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**Designing and Implementing a De-Escalation Toolkit to Improve Staff Education and
Competency on De-Escalation within a Mental Health Outpatient Setting**

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Designing and Implementing a De-Escalation Toolkit to Improve Staff Education and Competency on De-Escalation within a Mental Health Outpatient Setting

Abstract

Background: The purpose of this study is to develop and implement a de-escalation toolkit to help improve memory, retention, and utility of de-escalation techniques within an outpatient mental health crisis stabilization unit.

Problem: The aforementioned crisis stabilization unit has elevated rates of patient aggression/violence and staff present with difficulty recalling de-escalation techniques due to the lapse in memory and/or retention.

Methods: The project was introduced to the stakeholders of the crisis stabilization unit and input was obtained on the design and components of the toolkit. Various analyses were conducted to ensure the appropriate implementation of the project.

Intervention: A de-escalation toolkit was developed and implemented within the crisis stabilization unit to help increase de-escalation technique utility and increase staff competency of techniques.

Results: Staff responded positively to the implementation of the de-escalation toolkit and found it to be beneficial in their practice. Moreover, staff education and perception regarding de-escalation techniques was improved and technique utility due to the toolkit was also prevalent.

Conclusions: The de-escalation toolkit was helpful in improving de-escalation technique utility and improving memory and retention of techniques. The toolkit can continue to be improved in the future and used at other sites with benefit as well.

Keywords: de-escalation, de-escalation techniques, de-escalation toolkit, mental health, mental health outpatient setting, aggression/violence, staff education/training.

Designing and Implementing a De-Escalation Toolkit to Improve Staff Education and Competency on De-Escalation within a Mental Health Outpatient Setting

Background

Individuals requiring psychiatric support seek out settings in which they can obtain relief from their symptoms. The display of these symptoms can come across as aggressive or violent in behavior, including shouting, yelling, or posturing towards others. For example, in individuals with bipolar disorder and Schizophrenia without substance abuse, the rate of committing at least one act of violence was 8.5% and 4.9%, respectively, while those with substance use had violence rates of 27.6% and 21.3%, respectively (Fazel et al., 2009; Fazel et al., 2010). The display of these symptoms may result in the utility of more escalated processes, which continuously agitate the patient, leading to negative psychological and physical outcomes in addition to instances of potential injury to both patients and staff members (Godfrey et al., 2014). Additionally, the mean annual cost of conflict and containment in an acute psychiatric unit is \$283,458 and \$414,547 respectively, suggesting that aggressive and violent behavior resulting in the use of physical interventions for de-escalation can have massive financial implications (Flood et al., 2008). The utility of de-escalation strategies in escalated patient scenarios and experiences can make a large difference in their recovery. Unfortunately, many staff fail to utilize these techniques during real-life situations involving aggressive and violent behavior and resort back to physical interventions in order to mitigate the behavior (Price et al., 2015). While the utility of de-escalation techniques is “recognized nationally as a first-line intervention for [aggressive behavior], findings indicate restrictive practices are frequently used to manage escalations of aggression/agitation in mental health settings” (Price et al. 2018). Therefore, a growing concern is that while de-escalation training is being conducted regularly, the utility of de-escalation

techniques during pertinent situations is low and this represents a lapse in memory and/or retention of the de-escalation methods. The lapse in memory and/or retention can be mitigated through the development and implementation of a de-escalation toolkit.

Problem Description

The aforementioned mental health crisis stabilization unit (CSU) provides patients undergoing a mental health/psychiatric crisis with a place to stabilize and recover from their conditions. Patients are encouraged to practice therapeutic techniques to help stabilize from their conditions, while staff are provided with education on strategies and techniques during trainings and meetings to help encourage transitions to stability for patients. Currently at the CSU however, de-escalation techniques and strategies are not being practiced appropriately, as many staff resort are unable to recall these techniques and respond in methods, which can further escalate patients. Staff trainings on these techniques, such as Crisis Prevention Intervention (CPI), include performing in simulated settings and practicing certain methods that can be utilized in real-life situations (Price et al., 2018). Unfortunately, as evidenced by an increase in aggression and violence in the CSU, staff are failing to utilize de-escalation techniques during these real practice situations involving aggressive and violent behavior. While aggressive measures may be required in certain situations for de-escalation, resorting to their utility during each pertinent situation results in negative patient and staff outcomes, such as injuries and staff turnover (Lebel, 2011). Therefore, a growing concern for the organization is that while de-escalation training is being conducted regularly, the utility of de-escalation techniques during pertinent situations is low and this represents a lapse in memory and/or retention of the de-escalation methods.

Since de-escalation strategies are recognized nationally as a first-line intervention for aggressive behavior, obtaining efficient training and education of these strategies is extremely important to ensure positive patient outcomes (Price et al., 2018). However, aggressive behavior is usually handled using methods which can escalate patients further (Price et al., 2018). While de-escalation education and training is provided to staff to help deal with these situations, many of these trainings are not evaluated for effectiveness and therefore, there is a lack of evidence showing an improvement in clinical outcomes as well as the benefit of these trainings (Halm, 2017; Price et. al, 2015). Moreover, since many settings focus on preventive, organization wide programs for their training and do not focus specifically on aggressive behaviors, the lack of transference to real-life scenarios is apparent (Gaynes et al., 2017).

Setting

This project took place in an outpatient mental health crisis stabilization unit located in San Jose, California. The setting provides services to individuals undergoing a mental health crisis in an outpatient-based setting where stay is voluntary, however patients have the ability to obtain respite from their psychiatric symptoms without the necessity of inpatient hospitalization. The crisis stabilization unit has a maximum of five beds currently due to COVID-19 county restrictions, however can sustain a maximum of eight beds.

Specific Aim

Since de-escalation techniques are an important intervention to help in mitigation of aggressive and/or violent patient behavior and to prevent increases in injuries and costs, it is vital that staff remain educated and knowledgeable on these techniques. Therefore, an initiative to help encourage memory and retention of techniques was established and implemented in July 2021 at an outpatient crisis stabilization unit in San Jose, California and data collection was

completed in October 2021. A de-escalation toolkit was developed and implemented within the setting to help increase staff competency and retention of de-escalation techniques for staff working within the crisis stabilization unit. The toolkit was utilized in conjunction with other methods of de-escalation education, such as Crisis Prevention Intervention training and staff competency, retention, and utility of techniques using the toolkit was established via pre and post surveys which were developed and distributed. The aim was to increase staff competency and retention of proper de-escalation techniques from baseline (current perception of de-escalation) to 75% and to establish an increase of proper de-escalation technique utility as a result of the toolkit from baseline (considered to be ten times that a staff member uses any type of de-escalation technique) to at least an increase of 50% within three months. With the potential of injuries to patients and/or staff and the high costs attributed to conflict and containment, utilizing de-escalation techniques to help mitigate aggressive and/or violent patient behavior can be instrumental in improving patient outcomes and encouraging their recovery.

Available Knowledge

PICOT Question

In patients seeking mental health services within an outpatient mental health crisis stabilization unit, how does the development and implementation of a de-escalation toolkit, compared to the status quo practices of not instituting any changes, improve staff memory, retention, and utility of de-escalation techniques within a period of three months?

Search Methodology

The search for pertinent studies was conducted through CINAHL (Cumulative Index to Nursing and Allied Health Literature), PubMed, and PsycINFO. The primary search terms used were “de-escalation”, “de-escalation training”, “de-escalation techniques”, “de-escalation

education” and “violent/aggressive behavior.” Additionally, terms such as “ment*”, “viol*”, and “deesca*” were also utilized to help with the search. These terms were also utilized to search within the following journals: The American Journal of Psychiatry, Journal of Psychiatric Research, British Journal of Psychiatry, Journal of Psychiatric Services, and Journal of Psychiatric and Mental Health Nursing.

The search was primarily focused on studies involving de-escalation strategies/techniques and staff education regarding these techniques. These strategies included interventions such as the application of restraints, maintaining seclusion, administration of medication, non-verbal interventions, and any other alternatives. Individuals admitted into psychiatric facilities (both inpatient and outpatient) were the primary focus of this search, but studies involving de-escalation interventions outside of psychiatric care were also considered. Upon applying these search strategies within the databases, an initial yield of 648 studies were found. Furthermore, upon applying the search terms within each of the journals, the yield was 317. Studies which were peer-reviewed and published within the last five years were considered, lowering the yield to 117. To help in narrowing the pool of available evidence, further appraisal was conducted to isolate studies that were highly pertinent to the topic. Studies were isolated and appraised based on the inclusion criteria which was developed. The target population were staff who were primarily working in psychiatric care facilities with exposure to violent/aggressive patients and the target intervention was staff training involving de-escalation strategies along with the methods in which the training was provided, yielding 27 studies. Additionally, studies detailing results of the de-escalation staff training or technique utility were identified, yielding fifteen studies. Finally, studies that shared their results and also detailed appropriate evaluative methods were considered, yielding a total of nine studies. A study that was still in progress providing a

valuable outline was also considered for appraisal, yielding a total of ten studies which were reviewed and analyzed.

Integrated Review of the Literature

The studies within this review were analyzed using the John Hopkins (JH) Nursing Evidence Based Practice Tools by Dang & Dearholt (2017). Three of the studies were analyzed using the JH Non-Research Evidence Appraisal Tool, including a Level V-B QI study by Schwartz & Bjorklund (2019) that had inconclusive staff responses, a Level V-A QI study by Spears & McNeely (2019) providing a clear outline of identifying a de-escalation program for their organization, and a Level V-B program evaluation study by Snorrason & Biering (2018) identifying factors enhancing the competence of de-escalation teams in a psychiatric setting with limited sample sizes. The remaining studies were analyzed using the JH Research Evidence Appraisal Tool including a level I-C randomized control trial (RCT) by Ye et al. (2020) that is still in progress with no results or conclusion, a level II-B systematic review by Gaynes et al. (2017) that focused solely on individuals with aggression, and a level II-B quasi experimental study by Mavandadi et al. (2016) that tested their implementation within a non-randomized setting. Hallett & Dickens (2015) conducted a level III-B cross-sectional mixed methods survey study exploring the views of staff regarding de-escalation without random sampling and low sample size, while Kuivalainen et al. (2017) conducted a level III-B cross-sectional, retrospective, descriptive study without randomization and limited sample size. Price et al. (2015) conducted a level III-B systematic review focusing only on the adult population and did not consider studies involving the pediatric and geriatric populations. Price et al. (2018) conducted a level III-A systematic review conducting a descriptive qualitative study highlighting patient perspective on de-escalation. During the review of these pertinent ten studies (see

Appendix C), the following topics emerged: Lack of research on de-escalation, integration of de-escalation into practice, and evaluation of de-escalation.

Lack of Research on De-Escalation

A lack of research on whether de-escalation training provided to staff is effective was gleaned from the studies, including whether the techniques are being utilized appropriately and if any measures are being implemented to help evaluate the de-escalation programs (Gaynes et al., 2017; Price et al., 2015). Although some studies included within this review aim to identify appropriate de-escalation strategies and techniques, research prior to the conduction of these studies has been lacking (Gaynes et al., 2017; Price et al., 2015). Many trainings offered to staff occur on an organization wide basis without necessarily focusing on aggressive behaviors and are not being evaluated for effectiveness which illustrates the lack of evidence showing an improvement in clinical outcomes as well as the benefit of these trainings (Gaynes et al., 2017; Halm, 2017; Price et. al, 2015). Furthermore, current evidence shows that clinicians, administrators, staff and even patients have no real evidence base to seek guidance on how to prevent and de-escalate aggressive behaviors (Gaynes et al., 2017, Hallett & Dickens, 2015). Due to this lack of evidence, the benefits of using these strategies in real-life scenarios have not been adequately measured and evaluated and the views of staff regarding de-escalation may differ from optimal practice (Hallett & Dickens, 2015). This highlights a major gap in knowledge and places an emphasis exploring how staff can better transfer their de-escalation training into their practice, such as with the development of a de-escalation toolkit.

Integration of De-Escalation into Practice

Four of the chosen studies highlighted de-escalation methods or programs which were modified and/or integrated into different settings. The process of identifying a de-escalation

program to be utilized within a psychiatric setting was highlighted by Spears & McNeely (2019) and this study provides a detailed strategy, including researching, analyzing, and scoring de-escalation programs already instituted within other settings, which can be utilized to help other settings replicate and integrate their own de-escalation programs. An example of this integration is highlighted by Ye et al. (2020), as their study, which is currently in progress and does not have results yet, is focused on the effectiveness of a literature-review based CRSCE (Communication, Response, Solution, Care, and Environment) de-escalation training program within inpatient psychiatric hospitals in China. Another example involves the study by Mavandadi et al. (2016) which focused on validating the DABS (De-Escalation Behavior Scale) to be used in the English language and explored its effectiveness on de-escalation within a simulated setting. Moreover, the study by Snorrason & Biering (2018) helps highlight the potential of having specialized de-escalation teams within mental health facilities. Utilizing the underlying methods established within these studies can be instrumental for helping to guide the implementation of the de-escalation toolkit and allows for replication at other settings.

Evaluation of De-Escalation

Recognition and implementation of appropriate scales and measures to help evaluate de-escalation programs is vital to help determine efficacy and outcomes (Kuivalainen et al., 2017; Mavandadi et al., 2016; Schwartz & Bjorklund, 2019; Ye et al., 2020). Measuring staff knowledge of de-escalation training can be conducted through the dissemination of pretests and posttests which help establish staff competency of de-escalation techniques (Schwartz & Bjorklund, 2019). Moreover, utilizing specific scales and measures provides the ability to generate data on effectiveness of de-escalation strategies and techniques (Mavandadi et al., 2016; Schwartz & Bjorklund, 2019; Ye et al., 2020). Scales which can be instrumental in helping to

evaluate de-escalation efficacy include the Staff Observation Assessment Scale (SOAS), DABS, Confidence in Coping with Patient Aggression Instrument (CCPAI), Maslach Burnout Inventory-General Survey (MBI-GS) and Professional Quality of Life Scale (Pro QOL) (Mavandadi et al., 2016; Schwartz & Bjorklund, 2019; Ye et al., 2020). Evaluation can consist of measuring staff knowledge, benefits of techniques, appropriateness of the program itself and examining staff reasons for using more physically involved methods for de-escalation (Kuivalainen et al., 2017). Utilizing appropriate evaluation methods can be valuable for measuring effectiveness of a de-escalation program and the proposed de-escalation toolkit.

Summary/Synthesis of the Evidence

All of the ten studies highlighted the importance of de-escalation training and techniques being implemented within mental health settings. In highlighting the lack of effective de-escalation training and technique utility, Price et al. (2015) and Gaynes et al. (2017) noted a lack of evidence on improvement of techniques based on the education and effectiveness of de-escalation strategies. Additionally, Hallett & Dickens (2015) identified that the views of clinical staff differ from optimal practice and that their beliefs regarding de-escalation techniques involve physical and medicinal methods. Price et al. (2018) found that restrictive practices are commonly used for de-escalation without an attempt for non-physical interventions. In determining important concepts for de-escalation programs as well as their implementation into practice, Spears & Mcneely (2019) provided a strategy to help future researchers in identifying de-escalation programs which can be utilized for other settings. Snorrason & Biering (2018) assessed factors which assessed the effectiveness of de-escalation teams within their setting. Additionally, Ye et al. (2020) is in the process of conducting a study based on an established de-escalation training program to assess for effectiveness and improved outcomes within multiple psychiatric settings in China. Moreover, evaluating the effectiveness of de-escalation programs

and training as well as reasons for not utilizing these techniques is also vital to ensure efficacy and benefits of the implementation. Kuivalainen et al. (2017) examined reasons for utilizing restraints and seclusion and whether de-escalation methods were used. Mavandadi et al. (2016) validated a de-escalation scale to be used in the English language and to help evaluate de-escalation skills, while Schwartz & Bjorklund (2019) implemented a violence training program and identified appropriate measures to help evaluate staff knowledge and efficacy of the training.

A majority of the available evidence was conducted within inpatient facilities and therefore, there is a lack of evidence supporting the implementation of a de-escalation toolkit within an outpatient setting. However, based on the prevalence of escalated patient behaviors within outpatient settings as community alternatives to hospitalization, the assumption that these escalated patient scenarios also occur at outpatient mental health settings is valid and prevalent to help further support for the project intervention. Gaps identified across some of the evidence include the lack of appropriate sample sizes and the utilization of a minimal number of locations outside of the United States for the studies. Recommendations for future studies and change in practice include incorporating larger sample sizes for the studies, conducting further de-escalation based studies within the United States, and utilizing outpatient settings as the focus of the studies.

Rationale

The Diffusion of Innovations theoretical framework, developed by Everett Rogers in 1962, was utilized to help guide the implementation of the de-escalation toolkit into practice and emphasizes that the toolkit will be adopted by staff at different times according to the five adopter categories (LaMorte, 2018) (Appendix D). Using this framework, measurable variables can be attained including the rate of toolkit adoption, utility of de-escalation techniques from the toolkit, and level of proper staff training on de-escalation techniques. By using the diffusion of

innovations theoretical framework, a better understanding of the toolkit adoption and utility can be established. Moreover, highlighting rates of the adoption and obtaining feedback to continuously improve the toolkit will allow for greater diffusion and potentially improved patient outcomes.

Methods

Context

The crisis stabilization unit is a maximum eight-bed facility (currently maximum five-bed due to the COVID-19 pandemic) located in San Jose, California. The facility allows for individuals to walk up for admission or be referred from another mental health institution. The facility allows for a maximum 24 hour stay after which patients can be discharged to other mental health facilities such as crisis residential or substance abuse treatment. The key stakeholders of the project include the CEO, CFO, CPO, director of the setting, supervisor/manager of the training, and staff working at the setting. Due to the unpredictability of the patient population seeking admission to the unit, all stakeholders were informed of the need for proper de-escalation and are supportive of the proposed project and intervention.

Interventions

The toolkit program was designed, implemented, and evaluated within six months to ensure an accurate end result. The first step involved introducing the concept of the toolkit to the organizational leaders and stakeholders, including the CEO, CFO, CPO, director of the setting, supervisor/manager of the setting, and staff. The projected outcomes of the toolkit's implementation were detailed during this introduction (i.e., reduction in aggressive behaviors displayed by patients, potentially lower rate of injuries to staff/patients). The director and the supervisor were perceived to have the strongest interest levels in the project as they would be the

first to see the potential benefits of implementing the toolkit within the setting (Appendix E). Additionally, the CPO was also perceived to have interest in the project due to the potential improvements in performance, while the CEO and CFO were perceived to appreciate the low-cost of the project as well as the financial savings that the project generates. The projected outcomes of the toolkit implementation were detailed during the introduction of the project to stakeholders (i.e., increase in staff competency, retention of techniques, higher rate of technique utility, etc.). By involving and engaging stakeholders, the overall scope and potential impact of the project can be strengthened and therefore, it is important to maintain stakeholder interest, gain feedback and maintain open communication (Weberg & Davidson, 2019). Additionally, de-escalation guidelines and techniques which were included in the toolkit were also shared during this meeting.

Following this concept introduction, ideas on the design of the toolkit were collected with input from the leaders and staff. These ideas were used to generate a design of the toolkit, which will be focused on ease-of-use and detail. The final design of the toolkit involved having three different sections (Appendix F). The first section was titled the warnings section and included behaviors that could indicate that a patient could become escalated. The second section was titled the tips section and included tips to help practice de-escalation techniques and maintain control. The third section was titled the strategies section and included specific strategies that should be utilized to help in de-escalating a patient.

After establishing a proper design of the toolkit and obtaining confirmation to proceed forward with the program, toolkit materials were generated. These materials were ordered through a printing corporation, which were able to help produce posters and fliers. Once the materials arrived, a brief training was provided to staff members to help introduce them to the

toolkit and allow them to become familiar. Additionally, a pre-survey and staff assessment was developed and distributed during this time to garner staff knowledge and establish a baseline of de-escalation education amongst the staff. Once the materials arrived from the printing corporation, fliers were distributed to the staff and placed in the staff office for reference. The two posters printed were placed on the wall in the staff office room for easy reference and in the staff break room as well.

Gap Analysis

After comparison of the current evidence-based practice to the results of the current conditions at outpatient settings, a major gap between the education and training currently being provided to staff is highlighted and this places an emphasis on exploring how staff can better transfer their de-escalation training into their practice (Appendix G). Even with multiple sessions and trainings offered to staff at acute care settings including outpatient, staff attitudes towards aggressive behavior results in emotional responses which leads to violence and associated injuries (Halm, 2017). Furthermore, current evidence shows that clinicians, administrators, staff and even patients have no real evidence base to seek guidance on how to prevent and de-escalate aggressive behaviors (Gaynes et al., 2017). Therefore, in order to improve the process of memorizing and practicing de-escalation techniques, evidence has shown that staff prefer to have to have regular refreshers on the de-escalation information to help them recall the guidelines and techniques to use when necessary (Price et al., 2015). The de-escalation toolkit was designed to help provide for these requests and help provide a constant reminder.

Gantt Chart

As seen in Appendix H, the initiation of this project began with a literature review conducted between August 2020 and February 2021. After the literature review was completed,

the project was established and reviewed with the project chairperson, Dr. Trinette Radasa. During the month of May 2021, the project's goals and objectives were established and outlined. In June 2021, the project was presented to the stakeholders involved with the project and the setting. Following this presentation, the toolkit was developed later in the month and implemented within the setting to allow for utility by staff. The period of data collection lasted from the month of June 2021 to the end of September 2021. The evaluation of the toolkit and post toolkit staff competency occurred during October 2021. The data gathered and findings from the project were consolidated and presented during the months of November and December 2021.

Work Breakdown Structure

To help ensure the timely and structured implementation of the DNP project, a Work Breakdown Structure (WBS) was developed (Appendix I). The WBS identified the three steps which were necessary to help in development, implementation, and evaluation of the project. The development stage of the toolkit included the presentation of the toolkit plan to the stakeholders involved, development of the toolkit and associated materials, and development of the surveys which were distributed. The implementation stage of the toolkit included posting and distributing the toolkit materials and providing training for the staff. Finally, the evaluation stage included collecting data and feedback via staff surveys and improving the toolkit as an ongoing process by collecting feedback and making pertinent changes.

Responsibility/Communication Plan

A meeting with the project chairperson (Dr. Trinette Radasa) was conducted to help establish the goals and objectives of the project. To help convey information on the toolkit as well as provide frequent updates on its effectiveness, three types of primary communicative

meetings were conducted for the project, including the initial stakeholders meeting, the toolkit training sessions, and the toolkit assessment update meetings (Appendix J). The initial stakeholders meeting involved presenting the toolkit project idea to the stakeholders and using obtained feedback to help design and gain approval. After the toolkit was approved, designed and implemented, a training session focused on using the toolkit efficiently and effectively was provided. Additionally, toolkit assessments also took place periodically during normally scheduled staff meetings to obtain feedback from staff regarding the toolkit and to encourage staff to share their toolkit related experiences.

SWOT Analysis

The toolkit plan presented with some strengths, weaknesses, opportunities, and threats (Appendix K). One of the strengths of the plan was its overall low cost to implement. The plan involved the development of materials and training which did not constitute a high cost. Another strength of the toolkit plan was its ability to always be accessible and available for staff to access without the need for more training. A weakness of the plan was its reliance on staff utility, as the success of the toolkit relies mainly on the ability of staff to use the toolkit. Additionally, another weakness of this plan was that the toolkit reinforces information that may already be known by staff and therefore, staff may display a lack of interest due to repetition of information (Price et al., 2018). An opportunity of the toolkit involved the ability of staff to contribute to the toolkit on an ongoing basis. For example, if staff identified improved methods of de-escalating or some things that may have or may not have worked for them, they could contribute these suggestions to the toolkit and therefore, improve the overall toolkit. Depending on the future success of the toolkit, another opportunity would be to help disseminate the toolkit to other organizations and settings. A threat related to this toolkit plan involved staff not using the toolkit and continuing

the status quo practices, and while the focus of the toolkit was to prevent this from happening, it can still be an occurrence. Another threat is that it may require some time to see some benefits from the utility of the toolkit and that these benefits may not be as prevalent within the short term. An additional threat involved was that under certain circumstances, restrictive and aggressive measures may be required to help defuse situations and therefore, these events could indicate that the toolkit is unsuccessful, even though these situations may represent non-defusable altercations.

Budget and Financial Analysis

The implementation of the toolkit program had an initial cost that was higher than the savings that will be generated from the project within the first year, although this will be mitigated over time. The initial cost of the program for the first year of institution was projected to be \$2,285 (Appendix L). This cost included the materials that were and will be used in the program, training that will help acquaint staff to the toolkit, costs related to updating/maintaining the toolkit, and other miscellaneous costs. The annual median cost of conflict (\$283,458) and containment (\$414,547) were used to help guide the projected level of savings that the toolkit would help generate (Flood et al., 2008). While these values help provide a general estimate into the costs, there is difficulty in determining the true costs of conflict and containment especially due to the difference in the number of patients seen and the size of the units. Due to the size of the unit as well as the number of patients seen at the crisis stabilization unit, a general estimate of \$5,000 in savings from preventing containment and conflict each were utilized. Additionally, the costs associated with de-escalation and other miscellaneous costs were also estimated at \$5,000 to help mitigate any potential factors that may arise resulting in increased costs. Therefore, during the first year, the costs and savings are near equal to help better understand how much

benefit and improvement the toolkit generated. Therefore, the first year EBITDA is kept negative to help further understand the benefits of using de-escalation techniques instead of other methods of de-escalation. Over time, the belief is that an increase in de-escalation utility will lower the costs that are associated with de-escalation. Therefore, while the first year ROI is projected to be negative at -91.20%, which is based on the idea that the costs are not known so therefore the benefits and costs generated would remain the same, the ROI is projected to increase year over year with proper utility of the toolkit, with the second year ROI increasing to 25.58% once the savings are generated and the costs are more accurately understood.

Study of the Interventions

To determine and assess the impact of the interventions, multiple evaluative measures were utilized and provided to the staff. These evaluative measures included surveys and staff assessments. The surveys were designed to explore the benefit and utility of the toolkit by staff, while the staff assessments were used to evaluate staff knowledge of de-escalation techniques.

Outcome Measures

To measure the effectiveness of the implementations and the project, a qualitative measure (i.e., staff assessments) and a quantitative measure (i.e., Likert-Scale survey) were utilized. Feedback will also be collected from staff periodically to assess staff perceptions on the toolkit and any recommendations/improvements suggested for improving the toolkit. The surveys were distributed to assess for staff satisfaction with the toolkit and to understand any discrepancies that may be present between the toolkit and staff utility (Appendix M). Staff assessments were conducted prior to the implementation of the de-escalation toolkit and after the implementation to assess current knowledge and competency of proper de-escalation techniques (Appendix N). The assessments will include the following three open-ended questions to garner

current competency and level of proper de-escalation knowledge: 1. What does early de-escalation look like, 2. What are some interventions for early de-escalation, 3. What methods constitute de-escalation for you? Staff signed a confidentiality form which acknowledged that no specific staff names or patient names would be used to generate data for this project. Moreover, the Likert-Scale survey was also administered prior to the toolkit implementation and after its implementation with different questions for each of the surveys. The statements on the pre-survey will be the following, all based on a scale of one to ten, with ten being the highest rating and assessing the level of agreement: 1. I understand proper de-escalation techniques and how to perform them during a real-life situation, 2. I feel comfortable performing de-escalation techniques, 3. I feel the education I have previously received on de-escalation has been helpful and effective for me when it comes to real-life de-escalation, 4. A method to help encourage memory and retention of techniques would be helpful in allowing me to remember and utilize de-escalation techniques in real-life situations, 5. I believe that having a method to help encourage memory and retention of techniques will help in reducing the number of injuries and costs associated with aggressive/violent behavior at the facility, 6. I feel that once the intervention to help improve memory and retention of de-escalation techniques is implemented, it can be continually improved upon and made better over time through input from staff. This survey was distributed prior the implementation of the toolkit. A post-survey was administered three months after the implementation of the toolkit. The statements on the post-survey were the following, all based on a scale of one to ten, with ten being the highest rating and assessing the level of agreement: 1. The de-escalation toolkit helped me in understanding and remembering de-escalation techniques to perform them in real-life situations, 2. I feel that the de-escalation toolkit is a helpful resource for staff and can be used at other mental health settings as well, 3. I

feel that the de-escalation toolkit was easy to understand and follow, 4. I feel that the content of the de-escalation toolkit was current, relevant, and contained the most important elements of de-escalation, 5. I feel that the de-escalation toolkit can be improved over time and made better. Additionally, a question inquiring about how many times a de-escalation technique was used from the toolkit was also included on the post-survey to determine toolkit effectiveness.

CQI Method and Data Collection Instruments

To help with data collection and analysis of staff surveys, the Qualtrics survey program was utilized along with Microsoft Excel to help with evaluation and data consolidation. Additionally, Qualtrics was utilized to help generate the staff assessments that were provided prior to and after the implementation of the toolkit. The survey results were visualized through the combination of Qualtrics and Microsoft Excel, while the staff assessments were visualized using a designed word cloud. A PDSA cycle (Appendix O) was also developed to help outline plan and maintain continuous quality improvement strategies and to help in maintaining the steps needed to implement and evaluate the project.

Analysis

The staff feedback surveys were collected from the staff upon completion and responses to questions were analyzed and evaluated. Additionally, the number of times that de-escalation techniques were utilized as a result of the toolkit were also evaluated. The staff assessments were utilized to help understand the knowledge of staff members regarding proper de-escalation techniques. The responses on these assessments were assessed to further understand staff competency of de-escalation and whether they can practice appropriate de-escalation techniques. The surveys and the assessments were both conducted prior to and after the implementation of the toolkit. The first three questions and the last three questions on the pre-survey were analyzed

separately to help illustrate the results more clearly. Moreover, the first five questions of the post-survey and the last question of the post-survey were also separated for the same reason.

Ethical Considerations

The project was conducted in conjunction with HIPAA standards and patient confidentiality was fully upheld. Additionally, the project was conducted using the ANA ethical standard of maintaining the primacy of the patient's interests as the project was conducted to help improve patient outcomes in aggressive/violent situations using de-escalation techniques and also maintaining full patient confidentiality. Moreover, the project fulfilled the Jesuit value of focusing on a common good that transcends the interests of particular individuals or groups and also using reasoned discourse to solve the problem instead of continuing the status quo and coercing others to retain the same practices (American Nurses Association, 2018; University of San Francisco, 2020).

Results

The averages from the Likert-Scale surveys were calculated and depicted in multiple bar charts. There were a total of ten recorded responses from a total of 11 potential staff members. The pre-survey was separated into two parts, where the first three questions were depicted separately as they were centered around the current staff perceptions on de-escalation, and the last three questions were depicted separately as they focused on staff perceptions of having a de-escalation toolkit. The post-survey results were also separated into two parts, as the first five responses on the survey were analyzed separately from the last response involving the average number of times that the de-escalation toolkit was utilized.

The results from the first three questions of the pre-survey showed an average response score of around five for the first three questions (Appendix P). Since the survey scores ranged

from zero to ten, this fell around the middle in gauging the staff's current comfort level and readiness with de-escalation training and utility. The results from the last three questions of the pre-survey showed an average response score of around eight, which reflects the staff's desire to have a method instituted to help in remembering and improving the utility of de-escalation techniques. The results from the post-survey showed an average response score of around nine, which reflects the staff's perception of the de-escalation toolkit and their perceived benefit from the toolkit. Finally, the average result from the post-survey question regarding the number of times staff utilized the de-escalation toolkit during real-life situations involving de-escalation was around seven.

The staff assessments showed a variety of responses to the questions presented prior to the implementation of the toolkit and after the implementation of the toolkit. As shown in the Appendix Q, the word cloud generated from the pre-implementation staff assessment showed a large number of responses involving the use of medications as a way to help with de-escalation. Setting boundaries was also a common response among the responses from the pre-implementation staff survey. In contrast, the post-implementation staff assessment showed communication, more specifically positive and non-verbal communication, as a way of helping with de-escalation. Empathy was also a common response in the post-implementation staff assessments.

Discussion

Interpretation

The staff assessments showed a change in the words and descriptions that were used when conducted prior to the toolkit implementation and after its implementation. As depicted in Appendix Q, the pre-implementation staff assessments showed that staff considered medications

to be the primary method of de-escalation along with setting boundaries. However, after the implementation of the toolkit, the primary response from staff included descriptions involving communication and conveying empathy, which help illustrate the change in the approach of performing de-escalation. The generated word clouds help convey the differences in thinking prior to the implementation of the toolkit and after its implementation and help show the benefit of the toolkit and associated education. The aim to improve staff competency and knowledge of appropriate de-escalation techniques was perceived to have been met as the staff acknowledged the utility of appropriate de-escalation techniques in the post-assessment.

Based on the results from the first three questions of the pre-survey, staff working at the unit did not feel as confident in their knowledge and education regarding de-escalation techniques. Additionally, the average staff response score regarding the education and comfort level related to de-escalation was around the five, signifying that staff members were mixed in their responses. However, the results of the last three questions of the pre-survey show that staff overwhelmingly preferred to have a method and/or intervention to help in remembering and practicing de-escalation techniques, as the responses scores were all above eight. The pre-survey helped in illustrating that staff members acknowledged that there could be an improvement related to memory, retention, and utility of de-escalation techniques. The results of the post-survey showed an overwhelmingly positive response to the implementation of the toolkit, with the average response score being around nine for the first five questions of the survey. Since the baseline score was around a five prior to the implementation of the toolkit, having an average score of around nine indicates that the aim for improving staff retention and memory of techniques was achieved. This showed that the implementation and institution of the de-escalation toolkit was valuable to staff and that the toolkit can be utilized in other settings with

benefit as well. Moreover, staff agreed that the toolkit can be improved over time using its current design as a framework to build upon. The last question of the survey focusing on the utility of the de-escalation toolkit during real-life situations also showed a positive response, as the average number of times that the toolkit was used was close to seven times. There was a variety of responses for this question, which is understandable based on the Diffusion of Innovations theory and how individuals will adopt a change over time.

Summary

De-escalation techniques can be extremely beneficial and optimal in reducing instances of aggressive/violent patient behavior and can be instrumental in reducing patient injuries and costs. This project demonstrated the value of instituting and utilizing a de-escalation toolkit to help improve the memory and utility of proper de-escalation techniques. Staff working at the crisis stabilization unit found the toolkit to be beneficial and also provided suggestions to help improve the toolkit, such as changing the location of the posters to allow for easier visibility, using more posters, or even adding other de-escalation techniques to the poster itself. The success of the toolkit allows for its future potential to be disseminated to other settings as well.

Limitations

A limitation of this project was the heavy reliance on staff utility, as the success of the toolkit relied mainly on the ability of staff to use the toolkit. Since not all staff members adopted the change at the same time, this interfered with the ability to assess the true benefit of the toolkit after three months. Additionally, another limitation of this plan was that it reinforced some information that staff iterated that they already knew and therefore, they may not have presented with heightened interest in reinforcing the guidelines and techniques discussed in the toolkit. Furthermore, a future limitation may be that staff elect to not use the toolkit and continue using

the status quo practices. Finally, another limitation was the smaller sample size of only 11 potential staff members due to the crisis stabilization unit only having 11 staff members.

To help mitigate these limitations, the transformational leadership approach can be used in the future to help in offering individualized consideration and intellectual promotion to all the team members and focus on obtaining feedback from the staff to help improve the toolkit and encourage continued utility (Pereira et al., 2020). Additionally, involving all members of the team as well as implementing an empathetic approach can help encourage collaboration and this in turn can help with recognizing potential deficiencies involved with the toolkit (Pereira et al., 2020). Utilizing these approaches can help ensure that the program will continue provide a generally low-cost initiative that can reduce instances of aggression/violence and associated costs in the future. Additionally, similar projects can be instituted at other organizations with more staff to have larger sample sizes which can be analyzed.

Conclusion

De-escalation techniques can be extremely beneficial and optimal in reducing instances of aggressive/violent patient behavior and can be instrumental in reducing patient injuries and costs. While education on these techniques is provided during staff trainings, staff are unable to recall these techniques during practice and as a result, respond emotionally by resorting to restraints/seclusion (Halm, 2017). The de-escalation toolkit provides a generally low-cost initiative that can help improve the memory and retention of proper de-escalation techniques and increase their utility during real-life situations. Moreover, the toolkit can be continuously improved and refined over time, which will help maximize its potential and help in improving outcomes and metrics for all. Therefore, the de-escalation toolkit is a valuable asset to any setting and can help improve patient outcomes and lower associated costs.

Funding

This project received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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05506w

Appendix A. Non-Research Approval Documents



Doctor of Nursing Practice Statement of Non-Research Determination (SOD) Form

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

General Information

Last Name: Balwa First Name: Balraj
 CWID Number: 20454345 Semester/Year: Spring 2021
 Course Name & Number: NURS 749A – NP Qualifying Project: Manuscript Development
 Chairperson Name: Trinette Radasa Advisor Name: Trinette Radasa

Project Description

1) Title of Project

“Implementing a De-Escalation Toolkit to improve staff education and competency on De-Escalation within a Mental Health Outpatient Setting”

2) Brief Description of Project

Settings which provide mental health services can be sources of patient aggression and/or violence without proper de-escalation methods being utilized. A literature review shows that while staff working in mental health settings are provided with de-escalation training, including Crisis Prevention Intervention (CPI), there is a lack of transference from these trainings to real-life practice and that leads to increases in patient aggression and potential for violence, which results in an increase in injuries and associated costs (Price et al., 2015). Moreover, many of these trainings are not being evaluated for effectiveness and therefore, there is a lack of evidence showing an improvement in clinical outcomes as well as the benefit of these trainings. Since outpatient mental health settings range in acuity and since psychiatric settings have been shown to have common displays of aggression which can escalate into violence, an improved and streamlined method for helping in memory and recall of de-escalation techniques is needed.

Problem Statement: In mental health outpatient settings, instances of aggressive/violent patient behaviors can be largely prevalent. These behaviors can become easily escalated without proper interventions, resulting in injuries to patients and staff, and can also result in increased costs and lower patient satisfaction rates. Staff may be unaware of techniques and strategies that can be used to properly de-escalate patients, which can amplify this problem substantially. Therefore, implementing a helpful tool to help improve memory and recall of techniques can be instrumental in improving staff competency in de-escalation.

3) AIM Statement:

To increase staff competency and retention of de-escalation techniques from baseline to 75% and to establish an increase of proper de-escalation technique utility from baseline to an increase of 50% within three months.

4) Brief Description of Intervention:

A de-escalation toolkit will be designed and implemented within a mental health outpatient setting. The toolkit will include posters and fliers, with easy-to-understand information regarding these techniques and guidelines on de-escalation techniques and would detail actions to take during instances of aggressive/violent behavior. The toolkit would be designed with the help and input from the staff working within the unit to better identify display methods and designs to help in appropriate viewing and retention of the information. The implementation of the toolkit will include brief training to help in instructing appropriate utility of the toolkit, evaluation of toolkit utility, updating with current evidence-based research, and assessing staff knowledge regarding the toolkit. The toolkit will aim to help establish staff competency and memory of techniques.

5) How Will This Intervention be Implemented:

This project will be implemented within a mental health outpatient setting. The focus of the intervention is to help design and implement a de-escalation toolkit which can help staff working within mental health outpatient settings to better remember and utilize de-escalation techniques and prevent injuries and costs related to aggressive and/or violent patient behavior. The main stakeholders of this project include organizational leaders and stakeholders, including the CEO, CFO, CPO, director of the setting, supervisor/manager of the setting, and staff. The stakeholders will be educated on the current problem, the suggested intervention, the associated benefits, the goals projected, and all progress of the project. The stakeholders will also be involved in helping design and consistently improve the toolkit after implementation. The toolkit will be designed in conjunction with all stakeholders and will be designed using an easy-to use and simple to understand format. The toolkit will be continuously improved with feedback from staff and methods, such as Failure Mode Effects Analysis (FMEA) and Root Cause Analysis (RCA) will be used to determine potential discrepancies and negative attributes which can be mitigated.

6) Outcome Measurements:

To measure the effectiveness of the project, a qualitative measure (i.e. staff assessment) and a quantitative measure (i.e. Likert-Scale survey) will be used. Feedback will be collected from staff periodically to assess staff perceptions on the toolkit and any recommendations/improvements suggested for improving the toolkit. The surveys will be distributed to assess for staff satisfaction with the toolkit and to understand any discrepancies that may be present between the toolkit and staff utility. Staff assessments will be conducted prior to and after the implementation of the toolkit to assess for the current knowledge and competency of the techniques. The Likert-Scale survey will also be administered prior to and after the implementation of the toolkit with different responses for each type of survey. The assessments along with the surveys will be used to establish staff competency of techniques and to help evaluate for an increase of 75% in competency and retention of techniques. The responses on the post-survey will help evaluate for an increase of 50% of proper de-escalation technique utility.



DNP Statement of Determination

Evidence-Based Change of Practice Project Checklist*

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

Project Title:

“Implementing a De-Escalation Toolkit to improve staff education and competency on De-Escalation within a Mental Health Outpatient Setting”



Mark an “X” under “Yes” or “No” for each of the following statements:	Yes	No
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	X	
The specific aim is to improve performance on a specific service or program and is a part of usual care. All participants will receive standard of care.	X	
The project is not designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does not follow a protocol that overrides clinical decision-making.	X	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does not develop paradigms or untested methods or new untested standards.	X	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does not seek to test an intervention that is beyond current science and experience.	X	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	X	
The project has no funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	X	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	X	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: <i>“This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.”</i>	X	



**DNP Statement of Determination
Evidence-Based Change of Practice Project Checklist Outcome**

The SOD should be completed in NURS 7005 and NURS 791E/P or NURS 749/A/E

Project Title:

"Implementing a De-Escalation Toolkit to improve staff education and competency within a Mental Health Outpatient Setting"

X This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). **Student may proceed with implementation.**

This project involves research with human subjects and **must be submitted for IRB approval before project activity can commence.**

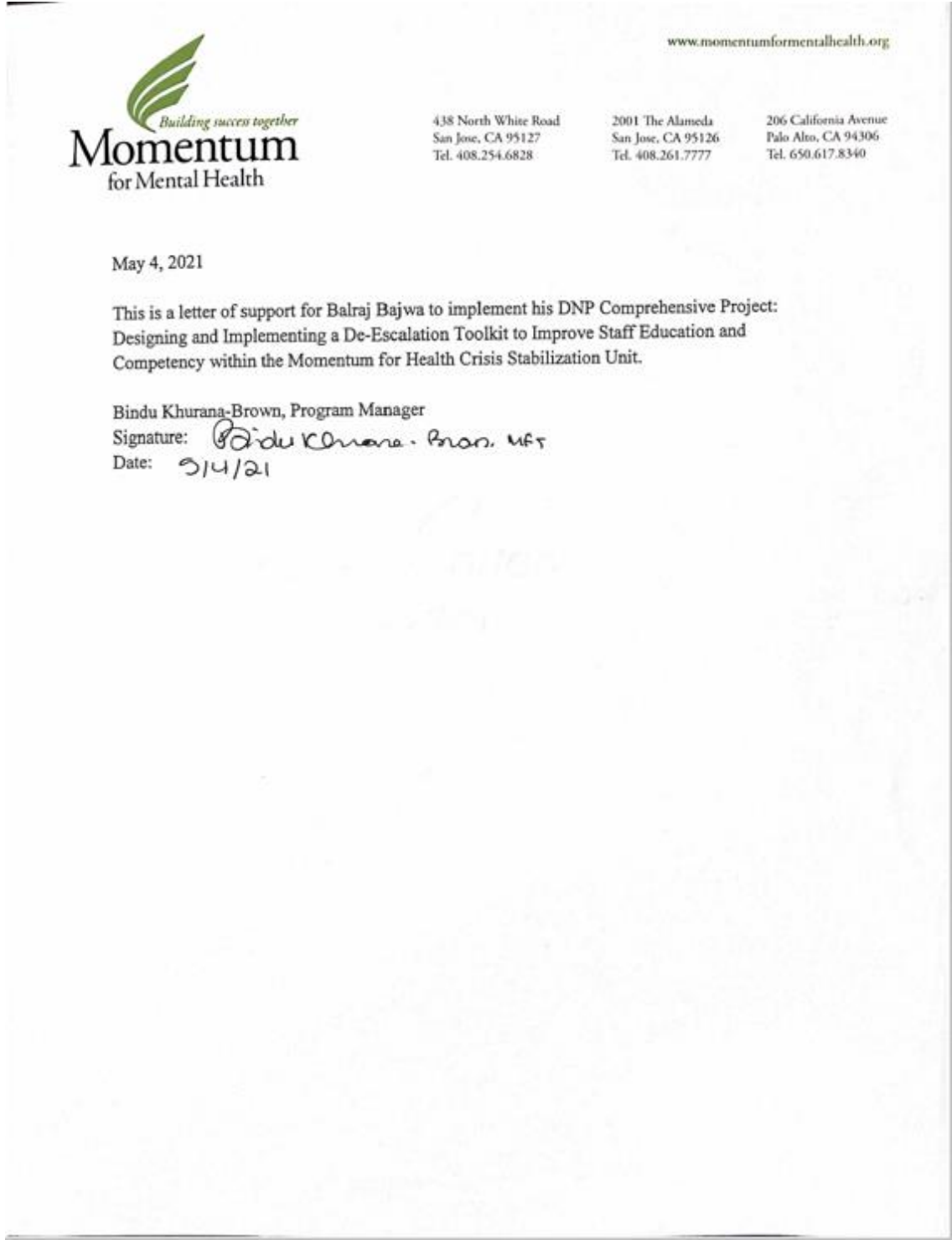
Comments:

Reference

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<https://doi.org/10.1192/bjp.bp.114.144576>

Student Last Name:	<u>Bajwa</u>	Student First Name:	<u>Balraj</u>
CWID Number:	<u>20454345</u>	Semester/Year:	<u>Spring 2021</u>
Student Signature:	<u><i>Balraj Bajwa</i></u>	Date:	<u>03/24/2021</u>
Chairperson Name:	<u>Trinette Radasa</u>		
Chairperson Signature:	<u><i>Trinette Radasa</i></u>	Date:	<u>03/24/2021</u>
DNP SOD Review Committee Member Name:	<u>Mahmoud Kaddoura</u>		
:	<u><i>Mahmoud Kaddoura</i></u>	Date:	<u>03/24/2021</u>

Appendix B. Letter of Support from Agency



Appendix C. Evidence Evaluation Table

Purpose of article or review	Design / Method / Conceptual framework	Sample / Setting	Major variables studied (and their definitions)	Measurement of major variables	Data analysis	Study findings	Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
<p>APA Reference: Gaynes, B. N., Brown, C. L., Lux, L. J., Brownley, K. A., Van Dorn, R. A., Edlund, M. J., Coker-Schwimmer, E., Weber, R. P., Sheitman, B., Zarzar, T., Viswanathan, M., & Lohr, K. N. (2017). Preventing and De-escalating Aggressive Behavior Among Adult Psychiatric Patients: A Systematic Review of the Evidence. <i>Journal of Psychiatric Services, 68</i>(8), 819–831. https://doi.org/10.1176/appi.ps.201600314</p>							
To compare effectiveness of strategies used to prevent and de-escalate aggressive behaviors among psychiatric patients in acute care settings.	<p>A systematic review involving comparative studies of violence prevention and de-escalation strategies in acute care settings</p> <p>Electronic databases were searched along with manually searched reference lists focused on comparative studies of de-escalation</p>	<p>Articles focused on comparative studies of de-escalation strategies used for adult patients with psychiatric disorders presenting with aggressive behavior</p> <p>Total studies found after initial search: 1,983</p> <p>After application of selection criteria: 39</p>	<p>IV: Search within electronic databases and reference lists with inclusion/exclusion criteria</p> <p>DV: Studies detailing and comparing de-escalation strategies used for adult patients with psychiatric disorders presenting with aggressive behavior</p>	<p>SOE for primary outcomes were independently graded based on incorporation of five key domains: 1. Study limitations, 2. Consistency, 3. Directness, 4. Precision, 5. Reporting bias</p>	<p>All identified studies were tabulated and compared based on the type of intervention, study design, risk of bias, clinical setting, country, sample size, duration of intervention, intervention and comparison groups, and the patient population.</p> <p>Studies with</p>	<p>Overall, there was very limited evidence surrounding strategies for preventing and de-escalating aggressive behavior among psychiatric patients. While risk assessment and multimodal interventions which were consistent</p>	<p>Level II-B</p> <p>Worth to Practice: Highlights the lack of research and evidence into effective de-escalation techniques and methods which can be used in psychiatric settings, including inpatient and outpatient and shows the need for further research and implementation of appropriate evaluation methods.</p> <p>Strengths and Weaknesses: Strengths include exploring and reviewing literature to identify de-escalation techniques and strategies which can be used to de-escalate patients in acute care settings. Additionally, the review also highlights the lack of available evidence on this topic and signifies the need for further</p>

Purpose of article or review	Design / Method / Conceptual framework	Sample / Setting	Major variables studied (and their definitions)	Measurement of major variables	Data analysis	Study findings	Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
	<p>strategies. Pertinent inclusion and exclusion criteria were developed to determine studies to be included. Two research team members independently reviewed all titles and abstracts against these criteria to identify studies.</p> <p>No conceptual/theoretical framework is used.</p>	<p>After application of inclusion/exclusion criteria and eliminating ineligible studies: 17 (13 RCTs, two NRCTs, and two retrospective cohort studies).</p> <p>Databases searched included MEDLINE (via PubMed), Embase, the Cochrane Library, Academic Search Premier, PsycINFO, and CINAHL (Cumulative Index to</p>			<p>low SOE (the highest SOE grade) were also separated to determine findings and direction of effect.</p>	<p>with the Six Core Strategies principles (including include leadership toward organizational change, use of data to inform practice, workforce development, use of seclusion and restraint prevention tools, consumer roles in inpatient settings, and debriefing techniques) may help lower aggressive</p>	<p>research in the future. Limitations included the review's sole focus on adults in acute care settings and left out data from chronic care and psychiatric residential settings, as well as children and adolescents. Additionally, another limitation is that studies solely focused on reducing aggression were identified and studies focused on reducing agitation were not considered.</p> <p>Feasibility and Conclusion: This review further displayed the lack of available evidence on effective de-escalation techniques and highlighted the need for further research and appropriate evaluation on this issue. The study is feasible to be conducted by other researchers in the future.</p> <p>Recommendations: Evaluate the utility of de-escalation techniques within the studies gleaned from the review and</p>

Purpose of article or review	Design / Method / Conceptual framework	Sample / Setting	Major variables studied (and their definitions)	Measurement of major variables	Data analysis	Study findings	Level of evidence (critical appraisal score) / Worth to practice / Strengths and weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
		Nursing and Allied Health Literature) for studies from January 1, 1991, to February 3, 2016				behavior and use of restraining methods, more research is needed to understand how best to prevent and de-escalated behavior in acute care settings. .	incorporate appropriate techniques found through the search for inclusion within the toolkit. Additionally, conduct further research into appropriate de-escalation techniques that are being utilized at different psychiatric facilities (inpatient and/or outpatient) and evaluate the techniques and strategies to identify significant results. By conducting further research and experimentation, more data and evidence can be generated to determine best techniques. Include in project.

Definition of abbreviations: SOE: Strength of Evidence.

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
<p>APA Reference: Hallett, N., & Dickens, G. L. (2015). De-escalation: A survey of clinical staff in a secure mental health inpatient service. <i>International Journal of Mental Health Nursing, 24</i>(4), 324–333. https://doi.org/10.1111/inm.12136</p>							
To explore the views of a range of clinical staff about de-escalation including their definition regarding de-escalation, interventions that they identify as de-escalation, their, interventions utilized during low level conflict resolution, intervention staff believe constitute de-escalation,	Cross-sectional mixed-methods questionnaire survey design incorporating quantitative and qualitative elements. 10-item questionnaire consisting of three different sections: participants' definitions of de-escalation, views about de-escalation, and range of interventions utilized by staff. Data analysis for each of the	N=72 80 staff were provided with questionnaires with 72 responses returned. Study was conducted as St. Andrew's mental health hospital and recruited multiple participants from different wards.	IV: 10-item questionnaire provided to staff DV: Demographic details and views of clinical staff (including communication, tactics, interpersonal skills, assessment/risk, getting help, and containment measures) on de-escalation and responses to vignettes showing aggressive behavior.	Demographic details were isolated and presented for the participating clinical staff. Free-response sections were analyzed using thematic analysis to identify common themes and de-escalation interventions that were used.	Each section of the questionnaire was analyzed separately, with the first two sections (participants' definitions of de-escalation and views about de-escalation) transcribed separately into Microsoft Excel and different codes were used to identify words and phrases within the data set to help formulate higher level	The views of clinical staff about de-escalation may differ from optimal practice, as half of the staff interviewed identified PRN medications as a de-escalation intervention and 15% wrongly stated that seclusion, restraints, and emergency	Level III-B Worth to practice: Identifies staff perceptions of de-escalation techniques and interventions which they currently use which can be used to provide proper education and training on appropriate de-escalation methods in the future. Strengths and Weaknesses: The strength of the study is that it provides staff perspectives of de-escalation studies which can be important to help in education and training. Additionally, the study helps clarify themes that should be addressed in de-escalation programs. Limitations of the study are the small sample size and the lack of random sampling. Feasibility and Conclusion:

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and interventions that staff believe are most effective.	<p>survey sections was conducted and thematic analysis of free-response sections was also performed.</p> <p>No conceptual framework is used.</p>				themes. The third section (range of interventions utilized by staff)	IM medications were de-escalation interventions. These interventions were also found to be the most commonly used.	<p>Study helps highlight themes and beliefs of staff around de-escalation and recognizes that aggressive measures are commonly used. Therefore, it is beneficial to recognize patient views on de-escalation to help design training and education that can help improve utility of appropriate de-escalation techniques.</p> <p>Recommendation: Study should be conducted in the United States at various mental health facilities throughout the country with larger sample sizes. Include in project.</p>

Definition of abbreviations: IM: Intramuscular; PRN: Pro Re Nata (as needed)

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
<p>APA Reference: Kuivalainen, S., Vehviläinen, J. K., Louheranta, O., Putkonen, A., Repo, T. E., & Tiihonen, J. (2017). De-escalation techniques used, and reasons for seclusion and restraint, in a forensic psychiatric hospital. <i>International Journal of Mental Health Nursing, 26(5)</i>, 513–524. https://doi.org/10.1111/inm.12389</p>							
Examining the reasons for utilizing seclusion and restraint, as well as any de-escalation techniques which were used to help calm patients down in a Finland hospital.	<p>Cross-sectional, retrospective, descriptive study.</p> <p>Seclusion and restraint forms from a 4-year period between 2009 and 2013 were investigated. Purposive sampling was utilized to ensure data were representative and included a variation of seclusion and restraint episodes from different units and patient</p>	<p>N=144 seclusion/restraint decisions</p> <p>Study was conducted within the Niuvanniemi state mental hospital in Finland.</p>	<p>IV: Investigation of seclusion or restraint episodes</p> <p>DV: Reasons for using seclusion or restraints and which de-escalation techniques, if any, were used to help.</p>	<p>Qualitative analysis was conducted on the seclusion and restraint forms to determine the de-escalation techniques that were used and the reasons for the seclusion and restraint along with the gender of patients involved and reason for inpatient admission.</p>	<p>Seclusion and restraint episodes were analyzed using descriptive statistics and X² test performed using SPSS Statistics version 20.</p> <p>Qualitative content analysis was used to investigate the de-escalation techniques in the narrative descriptions of the form. Analysis was furthered and four categories were</p>	<p>The most commonly used de-escalation techniques were one-to-one interactions with the patient and administration of extra medications. Additionally, the most common reasons for seclusion and restraint were threatening harmful behavior, direct harmful behavior,</p>	<p>Level III-B</p> <p>Worth to practice: Highlights the common reasons behind the application of restraints and utility of seclusion and pertinent de-escalation strategies that are being utilized within an inpatient mental health setting. These events can be analyzed to determine where de-escalation technique utility can be improved and ways to prevent unnecessary application of restraints and seclusion.</p> <p>Strengths and Weaknesses: The strength of this study is that it uses an appropriate sample size and time period to assess the interventions used and provides important insight into the approaches used by staff to de-escalate patients. Limitations of this study are that only the first seclusion or restraint episode</p>

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	<p>groups.</p> <p>No conceptual framework was used.</p>				<p>established to determine most common reasons for restraints and seclusion</p>	<p>indirect harmful behavior, and other behaviors.</p>	<p>was included in the study. Additionally, cases were not randomized at the ward level which would have been useful for generalization.</p> <p>Feasibility and Conclusion: Study helps highlight that staff should be educated on a broad range of de-escalation techniques instead of reverting restraint and/or seclusion use from the outset. While restraint and/or seclusion utility is warranted with risk to safety and in severe situations, it is important to train staff in multiple de-escalation areas so they can utilize them in pertinent situations. This study can be replicated at mental health hospitals and facilities.</p> <p>Recommendation: Study findings should be used to help educate during toolkit training. Include in project.</p>

Definition of abbreviations: None

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<p>APA Reference: Mavandadi, V., Bieling, P. J., & Madsen, V. (2016). Effective ingredients of verbal de-escalation: validating an English modified version of the “De-Escalating Aggressive Behaviour Scale.” <i>Journal of Psychiatric & Mental Health Nursing</i>, 23(6/7), 357–368. https://doi.org/10.1111/jpm.12310</p>							
To modify the DABS to include descriptions of best, acceptable, and least desirable staff practices towards de-escalation and to validate the DABS in the English language (EMDABS)	<p>Quasi-experimental study using ratings for EMDABS to evaluate effectiveness of de-escalation</p> <p>Item descriptions for the EMDABS were developed and 50 conflict centered staff-patient interactions were reviewed and summarized. Three raters used the EMDABS to evaluate 272 simulations that depicted these</p>	<p>135 staff members (105 nurses, 22 allied health, and 8 physicians) and four male actors each depicting an agitated mental health patient.</p> <p>Study occurred at a Canadian mental health hospital with approximately 300 beds and 800 staff.</p>	<p>IV: Utility of EMDABS in an aggressive patient situation</p> <p>DV: Rating for each of the seven EMDABS items to evaluate de-escalation skill (including valuing the client, reducing fear, inquiring about client’s queries and anxiety, providing guidance to the client, working about possible agreements, remaining calm, and establishing risk).</p>	<p>The seven EMDABS items were tabulated along with novel descriptors, including the least desirable, acceptable, and most desirable form of practice for each of the items. Additionally, item average ratings and interrater reliability scores were generated to assess the level of utility for each of the EMDABS items and the accuracy of the rating for the de-escalation scenario viewed.</p>	<p>Exploratory factor analysis was conducted by conducting the scree plot/test, examining the size of the eigenvalues, and explaining variance.</p> <p>Additionally, inter-rater reliability was compared amongst all three raters along with calculation of the Cronbach’s alpha for consistency.</p>	<p>The study helps validate the EMDABS to create descriptions of best, acceptable, and least desirable staff practices to help evaluate de-escalation skills or interventions and help guide best de-escalation practice.</p>	<p>Level II-B</p> <p>Worth to Practice: The EMDABS can be utilized in multiple different settings to evaluate de-escalation skill of staff members and help guide them in practicing appropriate de-escalation techniques.</p> <p>Strength and Weakness: Strength of this study is that it helps provide a scale to evaluate de-escalation skill which can be used to provide appropriate staff feedback and help guide staff utility of techniques. Limitations of the study include utilizing the same scenario for the aggressive patient across all four actors, lack of certainty regarding EMDABS including all necessary components for all settings, potential differences in ratings if different rates were used, and measurement of de-</p>

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	interactions No conceptual framework noted.						<p>escalation skill instead of the outcome of de-escalation.</p> <p>Feasibility and Conclusion: The study provides a great tool which can be used to evaluate de-escalation skill in a psychiatric setting (inpatient or outpatient) and can be used to guide appropriate de-escalation technique utility. The study's findings are feasible to be used for the toolkit.</p> <p>Recommendations: Incorporate scale into de-escalation toolkit to evaluate outcomes. Replicate a similar study which focused on the outcome of the de-escalation techniques and whether they have been successful in de-escalating the situation.</p> <p>Include in project.</p>

Definition of abbreviations: DABS: De-Escalating Aggressive Behavior Scale; EMDABS: English Modified De-Escalating Behavior Scale

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<p>APA Reference: 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. <i>British Journal of Psychiatry</i>, 206(6), 447-455. https://doi.org/10.1192/bjp.bp.114.1445767.</p>							
To determine the learning, performance, and clinical safety outcomes of de-escalation techniques training provided to mental health staff.	<p>Systematic review</p> <p>Search terms were developed involving mental health and de-escalation techniques and were used to search electronic databases.</p> <p>Inclusion and exclusion criteria were developed and utilized along with eligibility screening.</p> <p>No conceptual framework is</p>	<p>Studies on de-escalation training involving healthcare staff working with adult populations (aged 18 to 65 years) in mental health settings (no specific setting mentioned)</p> <p>Total studies found after initial search: 12,885</p> <p>After screening by title: 10,174</p> <p>After screening by</p>	<p>IV: Trainings conducted on de-escalation techniques for managing violence and aggression</p> <p>DV: Mental health staff learning and performance outcomes as a result of the de-escalation trainings provided</p>	<p>Quality Assessment Tool for Quantitative Studies: Identifies selection bias, study design, confounder variables, blinding, data collection methods, study withdrawals/dropouts, validity and reliability in quantitative studies.</p> <p>COREQ: Identifies research team and reflexivity, study design and data analysis/reporting of qualitative studies.</p>	<p>All quantitative data were tabulated according to key training outcomes (including cognitive, affective, skills-based, clinical, and organizational outcomes. Cohen's d was calculated for all studies that were reporting data appropriately. Formal qualitative data analysis was not performed due</p>	<p>Overall, there was insufficient evidence which consistently demonstrated improvements in cognitive, affective, and skill-based outcomes and transfer to enhanced job performance for de-escalation techniques.</p> <p>Through the available</p>	<p>Level III-B</p> <p>Worth to Practice: Highlights the lack of effective de-escalation training and education and places emphasis on future de-escalation training programs and their evaluation.</p> <p>Strengths and Weaknesses: Strengths include exploring and reviewing literature to assess the effectiveness and transferability of de-escalation trainings and their benefit to real-life practice. Additionally, the review highlights the lack of general evidence available on this issue and brings to light the need for more research on this topic. Limitations include not reviewing and evaluating studies involving the adolescent and geriatric population and potential bias towards unqualified and</p>

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	used.	<p>abstract: 1,247</p> <p>After screening by availability of full text: 67</p> <p>After application of inclusion/exclusion criteria: 38 (including quantitative and qualitative studies).</p>			to insufficient qualitative data and instead, common themes were extrapolated from these studies.	evidence, it was found that the strongest impact of de-escalation training was on knowledge and improving confidence in performing techniques. However, the evidence also shows that these attributes are not particularly helpful in managing actual aggressive behaviors and attitude	<p>student nurse populations based on the very limited data available on this issue.</p> <p>Feasibility and Conclusion: This review provided valuable insight into the lack of evidence available on the effectiveness of de-escalation trainings and their effect on learning and performance outcomes. It is feasible to conduct this study again to identify additional studies and effectiveness in the future.</p> <p>Recommendations: Evidence-based interventions measuring de-escalation performance and transfer to real life practice should be instituted. Additionally, measures used to evaluate de-escalation trainings should also be implemented.</p> <p>Include in project.</p>

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						modification s did not contribute to effective de- escalation technique utility either.	

Definition of abbreviations: IV: Independent Variable; DV: Dependent Variable; COREQ: Consolidated criteria of REporting Qualitative research

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APA Reference: Price, O., Baker, J., Bee, P., Grundy, A., Scott, A., Butler, D., Lovell, K. (2018). Patient perspectives on barriers and enablers to the use and effectiveness of de-escalation techniques for the management of violence and aggression in mental health settings. <i>Journal of Advanced Nursing</i> , 74(3), 614-625. https://doi.org/10.1111/jan.13488							
Investigate patient perspectives on barriers and enablers to the use and effectiveness of de-escalation techniques for aggression in mental health settings.	Descriptive qualitative research using semi-structured interviews. Utilized the multifactorial model of aggression.	N=26 previous patients in 7 wards across 4 different hospitals. Included 4 hospitals in North West England, United Kingdom.	IV: Patient interviews DV: Viewpoints of patients on staff practices, behaviors, context of situations, environmental, and cultural factors presenting barriers to de-escalation techniques and utility of restraints/seclusion.	Interview schedule was developed and used to guide participant discussion. Participants discussed their experiences during the past year and a questionnaire was provided to collect data on demographics, diagnoses, and experience of restrictive practices. Common themes, barriers, and enablers were identified.	Three stages were used: indexing, summarizing, and mapping/interpretation. Three SURs were involved with the data analysis. Indexing: Each patient transcript was read by the SURs and common themes were identified. Summarizing: QSR NVivo10 system was used to generate columns with	Each theme was evaluated. <u>Staff practices and behaviors:</u> Patients reported -restrictive practices were primarily used and de-escalation techniques were not used. -staff used more assertive methods to display dominance	Level III - B Worth to Practice: Focuses on patient experiences related to how staff handled situations in which de-escalation techniques were needed and provides important insight into methods and themes that can be used to help design a new de-escalation program. Strengths and Weakness: Strengths of this study include the ability to highlight common themes amongst patients regarding the lack of utility of de-escalation techniques and their perceptions. Additionally, another strength is that this information can be utilized to help develop and formulate an improved and more efficient de-escalation program. Weaknesses of the study are the small sample

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					<p>different categories and subthemes along with line-by-line analysis of the transcripts to help fill in columns with summarized data.</p> <p>Mapping/Interpretation: Concepts were defined and categories were refined. Cases were ordered by sample variables (including age and gender) to examine whether they had an influence on the responses.</p>	<p>over patients -staff acted with disrespect.</p> <p><u>Behaviors/Contexts:</u> Patients reported staff -having difficulty de-escalating through verbal means -difficulty remaining calm during hypomanic episodes and when experiencing psychotic symptoms, which led to unsuccessful de-</p>	<p>size, only including patients that had been involved in an incident of escalated behavior requiring staff intervention, and the differences between the genders (16 females and 8 males).</p> <p>Feasibility and Conclusion: Study is beneficial in obtaining patient perspectives on utility of de-escalation techniques and how they are being conducted and implemented within practice. This is a feasible study which can be conducted at many behavioral health settings and can be helpful in generating valuable qualitative data.</p> <p>Recommendation: Information should be used to help recognize barriers to de-escalation and incorporated within de-escalation toolkit training. This type of study should be conducted within the United States and should be utilized to develop effective de-escalation programs.</p>

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						escalation by staff <u>Environmental/Cultural factors:</u> Patients identified -lack of staff time due to under resourcing -prevalence of work and rule bound cultures impeding utility of de-escalation techniques.	Include in project.

Definition of abbreviations: SUR: Service User Researcher

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APA Reference: Schwartz, F., & Bjorklund, P. (2019). Quality Improvement Project to Manage Workplace Violence in Hospitals: Lessons Learned. <i>Journal of Nursing Care Quality, 34</i> (2), 114–120. https://doi.org/10.1097/NCQ.0000000000000358							
To pilot a violence management training program in a general medical unit, selected on the basis of increased cognitive impairment of patients and staff demands for measures to help protect them from patient and visitor violence.	Quality improvement study utilizing an independent pre/posttest design to measure changes in participant knowledge. The SOAS-R was used for data collection on aggression pre and post implementation of program.	N=93 health care staff members, including 65 associate or bachelor's prepared RNs, 2 master's prepared APRNs, and 26 PCAs. Conducted in a 39-bed general medical unit at a large teaching hospital in a Midwestern state.	IV: SOAS-R provided to staff and violence management training program DV: SOAS-R responses and pre/post test scores pre-violence training program and post-violence training program	SOAS-R was utilized to record discrete episodes of aggressive behavior and was used to measure staff perceptions of severity of aggressive behaviors from 0 (not severe) to 10 (extremely severe). Five question pretest and posttest were also provided to evaluate staff knowledge of the violence management program.	SOAS-R scores were collected three months prior to the implementation of the violence management training program and three months after implementation. Violence management program pretests were collected at the beginning of each training session and posttest was administered electronically to each participant three months after training session. A Z-	There was lack of sufficient evidence showing that the violence management program led to reduced number of aggressive incidents. However, participants presented with an increased level of knowledge for managing escalating, aggressive, and violent behavior.	Level V - B Worth to Practice: Provides tools which can be utilized to implement and evaluate de-escalation strategies and techniques at different sites and observe whether they lead to a decrease in aggressive patient behavior. Strengths and Weakness: Strength of this study includes the utility of appropriate tools to help measure staff knowledge measure whether the training has had an effect on reduction of escalated behavior. Additionally, the study highlights the presence of aggressive behavior in a non-psychiatric setting, illustrating the necessity of a de-escalation program in other settings as well. Limitations of this study include the lack of staff completing the SOAS-R and the involvement of

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					score 1-tailed test was conducted to look for significant differences between pre-and posttest scores.		<p>emergency response teams to help de-escalate situations even when they weren't study participants.</p> <p>Feasibility and Conclusion: Study is beneficial in implementing a violence prevention program and developing appropriate tools to evaluate effectiveness of the program. Additionally, the study highlights the importance of having de-escalation programs in all settings even outside of psychiatric settings. The study is feasible and replicable.</p> <p>Recommendation: SOAS-R can be beneficial to use for the toolkit. Future studies should make the completion of the SOAS-R mandatory and should encourage its completion to obtain valuable data. Include in Project</p>

Definition of abbreviations: SOAS-R: Staff Observation Assessment Scale-Revised; RN: Registered Nurse; APRN: Advanced Practice Registered Nurse.

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<p>APA Reference: Snorrason, J., & Biering, P. (2018). The attributes of successful de-escalation and restraint teams. <i>International Journal of Mental Health Nursing</i>, 27(6), 1842–1850. https://doi.org/10.1111/inm.12493</p>							
To identify and understand the factors that enhance D-E&R teams' competence in managing patients with aggression in a successful and safe manner.	Utilized Gadamer's philosophical hermeneutics and Ricoeur's hermeneutics methodology to conduct the process of "fusion of horizons" which involves collecting data from participants and creating understanding by discussing underlying subject with them. Each team member was interviewed for 30 to 60	N=12 D-E&R team members with significant experience in managing patients with aggression in a successful and same manner. Eight males and four females participated and ranged from 25 to 48 years old. Conducted at the Icelandic State and University Hospital.	IV: Interviews with staff members DV: Themes which contribute to factors that enhance competence in managing patients with aggression.	Two researchers interpreted the data from the interviews independently and afterwards, compared and discussed their findings to create a joint decision about which concepts best captured the participants' views and experiences.	A central theme from the data generated was established and two domains underneath the central theme were recognized. Within the two domains, several subcategories were identified to help recognize factors.	The central theme identified was the concept of a safe team. Within the safe team, the two major domains highlighted were the internal dynamics of the team and the team's interaction with the patients. Subcategories identified were confidence in the team,	Level V-B Worth to practice: Identifies common factors and methods that de-escalation teams use to successfully de-escalate patients with aggression and these factors can be used to implement similar interventions at other mental health settings as well including outpatient and inpatient. Additionally, also highlights the necessity of de-escalation teams at other settings. Strengths and Weaknesses: The strength of this study is that it recognizes the D-E&R teams as a valuable source of information and selects members of the team with the most amount of experience to identify factors helpful in de-escalation. Limitations of this study include

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	<p>minutes. Thematic analysis was utilized to identify common factors.</p> <p>Gadamer's philosophical hermeneutics and Ricoeur's hermeneutic methodology were utilized as frameworks.</p>					<p>mutual trust, information-based decisions, knowledge-based cohesiveness, flexibility in team's composition and skills, communication with the patient, supportive patient interactions, nonthreatening approach, interaction within the team, knowing role and being flexible, and not playing solo.</p>	<p>the small sample size and the selection of only one location for the setting. Additionally, since the interviewer was a trainer in de-escalation, most of the participants had attended courses held by him which may have created some bias.</p> <p>Feasibility and Conclusion: Study highlights that de-escalation teams are necessary at psychiatric hospitals and settings and that if the formation of a team is not possible, trainings and interventions should be in place to help in de-escalation. The factors identified in this study can be used to establish and improve de-escalation training and techniques at all psychiatric settings. The study can be replicated at all settings to identify common factors used in de-escalation.</p> <p>Recommendation: Utilize best de-escalation practices to be included within the toolkit.</p>

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							<p>Study should be conducted in the United States at various mental health facilities to understand which factors are beneficial for de-escalation for patients with aggression and should be conducted with a larger sample size.</p> <p>Include in project.</p>

Definition of abbreviations: D-E&R: De-escalation and Restraint

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
APA Reference: Spears, S., & McNeely, H. (2019). A Systematic Process for Selection of a Crisis Prevention/De-Escalation Training Program in the Hospital Setting. <i>Journal of the American Psychiatric Nurses Association</i> , 25(4), 298–304. https://doi.org/10.1177/1078390318794281							
To identify a de-escalation program that is evidence-based and able to be effective across all patients and ages at the organization referenced.	Quality improvement study involving a thorough systematic process to select a new behavioral health crisis prevention/de-escalation program. No conceptual framework utilized.	N=9 de-escalation programs were analyzed against one another to determine how they would help meet the needs of the organization. The setting was a pediatric hospital with two psychiatric wards.	IV: Search for de-escalation program using developed criteria. DV: De-escalation programs utilized by other healthcare facilities, including CPI, NAPPI, Safety Care, Mandt system, PACT, SCM, TCI, and SAMA.	Rated de-escalation programs by curriculum, cost, training, requirements, emphasis on verbal de-escalation, ability to address need of those with ASD, and overall fit for the organization. Task force was formed and members were asked to score programs based on presentation and also generated a list of questions to ask for the	After all programs were reviewed scores were tallied for each program and the top four programs were contacted. Each program was asked to provide references for two facilities where the program was currently in use and members at these facilities were asked to conduct a webinar to identify why their de-	Identified Safety Care as the program that will be utilized within the setting referenced in the study. The study also detailed next steps in identifying metrics to measure the success of the program once it is implemented and underway.	Level V-A Worth to Practice: Provides an outline to the strategy for searching and identifying a viable de-escalation program for an organization and allows others to utilize a similar process for their own organizations. Strengths and Weakness: The strength of this study is that it provides a detailed overview of the process of selecting a de-escalation program and the process involved. Additionally, it develops useful questionnaires which can be utilized for other organizations as well. Weaknesses are that the study does not mention the search terms that were used to search for the de-escalation programs and does not identify specific metrics that will be used to

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
				referring facilities where the programs were currently in effect.	escalation program was the best fit.		<p>evaluate the program.</p> <p>Feasibility and Conclusion: The study is feasible to conduct at other behavioral health facilities and organizations and can be instrumental in helping to implement a new de-escalation program.</p> <p>Recommendation: Assess and replicate study to help integrate and incorporate toolkit. This type of study should be used across all behavioral health facilities to adopt and implement effective and efficient de-escalation programs.</p> <p>Include in project.</p>

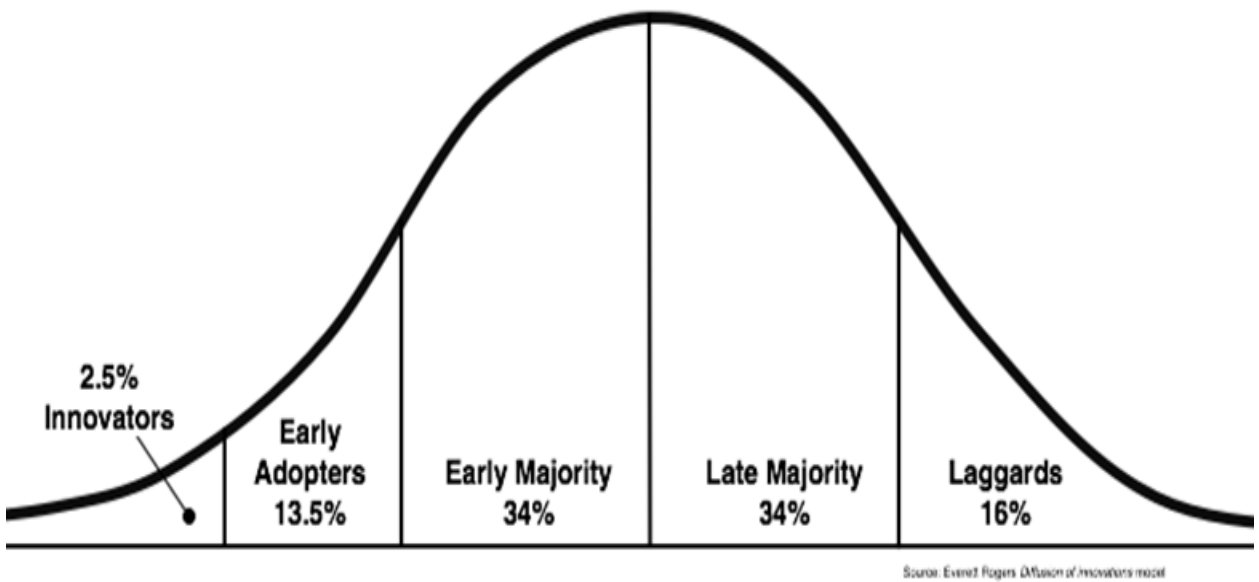
Definition of abbreviations: CPI: Crisis Prevention Intervention; NAPPI: Nonviolent and Psychological Physical Intervention; PACT: Professional Assault Crisis Training; SCA: Safe Crisis Management; TCI: Therapeutic Crisis Intervention; SAMA: Satori Alternatives to Managing Aggression

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
<p>APA Reference: Ye, J., Xiao, A., Wang, C., Xia, Z., Yu, L., Li, S., Lin, J., Liao, Y., Xu, Y., & Zhang, Y. L. (2020). Evaluating the effectiveness of a CRSCE-based de-escalation training program among psychiatric nurses: a study protocol for a cluster randomized controlled trial. <i>BMC Health Services Research</i>, 20(1), 1–10. https://doi.org/10.1186/s12913-020-05506-w</p>							
<p>Explore the effectiveness of a literature review based CRSCE de-escalation training program among psychiatric nurses in China</p>	<p>Multi-center, single blinded, cluster randomized control trial.</p> <p>Control group will receive routine WPV training, while those in the intervention group will receive CRSCE-based training.</p> <p>No conceptual framework noted.</p>	<p>N=98 total registered nurses (aged 18 to 60 years involved in mental healthcare and working full-time) within six hospitals will be randomized to the intervention group and the control group (49 each group) each based on the calculation of the sampling size of a controlled randomized control trial. A total of 6 different</p>	<p>IV: CRSCE de-escalation training program.</p> <p>DV: Frequency of WPV, injuries caused by WPV, and rates of utility for physical coercion (restraints and seclusion).</p>	<p>Primary Outcomes: Monthly WPV frequency, monthly frequency of injuries caused by WPV, and monthly frequency of physical restraint or seclusion.</p> <p>Secondary Outcomes: Different scales will be utilized to evaluate impact on nurses, including DABS, CCPAI, MBI-GS, and Pro QOL.</p>	<p>SPSS version 22.0 will be used to conduct statistical analysis. Descriptive statistics will be reported as frequencies and percentages</p> <p>Shapiro-Wilk test will be used in order to examine the distributions of the continuous outcomes.</p> <p>A Student's t-test, Mann-Whitney U</p>	<p>The study has been designed and is in the process of being conducted.</p> <p>The study will present helpful and practical evidence which can be utilized to generate beneficial and evidence-based de-escalation training and provide health providers</p>	<p>Level I-C</p> <p>Worth to Practice: Provides the outline of a study that will be conducted measuring the effectiveness of a CRSCE de-escalation training program and provides a great framework for other organizations to conduct similar studies to properly evaluate their own de-escalation training programs.</p> <p>Strength and Weakness: Strength of this study is the ability to provide evidence-based data which can help implement CRSCE de-escalation training into health care facilities worldwide if effective. Weaknesses include that the lack of results at the moment and the inclusion of only psychiatric nurses and not other disciplines within the mental health field.</p>

Purpose of Article or Review	Design / Method / Conceptual Framework	Sample / Setting	Major Variables Studied (and their Definitions)	Measurement of Major Variables	Data Analysis	Study Findings	Level of Evidence (Critical Appraisal Score) / Worth to Practice / Strengths and Weaknesses / Feasibility / Conclusion(s) / Recommendation(s) /
		<p>hospitals were considered for the experiment and at least 3 were assigned to each group.</p> <p>The study takes place in China and is focused on 6 different major public psychiatric hospitals each with different number of secured and non-secured wards.</p>			<p>test, Chi-square test, or Fisher's exact test will be used to adopt to compare the groups according to their normality distributions.</p> <p>Repeated ANOVA was used to explore the effectiveness of the CRSCE training program.</p>	<p>and policy makers with important data to help develop and establish appropriate and effective de-escalation training programs within healthcare facilities.</p>	<p>Feasibility and Conclusion: The study provides a great outline to help conduct and evaluate a study based on the implementation of a de-escalation technique program and is feasible to be replicated and conducted by other researchers in the future. The study provides valuable information for what the projected outcomes should be and the benefits of the CRSCE training program in addition to tools which can be helpful for toolkit project implementation.</p> <p>Recommendations: Replicate the methods within the study to help integrate toolkit. Replicate a similar study within the United States and include other mental health disciplines as well.</p> <p>Include in project.</p>

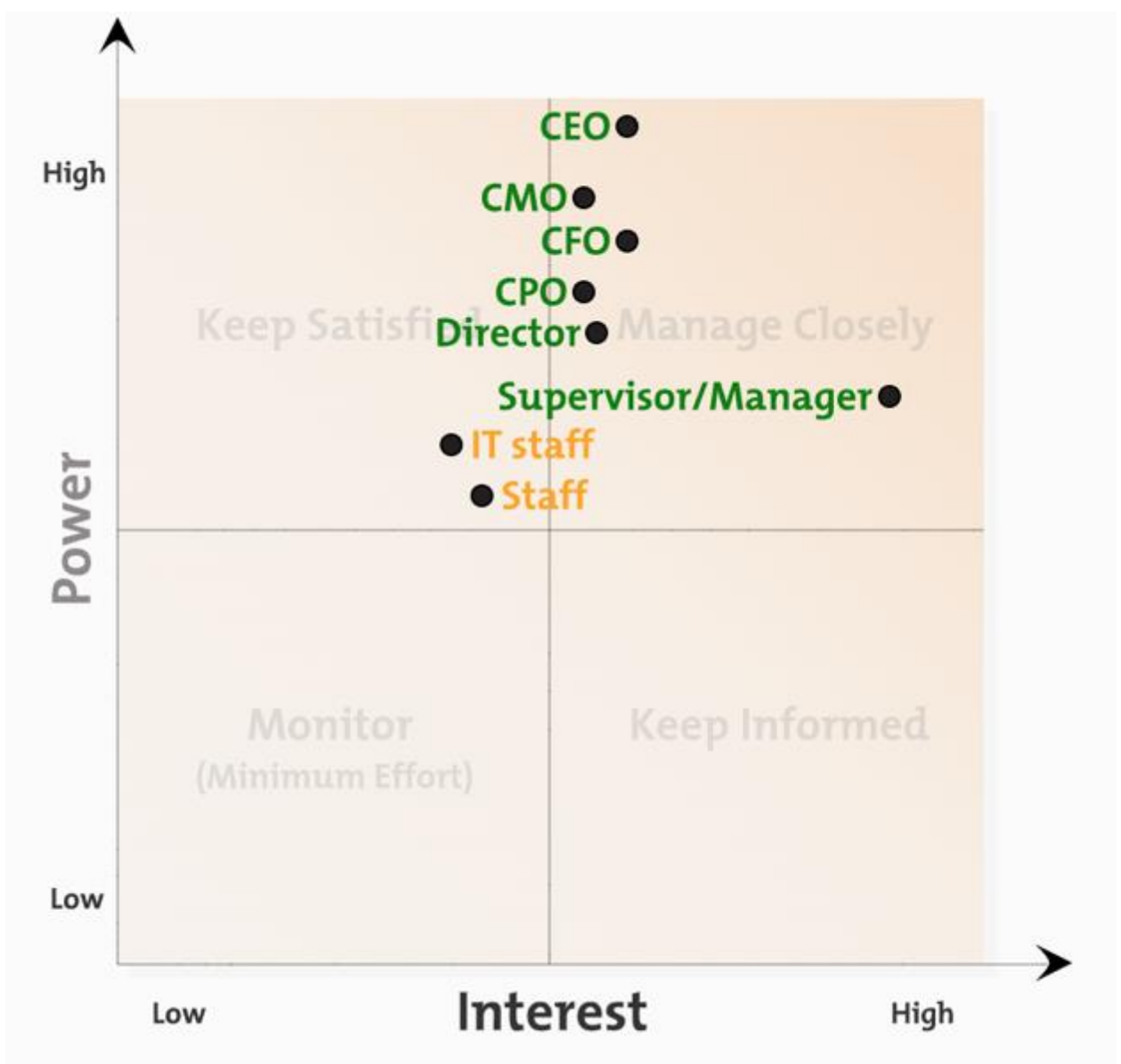
Definition of abbreviations: CRSCE: Communication, Response, Solution, Care, and Environment; WPV: Workplace Violence; DABS: De-escalating Aggressive Behavior Scale; CCPAI: Confidence in Coping with Patient Aggression Instrument; MBI-GS: Maslach Burnout Inventory-General Survey; Pro QOL: Professional Quality of Life Scale.

Appendix D. Diffusion of Innovations Theoretical Model



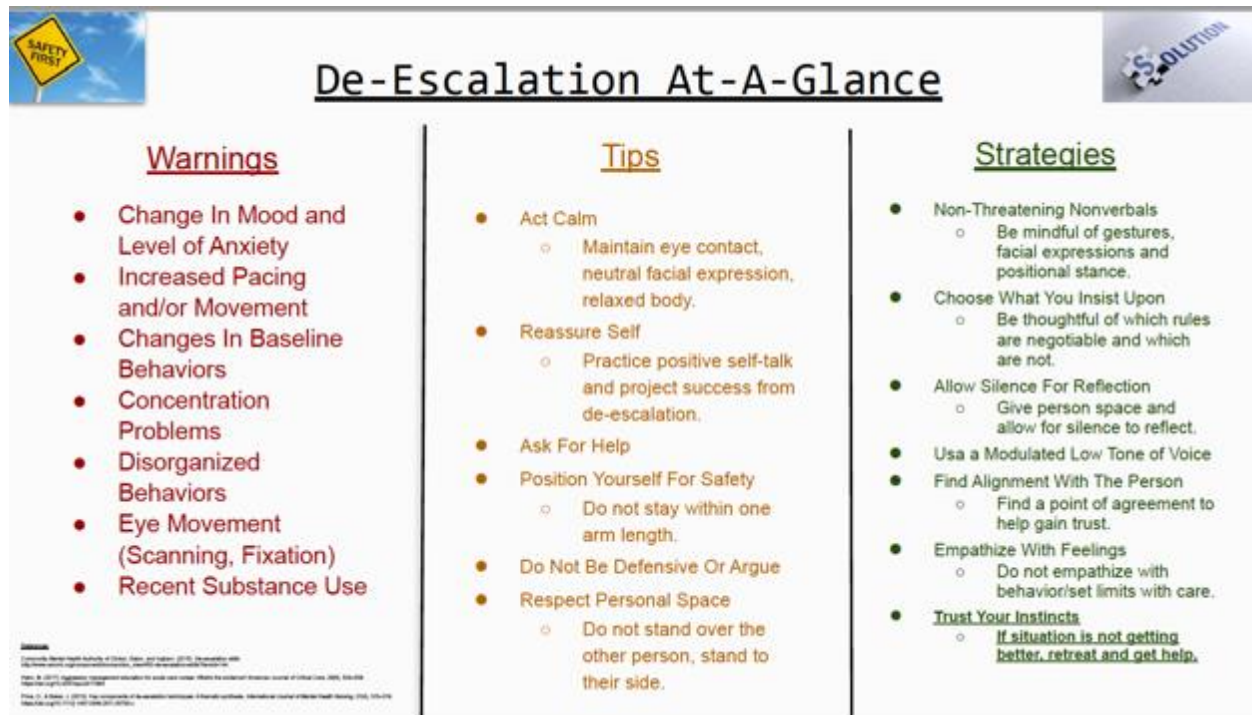
Note. Diagram of the Diffusion of Innovations Theoretical Model obtained from (Lamorte, 2018).

Appendix E. Stakeholder Analysis



Note. Stakeholder analysis from Mind Tools (n.d.).

Appendix F. De-Escalation At-A-Glance Toolkit



The poster is titled "De-Escalation At-A-Glance" and is divided into three columns: Warnings, Tips, and Strategies. It includes a "SAFETY FIRST" sign icon in the top left and a "SOLUTION" icon in the top right. The "Warnings" column lists eight red bullet points. The "Tips" column lists six orange bullet points. The "Strategies" column lists seven green bullet points, with the last one including a bolded instruction: "if situation is not getting better, retreat and get help."

<u>Warnings</u>	<u>Tips</u>	<u>Strategies</u>
<ul style="list-style-type: none"> ● Change In Mood and Level of Anxiety ● Increased Pacing and/or Movement ● Changes In Baseline Behaviors ● Concentration Problems ● Disorganized Behaviors ● Eye Movement (Scanning, Fixation) ● Recent Substance Use 	<ul style="list-style-type: none"> ● Act Calm <ul style="list-style-type: none"> ○ Maintain eye contact, neutral facial expression, relaxed body. ● Reassure Self <ul style="list-style-type: none"> ○ Practice positive self-talk and project success from de-escalation. ● Ask For Help ● Position Yourself For Safety <ul style="list-style-type: none"> ○ Do not stay within one arm length. ● Do Not Be Defensive Or Argue ● Respect Personal Space <ul style="list-style-type: none"> ○ Do not stand over the other person, stand to their side. 	<ul style="list-style-type: none"> ● Non-Threatening Nonverbals <ul style="list-style-type: none"> ○ Be mindful of gestures, facial expressions and positional stance. ● Choose What You Insist Upon <ul style="list-style-type: none"> ○ Be thoughtful of which rules are negotiable and which are not. ● Allow Silence For Reflection <ul style="list-style-type: none"> ○ Give person space and allow for silence to reflect. ● Use a Modulated Low Tone of Voice ● Find Alignment With The Person <ul style="list-style-type: none"> ○ Find a point of agreement to help gain trust. ● Empathize With Feelings <ul style="list-style-type: none"> ○ Do not empathize with behavior/set limits with care. ● <u>Trust Your Instincts</u> <ul style="list-style-type: none"> ○ if situation is not getting better, retreat and get help.

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Figure F1: De-Escalation At-A-Glance Poster




De-Escalation At-A-Glance

Meanings

- Change In Mood and Level of Anxiety
- Increased Pacing and/or Movement
- Changes In Baseline Behaviors
- Concentration Problems
- Disorganized Behaviors
- Eye Movement (Scanning, Fixation)
- Recent Substance Use

Tips

- Act Calm
 - Maintain eye contact, neutral facial expression, relaxed body.
- Reassure Self
 - Practice positive self-talk and project success from de-escalation.
- Ask For Help
- Position Yourself **For** Safety
 - Do not stay within one arm length.
- Do Not Be Defensive **Or** Argue
- Respect Personal Space
 - Do not stand over the other person, stand to their side.

Strategies

- Non-Threatening Nonverbals
 - Be mindful of gestures, facial expressions and positional stance.
- Choose What You Insist Upon
 - Be thoughtful of which rules are negotiable and which are not.
- Allow Silence **For** Reflection
 - Give person space and allow for silence to reflect.
- Use a Modulated Low Tone of Voice
- Find Alignment **With** The Person
 - Find a point of agreement to help gain trust.
- Empathize With Feelings
 - Do not empathize with behavior/set limits with care.
- Trust Your **Instincts**
 - **If situation is not getting better, retreat and get help**

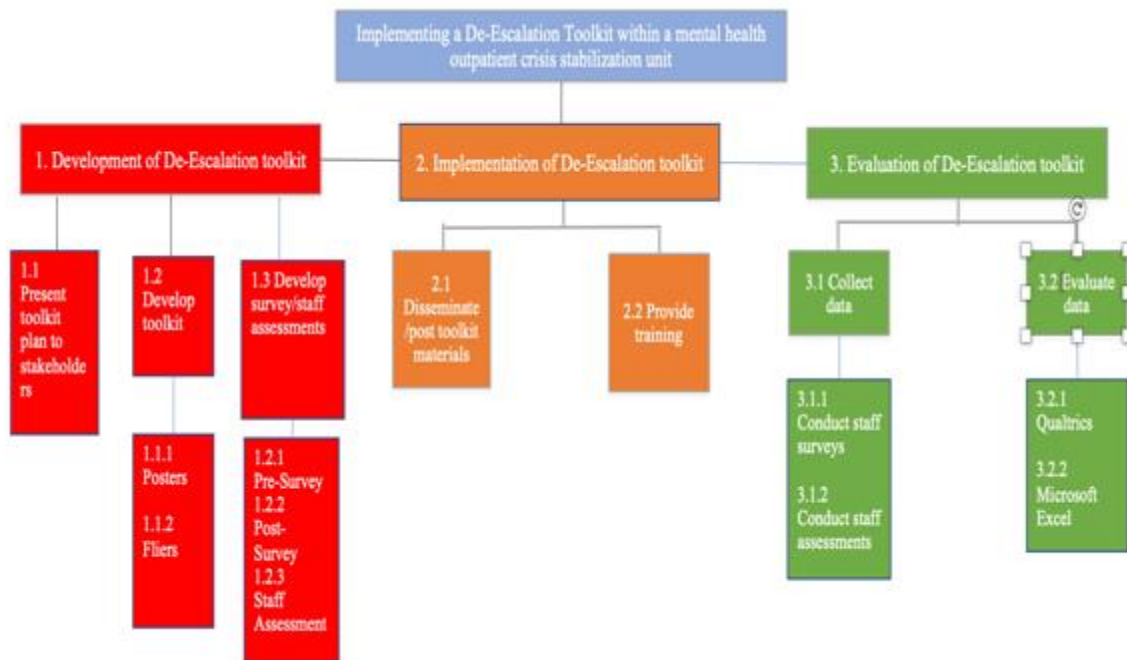
References
 Community Mental Health Institute of Texas, Davis, and Hughes (2015). De-escalation (4th ed.). <https://www.pearsoncmh.com/9780205207244/4477244444>
 Nelson, M. (2017). Aggression management education for acute care workers: What's the evidence? *American Journal of Critical Care, 26*(5), 395-398. <https://doi.org/10.1016/j.ajcc.2017.03.008>
 Pines, D., & Baker, J. (2015). Key components of de-escalation techniques: A research synthesis. *International Journal of Mental Health Nursing, 24*(6), 340-348. <https://doi.org/10.1016/j.ijmhn.2015.03.002>

Figure F2: De-Escalation At-A-Glance Flier

Appendix G. Gap Analysis

	Current State	Future State	Gap	Actions to Close Gap
Gap Analysis	Lack of de-escalation technique utility for aggressive/violent patient behavior	Increased de-escalation technique utility for aggressive/violent patient behavior	Ineffective memory, retention, and utility of de-escalation techniques	Create de-escalation toolkit to increase de-escalation technique utility

Appendix I. Work Breakdown Structure



Appendix J. Communication Matrix

Communication	Purpose	Medium	Frequency	Audience
Stakeholder Meeting	Introduce toolkit. Review the design and objectives/goals.	In person/Face to face	Once	Stakeholders
Toolkit training	Provide toolkit training to staff	In person/Face to face or online via Zoom	Initial/Annual	Staff
Toolkit assessment/update meetings	Gather feedback from staff and stakeholders regarding toolkit and identify ways to improve	In person/Face to face	Monthly	Stakeholders Staff

Appendix K. SWOT Analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> -Overall low cost to implement compared to the savings generated. -Always accessible and available for staff to access without additional need for training after initial training. -Helps reinforce de-escalation information and improve memory and recall of techniques. 	<ul style="list-style-type: none"> -High reliance on staff utility, as its success relies mainly on the ability of staff to use the toolkit -Reinforces information that staff may already know. -Guidelines and techniques detailed in the toolkit are similar to guidelines and techniques that staff may have already learned before, which may lead to reduced interest.
Opportunities	Threats
<ul style="list-style-type: none"> -Ability of staff to contribute to the toolkit on an ongoing basis. -If plan is successful and produces favorable outcomes, toolkit can be disseminated to other organizations and settings as well. -Can result in reduction in patient/staff injuries 	<ul style="list-style-type: none"> -Staff may not use the toolkit and may revert back to their original ways. -Certain circumstances may involve and demand the use of more aggressive measures which may portray the toolkit as unsuccessful. -Toolkit benefits may take some time to generate, which may make it difficult to assess effectiveness in short term.

Appendix L. Budget

Expenses	Initial	Annual	Year 2	Year 3	Year 4	Year 5	
Cost of Materials							
-Fliers (100 pcs)		\$60.00	\$60.00	\$100.00	\$140.00	\$180.00	\$220.00
-Posters (2 pcs)		\$100.00	\$100.00	\$150.00	\$200.00	\$250.00	\$300.00
-Badge Buddies (50 pcs)		\$70.00	\$70.00	\$90.00	\$110.00	\$130.00	\$150.00
Cost of Training/Evaluation							
-Training/Staff Surveys (time to conduct based on \$55.00/h)		\$605.00	\$605.00	\$1,210.00	\$1,815.00	\$2,420.00	\$3,025.00
-Miscellaneous (i.e. room, meals, etc.)		\$300.00	\$300.00	\$600.00	\$900	\$1,200.00	\$1,500.00
Cost of updating/maintaining		N/A	\$150.00	\$300.00	\$450.00	\$600.00	\$750.00
Miscellaneous (i.e. fees, other expenses)		N/A	\$1,000	\$1,500.00	\$2,000.00	\$2,500.00	\$3,000.00
Total		\$1,135.00	\$2,285.00	\$3,950.00	\$5,615.00	\$7,280.00	\$8,945.00

Line Item	Year 1	Year 2	Year 3	Year 4	Year 5	
Savings Generated						
Prevention of Containment		\$5,000	\$10,000	\$15,000	\$20,000	\$25,000
Prevention of Conflict		\$5,000	\$10,000	\$15,000	\$20,000	\$25,000
Other savings		\$200.00	\$400	\$600	\$800	\$1,000
Total Gross Savings		\$10,200	\$20,400	\$30,600	\$40,800	\$51,000
Deductions from Gross Savings						
Costs associated with de-escalation		\$5,000.00	\$7,500.00	\$9,000	\$10,000	\$10,500
Miscellaneous		\$5,000.00	\$7,500.00	\$9,000	\$10,000	\$10,500
Total Deductions		\$10,000.00	\$15,000.00	\$18,000	\$20,000	\$21,000
Operating Expenses						
Toolkit development		\$230	\$340	\$450	\$560.00	\$670.00
Training		\$605	\$1,210.00	\$1,815.00	\$2,420	\$3,025
Maintenance		\$150.00	\$300	\$450	\$600	\$750
Updating/Renewal		\$300.00	\$450	\$600	\$750	\$900
Miscellaneous (i.e. fees, other expenses)		\$1,000	\$2,000	\$3,000	\$4,000	\$5,000
Total Operating Expenses		\$2,285	\$4,300	\$6,315	\$8,330.00	\$10,345
EBITDA		(\$2,085)	\$1,100	\$16,285	\$22,470	\$30,155

Net Savings		\$200	5400
Cost of Investment		\$2,285	4300
Return of Investment (ROI)		-91.20%	25.58%
		(200-2285)/2285= -0.912	(5400-4300)/4300=0.2558
		-91.20%	25.58%

Appendix M: Pre-Survey and Post-Survey

I understand proper de-escalation techniques and how to perform them during a real-life situation involving aggressive/violent behavior.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel comfortable in performing de-escalation techniques.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel the education I have previously received on de-escalation has been helpful and effective for me when it comes to real-life de-escalation.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

A method to help encourage memory and retention of techniques would be helpful in allowing me to remember and utilize de-escalation techniques in real-life situations.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I believe that having a method to help encourage memory and retention of techniques will help in reducing the number of injuries and costs associated with aggressive/violent behavior at the facility.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that once the intervention to help improve memory and retention of de-escalation techniques is implemented, it can be continually improved upon and made better over time through input from staff.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure M1: Pre-Survey

The de-escalation toolkit helped me in understanding and remembering de-escalation techniques to perform them in real-life situations.

Not at all likely	Neutral						Extremely likely			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that the de-escalation toolkit is a helpful resource for staff and can be used at other mental health settings as well.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that the de-escalation toolkit was easy to understand and follow.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that the content of the de-escalation toolkit was current, relevant, and contained the most important elements of de-escalation.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel that the de-escalation toolkit can be improved over time and made better.

Strongly Disagree	Neutral						Strongly Agree			
0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How many times did you use the de-escalation toolkit since its implementation to help refresh memory, to perform a technique, or any other use.

0	1	2	3	4	5	6	7	8	9	10
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure M2: Post-Survey

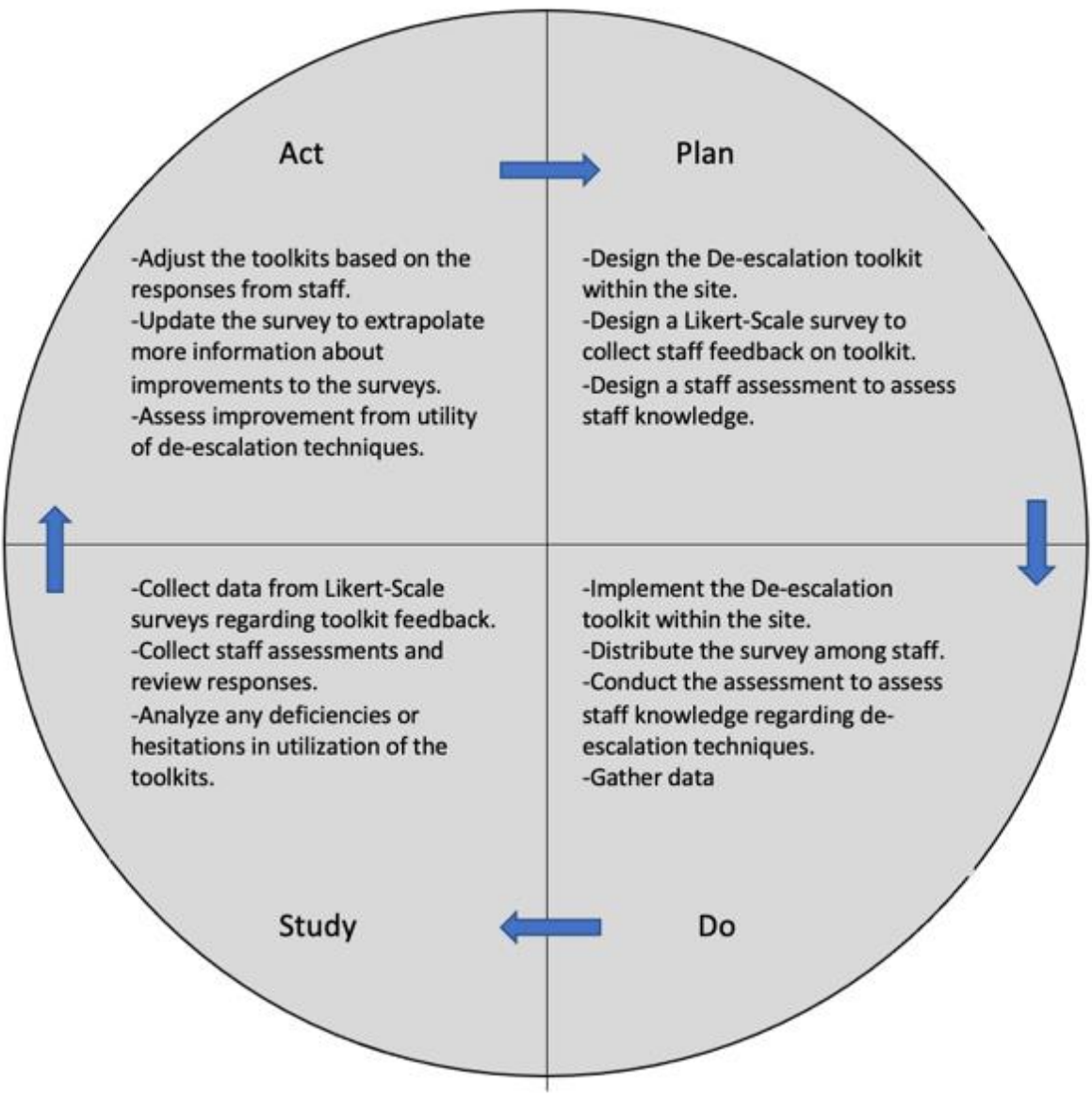
Appendix N: Staff Assessment

What does early de-escalation look like to you?

What are some interventions for early de-escalation?

What methods constitute de-escalation for you?

Appendix O. PDSA Cycle



Appendix P. Survey Results

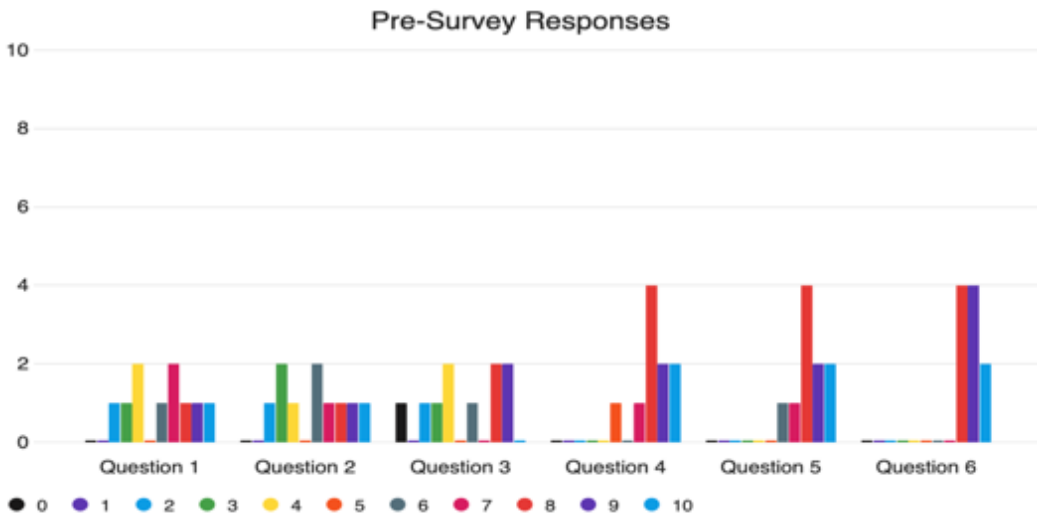


Figure P1: Pre-Survey responses

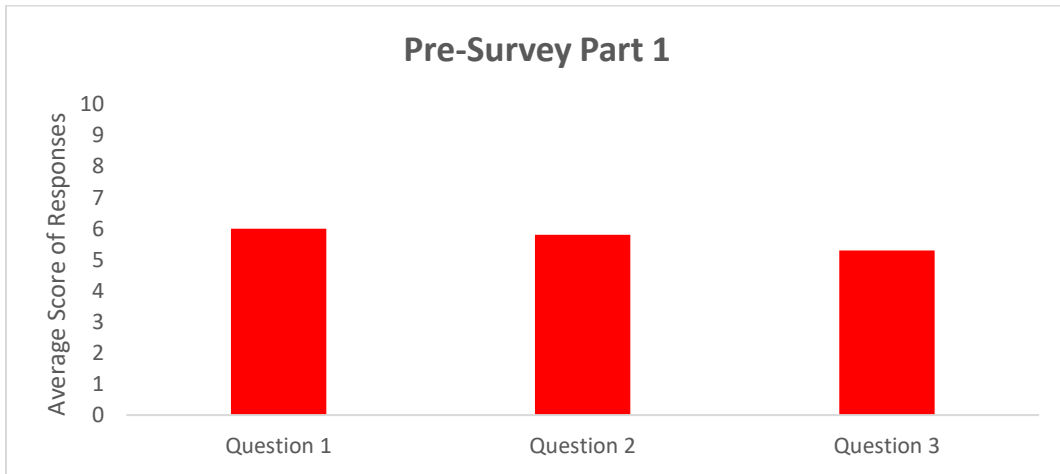


Figure P2: Pre-Survey results from first three questions.

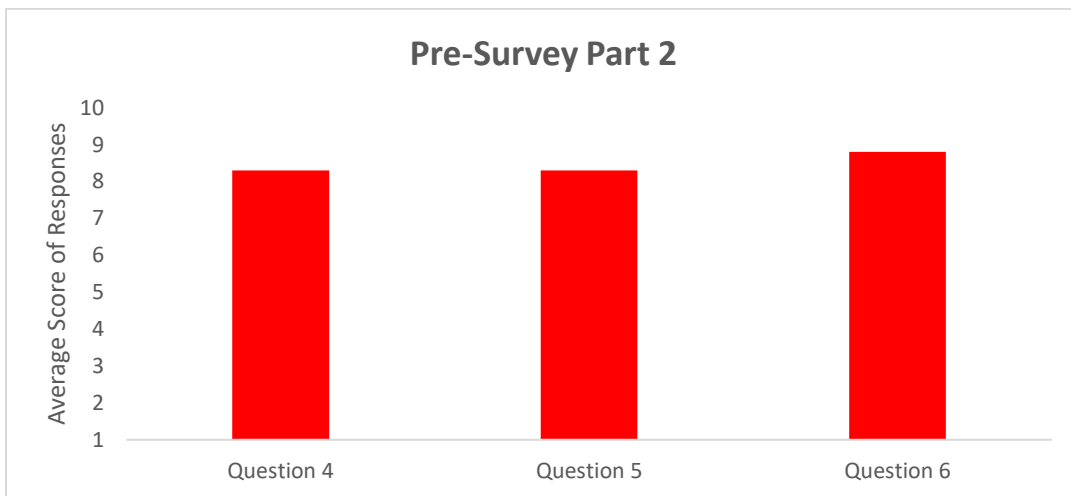


Figure P3: Pre-Survey results from last three questions.

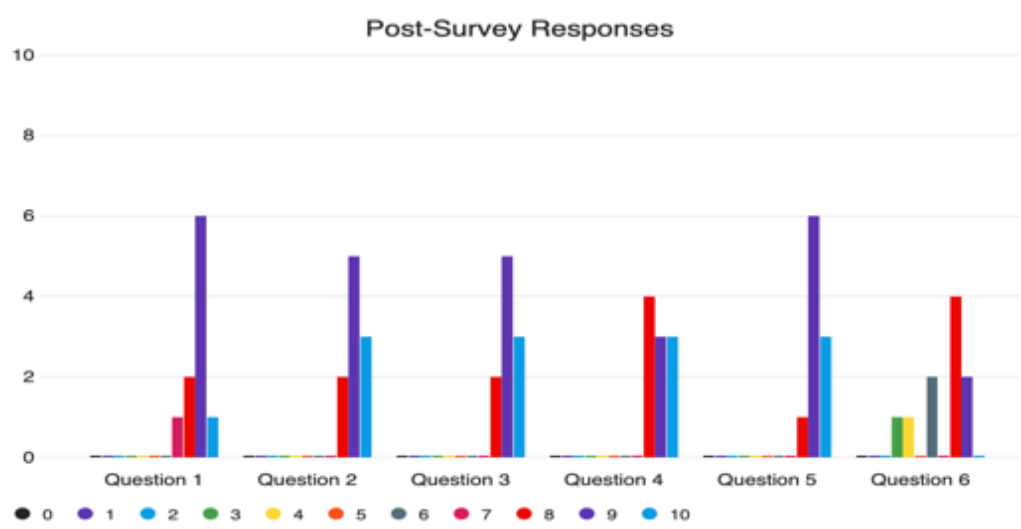


Figure P3: Post-Survey responses

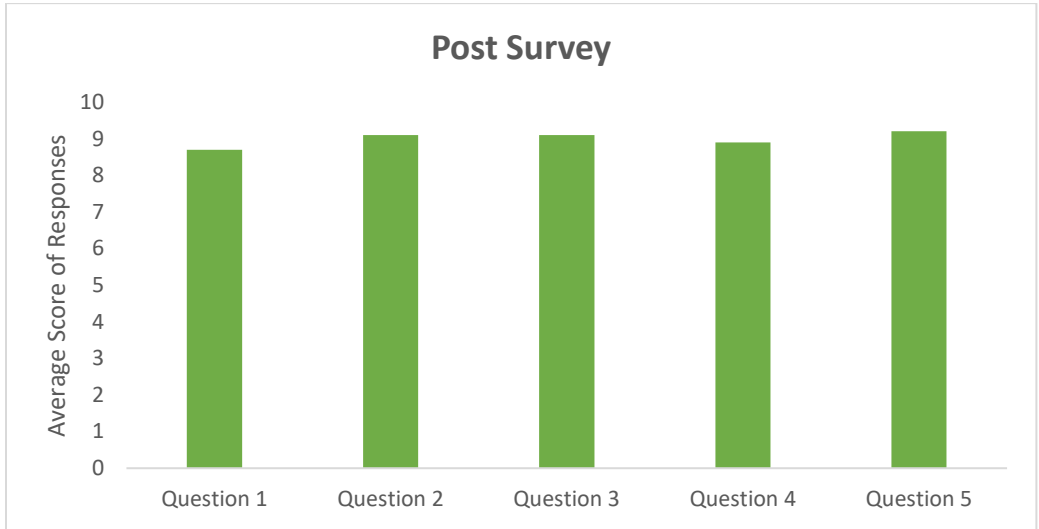


Figure P4: Post-Survey Results

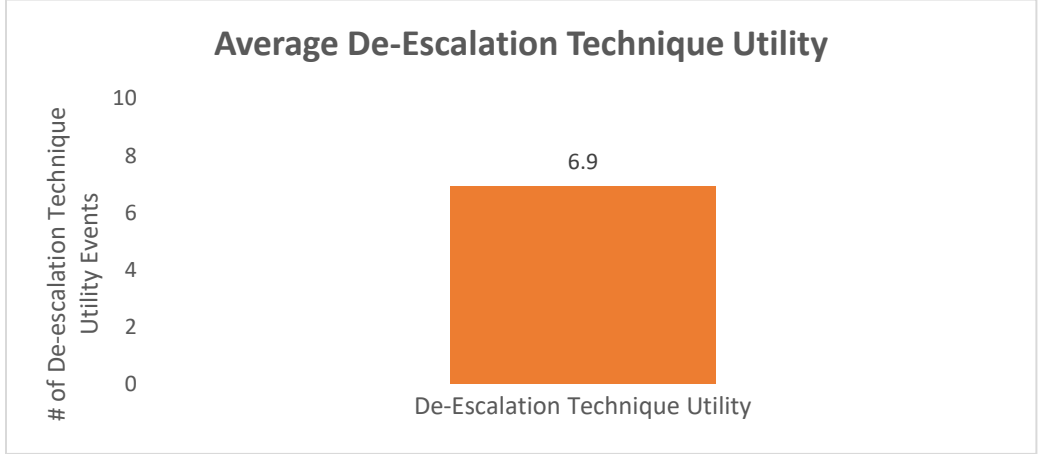


Figure P5: Average De-Escalation Technique Utility

Appendix Q. Staff Assessment Results



Figure Q1: Pre-Implementation Staff Assessment Word Cloud

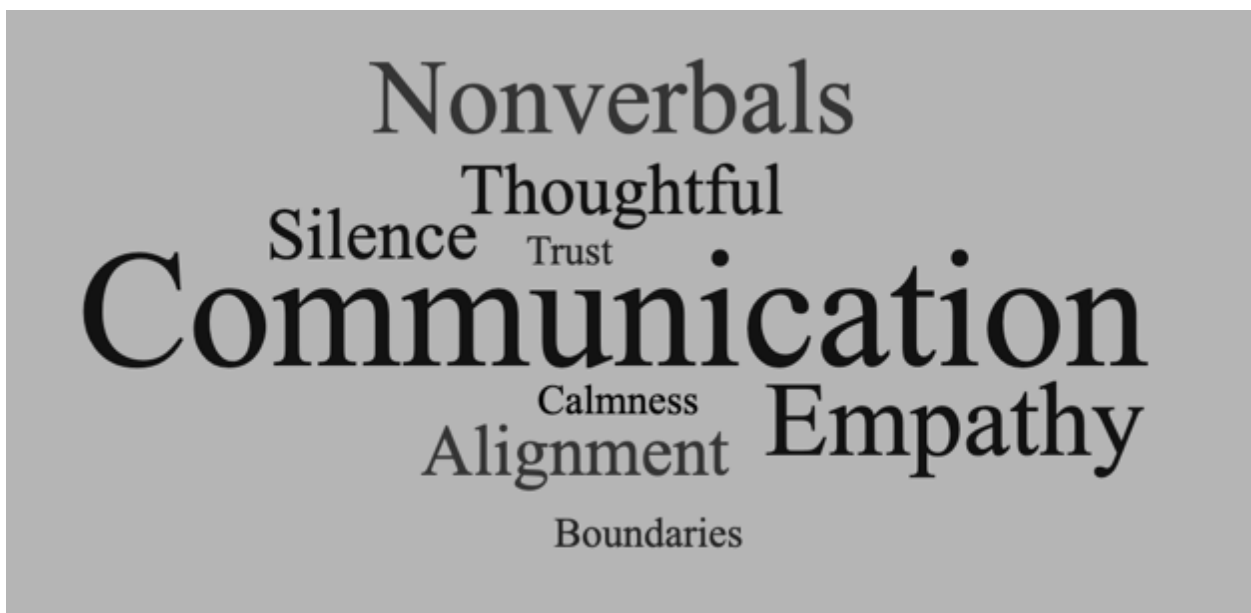


Figure Q2: Post-Implementation Staff Assessment Word Cloud