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Reducing Coercive Measures to Improve Patient and Staff Safety by Increasing the Frequency of Risk Assessment

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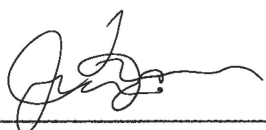
A doctoral project submitted in partial fulfillment

of the requirements for the degree of

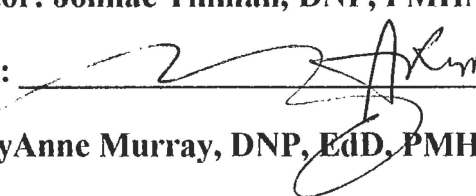
Doctor of Nursing Practice

College of Nursing, Seattle University

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Abstract

Violence is a critical issue in Healthcare. Inpatient psychiatric nurses are the healthcare professionals most affected by this problem. Structured risk assessment tools can predict imminent aggression, prompt interventions, mitigate the advent of aggressive behaviors and staff and patient injuries, and reduce restrictive aggression management methods. This quasi-mixed methods project instructed registered nurses in an acute inpatient psychiatric unit to implement the Dynamic Appraisal of Situational Aggression (DASA: IV) more frequently to determine the impact on aggressive behaviors, the use of coercive techniques to manage aggression, and to assess nurses' perception of the tool. Twenty-five registered nurses screened 447 patients over 28 days using the DASA: IV tool. Pre-implementation and implementation data were collected and analyzed with the statistical methods of percentage change, 2-tailed t-test, and ANOVA. The results indicated a 58.55% reduction in overall assault rates and a 20% reduction in the use of seclusions and restraints (S&R). A majority of participants had positive attitudes toward implementing the tool. Implementation of a DASA: IV protocol is feasible and may improve safety in adult inpatient acute psychiatric units.

Keywords: Seclusion and restraint, inpatient psychiatry, risk assessment, aggression, violence, coercive measures

Workplace violence is a growing problem in the United States and a prevalent problem in healthcare (D'Ettorre & Pellicani, 2017; Hollywood & Phillips, 2020; Liu et al., 2019). More than 70% of nurses suffer verbal and physical attacks (Hollywood & Phillips, 2020). Psychiatric nurses are three times more vulnerable to such attacks (Edward et al., 2015; Hilton et al., 2021).

In inpatient settings, verbal and physical attacks often prompt coercive methods to manage aggression (Lantta et al., 2020). Coercive treatment is common practice in psychiatric settings (Chieze et. al., 2019). Coercive measures are broadly defined as measures utilized “against the patient’s will or in spite of his or her opposition” (Biller-Andorno et. al., 2019) and include seclusion and restraint (S&R), forced treatment, and forced hospitalization (Chieze et. al., 2021). Seclusion & restraint includes the use of room seclusions, mechanical and/or physical restraints and chemical restraints (forced IM medications) (Knox & Holloman, 2012).

In psychiatric settings, the use of coercive measures causes high burnout rates, high staff turnover, and staff anxiety (Mento et al., 2020). Aggression toward nurses and the use of coercive measures has contributed to adverse physical and psychological effects on patients and staff (Goulet & Larue, 2017; Hilton et al., 2021). These adverse effects disrupt the therapeutic environment within the unit (Rosen, 2013). Psychiatric nurses are trained in de-escalation methods to reduce aggression and the subsequent use of coercive measures (Haefner et al., 2020). However, no definitive evidence supports the efficacy of de-escalation in reducing patient aggression (Gaynes et al., 2017). The aim of this project is to assess the effects of regularly using a validated violence risk assessment tool on incidences of violence, patient & staff injury, use of S&R, and nurses’ perception in an inpatient psychiatric setting.

Literature Review

Workplace Violence and Burnout

Violence and aggression are outlined in literature by physical types, verbal types, and physical and verbal types. Violence and aggression are defined broadly by the National Institute for Health Care Excellence in the United Kingdom (NICE) as "the range of behaviors or actions that can result in harm, hurt, or injury to another person, regardless of whether the violence or aggression is physically or verbally expressed, physical harm is sustained, or the intention is clear" (NICE, 2015, p. 5). Violence in the workplace is a pervasive issue in the United States, with healthcare being one of the most affected industries. Healthcare professionals, such as physicians, nurse practitioners, and nurses, are among the most vulnerable professionals, with most of the violence taking place in inpatient psychiatric settings (Stephens, 2019). The frequent occurrence of violent incidents in psychiatric inpatient settings prompts the implementation of coercive interventions to address patient aggression (Lantta et al. (2020). According to Mento et al. (2020), workplace violence induces elevated burnout rates, staff turnover, and anxiety among staff.

The utilization of coercive treatment, which refers to treatment administered without the individual's consent, is a common practice in psychiatric settings, as noted by Chieze et al. (2019). According to Biller-Andorno et al. (2019), coercive measures encompass actions implemented against a patient's wishes or despite their resistance. These measures include seclusion & restraint (S&R), forced treatment, and forced hospitalization (Chieze et al., 2021). The practice of seclusion and restraint encompasses the utilization of room seclusions and mechanical, physical, and chemical restraints, such as forced intramuscular medications, as outlined by Knox and Holloman (2012). The utilization of these techniques has been linked to

unfavorable physiological and psychological consequences for both patients and staff members, as evidenced by studies conducted by Chieze et al. (2019), Goulet and Larue (2017), and Hilton et al. (2021). Violence and consequent S&R use disrupt the therapeutic milieu within the unit (Rosen, 2013).

Adverse effects on patients and staff make using S&R an inappropriate and unacceptable intervention in managing patients' aggressive behaviors (WHO, 2019, p. 1). Seclusion and restraint should be used as a last-resort intervention (Lantta et al., 2020). The Project BETA (Best Practices in Evaluation and Treatment of Agitation) consensus guidelines on de-escalation discourages the use of seclusion and restraint while promoting the prioritization of screening for risk of aggression (Richmond et al., 2012).

Stigma Surrounding Mental Health Patients

Individuals with mental health diagnoses are subject to discrimination in healthcare settings. Psychiatric patients reported, “feeling devalued, dismissed, and dehumanized by many of the health professionals with whom they come into contact” (Knaak, Mantler & Szeto, 2017). “Receiving subtle or overt threats of coercive treatment” (Knaak, Mantler & Szeto, 2017) was a common theme reported by psychiatric patients. Threats to use coercive measures equate to threats to violate the patient's right to be free from S&R. Stigma towards mental health patients by mental health staff may lead to a biased approach towards treatment which may result in the implementation of coercive measures when they are not necessary (Steiger et. al., 2022).

Effects of Seclusion & Restraint on Patient Health Outcomes

According to Chou and Tseng (2020), nurses held a tendency to harbor distrust and hold unfavorable perceptions towards individuals with psychiatric conditions. Resulting from this, there appears to be hesitancy in initiating treatment, de-escalation, and psychopharmacological

intervention (Chou & Tseng, 2020; Rutledge et al., 2013). According to Hollywood and Phillips (2020), violence is high in inpatient psychiatric units. In situations where patients exhibit aggressive behaviors, nurses often resort to implementing coercive interventions, such as seclusion and restraint, to manage these behaviors (Joint Commission on Accreditation of Health Care Organizations (JCAHO), 2014).

The utilization of S&R yields various unfavorable outcomes. Coercive measures including S&R have been found to have a considerable likelihood of inducing Post-Traumatic Stress Disorder (PTSD), as evidenced by studies conducted by Chieze et al. (2019), Guzmán-Parra et al. (2019), and Whitecross, Seary & Lee (2013). The incidence rate of PTSD resulting from coercive measures has been reported to range from 25% to 47%, observed by Chieze et al. (2019). Steinert & colleagues (2013) completed retrospective interviews with patients who underwent S&R, revealing that the adverse psychological impacts were more severe in cases where restraint was employed instead of seclusion. The potential beneficial or protective effects of S&R have limited evidence, and the existing research on this topic is limited, as noted by Chieze et al. (2019). The use of physical restraints on psychiatric patients in inpatient settings is associated with a significantly increased risk of developing complications such as deep vein thrombosis (DVT) and aspiration pneumonia, which can lead to fatal outcomes (Chieze et al., 2019; Kersting, Hirsch & Steinert, 2019; Funayama & Takata, 2020). The act of physically restraining an individual may lead to their death as a result of asphyxiation (Kersting, Hirsch & Steinert, 2019)

The utilization of S&R carries substantial legal and monetary risk, as unwarranted use of S&R may result in concerns regarding patient consent, battery, and false imprisonment, as noted in various studies (Haimowitz, Urff & Huckshorn, 2006; Haimowitz & Urff, 2006; Knox &

Holloman, 2012; Thomas & Moore, 2013). The justification for limiting seclusion & restraint (S&R) use wherever feasible is based on the high incidence of psychological trauma and the potential for physical harm or death. The prospect of legal action against hospitals and healthcare personnel serves as an additional motivation to transition away from using these interventions.

Rates of Seclusion and Restraint

The Center for Medicare & Medicaid Services (CMS) operates the “Hospital Compare” tool in which S&R rates of Medicare patients are collected by hospitals. These data are limited by voluntary participation of hospitals and a narrow focus on Medicare patients only. Further, the only S&R data currently reported on “Hospital Compare” are physical restraint hours/1,000 hours of patient care and seclusion hours/1,000 hours of patient care. Although limited, this information provides cause for concern about the use of S&R in the state of Washington. The state of Washington’s average restraint hours/1,000 hours of patient care is 1.09, compared to 0.30 nationally. Seclusion and restraint hours/1,000 hours of patient care is 4.17, compared to 0.29 nationally.

Violence and Aggression Risk Assessment

The evaluation of risk is a crucial component in the risk management process, as stated by Kaunomäki (2015). Evaluating risk, particularly in cases of impending risk, typically involves relying on static baseline risk factors such as a patient's age, gender, family history, and diagnosis. These predictors are applicable in scenarios where a patient's risk level remains constant and necessitates evaluation, such as during their release from a psychiatric ward. However, these predictors do not account for the immediacy or probability of the risk behavior manifesting in the current clinical context (Ogloff & Daffern, 2006). The fundamental objective of a proficient risk assessment is to furnish the clinician with the requisite data to avert or

alleviate the consequences of the risk conduct being evaluated. Most risk factors which are utilized to predict the likelihood of violence or suicide are dynamic and are closely linked to the situational aspects of the specific risk scenario. The patient's affective state, including mood, anger level, irritability, behavior changes, negative attitudes, and expressed feelings of hopelessness, are significant dynamic risk factors for acute aggression and potential suicide. Research indicates that unassisted clinical judgments are limited in the ability to comprehend a clinical risk situation fully and are subject to the impact of variables such as the nature and extent of one's experience (Ogloff & Daffern, 2006).

Validated Risk Assessment Tools

Dickens et al. (2019) conducted a systematic review and meta-analysis to evaluate various tools' properties and predictive capabilities to predict aggression within a 24-hour timeframe. Imminent aggression was defined by the authors as aggression occurring within a 24-hour timeframe. Aggression in this study included physical aggression, verbal aggression, aggression directed at properties, and self-harm behaviors. The research examined a total of 50 papers, out of which 31 papers were primarily associated with the Broset Violence Checklist (BVC) and the DASA:IV and were subsequently incorporated in the study. The research determined that solely the Dynamic Appraisal of Situational Aggression and the Brøset Violence Checklist underwent implementation research, with the tools receiving high ratings for their utility and acceptability among users and participants (Dickens et al., 2019). This systematic review by Dickens & colleagues noted a high effect size in the ability of the DASA:IV & BVC to predict aggressive behaviors. Yunjati et al. (2020) demonstrated that DASA: IV was more sensitive, higher in specificity, and more accurate in predicting violent behavior within 24 hours compared to BVC.

Gaps in Practice

Risk assessment tools can predict violent incidents (Hanson, 2005; Lantta et al., 2016; Oglof & Daffern, 2006). Such tools enable healthcare professionals to identify the imminent risk of an aggressive crisis and present an opportunity to intervene before it evolves into a crisis. A systematic review by Gaynes et al. (2017) analyzed different methods used to prevent patient aggression and reduce coercive methods in inpatient settings. The authors noted the use of risk assessment protocols as one of the few proven methods to reduce patient aggression.

Despite this evidence favoring risk assessment tools, the use of these tools in practice has raised mixed and ambivalent views (Lantta et al., 2016). Lantta et al. (2016) documented hesitancy by Finnish nurses to use such a protocol. This reluctance by nurses to use a validated evidence-based tool necessitates the need to identify individual challenges to its implementation from a nurse's perspective to ensure sustainability. The Centers for Disease Control emphasizes the importance of stakeholder engagement as a significant contributor to sustainability in quality improvement projects in healthcare (Kidder & Chapel, 2018).

Seclusion and restraint rates, staff/patient safety, and the quality of the assessment process may all be influenced by using assessment tools early in the process to detect the seven aggressive and violent behaviors often leading to seclusion and restraint.

Conceptual Framework

The theoretical framework selected for this project is Kurt Lewin's Theory of Planned Change (TPC). TPC integrates driving factors, restraining forces, and equilibrium into a streamlined and compact paradigm for change management (Lewin, 1947). It can be broken down further into its component parts: unfreezing, movement, and refreezing. Unfreezing was the first step in application to this project since it encourages individuals to think creatively about

improving efficiency without sacrificing safety in the unit (Lewin, 1947). This correlates with a need to identify evidenced-based methods and adopt new ways to improve safety in the units by reviewing the research on evidence-based practices for aggressive behavior management tools. The second step was action, wherein all involved collectively take the necessary steps toward the desired change. These supporting data are then analyzed for the behavioral evaluation method. The assessment tool adopted for this project was already being utilized at the project facility to evaluate newly admitted individuals for their potential for imminent aggression and to evaluate patients after a violent incident. However, the application process deviates from the tool's validation methodology.

The final stage of Lewin's change model necessitates that stakeholders involved in the process ensure the permanence of the changes and prevent any regression to previous practices. Therefore, the DASA:IV is expected to be implemented and integrated into the daily assessment of aggressive behavior in therapy. Utilizing behavioral screening methodology offers regularity and familiarity, facilitating habitual use of the instruments. Staff members are likely to comprehend the significance of early intervention by observing a decrease in violent incidents, the issuance of restraint orders, and the utilization of physical restraints.

Purpose

The purpose of this project was to assess the impact of frequent risk assessments in reducing the use of seclusion and restraints, thus reducing patient violence, and improving staff safety. The aims of this project were to: 1) reduce the rate of coercive measures used by the RNs, 2) reduce the rates of patient and staff injury, and 3) determine the feasibility and nurses' perception of utilizing the DASA:IV Risk Assessment Tool during every shift.

Methodology

Setting

This quality improvement intervention took place at a 24-bed inpatient psychiatric facility in a mid-sized suburban area in the Pacific Northwest. This unit served patients experiencing psychosis, mania, and/or depressive disorders, often with co-occurring substance use disorders. These units were chosen as they typically have the greatest number of violence and aggression incidents, as reported by the facility. To track shift responsibilities, an assignment sheet is completed at the beginning of each shift by the charge nurse detailing patient assignment and unit responsibilities for the nurses and the behavioral health technicians (BHTs). The maximum patient load assigned to nurses in this unit is 8 patients each, with one charge nurse not assigned any patients. This results in a typical nurse:patient ratio of 3:1. Safety monitoring on the unit is conducted by the BHTs with a BHT:patient ratio of 1:8. Patients are typically monitored every 15 minutes, every 5 minutes or 1:1 depending on the acuity of the individual patient. The health recording system in this facility is paper-based. In the event of a documentable incident such as aggression, S&R, and/or staff and patient injury, an incident report is completed and the incident and intervention documented every shift in the unit's safety documentation book ("huddle book"). Data for all incidents on the unit is collected from the incident reports analyzed monthly by the risk assessment department of the facility.

Participants and Recruitment

Participants were registered nurses who work on the two acute adult psychiatric units. Recruitment of participants was completed in-person during staff huddles and via email. A total of 25 nurses participated in this study. Sampling of nurses was non-random and consecutive - every nurse working on the units was chosen to participate (Endacott & Botti, 2007). Consent

was obtained prior to initiation of the intervention via hand-signed consent forms which were emailed to participants. Consent could be withdrawn at any time. Other than consent there were no specific inclusion & exclusion criteria. The nurses had already received training to administer the DASA:IV as part of their new employee training.

Intervention

This quality improvement project utilized the DASA:IV structured risk assessment tool (Appendix A) to assess patient risk for violence and/or aggression. When utilized according to instructions, the DASA:IV allows for early identification and intervention in patient agitation (Richmond et. al, 2012). The DASA:IV contains a numerical rating system for irritability, impulsivity, verbal threats, negative attitudes, and more (Ogloff & Daffern, n.d.). The DASA:IV is noted for its high predictive accuracy and feasibility of use (Ramesh et al., 2018). The tool sheet (Appendix A) was modified to record incidents of aggression.

The current policy at the project facility is to complete one DASA:IV assessment for each patient upon admission. However, the DASA:IV screening tool is only capable of predicting aggressive behaviors up to 24 hours after its completion (Ogloff & Daffern, n.d.). Ogloff & Daffern state the DASA:IV tool should be utilized at least once daily or when patients appear to be presenting signs of increased aggression (n.d.).

Nurses were asked to complete the screening tool for their assigned patients within one hour of every shift change and at the time of admission. Nurses assessed the DASA:IV screening results to determine if risk management interventions were necessary [Appendix A]. Completed de-identified DASA:IV screening tools were placed into a collection box on the unit at the end of each shift. The degree to which a change is implemented as intended in a quality improvement project is characterized as fidelity (Etchells & Woodcock, 2018). In this project, fidelity was

monitored daily by comparing the number of patients screened every shift as documented by the assessment tool (Appendix A) by each nurse against their documented patient load for that shift. Nurses were also asked about their frequency of DASA:IV screening in the post-implementation survey. For fidelity in the survey studies, the number of nurses who were sent the survey was compared against the number of completed surveys.

Data Collection

Number of incidents and S&R rates were summarized from the completed DASA:IV. Staff/patient injury rates were summarized from the safety huddle book during the period of implementation and de-identified by an assisting unit supervisor. S&R rates included instances of seclusion, physical restraint, mechanical restraint, and chemical restraint. The number of incidents and S&R rates from the completed assessment tools were compared with the number of incidents and S&R rates summarized from the safety huddle book to check for discrepancies. Reported physical injury rates for staff and patients were recorded from huddle books on the units as well. During the course of this study, it was expected that pre-intervention injury rates would be provided by the facility, however these ultimately were not provided with the facility citing privacy concerns. Incidents considered assaultive behavior included physical aggression, verbal aggression, and self-injury.

For quantitative data such as S&R rates and staff/patient injury rates, descriptive statistics were calculated from raw data documented from total counts of patient load during implementation period, number of patients screened, number of incidents, interventions including S&R and the number of patient and staff injuries acquired from incident reports, safety huddle books and de-identified DASA:IV sheets. Similar pre-intervention quantitative data was collected from de-identified huddle books and incident reports information from the facility's

risk department. Total patient load was not determined for the pre-intervention period.

Quantitative data were calculated in rate (S&R, injury, or agitation) over a 28-day period (pre- and post-intervention). The facility additionally provided a 6-month summary of S&R statistics for reference.

Participating nurses were asked to complete a post-intervention survey one month after the project intervention was implemented. The survey included nine questions with mixed Likert-scale and open-ended response formats (Appendix B). This survey was designed by the investigators to assess nurse perceptions regarding DASA:IV efficacy and feasibility for long-term implementation. Participant years of nursing experience were also collected to assess how years of nursing experience affects perceptions of the DASA:IV tool.

Data Analysis Procedure

The rate of staff/patient injury and S&R use was compared to pre-intervention statistics with percentage change between the pre- and post-implementation periods to determine if they are impacted by the greater frequency of DASA:IV assessment. This process was completed with data analysis tools in Microsoft Excel.

Likert-Scale cumulative survey data were arranged in histogram format along with calculations of descriptive statistics. Likert scale responses were quantified on a scale of 1 to 5 with 5 being the most favorable responses (strongly agree or always, depending on the question) and 1 being most negative responses (strongly disagree or never, depending on the question). To assess how years of nursing experience impacted perceptions of the DASA:IV tool, a one-way analysis of variance was calculated. A post-hoc analysis on any significant ANOVA results was then completed with 2-tailed T-testing and Bonferroni correction. The use of a Bonferroni correction reduces the likelihood of type 1 error (false positive) results when completing multiple

pairwise comparisons of means (Sedgwick, 2014). Thematic analysis was completed on open-ended survey questions to determine common themes in responses to qualitative survey questions. This analysis was completed following guidelines provided by Peel (2020). Initial codes were identified from features that were markedly common among the qualitative responses. These codes were then categorized and themes were conceptualized from these categories. These themes were assessed to identify patterns in responses.

Results

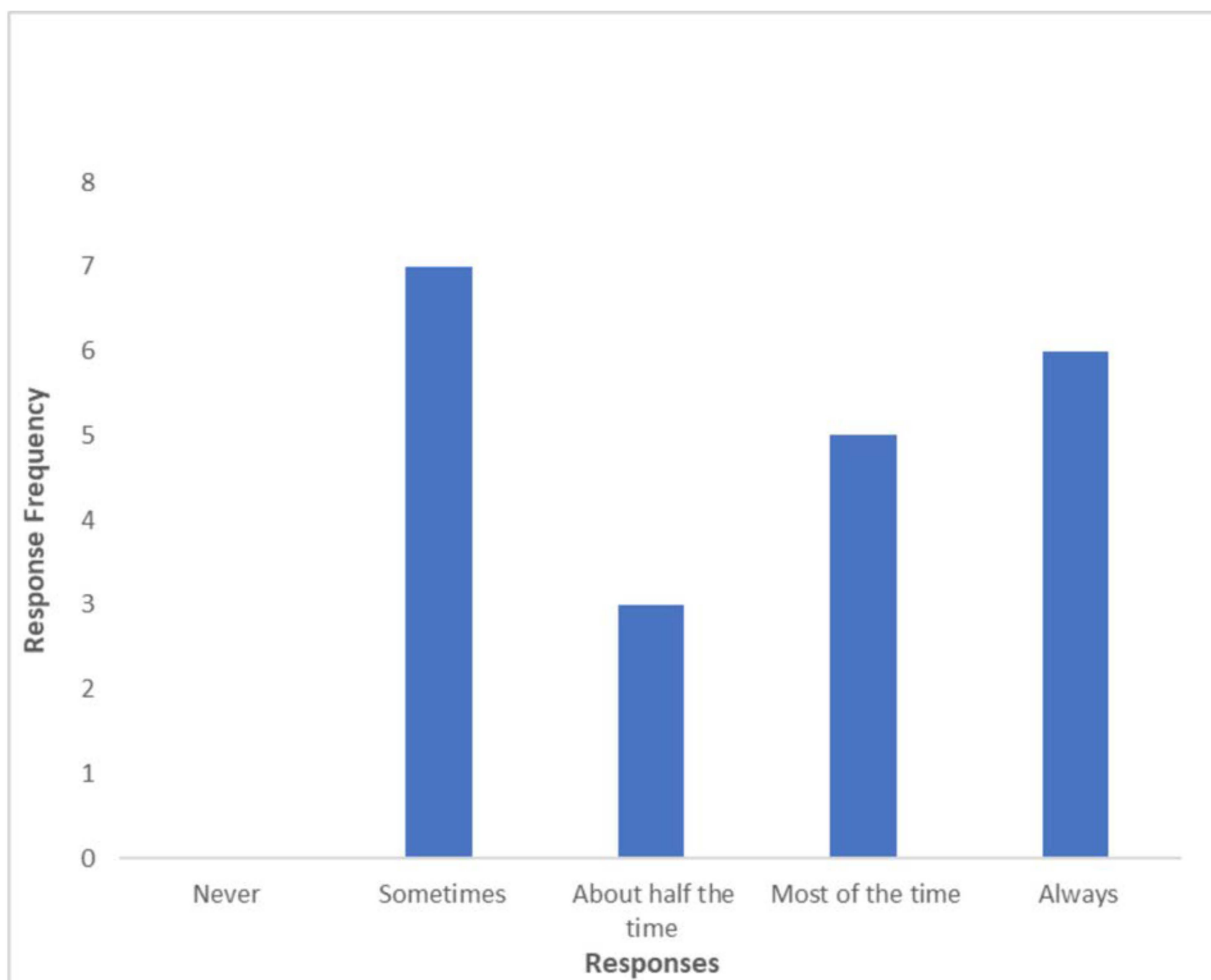
Fidelity

The patient census on the unit throughout the implementation period was 506. Audits of the DASA:IV forms indicated that 447 patients were screened with a completion rate of 88.5%. Of the 25 nurses who signed the informed consent form, all 25 actively participated in the quantitative study giving a participation rate of 100 %. For the post-survey, 25 nurses were emailed the survey and 21 nurses responded resulting in a participation rate of 85% for the post-survey.

Cumulative Survey Results

Figure 1

Responses to Likert Scale Question: "During my shift, I am able to evaluate all of my patients using the DASA:IV."



The frequency of patient assessment during each shift was reported by 20 nurses in response to this inquiry. Out of 20 nurses, 0 (0%) responded as “never,” 7 (35%) responded as “sometimes,” 2 (10%) responded as “about half of the time,” 5 (25%) responded as “most of the time” and 6 (30%) responded as “always” able to assess their patient during each shift. A mean score of 3.48 with a standard deviation of 1.25 was obtained by converting to the Likert scale.

Table 1

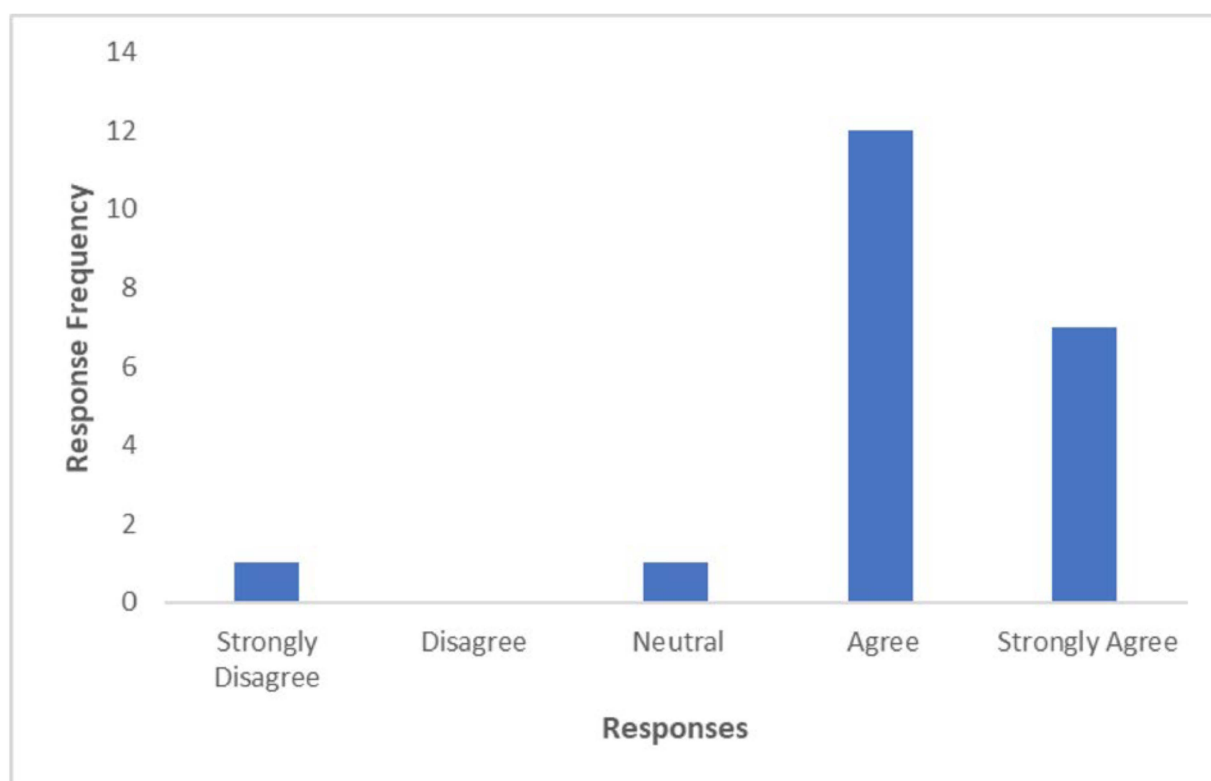
Qualitative thematic analysis; Barriers to screening using DASA:IV.

Question	Theme	Frequency
“Describe reasons and/or barriers that prevented you from completing screenings”	Time Constraints	6
	Patient Load	3
	Calm Patient Behavior	2

Nurses identified barriers preventing per-shift DASA:IV screening including time constraints, patient load, and calm patient behavior not requiring assessment. A total of 11 nurses responded to this question.

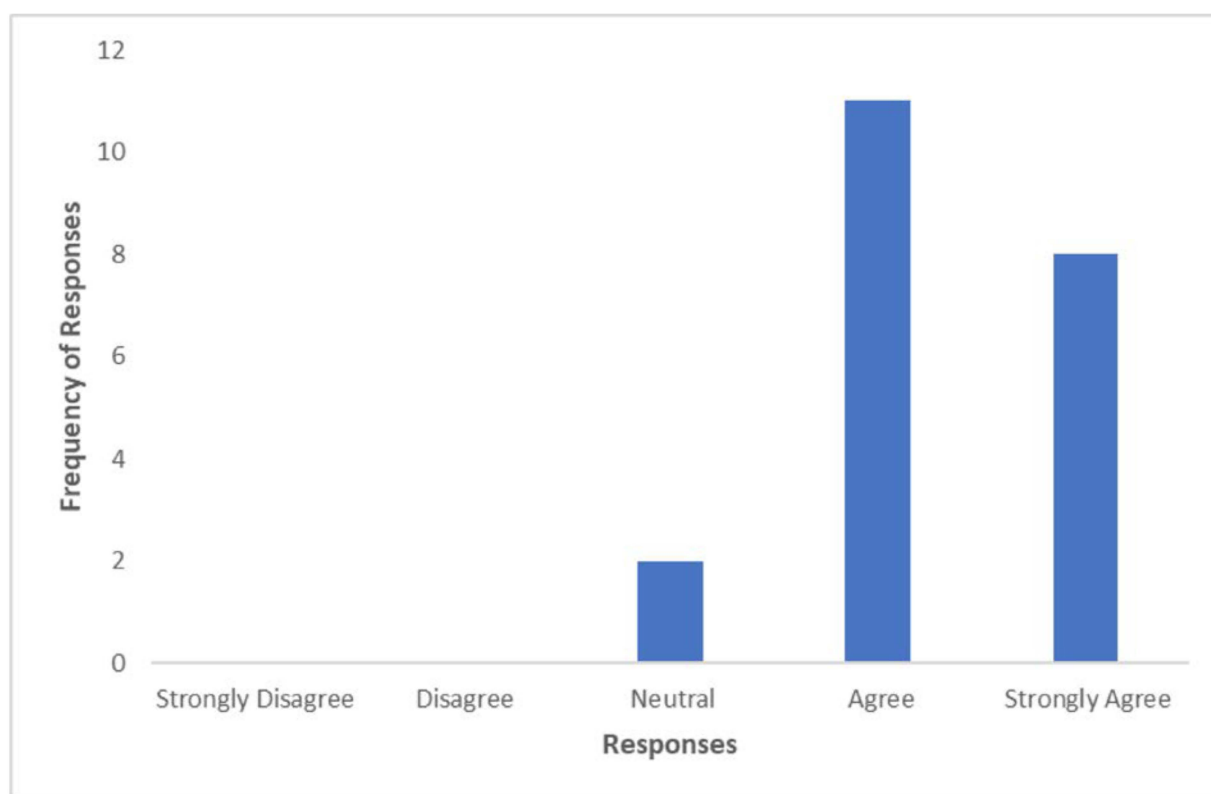
Figure 2

Responses to Likert Scale Question: “I am better able to recognize patient behaviors that preceded aggression after regularly utilizing the DASA:IV screening tool.”



A total of 21 nurses responded to the question regarding recognizing aggressive behaviors after regularly utilizing the DASA:IV screening tool. Out of 21 nurses, 1 (4.8%) responded as “strongly disagree,” 0 (0%) responded as “disagree,” 1 (4.8%) responded as “neutral,” 12 (57.1%) responded as “agree,” and 7 (33.3%) responded as “strongly agree” to the question of DASA:IV enabling them to better recognize aggressive patient behaviors after regular use. A mean score of 4.19 with a standard deviation of 0.87 was obtained by converting to the Likert scale.

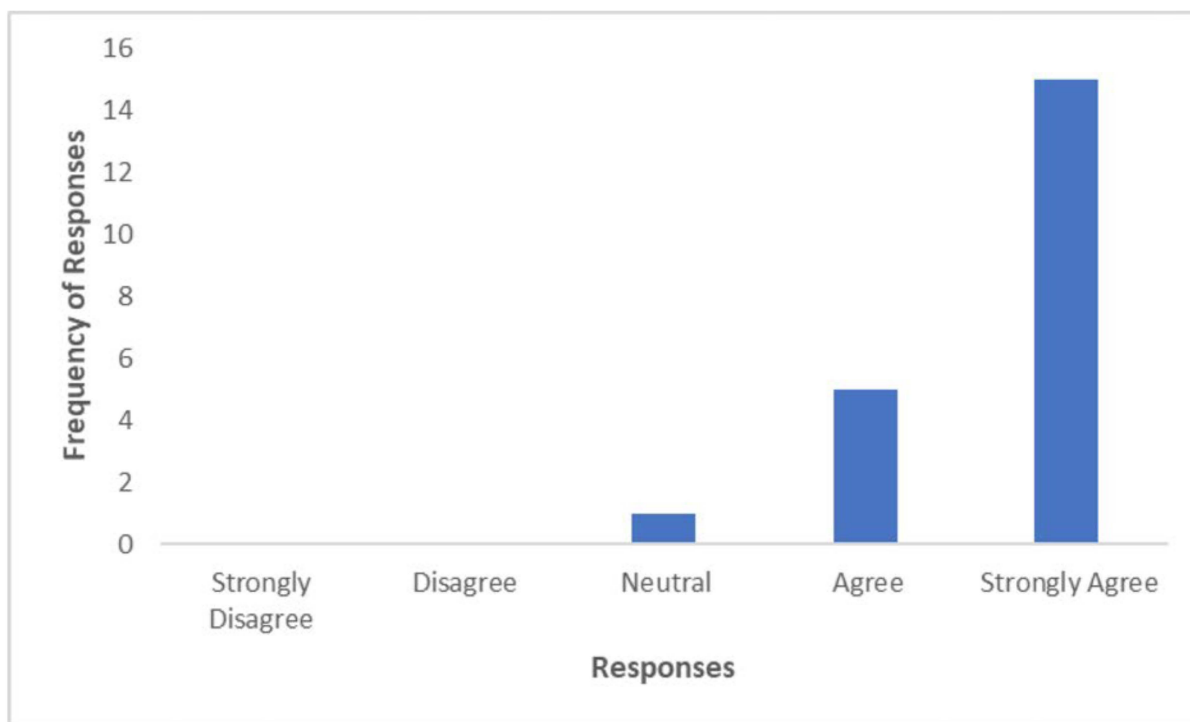
Figure 3 : *Responses to Likert Scale Question: “I felt that the DASA_IV screening tool was effective in predicting patient agitation and/or aggression.”*



A total of 21 nurses responded to the question regarding efficacy of the DASA:IV. Out of 21 nurses, 0 (0%) responded as “strongly disagree,” 0 (0%) responded as “disagree,” 2 (9.5%) responded as “neutral,” 11 (52.4%) responded as “agree,” and 8 (38.2%) responded as “strongly agree” to the DASA:IV tool being effective in predicting patient agitation and or aggression. A mean score of 4.29 with a standard deviation of 0.64 was obtained by converting to the Likert scale.

Figure 4

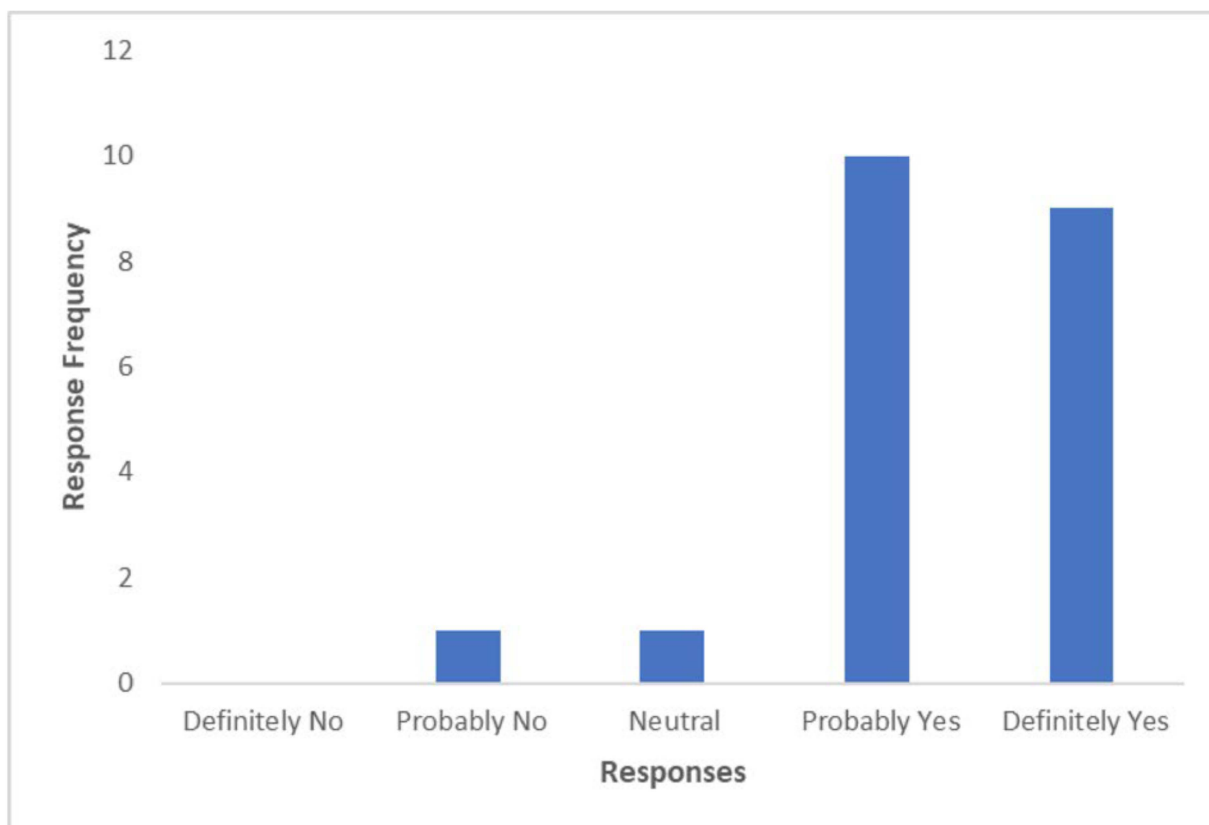
Responses to Likert Scale Question: “The DASA:IV prompted me to take action to mitigate the patient’s risk of escalating their hostile or violent behavior.”



A total of 21 nurses responded to the question regarding DASA:IV screening prompting action to mitigate the patient's risk of escalating their hostile or violent behavior. Out of 21 nurses, 0 (0 %) responded as "strongly disagree," 0 (0%) responded as "disagree," 1 (4.8%) responded as "neutral," 5 (28.8%) responded as "agree," and 15 (71.4 %) responded as "strongly agree" that DASA:IV screening enabled them to intervene promptly and prevent hostile behaviors from escalating. A mean score of 4.67 with a standard deviation of 0.58 was obtained by converting to the Likert scale.

Figure 5

Responses to Likert Scale Question: "Do you think that per Shift DASA:IV screening should be implemented permanently?"



A total of 21 nurses responded to the question regarding permanent implementation of the DASA:IV tool. Out of 21 nurses, 0 (0 %) responded as “Definitely no,” 1 (4.8%) responded as “disagree,” 1 (4.8%) responded as “neutral,” 10 (47.6%) responded as “Probably yes,” and 9 (42.8 %) responded as “Definitely yes” that DASA:IV screening be implemented permanently.

Implementation Stage Violence & Aggression Statistics

Table 2

Assaultive Behavior Rates and % Change Pre & Post-Intervention

Assault Type	Pre-Implementation Incidences	Post-Implementation Incidences	% Change
Verbal Aggression	6	1	-83.3%
Physical Aggression	3	3	0.0%
Self-Injury	3	1	-66.7%
Total	12	5	-58.33%

Table 3

S&R Incidence Rates and % Change Pre & Post-Intervention

S&R Type	Pre-Implementation Incidences	Post-Implementation Incidences	% Change
Mechanical Restraint	0	0	0.0%
Chemical Restraint	3	4	33.3%
Seclusion	2	0	-100%
Total	5	4	-20%

The quantitative analysis contained pre-implementation data from 486 patients after four weeks and data from 447 patients after four weeks of implementation. Twelve assaults were

recorded in the pre-implementation study (Table 2), resulting in 5 instances of seclusion and restraint use (Table 2). Five assaults were reported during the implementation period (Table 2), resulting in four seclusions and restraints (Table 3). As a result, implementing DASA:IV screening of patients resulted in a 58.33% decrease in assaultive occurrences (Table 2) and a 20% decrease in overall seclusion and restraint rates (Table 3).

Table 4

Themes Identified Within Qualitative Questions of the Post-Implementation Survey

Question	Theme	Frequency
“Should every shift DASA:IV screening be implemented permanently? Why or why not?”	Aggression Prediction	8
	Improved Safety	1
	Early Intervention	4
	Not Useful	2

Nurses feedback regarding permanent implementation, beneficial themes identified included: improved prediction of aggression, improved safety, initiation of early intervention. Two respondents noted they did not believe the DASA:IV tool was useful. A total of 15 nurses responded to this question.

The Influence of Nurse Experience on Perceptions of DASA:IV Screening

Post-implementation survey results were compared across years of nursing experience. One-way ANOVA analysis showed no significant difference in nurses’ responses pertaining to

permanent implementation, consistency of screening, prompting for early intervention and recognition of violence ($p > 0.05$).

One-way ANOVA analysis revealed significant difference between nursing years of experience and perceptions of the efficacy of the DASA:IV screening tool ($p = 0.046$). Post-hoc analysis with Bonferroni correction showed that nurses in the 0-to-2-year experience group found the tool to be more efficacious than those in the 7+ years ($p > 0.0167$) experience group.

Discussion

The principal aim of this project was to execute a DASA: IV screening protocol to be implemented every shift to reduce coercive measures and improve safety within the unit while also evaluating the feasibility of implementation. In the quantitative phase of the project, 12 instances of assaultive behaviors and five instances of seclusion and restraint use were recorded at the pre-implementation stage, and five instances of assaultive behavior and four instances of seclusion and restraint during the implementation stage. These numbers represent ideal although an unusually low rate for safety-related incidents in a 24-bed acute psychiatric unit over two months. Several factors can explain these low numbers at this inpatient unit. First, the lack of a standard definition of what constitutes violence and aggression in psychiatry plays a role. At the time of this project, an incident was considered to be violent by the project facility only if the victim perceived and reported physical and emotional trauma. Whereas NICE (2015) defines aggression as "the range of behaviors or actions that can result in harm, hurt, or injury to another person, regardless of whether the violence or aggression is physically or verbally expressed, physical harm is sustained, or the intention is clear." Discrepancies in the definition of violence may contribute to under-reporting of assaultive incidents. In addition, chemical restraints and seclusions are permitted only as last-resort interventions for aggression. Although chemical

restraints are related to administering medication to control behavior (Robin et al., 2021), only forced intra-muscular medications are formally documented as chemical restraints at the project facility. Furthermore, the ethical principle of non-maleficence plays a role in underreporting in most inpatient settings, and the perception that non-maleficence is not defined as violation may play a role in underreporting of S&R use.

Despite the impact of underreporting, the implementation of the DASA: IV screening tool in the unit correlated with a significant reduction in assaultive rates (Table 2) and the use of S&R (Table 3) within the implementation unit. In our study, more than 90 % of participants perceived the DASA: IV screening tool as a reliable and efficacious predictor of aggressive patient behaviors. This mirrors results from Lantta and colleagues (2016) who noted the high predictive ability of the DASA:IV in identifying early signs of aggression/violence. The ability of the DASA:IV to predict aggression was a significant factor in the positive attitude of nurses towards permanent implementation, as reported by 53.3% of survey respondents. A fundamental clinical importance of DASA: IV is the ability to predict aggression, enabling intervention (Maguire et al.,2018). The DASA:IV tool prompted preventive measures and interventions to avert violence for 95.2% of respondents. The ability of the DASA: IV tool to prompt interventions, hence preventive measures, contributed to a positive attitude towards permanently implementing regular use of this tool in the unit. This perception aligns with findings from Maguire et al. (2018), who noted an increased frequency of nursing intervention in an inpatient psychiatric unit when implementing DASA: IV screening. By intervening early, nurses can de-escalate agitated patients, reducing the probability of behavior escalating to an aggressive or assaultive event. In this intervention, DASA: IV implementation reduced the rate of assault on the unit by more than 50% (Table 2). In addition, the 20% reduction in S&R rates may be due to

the drop in patient aggression following regular DASA: IV implementation. S&R are common forms of aggression management in unsafe psychiatric units (JCAHO, 2014). A reduction in the assault rates due to increased DASA: IV screening creates a safer unit, and a consequence of this could be a reduction in S&R rates. These results correlate with results from a study by Maguire et al. (2019), who reported a significant reduction in the different types of assaults as well as seclusions and restraints rates when DASA: IV screening was implemented in a forensic psychiatric unit.

A greater number of nurses participated in the quantitative section of the survey (100%) than in the qualitative section (85%). Qualitative analysis revealed participants were more likely than not to screen their patients every shift (Figure 1). These results reinforced an important conclusion by Dickens et al. (2019) determining DASA: IV as a feasible tool. Though feasible, 35% of the nurses in this study could screen their patients only “some of the time.” The study found time constraints and a high patient load were significant barriers to screening. Multiple nurses noted they did not believe screening was necessary if acuity on the unit was low.

Lantta et al. (2016) found that the number of years in practice inversely correlated with the fidelity of screening with the DASA: IV tool. They noted that experienced nurses trust their clinical judgment more than the DASA: IV tool. In this study, nurses' perceptions were tested against years of experience and nurses with greater experience held a less favorable attitude towards the efficacy of DASA: IV screening. While this could be due to traditionalism in nursing and resistance to change (Zeitz & McCutcheon, 2005) which may occur in greater longevity, as several nurses stated the DASA: IV screening was not valuable. Additionally, these nurses did not have a positive attitude towards permanent implementation of the DASA:IV. Nurses’

experience was not found to be a significant factor affecting feasibility, promptness to intervene, or perceptions about the permanent implementation of this tool on the unit.

Conclusion

The results of this study suggest regular DASA:IV screening enhanced most nurses' assessments of the early signs of aggression and prompted an early and least-restrictive interventions. Violence in the acute inpatient psychiatric setting may be significantly reduced with the regular use of this tool. Regular DASA:IV assessment could potentially reduce workforce burnout, enhance patient and staff safety, and reduce the use of coercive measures such as seclusion & restraint. This study supports the adoption of a risk mitigation policy within inpatient psychiatric settings which includes regular violence risk assessment.

Limitations

The primary limitation of this study is the inability of these results to generalize to general inpatient psychiatry due to its small sample size. A larger sample is necessary to determine if the results apply to the overall population of inpatient psychiatric nurses. Another limitation is the facility's definition of violence aggression. This facility considered only assault resulting in physical or mental trauma to be acts of violence. Over the course of this study the facility adapted their definition was made to match best practices in literature, although this change was not directly credited to the implementation of this project.

Survey results suggest nurses generally perceived the DASA:IV to be an effective tool at predicting violence and prompting early intervention. Their beliefs regarding permanent implementation were also favorable, however consistency of screening was sporadic among nurses due to time constraints and patient load.

Sustainability Plan

Given the favorable responses from participating nurses in regard to regular DASA:IV screenings, it is recommended the unit continue to implement this tool each shift. However, given the reports of time constraints and patient load as barriers, completing DASA:IV screenings once daily instead of once per shift would be an improvement. The DASA:IV tool is validated for a 24-hour period and this schedule may alleviate burden on nurses. It is also recommended that DASA:IV assessments are included in daily charting to increase compliance and accountability with screening while reducing the overall documentation burden.

Results and recommendations were presented to the participating facility. An ongoing commitment to patient and nurse safety is necessary to sustain the outcomes long-term. Risk assessment tools increase nurses' ability to identify early signs of patient aggression and initiate preemptive interventions. The code of ethics for nurses (American Nurses Association, 2015) describes the tenet of non-maleficence ("do no harm"). This tenet requires nurses to avoid and minimize risks to patients wherever possible. Reducing patient harm due to limiting the use of coercive measures facilitates just and humane treatment during mental health emergencies.

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Appendix A: DASA:IV Tool

Dynamic Assessment Situation Aggression: IV (DASA:IV) (Ogloff & Daffern 2007)							
Name: _____		Week Beginning: ____/____/____			Week Commencing: _____		
The following ratings are based on your knowledge and observations of the patient during the PREVIOUS 24 HOURS.							
Scoring 0 =not present 1 = present							
Irritability Is the patient easily annoyed or angered. Is the patient unable to tolerate the presence of others?	Monday (Circle One)	Tuesday (Circle One)	Wednesday (Circle One)	Thursday (Circle One)	Friday (Circle One)	Saturday (Circle One)	Sunday (Circle One)
0 1	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Impulsivity The patient displays behavioural and affective instability (i.e. dramatic fluctuations in mood, or general demeanour: inability to remain composed and directed).	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Unwillingness to Follow Directions The patient tends to become angry and aggressive when asked to adhere to treatment or to the wards routine.	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Sensitivity to Perceived Provocation The patient tends to see other people's actions as deliberate and harmful; they may misinterpret other people's behaviour or respond with anger in a disproportionate manner to the extent of the provocation.	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Easily Angered when Requests are Denied. The patient tends to be intolerant, or is easily angered when they make a request that is denied or when they are asked to wait.	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Negative Attitudes The patient displays antisocial and negative attitudes and beliefs which may relate to violence and aggression.	0 1	0 1	0 1	0 1	0 1	0 1	0 1
Verbal Threats The patient displayed a verbal outburst, which is more than just a raised voice, and there is a definite intent to threaten or intimidate another person.	0 1	0 1	0 1	0 1	0 1	0 1	0 1
TOTAL	17	17	17	17	17	17	17
Final Risk Rating Based on the DASA score and clinical assessment rate (H) high (M) moderate or (L) Low for the next 24 hours. Ogloff and Daffern (2004) suggest a score of 0-1 indicates low risk, 2-3 means moderate risk and a score of 4 or more is predictive of high risk.							
Record of Aggression During the previous 24 hours has the patient behaved aggressively in any of the following ways (please mark with a cross in the appropriate box)							
Physical Aggression against Objects Slams doors, slams objects down, kicks furniture, breaks objects, smashes windows, sets fires, throws objects.							
Verbal Aggression against Other People. Shouts angrily, insults, curses viciously, uses foul language in anger, or makes clear threats of violence to others.							
Physical Aggression against Other People Makes threatening gesture, swings at people, grabs at clothes, strikes, bites, kicks, pulls hair, or attacks others.							
Restrictive Intervention Seclusion =S Long-term Segregation = LTS Mechanical Restraint=MR Physical Restraint = PR Rapid Tranquillisation = RT De-escalation =D							

Appendix B: Post-Implementation Survey

24

During my shift, I am able to evaluate all of my patients using the DASA-IV

Never	Sometimes	About half the time	Most of the time	Always
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If you were unable to complete and/or partially completed DASA-IV screenings every shift :
Describe reasons and/or barriers that prevented you from completing screenings

I felt that the DASA-IV screening tool was effective in predicting patient agitation and/or aggression

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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I am better able to recognize patient behaviors that precede aggression after regularly utilizing the DASA-IV screening tool

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
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Do you think that QShift DASA-IV screening should be implemented permanently?

Definitely not
Probably not
Might or might not
Probably yes
Definitely yes

Why or Why not?

The DASA-IV prompted me to take action to mitigate the patient's risk of escalating their hostile or violent behavior

Strongly disagree	Disagree	Neutral	Somewhat agree	Strongly agree
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Please select your age range.

20-29
30-39
40-49
50-59
60-69
70-79
Other

How many years have you been practicing as a Registered Nurse?

