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# Reducing Physical Restraints and Emergency Psychiatric Medications on an Inpatient Psychiatric Unit With the Broset Violence Checklist

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REDUCING PHYSICAL RESTRAINTS AND EMERGENCY PSYCHIATRIC  
MEDICATIONS ON AN INPATIENT PSYCHIATRIC UNIT WITH  
THE BROSET VIOLENCE CHECKLIST

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Victoria A. Hernandez

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### Abstract

**Background:** Physical restraint and psychiatric emergency medication use, especially psychotropic medications, is problematic, negatively impacting patient safety on psychiatric units (Ambwani et al., 2021; Iuppa et al., 2013; Rahman, 2021). The Bröset Violence Checklist (Woods & Almvik, 2002), a short-term violence-predicting tool, has been used in the inpatient setting to predict violent outbursts and determine when high-level violence interventions are needed.

**Purpose:** The purpose of this project was to recognize signs and symptoms of aggression and agitation early and intervene to reduce the use of physical restraints and emergency restraint medications on an inpatient psychiatric unit, thereby improving patient safety.

**Objectives:** The objectives of this project were to assess 90% of patients within 24 hrs of admission and daily using the Bröset Violence Checklist, then employ de-escalation techniques in 100% of patients scoring a 3–6 on the tool. These objectives were anticipated to reduce physical restraints and emergency restraint medications by 50%.

**Interventions:** After education sessions for the providers and staff on the Bröset Violence Checklist, copies of the tool were placed in the providers' offices, nurse's station, psychiatric department, and on patient charts. A handout reviewing de-escalation techniques was also available at the nurse's station. Patients were assessed within 24 hours of admission and daily during the project, and de-escalation was used on patients scoring a 3–6 on the checklist.

**Results:** ( $n = 46$ )

- The use of personal physical restraints, defined as the application of physical force without a device (De Berardis et al., 2020), decreased by 86%, and intramuscular



emergency psychiatric medications decreased by 83% after the intervention was implemented.

- Mechanical restraints, defined as restraining a person by applying a restraint device (De Berardis et al., 2020), increased by 23%, potentially due to the number of moderate and high-risk patients admitted to the unit.
- 100% of moderate and high-risk patients screened received de-escalation interventions.

**Implications for Practice:** Doctorally prepared Advanced Practice Registered Nurses can provide the oversight necessary to successfully implement evidence-based interventions to improve the screening and management of agitation and aggression, thereby decreasing the need for restraints and emergency psychiatric medications on psychiatric units.

*Keywords:* physical restraints, emergency restrain medications, inpatient, checklist

### **Reducing Physical Restraints and Emergency Psychiatric Medications on an Inpatient Psychiatric Unit with the Brøset Violence Checklist**

Many thought-provoking cases were encountered, and the project lead experienced diverse patient scenarios during clinical rotations on inpatient psychiatric units. There were countless cases of repeated admissions and patients needing acute stabilization. Nevertheless, the tremendous amount of patient need was revealed, showing the demand for psychiatric care in the community and the depth of the problems regarding the lack of available psychiatric resources. One might ask about what can be implemented to address this problem, improve community health, and ultimately enhance psychiatric health for the public. Also, what about the safety and effectiveness of care in local psychiatric establishments? These issues must be evaluated and addressed to ensure patients receive quality care. Healthcare providers must understand their role in healing and improving their patient's chronic diseases. Recovery is a dynamic process that must incorporate changes to improve overall health and well-being (Witkiewitz et al., 2020) and requires the assistance of psychiatric providers and clinicians to succeed.

#### **Problem**

Patient safety is a complex issue in the psychiatric healthcare setting (Thibaut et al., 2019). A significant problem affecting a psychiatric unit's safety is agitation and rowdiness. A common practice in the psychiatric setting is the administration of emergency medications to treat severe agitation in patients with conditions such as schizophrenia or bipolar disorder, which contributes to this safety issue because of the lack of medical oversight. For instance, healthcare professionals cannot do continuous monitoring or cardiac rhythm assessments as readily as a medical unit. Another problem that adds to this issue is the potency of psychiatric medications.

Psychiatric patients are often prescribed multiple medications that can potentially cause life-threatening adverse reactions. Recognizing and preventing adverse drug reactions (ADRs) in these patients is vital to providing safe patient care (Ambwani et al., 2021). In 2013, a four-year study of ADR reported the pharmacological class of medication prescribed in psychiatric patients and found that 87.5% of ADRs were due to psychiatric medications (antipsychotic, antidepressant, mood stabilizer, benzodiazepine, or a stimulant) (Iuppa et al., 2013). The medications that were highly associated with ADRs were divalproex sodium (15.6%) and haloperidol (12.5%) (Iuppa et al., 2013). Similarly, Ambwani and colleagues (2021) found that out of 334 ADRs reported, 60.6% were from antipsychotics, the bulk being from clozapine (15.8%), olanzapine (12%), and haloperidol (10.4%). Haloperidol is a common medication used independently and in combination with other medications during the emergency restraint process and requires intense medical supervision post-administration due to the potential of life-threatening adverse reactions and antidote unavailability (Rahman, 2021).

Assessment of the need for any emergency medication should be determined, and ample interventions should be implemented before such medications are administered. Intervening before the patient becomes aggressive enough to require emergency medications is critical in providing safe and effective care.

## **Background and Significance**

### ***Safety on Psychiatric Units***

Slemon et al. (2017) state that safety is not merely a goal in the psychiatric healthcare setting but of the highest value. Similar to other inpatient settings, adverse events such as falls and medication errors occur on psychiatric units (Staggs, 2021). However, issues such as rowdiness, violence, self-harm, and the use of restraints are unique to psychiatric care (Staggs,

2021). While safety is a critical part of inpatient psychiatric healthcare, there is a discourse between maintaining safety while allowing for autonomy and a therapeutic relationship (Slemon et al., 2017; Thibaut et al., 2019).

Inpatient psychiatric healthcare settings create distinct challenges for patient safety. (Thibaut et al., 2019). Unfortunately, compared to non-psychiatric health inpatient settings, patient safety in psychiatric healthcare settings is under-researched (Thibaut et al., 2019). In addition to the similar risks that patients have in other areas of healthcare, unsafe behaviors associated with serious mental health problems also pose a risk to patient safety in inpatient psychiatric healthcare facilities (Thibaut et al., 2019). Current literature neglects to focus on the “science” of patient safety but instead focuses on quality care components (Thibaut et al., 2019).

Inpatient psychiatric healthcare unit staff are at high risk for workplace violence, including physical assault and verbal aggression by patients, visitors, and supervisors. (Kelly et al., 2016). The U.S. Department of Justice held a survey that found that in occupational workplaces, the average annual rate of nonfatal workplace violence between 2005 and 2009 was 5.1 incidents per 1,000 employees (Kelly et al., 2016). In contrast, psychiatric mental health workers had 20.5 incidents per 1,000 employees (Kelly et al., 2016).

### ***Restraint Usage on Psychiatric and Non-Psychiatric Units***

Aggression and violent behavior are the primary reason coercive measures are used in the psychiatric healthcare setting (Kersting et al., 2019). Coercive measures can take the form of seclusion, using physical or mechanical restraints, or administering a pharmacological agent. Physical restraint uses physical force to restrain a person without a device, whereas mechanical restraints involve restraining a person by applying a restraint device (De Berardis et al., 2020).

The diagnoses most associated with using seclusion or restraint are schizophrenia, schizoaffective, or bipolar and currently manic (Chieze et al., 2019).

In a study analyzing variability among U.S. hospitals in rates of physical restraint, as well as the effects of hospital type and ownership, it was found that for both acute care and psychiatric hospitals, differences were noted in restraint rates above the median (Staggs, 2020). For-profit hospitals had lower restraint rates than government and nonprofit hospitals, and the odds of restraint with a mechanical device were lower in for-profit hospitals than in nonprofit hospitals (Staggs, 2020). Additionally, the odds of pharmacological restraint were higher in for-profit hospitals than in government and nonprofit hospitals (Staggs, 2020).

Seclusion can be hazardous, causing harm to staff and patients (Varpula et al., 2022). Patient seclusion is often used with the restrain process to mitigate the risk of aggressive behavior (Varpula et al., 2022). In a systematic review of seclusion and restraints in adult psychiatry, Chieze et al. (2019) reported more adverse events for seclusion combined with restraint compared to seclusion and forced medication alone or combined. These events can be traumatic and dangerous and can cause psychological harm to the patients subjected to these practices and the staff implementing them (Chieze et al., 2019; Kersting et al., 2019). Eliminating the use of seclusion and restraint in inpatient psychiatric settings have tremendous benefits, such as reduced patient and staff injuries, declined staff turnover rates, decreased lengths of stay, improved cost savings, better staff satisfaction, and continued patient success in the community after discharge (SAMHSA, 2010).

### ***Patient Aggression on a Psychiatric Unit***

Inpatient psychiatric healthcare settings often include patients facing high levels of mental distress and presenting the most significant risk for safety concerns and injuries (Thibaut

et al., 2019). Patients receiving care in inpatient mental health settings are often exposed to unsafe behaviors linked with severe mental health disorders such as hallucinations. These delusions might cause a patient to act violently toward other patients and staff. Addressing these issues, such as restraints or emergency medication usage, may increase patient safety risks (Thibaut et al., 2019). An immense challenge in inpatient psychiatric care is the pressure to maximize patient safety while maintaining patient autonomy (Thibaut et al., 2019).

Identifying agitation and aggression, noticing an acute emergency that requires immediate intervention, and decreasing the risk of injury are vital skills for staff working on the inpatient psychiatric unit (Richmond et al., 2011). Using verbal de-escalation techniques and nonverbal communication are essential when engaging patients, allowing them to become active participants in the de-escalation process and has the potential to decrease agitation and reduce the possibility of violence (Richmond et al., 2011). This modern way of clinical thinking allows for less restrictive interventions and advocates for patients to collaborate with staff in their treatment, leading to increased trust in the staff and limited subsequent occurrences of agitation (Richmond et al., 2011).

As a clinical practice, consideration should be given to using a tool for the short-term management of violence and aggression in inpatient psychiatric settings, especially for the narrow 24-hour window within which violence is predicted. This process allows prevention and management plans to be executed swiftly (Ramesh et al., 2018). The Brøset Violence Checklist (BVC) is a possible solution for predicting violence in the inpatient setting that can be integrated into everyday practice and has the benefit of scalability (Ramesh et al., 2018).

The Brøset Violence Checklist (BVC) is a tool developed by Woods & Almvik (2002) to predict short-term violence by assessing for the presence or absence of confusion, irritability,

boisterousness, verbal and physical threats, and attacks on objects. The BVC is scored from 0-6, corresponding to a small, moderate, or high risk of violence (see Table 1).

**Table 1**

*Bröset Violence Checklist Scoring*

SCORE	RISK
Sum = 0	The risk of violence is small
Sum = 1 – 2	The risk of violence is moderate. Preventative measures should be taken.
Sum = 3 – 6	The risk of violence is high. Preventative measures should be taken and plans about managing an attack made.

The BVC was proven effective in the in-patient setting to forecast a patient's violent outbursts and establish if high-level violence interventions are needed (Abderhalden et al., 2004). In a prospective cohort study conducted to predict inpatient violence in an acute psychiatric unit and validate the effectiveness of the BVC in psychiatric hospitals, it was found that 64.3% of all patients, who committed a physical attack in the shift following the prediction, scored 3–6 points on the BVC and 93.9% of all shifts with no patient aggression scored 0–2 on the BVC (Abderhalden et al., 2004). This validation study illustrated the accuracy of the BVC in short-term prediction of violence against patients and staff in newly admitted patients of an acute psychiatry unit in an independent sample and the ability of the BVC to be suitable for daily clinical use while predominantly using scores to outline a low, moderate, and high-risk group (Abderhalden et al., 2004).

A study by Moursel et al. (2019) looking at the reliability and validity of the BVC on an inpatient psychiatric unit found that the BVC score cutoff of two was a suitable score for

predicting violence within 24 hours, with a 52% sensitivity and 100% specificity. The BVC was administered to 126 patients on admission and the following 3 days. A total of 47 violent episodes were observed in 25 patients (Moursel et al., 2019). Of the 25 patients classified as high risk on the BVC, all exhibited violent behaviors within 24 hours (Moursel et al., 2019).

### Assessment

A comprehensive evaluation of the organization and individual unit where the project was to take place was completed. Data were collected and analyzed on the everyday processes for patients and staff. Professional input via surveys and questionnaires was vital to understanding the unit's workings and gave way to comprehending the more significant issue of patient and staff safety. The biggest issue identified was disorder or aggression on the unit, as demonstrated by data showing frequent restraint use and emergency medication administration in aggressive patients. The table shows the number of mechanical and personal restraints,

**Table 2**

#### *Pre-intervention Data*

Month	IM Medication	Mechanical Restraint	Physical Restraint	Avg Monthly Census
November	17	2	16	15
December	11	4	14	19
January	9	1	4	18
February	7	6	15	22
March	6	5	14	22
April	9	8	10	26
May	6	5	5	31

intramuscular psychiatric emergency medications per month during the pre-intervention stage, and the average monthly census. The rate of psychiatric emergency medication used for the pre-intervention phase was 11%, and physical restraint usage was 15.5%. Physical restraints refer to



physically holding the patient for a significant period, otherwise known as a “takedown.”

Mechanical restraints refer to using a device in the restraint process, such as a restraint chair. In November, the number of I.M. medications and physical restraints was more significant than the monthly average census.

The Hospital-Based Inpatient Psychiatric Services (HBIPS) core measure initiative is part of The Joint Commission accreditation process (National Association for Behavioral Healthcare, 2019). The HBIPS is a set of core measures developed to improve hospital-based inpatient psychiatric services’ quality, safety, and performance (National Association for Behavioral Healthcare, 2019). Seven core HBIPS quality measures are collected by the Centers for Medicare & Medicaid Services (CMS). The core measure data about physical restraints are collected annually and reported by facility, state, and national. The patients at the facility where the project took place spent an average of .50 hrs (CMS, 2022a) in physical restraints for every 1,000 hrs of patient care compared to .16 hrs per 1,000 hrs in Texas (CMS, 2022b) and .30 hrs per 1,000 hrs of care nationally (CMS, 2022c).

The organization uses clinical guidelines for agitation, a quick reference for the treatment developed by the state, which was last updated in 2020 (see Figure 1). This guideline for the pharmacological therapy of acute agitation aims to rapidly create a calming effect without excessive sedation, deliver early treatment of underlying psychosis, decrease treatment-related adverse events, and ensure patient and staff safety.

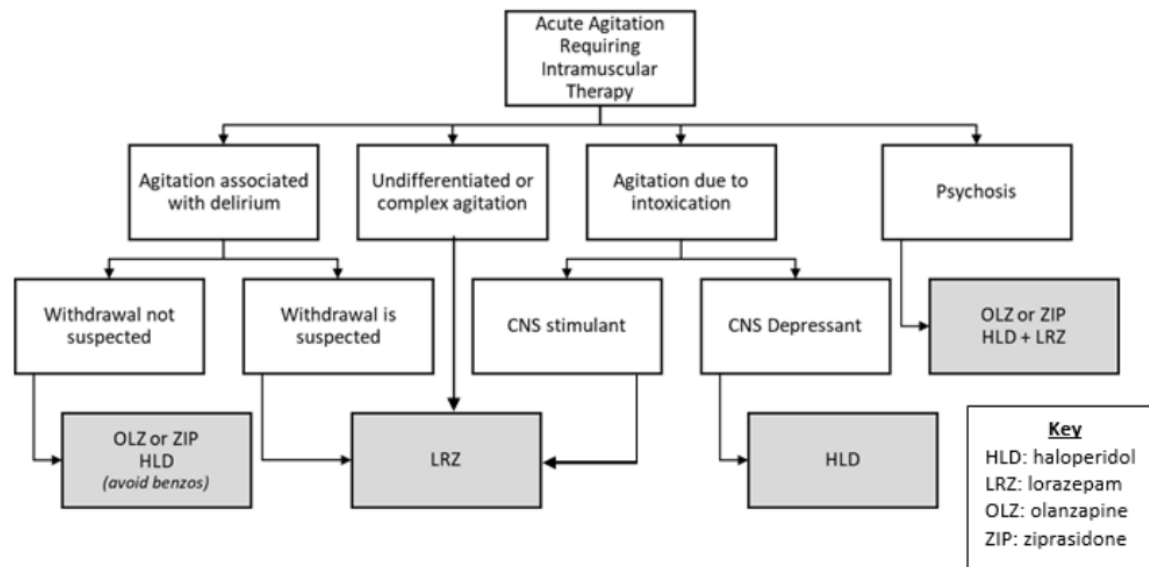
With the increased use of emergency psychiatric medications comes an increased need to monitor the safety of the patients on the unit. During the unit assessment, the project lead observed that there were tools the microsystem had put into place. For example, each patient admitted had a documented list of “triggers” or factors that might incite agitation or aggression.

Avoidance of those triggers was essential. The healthcare team was reminded of those triggers every shift. Despite this process, there remained a problem with aggression on the unit and the need for emergency medications.

**Figure 1**

*Intramuscular Medication Algorithm*

**Options for Management of Acute Agitation with Intramuscular Therapy**



(Texas Health and Human Services, 2020)

Two types of physical restraints are used on the unit, personal and mechanical. In a personal restraint, the patient is physically held by staff members as opposed to a mechanical restraint, where the patient is physically placed into a “restraint chair.” In addition to restraints, agitated patients are often administered emergency psychiatric medication. Some of the most common oral medications for moderate agitation are chlorpromazine, olanzapine, diphenhydramine, risperidone, and lorazepam. The most common intramuscular medications used are diphenhydramine, haloperidol, lorazepam, ziprasidone, “B52” (single and double dosed), which is a combination of Benadryl 50mg, haloperidol 2mg, and lorazepam 2mg (Lulla,

2015), as well as “5150” a combination drug that contains haloperidol 5mg, lorazepam 1mg, and diphenhydramine 50mg (Lulla, 2015).

### **Readiness for Change and Stakeholder Engagement**

The organization’s readiness for change was identified in the preparation stage. The unit was ready to make small changes, focusing on completing realistic, measurable goals that would contribute to reducing emergency medication usage. The changes were introduced through group discussions and a thorough timeline for developing the change intervention. A significant motivation for the readiness for change was the dilemmas of staff shortages and limitations due to the COVID-19 pandemic. The pandemic decreased the number of patient admissions and postponements of treatments like group counseling and patient group incentives for participating in care. So, while there were fewer patients on the unit, there were also fewer providers and staff, and the patients on the unit were not receiving the standard treatment.

The stakeholders in this project are the Texas Health and Human Services providers, staff, and the community in the area that the facility serves. The engagement of the providers was moderate, as they were dealing with pandemic setbacks. The providers were efficient in assisting with input for the project. They agreed that emergency, potentially harmful medication was being overused on the unit when evidence supports that when aggressive behavior is identified, early de-escalation techniques can defuse violent outbursts.

### **Project Identification**

#### **Purpose**

The purpose of this project was to recognize signs and symptoms of aggression and agitation early and intervene to reduce the use of physical restraints and emergency restraint

medications on an inpatient psychiatric unit, thereby improving patient safety and patient outcomes.

### **Short-Term and Long-Term Outcomes**

The short-term outcomes of the project are 1) Increase patient safety on the psychiatric unit by recognizing potentially aggressive behaviors and intervening before patients become violent, and; 2) Decrease overall tension on the unit to address the problem of aggression and hostility, thereby minimizing restraint and emergency psychiatric medication use. The long-term outcomes are 1) Decrease potentially deadly adverse drug reactions associated with the administration of emergency psychiatric medication use, and; 2) Mitigate injuries to patients and staff by decreasing the need to restrain severely agitated patients physically.

### **Objectives**

The following were the objectives of the project:

1. 100% of providers would be educated on the Bröset Violence Checklist (BVC) before implementing the project.
2. 90% of patients would be assessed within 24 hours of admission to the unit using the Bröset Violence Checklist (BVC).
3. 90% of patients would be assessed daily using the Bröset Violence Checklist (BVC).
4. During the 10 week implementation period, de-escalation interventions would be used in 100% of patients with a Bröset Violence Checklist (BVC) score of 3–6 to decrease physical restraints and emergency medication usage.
5. The use of physical restraints would decrease by 50% during the 10 week implementation period.

6. The use of emergency restraint medications would decrease by 50% during the 10 week implementation period.

### **Summary and Strength of the Evidence**

Literature reports that psychiatric medications can cause adverse effects, especially antipsychotics (Ambwani et al., 2021). Antipsychotic and atypical antipsychotics are two of the most common class drugs used to stabilize violent patients (Lulla, 2015). In a retrospective analysis of adverse reactions in psychiatric medications, 60.6% were caused by antipsychotics, with haloperidol causing over 10% of reactions (Ambwani et al., 2021). Haloperidol is a first-generation antipsychotic used alone and combined with other medications to manage acute agitation, as mentioned above. However, these agents risk prolonged QT syndrome resulting in torsades de pointes (Lulla, 2015).

One specific case report conveys the severity of adverse reactions following the administration of emergency restraint medications. The Kentucky state case report contains the details surrounding the sudden and unexpected deaths of two patients in a psychiatric healthcare setting that were linked to the administration of antipsychotic-containing intramuscular (I.M.) injections (Wahidi et al., 2016). The patient in the first case was a 27-year-old African American male diagnosed with schizophrenia, and no other medical issues, whose death was caused by repeated I.M. haloperidol injections of 10 mg, totaling 35 mg over 2 days (Wahidi et al., 2016). The second case involved a 42-year-old African American female with schizophrenia, and a metabolic syndrome, whose death was caused by a final ziprasidone I.M. injection of 20 mg in addition to three oral haloperidol doses (given 2 hours before, 21 hours before, and 2 days before), one 10 mg I.M. haloperidol dose and a long-acting paliperidone injection of 156 mg 18 days prior to death (Wahidi et al., 2016). The cause of these sudden unexpected deaths was

attributed to a cardiac arrhythmia called torsades de pointes (TdP), which happens after the accumulation of high serum haloperidol concentrations (Wahidi et al., 2016).

These two cases were deemed unnecessary and preventable if only the prescribing psychiatrist understood the potential dangers of utilizing I.M. antipsychotics that have a high possibility of producing TdP (Wahidi et al., 2016). In the case of the 27-year-old male, the psychiatrist ordered a high dose of 10 mg haloperidol I.M. every 12 hours and believed it was safe since the same order was initiated 3 years earlier for the same patient. In the case of the 42-year-old female, the haloperidol order was for 5 mg every 6 hours by mouth and was reported by the nurses to be ineffective in controlling the patient's agitation (Wahidi et al., 2016). After that determination was made, the nurses called the on-call psychiatrist, who bypassed the limit of the haloperidol dose and added ziprasidone 20 mg I.M., which was fatal (Wahidi et al., 2016).

The unit improvement effort put into practice was implementing a daily assessment using the Bröset Violence Checklist (BVC). The BVC has been used in the in-patient setting to predict the patient's violent outburst potential and determine the degree to which high-level violence interventions are needed. In a 2019 study by Sarver et al., the BVC was used to assess patients' violence predictor scores from admission to discharge. It was found that patients needing high-level violence interventions had a higher BVC score (Sarver et al., 2019). This information was used by staff to provide early high-level nursing interventions to those with a high BVC score, decreasing the occurrences of violent outbursts and maximizing the safety of patients and staff (Sarver et al., 2019). During the time that this study took place, it was noted that there was a decrease in the use of restraints and seclusion, which could be attributed to the decrease in violent episodes (Sarver et al., 2019).

In summary, antipsychotic medications are often used to treat severely agitated patients in the inpatient psychiatric setting. One of the most commonly used medications identified pre-intervention on the inpatient psychiatric unit for this project was a first-generation antipsychotic associated with a possible fatal adverse reaction. Literature supports the use of the BVC in identifying patients at risk for violence. In identifying and defining possible mania and aggression triggers, providers can improve the safety of care by implementing effective measures to decrease the need for emergency medication administration and implement effective de-escalation before a restraint event (Marcus et al., 2018).

## **Methods**

### **Project Intervention**

The pre-intervention stage began with educating all providers and staff on the Bröset Violence Checklist (BVC) with the rationale for implementation. The education was completed through seminars twice daily in the unit breakroom. Holding these education seminars twice daily allows for day and night shift staff members to receive the education. Additional education and resources on de-escalation techniques for patients scoring 3–6 on the Bröset Violence Checklist (BVC) were also provided. Education effectiveness was assessed by administering a brief post-test to all providers and staff on the Bröset Violence Checklist (BVC) to determine their understanding of the tool. Another element of the project pre-intervention stage was to determine the best time to conduct the daily patient assessment using the BVC in conjunction with the unit's routine through collaboration with the providers and staff.

A form was developed to educate the providers and to be used daily as the BVC tool once the project was started. During the intervention stage, a copy of the form remained in the providers' offices, at the nurse's station, and in the psychiatrists/psychologists' department as a

quick reference to the scoring protocol. The form was also inserted into every patient's chart. Providers primarily completed the daily assessment on all the patients. Nursing staff were also educated on how to conduct the assessment. The provider or nurse who completed the assessment calculated the score and intervened with de-escalation techniques for patients who scored 3–6 on the checklist. A document for de-escalation procedures was placed at the nurse's station for quick reference. A score of 3–6 on the BVC indicates a high risk of violence, and preventative measures were taken, such as de-escalation communication and procedure. The outcome of the proposed interventions was to eliminate the need for physical restraint and emergency restraint medication usage.

### **Setting and Population**

The setting where the intervention took place was an acute psychiatric unit of a state psychiatric hospital located in the south-central region of the United States. The facility is an inpatient psychiatric hospital that provides extensive psychiatric and rehabilitative care, including adult psychiatric and forensic competency restoration services. The unit of interest was an adult psychiatric unit managed by the state's department of Health and Human Services. The average maximum number of patient beds for the unit is 36.

### **Barriers and Facilitators**

An organizational barrier that was identified during the project is the ongoing COVID-19 pandemic. The COVID-19 pandemic made it difficult for the facility to retain patients and caused an overall reduction in the patient census on the unit. The COVID-19 pandemic also caused a staffing shortage on the unit. These shortages caused the staff to be busier overall and impacted attitudes and perceptions, which impacted staff participation in implementing the intervention. Regarding facilitators of the project, the most notable were the essential staff, such



as the psychologist and psychiatrist. They voiced the most support and interest in the overall project intervention and were excited about improving patient outcomes and the unit's culture.

### **Ethical Considerations**

This project's overall purpose was to improve patients' safety and care on the inpatient psychiatric unit. In doing so, the project lead looked at the Institute of Medicine's (2001) six aims for Quality Improvement – safety, effectiveness, timely, efficient, equitable, and patient-centered care (Agency for Healthcare Research and Quality [AHRQ], 2018). Of the six aims, safe, effective, and patient-centered care related most to the ethical considerations for this project. Safe care aims to avoid patient harm from the care intended to help them (AHRQ, 2018). Effective care serves to provide evidence-based care to those who will benefit from it and avoid providing unnecessary interventions to those who will not benefit (AHRQ, 2018). Patient-centered care is care that is respectful and responsive to the patient's needs and values (AHRQ, 2018). This project's outcomes focused on increasing safety on the psychiatric unit by recognizing potentially aggressive behaviors to decrease the use of restraints and emergency psychiatric medications. It also used a well-established tool to evaluate patients so that a more therapeutic patient-centered approach could be used with them. Lastly, this project was reviewed and found not to meet federal regulatory requirements for human subject research and did not require approval via the IRB process.

### **Results**

For this quality improvement project, data were collected by reviewing patient charts, facility restraint logs, and medication administration records. This project aimed to improve provider and staff usage of the BVC assessment tool and use those findings to provide effective de-escalation measures. The project period occurred from March 13, 2022, through May 21,

2022. A total of 46 patients were admitted to the psychiatric unit during the 10 week implementation period. The data showed that  $n = 23$  (50%) were male and  $n = 23$  (50%) were female. Trends in the patient demographic data showed that the females were slightly younger than the males. Most admitted were Hispanics, followed by Whites and African Americans. Characteristics of the patient population are shown in Table 3. The average census was 26 patients during the 10 week implementation period. Four months before project implementation it was 18.5 patients. Over the project period, the census fluctuated as there were discharges and admissions throughout the implementation period. Additionally, there was a significant increase in census toward the end of the implementation period.

**Table 3**

*Characteristics of Patients Involved in Project.*

Categories	$N = 46$	(%)
Gender		
Male	23	(50)
Female	23	(50)
Age (years)		
21-25	5	(11)
26-30	8	(17)
31-35	12	(26)
36-40	9	(20)
41-45	3	(7)
46-50	4	(9)
51-55	4	(9)
56-60	1	(2)
Race		
Hispanic	20	(43)
Whites	12	(26)
African American	11	(24)
Other	3	(7)

**Objective 1 Outcomes**

Initially, a dual-purpose document was created. This document was used to educate providers and staff on how to conduct assessments using the BVC and served as the document used for assessing each patient daily or on admission. For the first objective, the goal was to have 100% of providers educated on the BVC prior to implementing the project. This objective was met 100%; all providers were educated on the BVC. Education to providers and staff was given in a meeting format that involved a presentation of BVC educational videos and a detailed explanation of how to score the BVC tool. Providers and staff voiced understanding and denied any questions about the BVC tool. Contact information was provided for any questions.

**Objective 2 Outcomes**

The goal of the second objective was to have 90% of patients assessed within 24 hours of admission to the unit using the Bröset Violence Checklist (BVC). Initially, the providers were the only ones conducting the assessments on patients using the BVC. Due to difficulties in providers completing assessments, assessment completion was then transferred to nursing responsibilities. Nurses proved more efficient in completing assessments, as providers were forgetful and busy throughout the intervention phase. After that, nurses could delegate the task to the psychiatric nursing assistants if needed. This goal was met; 100% of patients were assessed within 24 hours of admission to the unit using the BVC.

**Objective 3 Outcomes**

For the third objective, the goal was to have 90% of patients assessed daily using the Bröset Violence Checklist (BVC). This was conducted by observing the patient and rating them on the BVC at least once daily. The score was calculated on the BVC form and remained in the

chart for collection. This goal was met; 98% of patients were assessed daily with the BVC and had a completed BVC form in their chart.

#### **Objective 4 Outcomes**

The goal of the fourth outcome was to use de-escalation interventions in 100% of patients with a Bröset Violence Checklist (BVC) score of 3–6, to decrease physical restraints and emergency medication usage during the ten-week implementation period. When a patient scored a 3–6 on the BVC, staff immediately intervened by assessing the patient’s surroundings and potential causes of the behaviors with the goal of collaborating with the patient to determine the best solution without warranting any restraints or I.M. medications. A de-escalation document was created, placed at the nurse’s station, and supplied to staff containing reminders of how to de-escalate agitated patients. The document included seven de-escalation procedure reminders:

- Use a clear (calm) soft voice and a non-confrontational attitude.
- Use non-threatening body language.
- Approach the patient with respect and use collaborative language.
- Minimize light and loud noises and/or conversations.
- Establish trust by responding to the patient’s expressed problems or concerns.
- Set clear, mutual expectations with the patient.
- Clarify issues and find solutions together.

Staff was also instructed to use their previous de-escalation facility training as well. This objective was met at 100%.

#### **Objective 5 Outcomes**

The goal for objective five was to decrease the use of personal physical restraints by 50% during the ten-week implementation period. Data analysis showed that the use of personal

physical restraints, and application of physical force without the use of any device to restrain free movement, decreased by 86%. Oppositely, mechanical restraints, the restraint of a person by the application of a device to the person's body, or a limb of the person, to restrict the person's movement, increased by 23%, potentially due to the number of moderate and high-risk patients admitted to the unit. Since the objective was to decrease personal physical restraints, the objective was met without mechanical restraints included in the objective.

### **Objective 6 Outcomes**

The goal of the final objective was to decrease the use of emergency restraint medications by 50% during the ten-week implementation period. This objective was met. After data analysis, it was found that the administration of intramuscular emergency psychiatric medications decreased by 83% after the intervention was implemented.

### **Additional Outcomes**

During the implementation period, the overall tension on the unit was decreased per the opinions of unit staff. Also, it was noticed that more patients were opting to take by mouth as-needed medications sooner. When paired with de-escalation measures, this highly impacted the decreased administration of I.M. emergency psychiatric medications. Lastly, it was observed that moderate-risk patients were the highest and high-risk patients were the second highest population admitted to the unit. The jump in moderate and high-risk patients in the last few weeks was significant and might account for the increase in mechanical restraint use (see Table 4).

**Table 4***Risk Level by Week*

Number of Patients Categorized by Level of Risk by Week											
Week	Mar 13- Mar 19	Mar 20- Mar 26	Mar 27- Apr 2	Apr 3- Apr 9	Apr 10- Apr 16	Apr 17- Apr 23	Apr 24- Apr 30	May 1- May 7	May 8- May 14	May 15- May 21	Total
Small Risk	2	2	1	-	-	-	-	1	1	2	9
Moderate Risk	13	16	14	18	10	8	16	17	14	22	148
High Risk	6	5	6	6	17	17	11	10	16	9	103
<b>Total</b>	21	23	21	24	27	25	27	28	31	33	260

### Discussion

The most important successes of implementing the intervention were staff and provider education on the Bröset Violence Checklist (BVC). Providers and staff were quickly able to understand and use the BVC. Understanding of the tool was assessed via short staff and provider follow-ups. The follow-ups were conducted using verbal close-ended questions assessing thoughts about the BVC. The survey was intentionally short and to the point and contained the following questions:

Was the tool easy to use?

Does the tool take minimal time to complete?

Does the tool assist with the early detection of aggression?

Was the location of the tool in the chart easy to identify?

Do you feel the usage of this tool is sustainable on the unit?

Providing resources to the unit staff on de-escalation techniques and placing copies of the BVC in patient charts and at the nurse's station were also successes of the intervention plan. There were some difficulties when implementing the intervention, such as getting the providers to conduct daily assessments on each patient using the BVC tool. After noticing provider resistance in completing the BVCs, the intervention was transitioned to having the nurses complete the

assessments using the BVC tool. After this transition, objectives were more likely to get met. There was no resistance from the nursing staff to complete the BVC tool.

The most significant change observed after the intervention was implemented was the ability to predict violence in the unit's population. When a patient score was 3–6, de-escalation interventions and oral medications were given, avoiding the need for I.M. medications and physical restraint in most situations. The project's strength was that the intervention was effective enough to cause an impact. There was a significant decrease in the need to physically restrain patients and administer I.M. medications.

In this quality improvement project, BVC scores were taken daily and upon admission to detect potential violent behavior. Similarly, in a 2002 study conducted by Woods & Almvik, it was found that the BVC was used as a helpful instrument in predicting violence within a 24-hour interval. Additionally, the study also found that the BVC was used to distinguish violent patients from non-violent patients. In a 2019 study by Sarver et al., registered nurses collected BVC scores on all patients on admission and daily until discharge. Comparably, BVC scores were collected similarly in this quality improvement project. In the 2019 Sarver et al. study, the BVC was a valuable tool in identifying patients who may be at risk for violent behaviors and needing high-level interventions. This conclusion was also found to be true in this quality improvement project.

### **Limitations**

Some limitations to the project included staff shortages and general business of providers and staff. These limitations made an impact on who was completing the BVC tool assessments. The providers initially were to be using the tool and conducting the assessment. As the intervention phase began, it was evident that the providers were missing some of the BVC

documents in patients' charts, and they were not getting completed. When the task was transitioned to the nurses, all the BVC tools were completed. The 10-week implementation period of collecting data made it difficult to establish the indicator of violence before the intervention was implemented, despite knowing the restraint and I.M. medication administration incidences were high pre-intervention.

### **Recommendations**

Based on the results, recommendations of intervention continuation would be primarily to keep the BVC tools readily available and in the patient charts for everyday use. Also, there is a recommendation to include the BVC tool in the admission packet that is put together by office staff. In this quality improvement project, the BVC was completed on admission after the patient arrived at the unit. It might be helpful to include the BVC document in the admission paperwork to be completed when the patient is first taken into the admission building before actual arrival to the unit. Some modifications may be necessary if the BVC is used on other in the facility and not just the acute unit where this quality improvement project took place..

### **Sustainability**

It is vital to communicate with the nursing director about educating staff on the importance of the tool to facilitate sustainability. It is essential to show the improved outcomes that resulted from this quality improvement project, how the BVC tool can be used to identify potential violence, and when to give de-escalation measures. It is also crucial to ensure that the tool remains available at the nurse's station and is used daily and on admission. Lastly, it is imperative to provide the project results to stakeholders and encourage sustainment across the unit.



**Implications for Practice**

Nursing staff must apply preventative procedures to reduce violent episodes, mainly because staff are frequently the target of violent incidents (Sarver et al., 2019). Implementing screening tools to predict violent behavior, such as the BVC, is a great way to accomplish this. The use of the BVC in this quality improvement project indicates that such tools may help reduce violent episodes, especially when implementing de-escalation measures. With the high frequency of violence on inpatient psychiatric units, using tools such as the BVC to predict when violence may occur can help increase the overall safety for patients and staff. Doctorate-prepared APRNs can provide the oversight necessary to successfully implement evidence-based interventions to improve the screening and management of agitated and aggressive patients, thereby decreasing the need for restraints and emergency psychiatric medications on psychiatric units.

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## Appendix A

### Letter of Support



San Antonio State Hospital  
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Reviewed by:

NOV 04 2021

R.Diaz, DNP,FNP/PMHNP

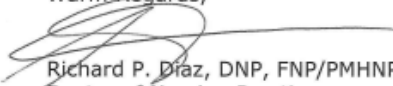
To whom it may concern,

I am pleased to be writing a letter of support for student Victoria Hernandez as a part of her DNP project proposal for the University of the Incarnate Word. We have worked closely with Victoria for two consecutive semesters and feel confident expressing our full support for her project to be performed in our facility.

Victoria has demonstrated a passion for psychiatric practice by applying herself during clinical rotations. Victoria has a great work ethic and is enthusiastic about her education. Victoria has an aspiration to better herself and is focused on improving her education. This aligns precisely with the mission of Ila Faye Miller School of Nursing and Health Professions, which is to "extend the healing ministry of Jesus Christ, the Incarnate Word, through the educational preparation of health professionals."

I fully believe that Victoria Hernandez will successfully conduct her Doctoral project here at the San Antonio State Hospital, and I anticipate outstanding outcomes to come of it.

Warm Regards,



Richard P. Diaz, DNP, FNP/PMHNP-BC  
Doctor of Nursing Practice  
Family Nurse Practitioner  
Psychiatric Mental Health Nurse Practitioner

## Appendix B

### IRB Determinations Letter



2/8/2022

Project Lead: Victoria Hernandez

Project title: Reducing the Use of Physical Restraints and Emergency Restraint Medication Through the Use of the Bröset Violence Checklist (BVC) on an Inpatient Psychiatric Unit.

Ms. Hernandez,

Your project titled *Reducing the Use of Physical Restraints and Emergency Restraint Medication Through the Use of the Bröset Violence Checklist (BVC) on an Inpatient Psychiatric Unit* was deemed to be **Not Regulated Research**.

Your proposed project was reviewed and found to not meet federal regulatory requirements for human subject research and does not require approval via the IRB process. Please use the IRB number **NRR [22-002]** when inquiring about or referencing this determination.

No further review of the project as proposed is required. Should you determine at any point you wish to add additional elements to the project, please contact us before initiating those components, as this may impact the determination.

For information regarding the IRB or the review process, please contact us at [irb@uiwtx.edu](mailto:irb@uiwtx.edu).

Sincerely,

A handwritten signature in blue ink, appearing to be "VH".

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