

Improving Employee Safety in an Outpatient Psychiatric Private Practice via De-escalation

Training: A Quality Improvement Project

Hannah Berglund, BSN

Oregon Health and Science University School of Nursing

Submitted to: Molly Goddard, DNP, PMHNP

This paper is submitted in partial fulfillment of the Doctor of Nursing Practice degree requirements.

Abstract

According to the Bureau of Labor Statistics, workplace violence is five times more prevalent in healthcare than any other private workplace (BLS, 2020). This quality improvement project sought to improve employee confidence in coping with patient aggression in an outpatient psychiatric private practice via de-escalation training. Training consisted of a 50-minute didactic presentation facilitated by a content expert that utilized original training materials informed by Richmond's 10 Domains of De-escalation (2012) and the content expert's experience in the field. The specific aim was to improve knowledge and comfort by 15% following the intervention. This aim was met by an average 50.41% increase in knowledge and 15.9% increase in comfort reported by in-person attendants (N=9). It further indicated a need for education of best practice self-defensive strategies to improve feelings of safety during an incident. These results suggest that providing de-escalation training to private practice employees may lead to improved levels of confidence when navigating instances of patient aggression. Future projects could include self-defense training, training catered to patient-facing non-clinical roles, and data analysis of instances and types of violence experienced.

Problem Description

Workplace violence in healthcare settings is appearing in news headlines at an alarming frequency. The occupational safety and health administration (OSHA) defines workplace violence as any act or threat of physical violence, harassment, intimidation, or other threatening disruptive behavior that occurs at the work site. Workplace violence is five times more prevalent in healthcare than any other private workplace, comprising 73% of all nonfatal workplace injuries and illnesses requiring days away from work (BLS, 2020). It occurs mostly in psychiatric departments, waiting rooms, emergency services, and geriatric units and can present as verbal abuse, psychological violence, physical assault, and sexual abuse (Mento, 2020). Due to setting, general lack of security, and type of care provided, psychiatric clinic workers are particularly vulnerable to violence (Pompeii, 2022; Pompeii 2020). A systematic review examining workplace violence in outpatient physician clinics found the prevalence of violence initiated by a patient or family member to range from 9.5% to 74.6%, with verbal abuse making up 42.1% - 94.3%

of reported violence (Pompeii et al, 2020). At times, workplace violence from patients can even result in homicide. Between 2011 and 2018, 23 out of 156 reported workplace homicides to private healthcare workers were committed by patients (BLS, 2020).

In addition to physical consequences, healthcare workers often experience negative emotional, cognitive, and behavioral outcomes due to workplace violence. Reported emotional and cognitive symptoms consist of increases in suicidal thoughts, anxiety, anger, depression, and feelings of guilt (Konttila et al, 2020; Mento et al, 2020; Pompeii et al, 2020). Workplace violence has been shown to contribute to caregiver burnout, resulting from high levels of emotional exhaustion and poor occupational and organizational satisfaction (Konttila et al, 2020; Mento et al, 2020). Though these consequences are important on an individual level, they have a significant effect on healthcare organizations in general. Increased caregiver burnout, injuries resulting in absenteeism, and decreased occupational satisfaction are just a few of the ways that workplace violence effects the functionality of a healthcare site, with the potential to further effect patient care outcomes (Pompeii et al, 2020; Mento et al, 2020). Despite the high prevalence of workplace violence in healthcare settings and its associated consequences, education regarding de-escalation and violence prevention techniques are not required in professional or graduate training prior to entering the workforce.

Available Knowledge

A literature review was conducted with resources available through the Oregon Health and Science University Library, namely PubMed, PsycINFO, and SCOPUS for papers published during the years 2012 – 2022 as well as internet search engines using the following key words: workplace violence healthcare, patient aggression towards nurses, de-escalation training, and patient aggression outpatient. Papers selected examined best practice techniques for de-escalation training, the effects of de-escalation training on confidence levels of healthcare workers in managing agitated patients, and the effects of one day de-escalation training programs implemented as quality improvement projects in healthcare facilities.

OSHA guidelines for preventing workplace violence recommend education and training as key elements of a workplace prevention program, further advising that training contains elements of de-

escalation and self-defense techniques (OSHA, 2020). Additionally, as of January 1st, 2022, the Joint Commission introduced revised standards to prevent workplace violence that includes training and education of de-escalation strategies (The Joint Commission, 2020). De-escalation is a verbal method of calming an agitated patient to prevent physical intervention and maintain safety. Verbal de-escalation was identified by the American Association for Emergency Psychiatry Project as a best practice method for treating agitation that encourages a patient to manage their emotions and regain control of their behavior (Richmond et al., 2012). Per Richmond et al.'s (2012) ten domains of de-escalation, key aspects include respecting personal space, establishing verbal contact, identifying wants and feelings, setting clear limits, offering choices, and being concise. It can be structured as a verbal loop that consists of listening to the patient, responding with validation, and then stating the expectation, with the potential need to repeat this loop a dozen or so times before it is heard by the patient (Richmond et al., 2012).

De-escalation training interventions found in the research varied in length, from 30-minute lunch and learn sessions to 8-hour full day trainings, tending to prioritize the improvement of clinician confidence in successfully managing an agitated patient (Thackery, 1987; Thompson & Zurmehly, 2022; Duncan et al., 2021; Ferrara et al., 2017). Confidence is a critical aspect in effective de-escalation of agitated patients as it enables clinicians to remain calm and unreactive to their own fear or anger (Thackery, 1987; Richmond et al., 2012). This prioritization has led to success, resulting in improved clinician confidence in managing agitated patients after training is completed (Duncan et al., 2021; Ferrara et al., 2017; Thackery, 1987; Thompson & Zurmehly, 2022).

In a quality improvement (QI) initiative, a midwestern cancer center was able to improve nursing confidence in coping with aggression by 21% (n=98) from 3 months pre-training to 3 months post-training by utilizing an hour-long virtual course developed from Richmond's (2012) ten domains of de-escalation and crisis intervention team programs (Thompson & Zurmehly, 2022). Similar results were found in another midwestern hospital, where Duncan et al. (2021) created a de-escalation training that consisted of an expert-led 30 minute didactic followed by a 10-minute simulated patient scenario and a 50 minute debrief that resulted in 92% of learners (n=75) feeling more confident in their ability to approach

an agitated patient. Additionally, a QI project focused on medical surgical nurses (n=43) at a Maryland hospital saw confidence in approaching agitated patients raise from 18.7% to 53% and confidence in protecting themselves from an aggressive patient raise from 11.6% to 61.8% following training sessions that consisted of a 30-minute didactic developed from Richmond's (2012) ten domains of de-escalation and a 15-minute case study (Ferrara et al., 2017).

Several studies utilized Thackery's (1987) Confidence in Coping with Patient Aggression Instrument (CCPA) to measure confidence pre and post training (Duncan et al., 2021; Ferrara et al, 2017; Thackery, 1987; Thompson & Zurmehly, 2022). In his 1987 study, Thackery emphasized confidence in de-escalating patients that has echoed throughout research in the following decades. He believed that clinicians required a reasonable amount of self-assurance to manage aggression in a professional, therapeutic manner rather than resorting to feelings of fear that may lead the clinician to flee or retaliate (Thackery, 1987). A systemic review found that although confidence and knowledge are consistently improved post-training, interpersonal connections with patients may have more of a pivotal role in effective de-escalation, indicating that clinicians should take care to prevent their confidence from being perceived as arrogance (Price et al., 2015). Additionally, the research on de-escalation training appears limited to sample size and isolated study settings, as well as a lack of strong research examining its direct impact on decreasing incidents of workplace violence in healthcare settings.

Rationale

The site of this study does not currently provide de-escalation training to their employees. As de-escalation training has been shown to improve clinician confidence in working with agitated patients, their employees may benefit from receiving this training so that knowledge and comfort improve, leading to lessened feelings of intimidation and increased safety in escalated situations (Duncan et al., 2021; Ferrara et al, 2017; Thackery, 1987; Thompson & Zurmehly, 2022).

This project was designed using the Institute for Healthcare Improvement (IHI) Model for Improvement as a framework. This model has been used by many health care organizations to improve processes and outcomes, utilizing a Plan-Do-Study-Act (PDSA) cycle to test changes in real work settings

and determine if the change is an improvement. It involves setting aims that are time-specific and measurable, establishing measures, selecting changes, and testing changes. The cycle then continues as changes are tested and refined until they are suitable for a broader scale implementation. In this project, this framework was utilized in a pilot de-escalation training intervention with participating project site employees. (Langley et al., 2009)

Specific Aim

By February of 2024, participating project site employees will have improved knowledge of and comfort with de-escalating agitated patients at their outpatient clinics. Scores on questionnaires will demonstrate a 15 percent increase in both knowledge and comfort.

Context

The project site includes an outpatient psychiatry practice with two locations, identified in this paper as the primary and secondary locations. The staff includes psychiatrists, nurse practitioners, psychologists, licensed professional counselors, and front desk personnel who provide specialty services such as psychiatric medication management and psychotherapy. In 2023, they served a total of 3,733 unique patients through 26,632 appointments. De-escalation training is not currently provided for staff working at either location. An assessment of workplace violence experienced at this practice was not completed prior to this project. This practice currently employs 9 psychiatric mental health nurse practitioners (PMHNPs) who see patients at both locations. This project was initially focused on the PMHNPs but was later expanded to include all employees that wished to attend the training.

Intervention

In February of 2024, a 50-minute de-escalation training was provided in person at the primary clinic location. Live virtual access was provided via Zoom to employees attending remotely from the secondary location. Training consisted of a 50-minute didactic presentation facilitated by a content expert that utilized original training materials informed by Richmond's 10 Domains of De-escalation (2012) and the content expert's experience in the field. Training was primarily focused on verbal and hands-off physical interventions and strategies for debriefing with the patient and staff. The training did not include

hands-on interventions or self-defense strategies. The didactic portion was followed by a 10-minute question and answer period with the content expert. Additional training sessions and corresponding PDSA cycles were considered but ultimately not possible as dictated by time allotment and participant availability.

Measures

Employees attending the training were asked to complete Thackery's (1987) 10-question Confidence in Coping with Patient Aggression Instrument (CCWPA) before and after the de-escalation training (see Appendix A). The CCWPA is an assessment originally developed by Thackery (1987) to assess changes in clinician confidence after completing a training course entitled "Therapeutics for Aggression" in a pilot study at the Veterans Administration inpatient psychiatric unit. Thackery believed that higher confidence increased the likelihood of competent therapeutic intervention by the clinician in moments of patient aggression, leading to higher rates of successful de-escalation (Thackery, 1987). In this project, the CCWPA was utilized to assess employee levels of confidence pre and post intervention as a measure of efficacy. Participants attending the training in person were given a physical copy of the CCWPA pre-intervention survey upon entering the room. Immediately upon completing the training, a post-intervention survey containing identical questions was completed by attendants before exiting the room. Both surveys were completed anonymously. The outcome measure of this project, as identified by the specific aim, will be the percentage change in de-escalation knowledge and comfort of employees after completing the training. Digital CCWPA pre-intervention and post-intervention surveys were created and emailed to participating nurse practitioners at the secondary site but were inconsistently completed by attendants and therefore not included in data analysis.

Data Analysis

Data analyzed for this project included CCWPA results from pre-intervention and post-intervention surveys of all in person attendants at the primary site. Confidence is self-rated on a 1 to 5 scale for each of the 10 questions on the CCWPA (See Appendix A). Respondents ranked their

confidence in each of these areas before and after the training. The pre-intervention survey and post-intervention surveys were analyzed for their total average level of confidence (mean of all responses for all attendants), as well as their average levels of confidence in each category (knowledge, safety, comfort, patient care, and interventions), and average levels of confidence for each individual question. Pre-intervention and post-intervention means were then compared to assess for changes in confidence in coping with patient aggression before and after the de-escalation training.

Ethical Considerations

All staff at the primary location were notified of the training in person several weeks in advance and invited to attend. Staff at the secondary location were notified of the training via email and staff meetings and invited to attend remotely via a Zoom meeting link. Participation in this improvement project was voluntary. Both pre-intervention and post-intervention surveys were completed anonymously. The content of the training included only verbal methods of de-escalation and did not advise or instruct on self-defense strategies or hands-on strategies for stopping patient aggression. Attendants were invited to share personal experiences and ask questions, but participation was not required. This project was submitted to the OHSU Investigational Review Board (Study 00026373) and deemed not to be research or needing further review.

Results

There were 9 in-person attendants in total on the day of training and 100% completion of both pre-intervention and post-intervention surveys (N=9). Participant roles included one psychiatrist, one psychologist, 5 psychiatric mental health nurse practitioners, and 2 front desk personnel at the primary location. Remote attendance included 3 psychiatric mental health nurse practitioners and 4 front desk personnel at the secondary location. As previously mentioned, due to incompleteness of the pre-intervention and post-intervention surveys, only surveys from the in-person primary location were included in the data analysis. The pre-intervention survey mean for all survey responses was 2.62, which corresponds with a ranking of general confidence between Some and Average. The post-intervention survey mean for all survey responses was 3.37, which corresponds with a ranking of general confidence between Average and

Moderate. This indicates a 28.5% increase of the general mean in reported confidence in coping with patient aggression after the intervention (See Graph 1 in Appendix B). When examined by category, there was a 50.41% increase in knowledge, 15.9% increase in comfort, 10.11% increase in safety, 30.89% increase in patient care, and 40.98% increase in intervention confidence (See Table 2 in Appendix B).

In examining specific survey question responses, differences in confidence pertaining to psychological versus physical interventions can be noted. Questions 9 and 10 of the survey examine the ability to intervene physically and psychologically, respectively (categorized as interventions). Survey respondents felt the least confident in their ability to intervene physically in pre-intervention surveys compared to all other questions (mean of 1.78) but showed a significant increase in confidence in the post-intervention survey of 68.53% (mean of 3). The pre-intervention mean for psychological intervention ability (Question 10) indicated an average of 3.11 and increased further to 3.89, showing an increase of 25.08% and maintaining a higher confidence level post-intervention compared to confidence levels with physical interventions. Additionally, questions 1 and 2 of the survey examine present levels of training (categorized as knowledge) for handling physical and psychological aggression, respectively. Respondents indicated an average confidence level of 2.33 in pre-intervention surveys for handling physical aggression (Question 1) that increased to 3.22 in post-intervention surveys, showing a 38.19% increase in confidence. Pre-intervention confidence levels for handling psychological aggression (Question 2) indicated an average level of 2.5 that increased to 4, becoming the highest post-intervention survey mean, and displayed an increase in average confidence of 60%. Furthermore, the smallest change in confidence was noted in the ability to protect oneself from an aggressive patient (question 4) at 3.8%, with a pre-intervention mean of 2.89 and a post intervention mean of 3. Percentage changes for each individual question are shown in Table 1 (See Appendix B).

Summary

This quality improvement project sought to improve employee confidence in coping with patient aggression in an outpatient psychiatric private practice via de-escalation training. The specific aim was to improve knowledge and comfort by 15% following the intervention. This aim was met by an average

50.41% increase in knowledge and 15.9% increase in comfort reported by in-person attendants (N=9).

Assessment of the efficacy of attending the training virtually was not possible due to the incompleteness of online surveys by remote attendants.

Interpretation

There was a 28.5% increase in general confidence of all in-person attendants following the intervention. This is consistent with prior research that de-escalation training is an effective intervention for increasing clinician confidence in handling patient aggression (Duncan et al., 2021; Ferrara et al, 2017; Thackery, 1987; Thompson & Zurmehly, 2022). The largest categorical improvement in confidence was seen in general knowledge, with attendants reporting an average of 50.41% improvement and an above average post-intervention level of confidence. The didactic portion included information on precipitating factors, utilizing teamwork, and simple methods for communicating both verbally and nonverbally with a person in distress to minimize safety risks. Though attendants were not surveyed on their prior experience or training, it was evident that certain roles such as front desk staff were unaware of these methods for communicating with distressed patients effectively and were highly engaged with the strategies presented by the content expert. Other attendants commented that they had experienced similar training in the past but felt benefit from reviewing evidence-based de-escalation techniques.

In examining the data further, there are distinct differences in confidence pertaining to physical versus psychological interventions. This could be a result of training focusing on verbal de-escalation techniques over physical intervention techniques. Greater improvement in confidence and higher post-intervention confidence levels were seen in the ability to use psychological interventions. Though there is improvement indicated in physical areas, this could be due to the hands-off physical intervention techniques that were discussed during the training, such as clearing of dangerous objects, body positioning, changing locations, and other techniques. As previously mentioned, self-defense techniques and hands-on physical interventions for protecting oneself from an aggressive person were not covered in the training. Therefore, we do not see significant improvement in participant ability to protect themselves

physically and maintained an overall higher confidence in their ability to utilize psychological interventions and strategies following the training.

Furthermore, engagement from virtual attendants was less than anticipated. Throughout the training the camera was positioned to show the content expert and all in-person attendants. Presentation slides for the didactic portion were displayed and viewable within the virtual meeting window. Despite encouragement of the content expert to both remote and in-person attendants to ask questions during and after the training, in-person attendants were the only ones to do so. Combining both modalities may have made it more difficult for virtual attendants to speak up or participate. As they did not complete the pre-intervention or post-intervention surveys, it is unclear as to what aspects of the training were most or least beneficial to this audience.

Limitations

The generalizability of this project may be limited due to the small private practice setting for which it was specifically created (N=9). Online attendants were unable to provide completed pre-intervention and post-intervention surveys which further limited understanding of de-escalation training efficacy when delivered in a virtual format. In-person attendants were able to interact directly with the content expert throughout the training and did so on several occasions. The online attendants were less inclined to interrupt with questions or provide case examples, likely effected by the distance felt from a virtual view. Identifiers were not utilized in this project, which made it impossible to assess which roles or individuals benefitted most from the de-escalation training. An initial assessment of prior training received in each role would have provided a more complete picture of training received in schooling or previous job placements. Additionally, this training did not cover self-defense or hands-on methods for minimizing aggression and injury when a patient is escalated. Survey responses indicate a potential need for self-defense strategies that may increase feelings of physical safety when these incidents occur. This project did not include assessment of incidents in the workplace prior to or after the intervention and therefore the impact of de-escalation training in decreasing incidents of workplace violence could not be assessed.

Conclusion

Healthcare workers are impacted by workplace violence at an unacceptable rate. Thackery (1987) believed that improving clinician confidence was important in advancing their ability to utilize therapeutic methods during an interaction with an aggressive patient over resorting to an emotional response. This QI project achieved higher confidence levels of employees in an outpatient psychiatric private practice through the intervention of de-escalation training, coinciding with results found in similar QI projects in larger settings (Duncan et al., 2021; Ferrara et al, 2017; Thackery, 1987; Thompson & Zurmehly, 2022). It further indicated a need for education of best practice self-defensive strategies to improve feelings of safety during an incident. Future projects could include self-defense training, training catered to patient-facing non-clinical roles, and data analysis of instances and types of violence experienced to improve training overall. Workplace violence can lead to increases in workplace injuries, caregiver burnout, mental health disorders, and overall workplace dissatisfaction (Konttila et al, 2020; Mento et al, 2020). It is a known risk of working in the healthcare setting. Preparing employees for potential violence via methods such as de-escalation training can provide resources and strategies to prioritize safety, improve confidence, and better navigate instances of patient aggression.

References

- Duncan, G., Schabbing, M., & Gable, B. D. (2021). A Novel Simulation-Based Multidisciplinary Verbal De-escalation Training. *Cureus*. <https://doi.org/10.7759/cureus.20849>
- Ferrara, K. L., Davis-Ajami, M. L., Warren, J. I., & Murphy, L. S. (2017). De-Escalation Training to Medical-Surgical Nurses in the Acute Care Setting. *Issues in Mental Health Nursing*, 38(9), 742-749. <https://doi.org/10.1080/01612840.2017.1335363>
- Konttila, J., Holopainen, A., Pesonen, H. M., & Kyngäs, H. (2020). Occurrence of workplace violence and the psychological consequences of it among nurses working in psychiatric outpatient settings. *Journal of Psychiatric and Mental Health Nursing*, 28(4), 706-720. <https://doi.org/10.1111/jpm.12723>
- Langley GL, Nolan KM, Nolan TW, Norman CL, Provost LP. *The Improvement Guide: A Practical Approach to Enhancing Organizational Performance* (2nd edition). San Francisco: Jossey-Bass Publishers; 2009.
- Mento, C., Silvestri, M. C., Bruno, A., Muscatello, M. R. A., Cedro, C., Pandolfo, G., & Zoccali, R. A. (2020). Workplace violence against healthcare professionals: A systematic review. *Aggression and Violent Behavior*, 51. <https://doi.org/10.1016/j.avb.2020.101381>
- Occupational Safety and Health Administration. "Workplace Violence - Overview." *United States Department of Labor*, 2020, www.osha.gov/workplace-violence.
- Pompeii, L., Benavides, E., Pop, O., Rojas, Y., Emery, R., Delclos, G., Markham, C., Oluyomi, A., Vellani, K., & Levine, N. (2020). Workplace Violence in Outpatient Physician Clinics: A Systematic Review. *International Journal of Environmental Research and Public Health*, 17(18), 6587. <https://doi.org/10.3390/ijerph17186587>
- Price, O., Baker, J., Bee, P., & Lovell, K. (2015). Learning and performance outcomes of mental health staff training in de-escalation techniques for the management of violence and aggression. *Br J Psychiatry*, 206(6), 447-455. <https://doi.org/10.1192/bjp.bp.114.144576>

- Richmond, J. S., Berlin, J. S., Fishkind, A. B., Holloman, G. H., Jr., Zeller, S. L., Wilson, M. P., Rifai, M. A., & Ng, A. T. (2012). Verbal De-escalation of the Agitated Patient: Consensus Statement of the American Association for Emergency Psychiatry Project BETA De-escalation Workgroup. *West J Emerg Med*, *13*(1), 17-25. <https://doi.org/10.5811/westjem.2011.9.6864>
- Thackery, M. (1987). Clinician Confidence in Coping with Patient Aggression: Assessment and Enhancement. *Professional Psychology: Research and Practice*, *18*(1), 57-60.
- Thompson, S. L., Zurmehly, J., Bauldoff, G., & Rosselet, R. (2022). De-escalation Training as Part of a Workplace Violence Prevention Program. *J Nurs Adm*, *52*(4), 222-227. <https://doi.org/10.1097/NNA.0000000000001135>
- “Workplace Violence Prevention – New and Revised Requirements.” *The Joint Commission*, 2020, www.jointcommission.org/resources/news-and-multimedia/video-resources/workplace-violence-prevention-new-and-revised-requirements/. Accessed 28 July 2023.

APPENDIX A

Confidence in Coping With Patient Aggression Instrument

Item	Scale anchors	
	1	11
1. How comfortable are you in working with an aggressive patient?	very uncomfortable	very comfortable
2. How good is your present level of training for handling psychological aggression?	very poor	very good
3. How able are you to intervene physically with an aggressive patient?	very unable	very able
4. How self-assured do you feel in the presence of an aggressive patient?	not very self-assured	very self-assured
5. How able are you to intervene psychologically with an aggressive patient?	very unable	very able
6. How good is your present level of training for handling physical aggression?	very poor	very good
7. How safe do you feel around an aggressive patient?	very unsafe	very safe
8. How effective are the techniques that you know for dealing with aggression?	very ineffective	very effective
9. How able are you to meet the needs of an aggressive patient?	very unable	very able
10. How able are you to protect yourself physically from an aggressive patient?	very unable	very able

Note. From *Clinician Confidence in Coping with Patient Aggression: Assessment and Enhancement* (Thackery, 1987)

APPENDIX B

Table 1*Individual Survey Question Means Pre-Intervention and Post-Intervention*

Category	CCWPA Survey Question	Pre-Intervention Mean	Post-Intervention Mean	Percentage Change
Knowledge	How good is your present level of training for handling physical aggression?	2.33	3.22	+38.2%
	How good is your present level of training for handling psychological aggression?	2.5	4	+60%
Safety	How safe do you feel around an aggressive patient?	2.44	2.89	+18.44%
	How able are you to protect yourself physically from an aggressive patient?	2.89	3	+3.81%
Comfort	How comfortable are you in working with an aggressive patient?	2.8	3.33	+18.93%
	How self-assured do you feel in the presence of an aggressive patient?	2.78	3.22	+15.83%
Patient Care	How able are you to meet the needs of an aggressive patient?	2.67	3.56	+33.33%
	How effective are the techniques that you know for dealing with aggression?	2.78	3.56	+28.06%
Interventions	How able are you to intervene physically with an aggressive patient?	1.78	3	+68.53%
	How able are you to intervene psychologically with an aggressive patient?	3.11	3.89	+25.08%

Note. Adapted from *Confidence in Coping with Patient Aggression Instrument* (Thackery, 1987)

Figure 1

General Distribution of all Survey Responses Pre-Intervention and Post-Intervention

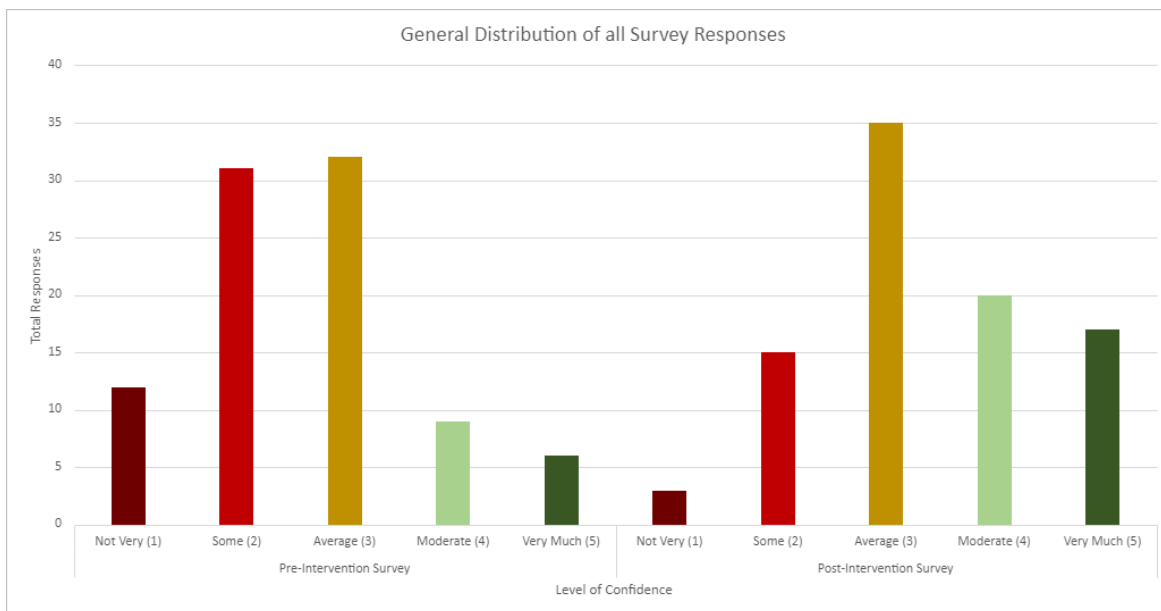


Table 2
Categorical Means Pre-Intervention and Post-Intervention

Category	Pre-Intervention Mean	Post-Intervention Mean	Percent Change
Knowledge	2.4	3.61	+50.41%
Comfort	2.83	3.28	+15.9%
Safety	2.67	2.94	+10.11%
Patient Care	2.72	3.55	+30.89%
Interventions	2.44	3.44	+40.98%

Figure 2
Categorical Response Percentages Pre-Intervention and Post-Intervention

