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Evidence-Based Practice Initiative for Staff Training to Reduce Adult Psychiatric Inpatient Restraints & Injuries

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Evidence-Based Practice Initiative for Staff Training to Reduce Adult Psychiatric
Inpatient Restraints & Injuries

Presented to the Faculty of the School of Nursing

The George Washington University

In partial fulfillment of the
requirements for the degree of
Doctor of Nursing Practice

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Abstract

Background: Violence against healthcare professionals is a growing phenomenon, and mental health care has the highest risk (Phillips, 2016). The experience of workplace violence is demoralizing, resulting in low job satisfaction, decrease productivity, physical injury, and potential Post-Traumatic Stress Disorder (Phillips, 2016; Howerton & Menten, 2010). The Joint Commission and The Centers for Medicare and Medicaid identify patient perpetrated violence as a significant workplace risk, and they endorse education and training for risk reduction and safe intervention (The Joint Commission, 2018, 2019).

Objective: The purpose of this evidence-based practice initiative was to evaluate the impact of staff training with the Safewards model on rates of restraint, and subsequent injuries, for patients and staff, on four inpatient psychiatric units in a large state hospital.

Methods: This Evidence-Based practice initiative used a pre- and post-intervention design to evaluate the implementation of Safewards (Bowers, 2014). Hospital staff (n=128) were trained using a train-the-trainer model, and interventions were incorporated into unit practice over five weeks on four inpatient psychiatric units. Hospital risk data for rates of patient restraints and injuries for patients and staff were evaluated using the Wilcoxon signed-rank test.

Results: There were no statistically significant differences between the medians of restraints and injuries pre- and post-Safewards implementation.

Conclusions: Safewards (Bowers, 2014) is an evidence-based model of care to reduce patient violence. Training and implantation of the model on four inpatient psychiatric units did not yield statistically significant results after training, but a decrease trend in restraints was noted.

Recommendations for continued use of interventions and mentorship to foster fidelity in use has the potential for long-term benefits on restraint and injury rate reductions (Fletcher et al., 2017).

Background

Violence against healthcare providers is a growing phenomenon. According to Phillips (2016), 75% of all workplace assaults in 2014 occurred in healthcare settings. Stevenson, Jack, O'Mara, & LeGris (2015) report that up to 80% of nurses in an acute care environment report violence, which can be verbal, emotional, or physical. Violence occurs across all sectors of healthcare delivery, and employees who are at the highest risk of patient perpetrated violence are those who work in inpatient psychiatric units (Phillips, 2016, p. 1663). Fisher (2016) reports, "...that 25% to 35% of inpatients exhibit violent behavior during their hospitalization" (p. 567). The impact of workplace violence leads to increased injuries, decreases in both productivity and job satisfaction, burnout, absenteeism, and Post-Traumatic Stress Disorder for healthcare providers (Howerton & Menten, 2010).

Regulatory bodies (The Joint Commission), governmental agencies for quality oversight (Substance Abuse and Mental Health Service Administration [SAMHSA], & Occupational Safety & Health Administration [OSHA]), and professional organizations (American Psychiatric Nurses Association [APNA]) all endorse attention to patient violence in psychiatric care. SAMHSA affirms that organizations using restraint and seclusion have higher staff injury rates, greater likelihood of re-traumatizing patients, and longer lengths of stay for patients. SAMHSA (2016) champions Trauma-Informed Care as a framework for patient care while using the Six Core Strategies (6CS) as targeted interventions for reduction of seclusion and restraint. The 6CS, also advocated by The Joint Commission (2017) in their endorsement of the Crisis Prevention Institute (CPI), include leadership support, workforce development, maximizing data to drive change, tools to reduce seclusion and restraint, debriefing, and consumer partnership to effect change (SAMHSA, 2015; CPI, 2011; The Joint Commission, 2018).

Originating in 2008 under the National Technical Assistance Center of the National Association of State Mental Health Program Directors (NASMHPD), the 6CS are broad statements without a defined process for implementation. Lack of process has left governmental agencies to endorse different strategies with The Joint Commission supporting a formal and costly approach to training through CPIs copyrighted training process, and SAMHSA offered implementation grants to organizations to develop best practice for the application of the 6CS. Although the 6CS are reported to be evidence-based, the two studies listed by SAMHSA on its National Registry for Evidenced Based Programs and Practices (NREPP) were both pre-experimental designs. Despite different approaches for using the 6CS, two fundamental requirements for any success appear to be organizational support and workforce development (SAMHSA, 2015; CPI, 2011; NASMHPD, 2008; NREPP, n.d.). In January 2019, The Joint Commission published a Quick Safety report to disseminate broader models of violence prevention, including de-escalation, early identification, and patient-centered care that incorporates engagement (The Joint Commission, 2019).

Problem Statement

Patient restraints, seclusion, and subsequent injuries for both staff and patients are the result of patient perpetrated violence. Therefore, prevention is the goal to reduce these incidences. Fundamental to prevention is preparing a workforce that can be aware of risk factors, have a skill base that allows for early identification and intervention, and can be adept at crisis intervention and de-escalation to avoid restraint. Although the literature is replete with intervention trials to reduce patient violence, only a handful of randomized control trials (RCTs) exist for evidence-based strategies to reduce psychiatric patient violence (Bowers, James, Quirk, Simpson, Stewart, Hodsoll, Sugar, Stewart, & Hodsoll, 2015; Borckardt, Madan, Grubaugh,

Danielson, Pelic, Hardesty, Hanson, Herbert, Cooney, Benson, Frueh, 2011; Putkonen, Kuivalainen, Louheranta, Repo-Tiihonen, Ryyänen, Kautiainen, & Tiihonen, 2013).

Purpose

The purpose of this evidence-based practice (EBP) project was to translate the best evidence into practice on strategies to reduce episodes of patient violence on adult inpatient psychiatric units as measured by rates of patient restraints and injuries for patients and staff. The initiative focused on staff development using the Safewards model developed by Bowers (2014). The Safewards model identifies six domains (See Appendix 1) which have the potential for conflict events and ten intervention strategies (See Table 1) for staff to facilitate therapeutic patient interactions, enhance unit management, and foster patient self-control (Bowers, James, Quirk, Simpson, Stewart, & Hodsoll, 2015). Through the comprehensive development of both knowledge and skills, the staff was educated in the Safewards model and trained to utilize the ten interventions to enhance patient engagement and foster a therapeutic environment to reduce incidents of violence, restraint, and subsequent injuries.

Aim

The aim of this EBP project was to offer staff development, utilizing the Safewards model (Bowers, 2014; Bowers, et al., 2014; Bowers, et al., 2015; Fletcher, Spittal, Brophy, Tibble, Kinner, Elsom, & Hamilton, 2017), and assess the impact of training and practice change on patient violence as measured by patient restraint events and subsequent injuries for both patients and staff. Recommendations for policy change in standards of education and annual competencies will follow.

Hypotheses

1. Rates of patient restraints will decrease on those units in which staff are trained in the Safewards model (2014) as measured three-months before implementation and three-months post-intervention.
2. Rates of both staff and patient injuries will decrease on those units in which staff are trained in the Safewards model (2014) as measured three-months before implementation and three-months post-intervention.

Research Question

Will clinical staff training, utilizing the Safewards model (2014), significantly reduce patient violence as measured by episodes of restraint, and subsequent injuries, on adult, inpatient, psychiatric units?

Significance

Attending to violence from a preventative perspective serves the Triple Aim. The Institute for Healthcare Improvement (IHI) developed The Triple Aim, which is a framework to optimize performance in healthcare delivery (IHI Triple-Aim Initiative, 2017). The three dimensions of the framework are patient experience, population health, and reduction of per capita costs. Stiefel & Nolan (2012) identify that population can be defined broadly as all people within a geographical area or by subpopulations. Subpopulations focus on needs of defined groups such as age or a workforce. Mitigating violence in behavioral healthcare attends to all the three dimensions of the Triple Aim. Behavioral health defines a subpopulation of patients, and violence prevention improves the quality of patient care for the potential perpetrators as well as other patients in the treatment milieu. Additionally, effective interventions that allow behavioral control and progressive patient improvement fosters cost-containment. For the healthcare institution, the reduced costs are also realized in decreased staff injuries, increased work satisfaction, and enhanced retention.

Patient perpetrated violence against staff or other patients in psychiatric facilities is a long-acknowledged issue. Livingston, Verdun-Jones, Brink, Lussier, & Nicholls (2010) report that the professional group most victimized by aggression are nurses but further state that “...violence and aggression in psychiatric hospitals threatens the well-being and safety of patients and staff and represents a substantial burden to administrators.” (p. 15). In a systematic review of the literature, researchers identify that the impact of patient perpetrated violence on staff, other patients, and organizational quality is multifold. Staff who are victimized by violence experience injury, low morale, and turnover, which leads to higher staffing costs and inconsistent quality of care delivery. For patients exposed to violence, the subsequent emotional impact of anxiety and fear can lead to withdrawal and disengagement from the therapeutic environment (Iozzino, Ferrari, Large, Nielssen, & de Girolamo, 2015).

The APNA published a position statement in 2008, which states that workplace violence continued to be an issue because of wide variations in preventative approaches that were not evidence-based. Inconsistencies in defining workplace violence and the prevailing belief that workplace violence is simply part of the job also limited the ability to define a comprehensive approach to prevention. The APNA later released the Workplace Violence Workgroup Report (2008) in which they again advocate for an operational definition of workplace violence. It was also strongly recommended that nurses insist on safer work environments, necessary environmental changes to address safety, and providing appropriate physical and / or psychological support to those who who have experienced violence (APNA, 2008; Cafaro, Jolley, LaValla, & Schroeder, 2012).

In 2016 the APNA released a Position Paper: Violence Prevention (2016) which offers guidelines for the development and testing of intervention strategies but lacked evidence-based

practice recommendations. They have several citations to support the theoretical underpinning of a patient-focused, trauma-informed care approach to preventing violence. However, the variety of work cited includes systematic reviews, quality improvement publications, and theoretical works. They conclude that developing a relationship, assessing, engaging in a therapeutic dialogue, and being a role model will efficiently make changes. One could argue that these elements have always been a part of psychiatric nursing, but escalating violence continues.

Literature Review

Evaluation of Patient Violence in Psychiatric Care

The literature demonstrates that violence is the result of many factors, including relational, biological, and volitional (Fisher, 2016; Phillips, 2016). Fisher (2016) subdivides motivation for violence into three categories; impulsive, psychotic, and predatory. The first two categories are biological and speak to psychiatric illness disrupting emotional regulation and impaired ability to modulate internal and external stimuli. The predatory category represents volitional behavior with a base in sociopathy. Fisher (2016) further illuminates predatory violence as planned and purposeful, typically against other patients, and accounts for almost one-third of the violence seen on inpatient units.

Severe mental illness is an area of risk (Schizophrenia, Bipolar disorder), but it is only a small percentage of the overall violent episodes (Anderson & West, 2011). Violence appears to be a response to several factors unique to both the patient and the environment. Newton, Elbogen, Brown, Snyder & Barrick (2012) evaluated consistent characteristics seen in patients who perpetrate violence which include; age less than 35 years, lower IQ, homelessness, lack of gainful employment, history of mental illness, and history of aggression (p. 211). Risk factors for violence are either static or dynamic qualities of the patient (Anderson & West, 2011). Static

qualities that may lead to violence are endowed qualities, like gender and IQ. The dynamic risk factors of violence are those that relate to the illness and are amenable to change with treatment.

A risk assessment tool is only useful if preventative intervention strategies are in place, and the staff trained in its' proper use (Newton et al., 2012). The indication is clear that assessment done upon admission allows for more useful and actionable patient-centered data. Further, restrictive environments that set firm limits can be a trigger for violence and research indicates that traditional methods of managing escalated behavior only triggers increased violence in patients. Training for interventions and management of the environment is essential (Quintal, 2002). Current indicators support training staff to engage and therapeutically interact with patients to prevent incidences and foster enhanced engagement. When coupled with de-escalation training, these skills help staff and patients to manage volatile situations with greater success. (Anderson, et al., 2011; Cowman, Björkdahl, Clarke, Gethin, Maguire, & European, 2017)

“Violence prevention and management are considered to be an important but challenging part of inpatient psychiatric nursing, and specific staff training is regarded as essential” (Björkdahl, Hansebo, & Palmstierna, 2013, p. 397). Following a primary prevention philosophy, the authors reviewed the literature and found that although staff training to prevent violence is endorsed, the context of training showed wide variation. Regardless, training does support nursing staff to adopt a stance of being “active and health-promoting” instead of passive and waiting for signs of aggression (Bjorkdahl et al., 2013).

Bowen, Privitera, and Bowie (2011) advocate using a public health model in approach to milieu management with primary prevention as the most cost-effective measure. Toward this aim, they state “all behavior happens in a social context” (p. 189), and a therapeutic environment

is one in which there is therapeutic understanding of behavior as well as a keen awareness of the impact of care providers on the situation. Moving away from a punitive approach to patient management, toward one of therapeutic appreciation creates a welcoming and judgment-free environment. “Engaging environments empower individuals served to direct the process of their own recovery...” (p. 189).

Similarly, Bowers (2014) formulated an approach to patient care called the Safewards model. He identifies that violent events are the outcome of an interplay between many facets, hospital culture, staff attitudes, the unique experience of the patient, and physical environment, to name a few. He endorses that active management and therapeutic intervention across all areas decrease the potential for violence. “...there are a set of conflict-originating factors that can give rise to specific flashpoints which can then trigger a conflict incident leading to containment” (p. 500). Additionally, Bowers (2014) incorporates ten interventions to reduce conflict and subsequent containment through engagement and therapeutic strategies.

With the lens of public health, Hallett, Huber, & Dickens, (2014) identified that most studies focus on tertiary intervention, but those that had education and intervention focused on primary and secondary levels of intervention had good outcomes, including better therapeutic engagement and reduced rates of aggression, restraint, and seclusion. Although the literature is rich with identifying risk factors for patient violence and varied recommendations for prevention and intervention, no evidence-based practice prevails for preventing violence. However, consistently noted in the literature are practices that address the preparation of staff for early identification and intervention to mitigate potential violence. Staff training to address emerging violence is essential. However, this leaves staff ready to react and does not prepare them to engage. Engaging patients in a meaningful, therapeutic manner both individually and in group

contexts enhances staff confidence and helps patients to be more reflective and less reactive (Bowers, 2014). Bowen et al. (2011) further advocates moving away from behavioral modification approaches to engagement and empower techniques that lead to recovery.

Review of Evidence-Based Intervention Strategies to Reduce Violence

RCTs addressing staff training in the prevention of violence are starkly limited. Phillips (2016) critically reviewed the literature and stated that work to date qualifies the problem. Of the literature that addresses workplace violence empirically, the results were weak, had poor designs, and inconclusive results. Although there is a plethora of literature on prevention, Phillips (2016) concludes, “Proving that prevention programs are efficacious and cost-effective requires scientific experimentation and designing such experiments has proved to be challenging. Without standardized definitions, it will remain difficult for researchers to combine or compare data, assess interventions, and detect temporal changes.” (p. 1662).

Identified randomized control trials demonstrated a variety of interventions from monitoring for violence (Abderhalden, Needham, Dassen, Halfens, Haug, & Fischer, 2008; Sande, Nijman, Noorthoorn, Wierdsma, Hellendoorn, Staak, & Mulder, 2011), recording and processing violent events (Arnetz, et al., 2000) and the more complex training staff for violence prevention (Borckardt et al., 2011; Bowers et al., 2015; & Putkonen et al., 2013). Monitoring and reporting strategies are passive and limited. However, raising awareness, identifying risk factors, and debriefing all incidents fosters proactive recognition of risk factors. In addition to monitoring Abderhalden, et al. (2000) & Sande et al. (2011) instituted a daily review of violence risk scores and held team meetings to manage at-risk patients. Interdisciplinary problem solving was not measured, but most likely had a significant impact on the outcome.

The studies with interventions varied across concepts taught to staff or support offered to them. Putkonen et al., (2013) identifies using the 6CS, as previously described, and reports these loosely as reviewing support given to unit management and staff during the debriefing of all incidents. Coaches worked on the units for observation and support to develop individualized strategies to prevent violence. Therapy with patients included training on calming techniques, and feedback elicited. Interventions were presented as themes, not defined, and therefore, unable to replicate.

Borckardt et al., (2011) & Bowers et al., (2015) both use defined approaches to reducing episodes of patient violence that are replicable and show promise in use. Bowers et al. (2015) instituted the Safewards approach which breaks down potential points of conflict into six domains (a) patient characteristics; (b) staff characteristics; (c) the physical environment; (d) the regulatory environment; (e) community or patient to patient experiences; (f) issues outside of the hospital. The domains break down causative factors leading to a “flashpoint” or the moment that aggression escalates, and intervention is needed. Ten, well-defined interventions are offered to address areas of risk in each domain and reduce escalation while addressing unit culture, patient engagement, and staff perceptions. Borckardt et al. (2011) utilized the engagement model which “includes four separate components: trauma-informed care training, changes in rules and language, patient involvement in treatment planning, and changes to the physical characteristics of the therapeutic environment.” (p. 478). Although each uses slightly different language, the commonalities include creating a less restrictive environment with behavioral expectations, engagement, appreciation for the patient’s history, providing active patient involvement in treatment and use of supportive resources.

A common thread across all studies was increasing awareness of violence which includes both proactive and retroactive approaches (Abderhalden et al., 2008; Arnetz et al., 2000; & Sand et al., 2011). Proactive measures include assessment of early warning signs and formulating plans to reduce risk or heighten monitoring for quick intervention. Retroactive approaches use debriefing to evaluate details leading to a violent event to foster skill development for early identification. Proactive identification and prevention of violence yields better outcomes but raising awareness and supporting staff in the skill of identifying risk factors for violence appears to be a sound area for further study. (Abderhalden et al., 2008; Arnetz et al., 2000; & Sand et al., 2011)

Limitations in the studies and a variety of interventions make drawing correlations across interventions impossible. However, all the RCTs shared themes of staff development, including awareness of risk, providing a therapeutic milieu, and enhancing patient engagement. Bowers et al. (2015) conducted the highest quality RCT and offered clearly defined interventions, which can lead to replication. The Safewards model uses ten interventions that address unit culture, patient engagement, and staff perception (See Table 1). Defining standards that address patient engagement, staff approach to care, relationship building, and patient preparation for discharge staff are better prepared to minimize patient distress and avoid escalation, referred to as a “flashpoint” or trigger that leads to a conflict and containment dynamic between patients and staff. (See Appendix 1). This model is highly detailed, and training resources are readily available for translation to practice.

Safety Indicators as Measures of Violence Management

Evaluation of violence in healthcare is also measured by its impact on quality and safety indicators. Quality measures for psychiatric care evolved from public and private partnerships to

address factors impacting the delivery of care and patient outcomes (Covall, 2010; National Association for Behavioral Healthcare, 2012). The hospital-based inpatient psychiatric services (HBIPS) core measure set evolved as standards of quality indicators required by the Centers for Medicare and Medicaid and monitored by the Joint Commission (National Association for Behavioral Healthcare, 2012). A reportable measure for hospitals is hours of restraint use with the goal of reduction because the negative consequences of restraint are physical and emotional trauma to both patients and staff (The Joint Commission, 2019). Physical assaults on staff and other patients with resulting injuries are a quality measure monitored by the National Database of Nursing Quality Indicators or NDNQI (Staggs, 2015) which is a voluntary membership for hospitals who wish to benchmark nursing quality improvement. Staggs (2015) states that assault and injuries to staff and patients have remained significant, despite the growing trend for decreased restraint, which most likely indicates a lack of adequate education and management plans for patient violence.

Patient perpetrated violence can result in injury for the perpetrator, targeted staff, staff intervening, and other patients who are victimized by direct assault or as a bystander. Violence can be verbal, physical, or sexual, and the group most targeted in a violent event are nursing staff, followed by patients (Fisher, 2016; Staggs, 2015). Staggs (2015) identified that nurses are at a higher risk of perpetrated violence because they are often implementing unit rules, setting limits, and denying patient requests. Nurses commonly report incidences of being pushed, hit, and spit at by patients but other perpetrated violence can include punching and kicking (Kelly, Fenwick, Brekke, & Novaco, 2016; Broderick, Azizian, Kornbluh, & Warburton, 2015). Injuries can occur by direct assault or when containing a patient and can range from mild to severe (Erdoş, & Hughes, 2001; Bensley, Nelson, Kaufman, Silverstein, Kalat, & Shields, 1997). Mild

injuries include minor abrasions and bruises, while moderate can include muscle soreness and extensive bruising (Bensley et al., 1997; Flannery, Wyshak, & Flannery, 2018). Severe injuries can result in fractures or head injuries, and the most extreme can lead to permanent physical disabilities (Benseley et al., 1997; Flannery et al., 2018).

Injuries for patients can occur during the restraint event. Physical restraints are an intervention that prevents a patient from moving freely or having full access to his or her own body (Springer, 2015). Restraining a violent patient may involve staff physically restraining a patient while securing a mechanical restraint such as wrist or ankle restraints or to move a patient to a secure and secluded area (Springer, 2015). A physical struggle can result in mild to severe injuries from abrasions to strained muscles. Patients' descriptions of restraint injuries include blisters, bruises, ineffective circulation, and skin irritation (Hamid & Daulima, 2018). However, restraints pose more significant risks including aspiration, choking, strangulation, positional asphyxia, and blunt trauma to the chest which can result in catastrophic injury and death (Mohr, Petti, & Mohr, 2003; Springer, 2015). Staff and patient injuries remain a significant risk in psychiatric care.

Theoretical Foundation

Safewards is an explanatory model for the cause of inpatient psychiatric violence and containment. Bowers (2014) conceives of an inpatient unit as consisting of six defined areas, referred to as domains, in which the potential of conflict exists (See Appendix 1). The domains attend to the relational experiences of patients with themselves, other patients, staff, the hospital environment, which includes both the physical layout and rules, and influences from outside the hospital. These relational domains, individually or combined, have the potential for conflict which if left to escalate can lead to a "flashpoint" or the pivotal incident that leads to conflict and

subsequent containment. Recognizing these domains and the potential conflict within each allows providers to be proactive in decreasing conflict or to be better prepared to intervene once a flashpoint has occurred. Prevention is ideal, but intervention at the point of conflict facilitates better control for both patients and staff while helping to avoid containment interventions.

(Bowers, 2014; Bowers et al., 2014; Bowers et al., 2015)

The Safewards model encompasses ten interventions to enhance the therapeutic and relational aspects of the unit. Interventions consist of ways in which staff reframe their narrative regarding patient behaviors with objective and thoughtful insights into the reasons that drive behavior. Other interventions foster the work that staff does with individual patients to broaden patient skills in coping, anticipate potential patient distress, and minimize the impact of these stressors. Lastly, the interventions focus on building community between staff and patients and patients and patients. Building a community of support with groups, unit messages, and agreed-upon guidelines for personal and interpersonal conduct embeds personal accountability and fosters enhanced behavioral control (See Table 1).

Variables

The independent variable under investigation was the implementation of Safewards training across four inpatient psychiatric units for 128 staff consisting of 43 RNs and 85 Institutional Aids. Staff training occurred with a train-the-trainer (TTT) model in which 16 trainers consisting of nurse managers, director of nursing education, and shift supervisors completed training. The dependent variables identified to measure the outcome of Safewards training were rates of patient restraints and rates of injuries for both patients and staff (See Table 2).

Methods

Design

Safewards implementation was an EBP initiative to train staff for patient care improvement to reduce restraint and injury rates. The units of implementation were decided upon by the Chief Nursing Officer (CNO) who determined that training would occur on all inpatient units (n=4) for one building in a complex state healthcare system. A formal research design with intervention and control units was impossible. The cost of staff training is prohibitive when introducing new models of care, and it is more cost-efficient to rotate all staff through training. Secondly, the building chosen for intervention provides staffing with multiple floating personnel, eliminating the potential for a contained intervention unit. Therefore, the units chosen were a convenience sample.

The nature of EBP initiatives lends itself to a quasi-experimental, nonrandomized, pre- and post-intervention design with staff education in Safewards as the intervention. Quasi-experimental designs address work done in settings that have naturally formed groups which preclude sample randomization (Polit, Beck, Hungler, 2001; Creswell, 2014). Ideally, a comparison group, such as a like unit, would have supported any identified change realized on the intervention units (Polit, Beck, Hungler, 2001). However, the clinical setting, for reasons previously identified, required the nonrandomized pre and post-intervention design.

Setting & Recruitment

The Safewards EBP initiative took place in a large State Hospital System with a 284-bed capacity that covers two separate geographical locations in the State. It offers both acute and long-term treatment for complex medical and psychiatric needs. Additionally, rehabilitation services are offered in the form of occupational therapy, recreational, speech, and respiratory, to name a few. The psychiatric service consists of adult, forensic, and geriatric units. Safewards training occurred on four adult psychiatric inpatient units with a total of 64 beds. The patient population

represents all major diagnostic groups. The adult patient age range is 18 to 58 and consists of males and females. Individual evaluation of patients over age 58 occurs for fit on either the adult unit or the geriatric unit, determined by the presence of chronic physical illness with associated limitations or dementia.

Incidents of patient violence and subsequent restraints for the entire system demonstrated a baseline average of 122 per month in the first half of the calendar year 2018. Injuries related to patient violence for both patients and staff averaged 7.83 and 8 per month, respectively. The four units identified for the implementation of Safewards are in the same building and collectively averaged 93.6 episodes of restraints per month from March 2018 thru August 2018. The CNO chose the intervention units as the highest areas of risk.

The four intervention units were in an older building with small units and limited community areas. Care delivery remains primarily custodial, and patient care activities generally revolve around the structure of the shift. Therapeutic activities, such as groups, are run by the psychology department. Staff receives training in de-escalation techniques and Trauma-Informed Care. However, nursing administration identified a gap in staff knowledge and skill for active therapeutic engagement with patients.

Intervention

A train the trainer (TTT) model was developed in September 2018 as the most efficient approach to train the 128 staff for the four inpatient units. TTT is a model of training where trainers, or experts, train others in an organization to disseminate education and is a highly effective approach in translating research to practice (Suhrheinrich, 2015). Materials for trainer and staff training (PowerPoint presentation and handout) were compiled from two well-developed resources; The Victoria State Government Department of Health & Human Services Website,

Safewards Victoria, (Victoria State Government, 2018) and the Institute of Psychiatry Health Service and Population Research, Section of Mental Health Nursing, Safewards (Safewards, 2018 & 2019). The training incorporated the history of Safewards, research evidence, the domains, interventions, and audience engagement for successful implementation with hospital staff. Ample time for discussion was embedded. Subsequently, a four-hour staff training PowerPoint was developed from the available resources and handouts (See Appendix 2).

Train-the-trainer sessions occurred over four days in October & November 2018. Sixteen trainers, identified by nursing administration, included shift supervisors, nurse managers, and the nurse educator. In December 2018, training materials were refined with trainers and nursing administration (See Appendix 2). The student investigator also did a voice-over of the PowerPoint staff training slides for use on the Hospital's learning management system for those staff who were not present during the live training and for future hires. A timeline for staff training was established to begin the end of January 2019 with completion at the end of February 2019. During the staff training period champions were identified to implement interventions and mentor staff in the ongoing use of the ten interventions of the Safewards model. Interventions were rolled-out during training and through March with a capstone summary at the annual hospital education fair in April 2019.

Instruments, Measurement, & Data Collection

This EBP initiative was a pre-post intervention method, without a control group, also known as one-group before-after design (Polit, Beck, Hungler, 2001). Quasi-experimental designs address work done in settings that have naturally formed groups which preclude sample randomization (Polit, Beck, Hungler, 2001; Creswell, 2014). Ideally, having a comparison group such as a like unit that did not receive the intervention would have strengthened the results and

support any measured change (Polit, Beck, Hungler, 2001). However, the clinical setting's goal was to address high rates of restraint and injuries expeditiously.

The hospital maintains records of incidents through the Risk Department. The recording of violent episodes is through restraint records. Subsequently, the hospital also tracks incidents of injury related to restraints for both patients and staff. The aggregated, de-identified restraint and injury numbers were compared for the intervention units with the Wilcoxon signed-rank test looking at the difference in medians between these measures in the three months pre-training and again in the three-months post-training. Three months pre and post staff training was chosen to minimize the impact of unit variation for both staffing, patient turnover, and for the complexity of Safewards' interventions integration into unit practice.

Data Analysis:

The hospital's risk department provided the data and the student investigator manually entered them into IBM SPSS v26.0 (2019). Descriptive statistics were run for each dependent variable. Evaluation of dependent variable medians were compared with the Wilcoxon signed-ranks test with a set p value = 0.05. Medians for restraints (Hypothesis 1) and injuries for staff and patients (hypothesis 2) were compared three-months pre-and three-months post-intervention.

Ethical Considerations

The Safewards EBP initiative was deemed exempt by the George Washington University School of Nursing Institutional Review Board (IRB). The Hospital does not have a formal IRB but has a Research Committee which functions as a review body, and they also deemed the initiative exempt, not meeting the criteria of human subject research. Continuous quality improvement for enhanced patient care is a standard of hospital practice and includes staff training

(Office for Human Research Protections, n.d.). Safewards was mandatory training for all staff working in the designated building, for all four patient care units.

Data reviewed was produced by the Hospital's Risk Department and was shared with this investigator in paper copies, now housed in a locked filing cabinet in the student investigators office. Documents did not contain the Hospital's name, and unit names were initials. For data evaluation, the units were identified in numeric order, further eliminating any potential identifiers. All data received was aggregated and de-identified, conveyed in whole numbers for each variable for each unit and each month.

Results

There was a total of 16 nurse managers, nursing educator, and shift supervisors that participated in TTT sessions, and only six conducted staff training. Education sessions for staff began at the end of January 2019 and completed over February 2019. A total of 128 staff received training; 43 nurses and 85 institutional aids. Education occurred in two, two-hour sessions (See Appendix 2 for Educational Outline). Simultaneously, nursing administration identified intervention champions who had oversight of the integration of the Safewards' interventions on each of the implementation units. The student investigator did have meetings with nursing administration to review the integration of Safewards interventions on the units but functioned in consultation and did not have direct oversight of integrating the ten interventions. The hospital's nurse educator and lead nurse manager led integration.

The Wilcoxon signed-ranks test was performed to evaluate the difference between medians for patient restraints (hypothesis 1) and injury rates (hypothesis 2) for both staff and patients pre- and post-Safewards training. The Wilcoxon signed ranks test was chosen because the data violated the assumption of normal distribution required for the paired t-test. A small n can lead to issues

in normal distribution on standard error ratios. Additionally, the intention of this EBP project is for reduction of restraints and injuries. These are events that we want to reduce or avoid, and a successfully functioning unit would aim for zero events and not a normal distribution. With the violation of the normality assumption, the more prudent approach to evaluation was with the Wilcoxon signed-rank test. (Polit, 2010).

The first hypothesis predicted a reduction in restraint rates from pre-training ($M=28$; $SD=27.34$) to post-training ($M=20.25$; $SD=7.81$) and evaluated with the Wilcoxon signed-rank test. The results were not statistically significant, pre-training restraint $Mdn=17.50$ and post $Mdn = 18.00$, with a Z score = -365 , $p = .715$. The lack of statistical significance indicates any difference between medians could be attributed to chance, and the null hypothesis that there would be no difference in restraint rates related to the intervention of Safewards training must be retained. The second hypothesis estimated that there would be a reduction in injury rates from pre-training for staff ($M=3.75$, $SD=4.50$) and patients ($M=3.25$, $SD=2.75$) to post-training for each staff ($M=4.0$, $SD=1.63$) and patients ($M=3.50$, $SD=1.73$). Again, the Wilcoxon signed-rank test was run for each variable, staff injury, and patient injury rates. Both rates increased slightly, with no statistical significance. Pre-training staff injuries $Mdn = 2.50$ and post $Mdn = 4.00$, $Z = -184$, $p = .854$. Pre-training patient injuries $Mdn = 3.50$ and post $Mdn = 4.00$, $Z = -.378$, $p = .705$. The null hypothesis was again retained that there would be no difference in injury rates related to Safewards training (See Table 3).

Discussion

Safewards is an evidence-based practice model that has demonstrated statistically significant effects on conflict and containment for inpatient psychiatric care (Bowers et al., 2015; Fletcher et al., 2017). Despite having robust evidence as a model of care delivery for positive

staff and patient outcomes, the results of this EBP initiative were not statistically significant. The work of Fletcher et al. (2017) offers insight into the lack of change. In a before and after design study, Fletcher et al. (2017) conducted a 12-week trial to implement Safewards on 13 inpatient psychiatric units in Victoria, Australia. Units self-selected to participate and the 31 units opting not to participate served as controls. After the 12-week trial, there were no statistically significant differences between intervention and control units. However, at the one-year evaluation, trial units demonstrated statistically significant reductions in restraint and seclusion in comparison to the control units. The Safewards model is a practice model, and the investigators concluded that training was only the beginning of practice change. Mentorship and coaching for the ten interventions are essential for staff to adhere to change and foster knowledge and skill acquisition leading to measurable results in the use of Safewards. Based on the results of Fletcher et al. (2017), it will be essential to assess long-term implications.

The current EBP initiative for Safewards had a five-week training window for staff and results evaluated for three months post-training. Interventions were being rolled out simultaneous to training, but completion of intervention roll-out was estimated the first week in April 2019. Fletcher, et al. (2017) & James, Quirk, Patterson, Brennan, & Stewart, (2017) both address intervention fidelity as essential in the implementation of Safewards. James et al. (2017), defines intervention fidelity as assurance that interventions are implemented as intended. Using a Safewards fidelity checklist, a form outlining the interventions and an objective assessment if interventions are implemented and effectively used, Fletcher, et al. (2017) identified in the months following the trial period staff demonstrated improvement in the use of the interventions with consistent fidelity achieved at 12-months. James et al. (2017) utilized the checklist as well but expanded the assessment to define characteristics that could either support

or hinder the use of Safewards interventions; unit environment, unit culture, staff skills, and staff value of Safewards (p. 6). Values, attitudes, and organizational culture are also identified in the nursing literature as barriers for the implementation of EBP (Shayan, Kiwanuka, & Nakaye, 2019; Rapp, Etzel-Wise, Marty, Coffman, Carlson, Asher, . . . Holter, 2010) and will frame the following part of this discussion.

Staff values of Safewards were unclear to the student investigator who did not have contact with frontline staff. However, working with trainers offered some insight into the overall perspective of taking on a new initiative. Safewards, as a model of care, requires practice change. Essential to the implementation of EBP is staff engagement to identify clinical issues (Kowalski, 2017). Although rates of restraints and injuries were an issue for hospital administration, unit management at the staff level relied heavily on long-term mechanical restraints for violent patients in order to provide unit safety. Therefore, the prospect of restraint reduction engendered apprehension for trainers.

Throughout the TTT sessions, ample time was afforded to engage the sharing of clinical experiences, affective engagement regarding goals of nursing care, and objective evaluation of the patient experience. Discussion and personalizing material from clinical experiences were necessary to engage the trainers and assist them to gain objectivity for current practice and identify how change can improve the quality of patient and staff experience. As an advanced practice psychiatric nurse, with three decades of clinical experience, this student investigator could also invite conversation of unit safety from lived experience. Conversation and questions arose about teaching the Safewards model and the ten interventions. Engagement during the training facilitated the relationship while also building trust in the expertise of the student

investigator. Subject matter experts are vital for successful implementation of EBP and need to have credibility with those they are training (Kowalski, 2017).

Despite relationship-building and ample trainer discussion of wanting to make a difference in the lives of patients, there was further discussion of lack of institutional support for autonomous nursing practice. Team culture plays an essential role in the successful implementation of Safewards and consistent use of interventions. However, trainers identify staff as essential for custodial care of patients, but the psychology department or occupational therapy as driving therapeutic activities. Another barrier was communication issues between providers (psychiatrist and advanced practice nurses) and staff because nurses may have inconsistent engagement in team meetings. Poor communication with the provider team is perceived as a risk factor for patient aggression because conflict escalates when staff is not implementing changes providers discuss directly with patients. The role of custodial management of patients leaves front-line staff with a limited skill for therapeutic engagement of patients and a more substantial leap for skill acquisition and cultural change in the role of nursing for direct care.

Attendance at TTT meetings was inconsistent although those in attendance were participatory. Even after completion of the formal TTT sessions, new trainers would attend follow up meetings focused on refining staff training materials and trainers practiced their presentation of materials. Despite efforts toward engagement of trainers, 10 of the 16 trainers did not participate in staff training. Fundamental to the success of a TTT model is choosing the appropriate trainers who will disseminate the training in a consistent manner. Those chosen must have a willingness to see the project through to completion, have institutional credibility,

and complete the entire training program (Bennett, 2019; Sokolowski, 2015; Centers for Disease Control and Prevention, n.d.).

Unit environmental conditions can be a barrier for implementation of EBP and unit demands were often identified as the issue with TTT attendance. As James et al. (2017) offer, implementation quality is impacted by how busy a unit is, which includes chaos, staffing issues, incidents, and patient acuity. Trainers' inability to attend, or finish TTT sessions and refusal to participate in training front-line staff may be indicative of unit cultures that diminish motivation for practice change.

Price, Burbery, Leonard, & Doyle (2016) implemented Safewards on six forensic mental health units without statistically significant results. Similarly, they identified implementation issues related to staff perception of the model and interventions. Like Price, et al. (2016), the student investigator was given feedback at the TTT sessions that many of the interventions were already embedded in patient care practice. However, the Safewards model pulls together interventions in a systematized approach to embed fidelity of use rather than an inconsistent and individualized preference for patient care choices. Another barrier noted by Price et al. (2016), was a lack of frontline engagement early in the process for problem identification and engagement, which reduced motivation to adopt the interventions. As previously stated, early engagement and participation are essential to EBP implementation, and it is uncertain how front-line staff were engaged outside of the training sessions for this current intervention.

A staff concern identified by Price, et al. (2016), and conveyed in TTT sessions, is a concern for a potential increase in patient aggression while changing the practice approach. Although statistically insignificant for this intervention, it is interesting to note a decreasing trend in restraint reduction but an increase in injuries (See Table 3). Each of these should be assessed

by unit leadership to use in coaching and mentoring. Being able to create linkages for the staff of their efforts to positive trends in the reduction of restraints will instill confidence in practice change. Equally important is to investigate all incidents of injuries and define causation. Questions to investigate should address potential risk when acquiring and practicing new skills. Conversely, are injuries occurring for staff that are resistant to using a new model of care? Conflict may occur when patients perceive being treated differently by various staff. Evaluating all incidents and debriefing will foster an environment of continuous improvement in the use of Safewards.

Significant to the EBP were system changes implemented by the hospital that may have impacted outcomes. A new forensic unit was developed and opened during the planning months of this EBP initiative. Some of the patients who contributed to the restraint rates were moved to the new unit, which changed baseline rates from inception to launch. Additionally, the CNO developed a new staff-level position, Psychiatric Technician, who are required to hold a bachelor's degree and have two years of experience in psychiatric care. Their role is to embed therapeutic activities on the unit and enhance patient engagement. Through planning and TTT sessions, concerns about difficult patient situations were discussed. Based on heightened awareness, TTT participants engaged the treatment team and subsequently implemented therapeutic behavioral plans to address patient-specific issues. Lastly, the Safewards intervention of reassurance was added to the patient event paperwork as a standard of practice approximately two months before staff training started.

Study Limitations

This EBP initiative had several limitations. There was a small sample size (n=4) of intervention units. The units were a convenience sample, and the project lacked a control

population. Implementation of the Safewards model is a two-fold process of training staff for a conceptual understanding of the model's domains that can lead to conflict and containment as well as a review of the ten interventions. The second aspect is integrating the interventions into practice. The student investigator completed TTT sessions but did not participate in staff training or evaluate the trainers for competency in training. There were two meetings for intervention implementation in which the student investigator discussed best practice of identified champions taking the lead for each intervention (Victoria State Government, 2018). Brainstorming for ways to personalize the interventions occurred. However, the fidelity of intervention integration and use was not evaluated by this student investigator. The lack of oversight of model integration makes it impossible to fully assess barriers to the implementation.

Implications and Recommendations for Practice, Policy, and Research

Although the results of this EBP intervention did not yield the hypothesized outcomes, it would be necessary for the hospital to implement an objective evaluation to assess the fidelity of use of the Safewards' ten intervention. Utilizing the intervention champions, coaching, and encouragement for the integration of interventions should continue. Actual practice change demonstrated by consistent use of interventions can take several months to a year (Fletcher et al., 2017; James et al., 2017). Establishing mentorship for champions could provide beneficial motivation and generate ideas for sustainability. Model implementation could also be better supported if all clinicians on the units participated in the training sessions. Knowledge and understanding of the efforts of front-line staff could lead to better support and engagement for fidelity.

The value of accurate data will be essential to evaluate the long-term outcome of Safewards implementation. The hospital still has a paper reporting system of incidents. The use

of electronic reporting systems has demonstrated both increases in reporting and more timely reporting (Elliott, Martin, & Neville, 2014). Accurately defining incidents would be essential, as well as using other data related to the management of behavioral needs such as observational status or use of room restriction. Rodrigues (2000) states that for any organization to successfully engage in evidence-based decision making, there needs to be robust, transparent, and usable data supported by appropriate tools and infrastructure. Lastly, incorporating qualitative data from hospital surveys for patient and staff satisfaction can add insight into the experience of Safewards implementation and potential refinement for a successful outcome.

Conclusion

Safewards was introduced as an EBP initiative for a large, state-run, psychiatric service. Implementation units were identified by nursing administration based on historical data of restraint and injury rates, which were the measures to evaluate outcomes. No statistically significant results were obtained in a comparison of medians pre- and post-intervention as evaluated by the Wilcoxon signed-rank test. It is recommended that the hospital continues with the integration of Safewards' ten interventions because research has demonstrated practice change can take up to a year and results improve as there is consistent use of the interventions (Fletcher et al., 2017). Mentorship and evaluation of fidelity in the use of interventions are recommended.

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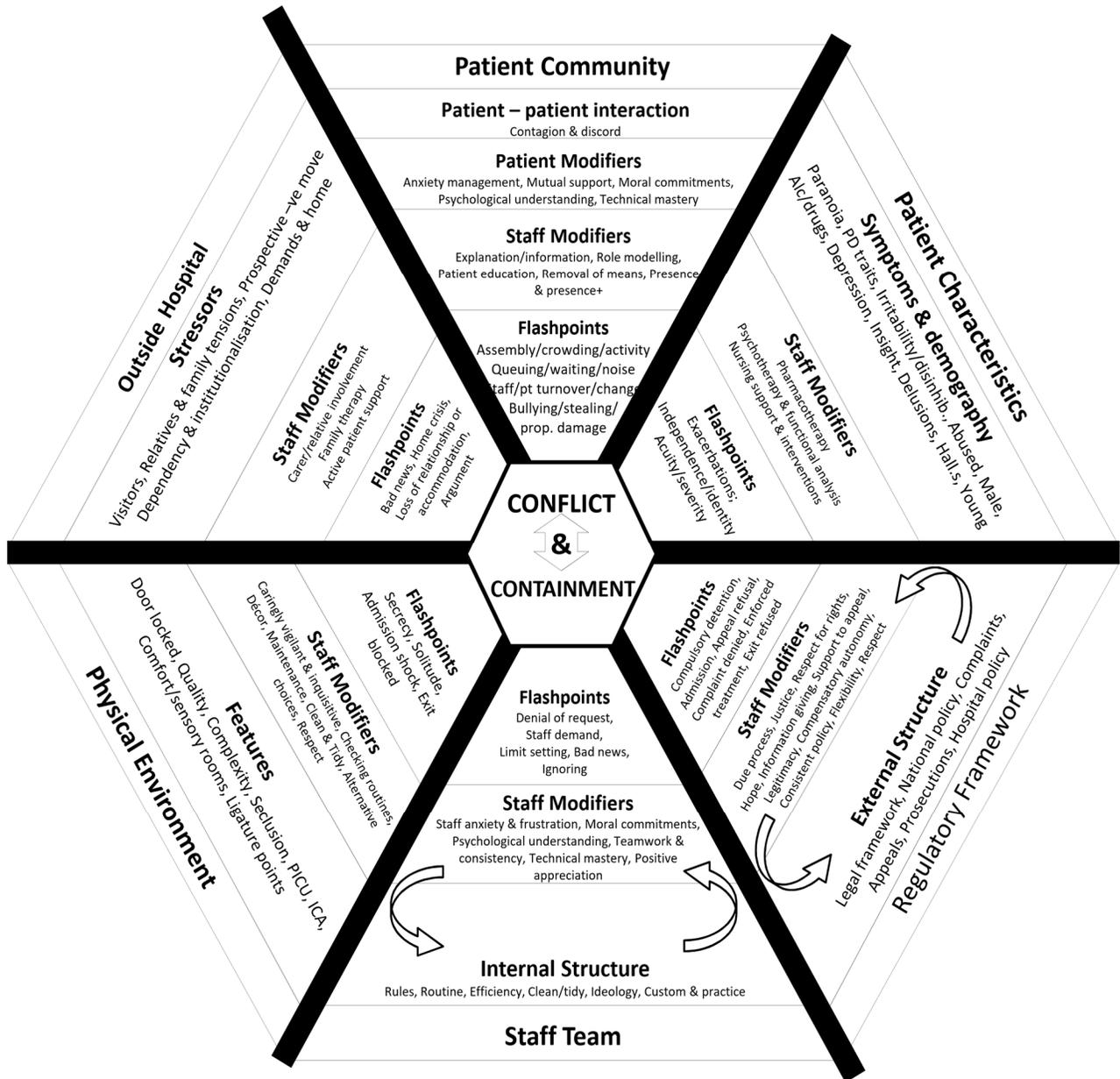
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Appendix 1

Safewards' Domains



Victoria State Government (2018). Safewards Model Refresher, slide 28

Appendix 2

Outline of Safewards Training Presentation

- I. Overview of the Safewards model
 - A. Development
 - B. Research evidence
 - C. Key aims
- II. Conflict & Containment
 - A. Define forms of conflict
 - B. Define means of containment
 - C. Identify factors that contribute to conflict & containment
- III. The Six Domains
 - A. Safewards conceptual model of areas for conflict risk
 - 1. Staff team domain
 - 2. Physical environment domain
 - 3. Outside of hospital domain
 - 4. Patient community domain
 - 5. Patient characteristics domain
 - 6. Regulatory framework domain
 - B. Modifiers that influence the domains and potential conflict & containment
 - 1. Define modifiers
 - 2. Staff modifiers
 - 3. Patient modifiers
- IV. Safewards Ten Interventions

- A. Know each other
 - 1. Background and aims
 - 2. Intervention in action
 - 3. Examples and discussion
- B. Positive words
 - 1. Background and aims
 - 2. Intervention in action
 - 3. Examples and discussion
- C. Reassurance
 - 1. Background and aims
 - 2. Intervention in action
 - 3. Empathy
 - 4. Examples and discussion
- D. Self-soothing methods
 - 1. Background and aims
 - 2. Intervention in action
 - 3. Examples and discussion
- E. Talk-down
 - 1. Background and aims
 - 2. Talk-down process
 - 3. Examples and discussion
- F. Clear & Mutual Expectations
 - 1. Background and aims

2. Intervention in action
3. Ideas for implementation
4. Examples and discussion

G. Mutual Help Meetings

1. Background and aims
2. Mutual help meeting agenda
3. Discussion

H. Discharge Messages

1. Background and aims
2. Intervention in action with modifications for long-term care
3. Examples and discussion

I. Bad News Mitigation

1. Background and aims
2. Intervention in action
3. Examples and discussion

J. Soft words

1. Background and aims
2. Intervention in action
3. Examples and discussion

V. Training wrap-up

(Victoria State Government, 2018; Institute of Psychiatry Health Service and Population Research, Section of Mental Health Nursing, 2018 & 2019)

*Table 1**Safewards Interventions Descriptions*

Safewards Interventions	Description
Clear Mutual Expectations	Involves the negotiation process between staff and patients resulting in shared expectations that are displayed on the unit.
Soft Words	Commitment to patient-centered care using professional language with reminders posted in staff areas that prompt soft words.
Talk Down	Structured intervention to facilitate patient de-escalation
Positive Words	Focus on the language used when discussing patients with an emphasis on identifying symptoms, strengths, and acknowledgment of patients' efforts.
Bad News Mitigation	Staff awareness of and communication of known difficulties a patient may have experienced. An effort is made by staff to give patients opportunities to discuss stressors.
Know Each Other	Sharing introductory information between patients and staff that identify neutral, social information, which is displayed on the unit.
Mutual Help Meetings	Structured daily meetings that address the sharing of mutual appreciation and support fostering patient connection.
Calm Down Methods	Sensory based, self-soothing interventions for patients
Reassurance	Purposeful rounding to offer support and reassurance to patients who may have witnessed or been impacted by a conflict event on the unit.
Discharge Messages	Displaying encouraging messages from patients and staff to those who are being discharged.

(Fletcher et al., 2017; Price et al., 2016)

Table 2

Definition of variables

Variable	Type	Theoretical Definition	Operational Definition	Measurement
Restraint rates	Dependent	“Restraint refers to any method, physical or mechanical device, or material or equipment that immobilizes or reduces an individual’s ability to freely move his or her arms, legs, body, or head.” (SAMHSA, 2015)	All documented rates three months prior and three months post intervention	Ratio
Injury rates – Staff	Dependent	Reported, via incident reports, events of injuries related to restraint and seclusion events	All reported cases three months before and three months after intervention	Ratio
Injury rates – Patients	Dependent	Reported, via incident reports, events of injuries in the context of seclusion and restraint events.	All reported cases three months before and three months after intervention	Ratio
Safewards Training	Independent	Safewards model of conflict prevention developed by Bowers et al, 2014.	Education with staff across six domains of potential conflict and implementation of ten interventions	

Table 3

Descriptive Statistics and Wilcoxon Signed-Rank Test Results

	Pre-Safewards	Post-Safewards		
	<i>M (SD)</i>	<i>M (SD)</i>	<i>Z</i>	<i>p value</i>
Restraints	28.00 (27.34)	20.25 (7.81)	-.365^b	.715
Staff Injuries	3.75 (4.50)	4.00 (1.63)	-.184^b	.854
Patient Injuries	3.25 (2.75)	3.50 (1.73)	-.378^b	.705