to practice their skills and learn from each other. Medical and pharmacy students who participated in this crisis prevention training module rated the training as an effective way to learn crisis management techniques.

Disclosures

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