Reducing the Use of Multiple Restraints in the Psychiatric Emergency Department

Submitted by

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A Direct Practice Improvement Project Presented in Partial Fulfillment

of the Requirements for the Degree

Doctor of Nursing Practice

Grand Canyon University

Phoenix, Arizona

August 1, 2019

GRAND CANYON UNIVERSITY

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Abstract

The use of multiple restraints in the de-escalation of behavior in psychiatric emergency departments accounts for more physical injury and emotional problems in the population with mental illness. The purpose of the quantitative quality-improvement project was to implement the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. Peplau's theory of interprofessional relations and the social-ecological model (SEM), served as the theoretical framework. The project used a quasi-experimental, pre and post-intervention design to understand how the implementation of the ICPM education program for providers impact the use of multiple restraints. The sample included 12 health care providers and the use of a baseline chart review of 278 patients from Southeastern United State. Data analysis conducted using the Intellectus Statistical software and a *t*-test to determine the significant differences between pre and post-intervention. The result of the two-tailed paired samples *t*-test for most of the set variables was significant, $t\ (11) = -8.50$, $p <. 001$, indicating a difference in the means. However, the result of the two-tailed paired samples *t*-test was not significant, $t\ (11) = -1.56$, $p =. 147$, for the pre and post-decision-making and conflict management, suggesting that the true difference in the means was not significantly different from zero. The implementation of the ICPM education program has statistically led to a 50% reduction in the use of multiple restraints. The recommendation from this project is the continuous evaluation of the intervention with increased sample size.

Keywords: Interprofessional collaboration, restraints, psychiatric emergency department.

Dedication

This project is dedicated to my mother, Mrs. Aderemilekun Azogi, who always reminds me that no mountain is too high to climb, and no obstacle is too much to overcome. I will like to thank my husband – Air Commander John Udo, my children, Edidiong, Ekom, Aniebiet, Anwananie, and Unwana, for their love and support, especially when the educational stress gets on my last nerve. Finally, I will like to express gratitude to my three grandchildren, Nonso, Kobim, and Chisom, who always remind me that there is life after GCU.

Acknowledgments

I want to express my sincere gratitude to Dr. Taghavi, who doubled as a preceptor and content expert, for his support throughout this DNP program. His support, patience, and endurance at all times, most notably during my annoying late-night calls and text messages for help, pulled me through many challenges. He remains a source of my inspiration. Besides, exceptional thanks to Dr. Khadavi, who served as a willing project adviser throughout the life span of the project. I am especially grateful to Dr. Torres, who served as the chairperson for the last three courses- your gentleness knows no bound, and your style of constructive criticism will follow me even after graduation. Finally, I would like to express my sincere gratitude to my night shift colleagues for their encouragement and support especially Mr. Rasheed Akinola and Mr. Adeniji Kelani, who functioned as unpaid consultants.

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Chapter 1: Introduction to the Project

The use of multiple restraints remains a challenge to the quality of care rendered to patients in the psychiatric emergency department. Therefore, providers must demonstrate knowledge of ways to identify aggressive or violent behavior before the use of multiple restraints. Caution is necessary during restraints, and consideration for the health of the patients should remain a priority, especially when using multiple restraints in care areas (Kalula & Petros, 2016). The concept of restraint refers to the restriction of individual freedom of movement and involves the physical and pharmacological or chemical restraints that are commonly in use in the psychiatric emergency department (Negroni, 2017). The application of one form of restraint at a time is the norm, but the use of multiple restraints or the use of more than one form of restraint comes into play based on the risk behavior of the individual patient during care (Scheepmans et al., 2014). Importantly, the use of multiple restraints should not relate to the clinical diagnosis or past psychiatric history of the patient (Mah, Hirdes, Heckman, & Stolee, 2015). Therefore, the need to meet patients' health demands through excellent communication and comprehensive assessment should remain a priority (Masters, 2017).

The prevalence of restraints use worldwide is between 3.8% and 20%, most frequently associated with male gender, younger age, mental illness, involuntary admission, aggression or trying to abscond, and the presence of male staff (Beghi, Peroni, Gabola, Rossetti, & Cornaggia, 2013). The use of multiple restraints is also frequent among individuals with substance abuse and those with cognitive impairment, due to an inevitable change in emotion, mostly related to difficulty in expressing feelings (McClure & Bickel, 2014). Such changes in emotion include aggression, violence, and difficulty communicating feelings to the caregiver. The untoward effects of restraint on patients

and employees are enormous and include physical, emotional, and psychological injuries (Moghadam, Khoshknab, & Pazargadi, 2014). A physical injury might range from simple cuts to severe trauma. Emotional injuries, which applies to the patient, include fear, anger, and feelings of incarceration, dehumanization, victimization, and humiliation (Johnston, 2013). In some cases, procedures bring back traumatic memories, especially in patients with a history of being a sexual abuse victim, and other forms of physical abuse (Steinert, Birk, Flammer, & Bergk, 2013). The purpose of this quantitative quality-improvement project was to implement the ICPM education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department.

Understanding how the implementation of the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention, can make reducing the use of multiple restraints in the psychiatric emergency department becomes a priority. The intervention served as an alternative to restraint and supported the reduction of restraints among the population with mental illness in a psychiatric emergency department. To achieve a successful intervention in reducing the use of multiple restraints, consideration of structural, environmental, and individual factors must be in place through the education of stakeholders (Ramacciati, Ceccagnoli, Addey, Lumini, & Rasero, 2016). Reducing the number and shortening the time of restraint episodes requires the continuous education of care providers and the promotion of projects that center on reducing the use of restraints (Hottinen et al., 2013).

This chapter offers a succinct summary of the quality-improvement project and sheds light on the various steps toward project completion. Additionally, this chapter describes the background, problem statement, and the purpose of the project. Finally, the

chapter concisely introduces the clinical question, the significance of the project, the rationale for the methodology, the nature of the project, and the assumptions and limitations of the project.

Background of the Project

The use of restraints dated back 300 years, when individuals with mental illness were incarcerated and isolated from society to prevent the show of unacceptable behaviors in public (Moghadam et al., 2014). Restraints come into focus as an intervention in the management of patients with mental illness who are aggressive, dangerous, and a risk to themselves and others in a therapeutic environment during treatment in the psychiatric emergency department (Riahi, Thomson, & Duxbury, 2016). Although prior studies indicated a contradiction between the use of restraints as a safety measure and the protection of patients' dignity in the psychiatric setting (Kodal, Kjær, & Larsen, 2018), authorization for the use of restraints persists because the benefits outweigh the consequences of an individual's unruly behavior, if left unrestrained.

Restraints remain an essential procedure in the psychiatric emergency department to control patients who pose an imminent physical danger. The use of restraints is common with individuals who present with disturbing attitudes that can jeopardize the safety and health of the patient and the safety of supporting staff (Jacob et al., 2015). Consideration for professional, legal, and ethical implications has a significant impact during and after the use of multiple restraints in the management of disruptive and aggressive behavior. In most cases, the procedure is the last resort in de-escalating and preventing situations from becoming violent in a psychiatric emergency department (Cleary & Prescott, 2015). It is clinically unclear to what extent the implementation of the ICPM education program as an evidence-based intervention affects the use of

multiple restraints in the psychiatric emergency department. Available research studies have indicated that the ICPM education program is an evidence-based intervention that improves decision-making capabilities and promotes patient-care outcomes (Morgan, Pullon, & McKinlay, 2015). In addition, available research studies on the use of multiple restraints have shown the use of restraints in various clinical areas, with limited literature available in comparing the ICPM education program effect on the use of multiple restraints (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013). Multiple restraints include the administration of an intramuscular medication (pharmacological/chemical restraint), followed by physical restraint during safety intervention. Patient evaluation determines the characteristics of the individuals who come under the use of multiple restraints on admission to the psychiatric emergency department (MacDonald & Albulushi, 2017).

The importance of patient safety and the use of restraints involve ethical and legal issues that affect the mental-health-care system (Moghadam et al., 2014). The significance of reducing the use of restraints among the population with mental illness remains a challenge in the health care setting. It was evident that a reduction in the use of restraints can reduce physical injuries to the patients or staff, and sometimes prevent damage to property in the vicinity (Bell & Gallacher, 2016).

Notably, this quality improvement project differed from other studies as it used baseline data from the electronic medical records of patients and evidence-based intervention (ICPM education program) to reduce the use of multiple restraints in the psychiatric emergency department. Moreover, the project enhances the practical approach in reducing the use of multiple restraints among patients who have mental illness. The focus of the project was to implement the ICPM education program for providers, as an

evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department.

Problem Statement

It was unknown to what extent the implementation of the ICPM education program, as an evidence-based intervention for providers, impacts, reduction in the use of multiple restraints in a psychiatric emergency department. The project explored the use of the ICPM education program as an evidence-based intervention for care providers to reduce the use of multiple restraints in the psychiatric emergency department. The project sought ways to deescalate aggressive behaviors through providers' active communication, patient assessment, and sound clinical judgment before considering the use of multiple restraints.

Despite the insignificant evidence associated with the use of restraints to control behavior and the psychological/emotional impact on individuals, the practice of restraint remains a recurring procedure that occurs in the psychiatric emergency department. The population affected by the use of multiple restraints is the mental health population, especially those who seek help in the psychiatric emergency department. Behavioral problems, such as aggression and violence either to oneself or to others in the therapeutic environment, are a common feature among the mental health population (Christie & Jones, 2014).

Focus on the need to promote an evidence-based intervention that will support the reduction of restraint use, especially in the psychiatric emergency department, was the goal of the project. The use of multiple restraints as a method of control stems from the integration of three problematic components: mental status, patient factors, and a non-patient factor that delays effectiveness in the provision of adequate treatment to the

mental health population (Hoke, 2015). The assumption is that restraints serve as a form of protection from violent patients who might be at risk to themselves and others in the care vicinity. Patients who exhibit such violence vary in characteristics. These characteristics include age, gender, education, religion, nationality, economic status, and diagnosis (Huang, Huang, Lin, & Kuo, 2014). Moreover, it was clear that the project enhanced the practice approach toward reducing the use of multiple restraints among the mental health population in the psychiatric emergency department.

Purpose of the Project

The purpose of the quantitative, quasi-experimental, pre and post-intervention design, quality-improvement project was to implement the ICPM education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The project focused on the implementation of the ICPM education program for providers as an evidence-based intervention in reducing the use of multiple restraints among the mental health population in the psychiatric emergency department in the Southeastern United States.

The use of multiple restraints in the psychiatric emergency department involves the administration of an intramuscular medication (pharmacological/chemical restraint) followed by physical restraint during the same period. Physical restraint serves as an intervention in mental health services and other related settings to control or manage harm and abnormal or self-destructive behavior in the emergency-care department. Chemical restraint help minimizes behavioral problems that might be hazardous to everyone and is a safety intervention (Cunha et al., 2016). The project aimed to assist providers in providing quality care to the mental health population.

The dependent variable for the project was the use of multiple restraints. Data collection was built on a baseline chart review from December 2018 to January 2019, from patients' electronic health records (EHRs). The measurement for multiple restraints accrued by counting the number of times a patient restraint occurred within the marked period using a report from nursing notes and other related baseline records from EHRs for 15 days (December 2018 to January 2019). The data included demographics and treatment of patients within the period.

The independent variable was the implementation of the ICPM education program as an evidence-based intervention for providers. The primary investigator used the Collaborative Professional Assessment Tool (Selleck et al., 2017), a survey instrument for data collection. Gathering of the pre-evidence-based intervention data took place 15 days after the implementation of the evidence-based education program. The intervention was an ongoing education that focused on identifying and preventing behaviors that emanate because of clinical or emotional characteristics among the population with mental illness. The ICPM is an evidence-based educational program that focuses on team function of professionals and, at its peak, model health care delivery that affects the effectiveness and proficiency of patient care (Selleck et al., 2017). The comparison was among the data collected on restraints after the intervention phase and the data collected before the intervention, to determine the effect of the model on the use of multiple restraints. The pre-intervention data were the use of multiple restraints collected from the nurse's logbook and through EHR and the pre-CPAT survey completed by the providers (throughout the 15 days). The post-intervention data were the use of multiple restraints recorded after the implementation of the ICPM education program to providers and the post-CPAT survey question throughout 15 days.

Providers should understand the characteristics of each patient and identify the primary cause of the presenting behavior during the assessment and planning of care (Molony, Kolanowski, Van Haitsma, & Rooney, 2018). Comprehensive assessment of a patient is a relevant factor before considering the use of any form of restraint. The project promoted a reduction in the use of multiple restraints using the ICPM as an educational intervention among care providers. The ICPM education program supports providers' understanding of the use of multiple restraints in a psychiatric emergency department.

Clinical Question

The population, intervention, comparison, outcome, time (PICOT) format provided direction to answer the project question and offered insight into the ability to furnish answers that impact the practice gap or current body of knowledge. The direct clinical question that guided the data collection for the project was: How would the use of an ICPM education program for providers affect the reduction in the use of multiple restraint in the psychiatric emergency department?

The mental health population is the target population for the project. In order to reduce the use of multiple restraints within the mental health population during care, the primary investigator sought to educate the healthcare providers who care for the mental health patients in the psychiatric emergency department. The project used the ICPM education program to educate and guide care providers during the assessment and continuous patient care. The comparison was between the use of multiple restraints before the implementation of the ICPM education program and the use of multiple restraints after the implementation of the ICPM education program as an intervention. The outcome of the project was a reduction in the use of multiple restraints in the psychiatric emergency department. The project time was three weeks.

The dependent variable for the project was the use of multiple restraints. The data collection entailed the use of baseline chart review from December 2018 to January 2019 (15 days), from patient EHRs. The measurement for multiple restraints counted as the number of times patient restraints occurred in the marked period from nursing notes and other related baseline records from the EHR throughout the 15 days. The data described pre- and post-implementation of the evidence-based intervention impact on the use of multiple restraints. Evidence-based interventions are interventions that have been established and tested according to best practice. The project applied the ICPM as an evidence-based educational program. The ICPM remains an evidence-based path in educating care providers (Selleck et al., 2017).

The CPAT (Appendix C), administered in survey form, was the instrument for this project's data collection. The gathering of the pre-evidence-based intervention data followed the implementation of the evidence-based intervention. The intervention was ongoing education that focused on identifying and preventing behaviors that emanated because of clinical characteristics, emotional and mental health among the population with mental illness. Knowledge of the effect of restraints and alternative methods to restrain can support the reduction in the use of multiple restraints in the emergency department. Understanding the management of aggressive and violent behavior on presentation in the psychiatric emergency department (which was the focus of the ICPM education program) reduced the use of multiple restraints. The clinical question that guided the quantitative quality-improvement project was: How would the use of an ICPM education program for providers affect the reduction in the use of multiple restraints in the psychiatric emergency department?

Advancing Scientific Knowledge

This project is a quantitative, quasi-experimental pre and posttest-intervention design, evidence-based quality-improvement that bridged the literature gap on the use of the ICPM education program as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The implementation of any form of restraint should adhere to the institutional assessment of the patient and patient records during care and align with the physician's order (Scheepmans et al., 2014). Restraints have not only poor outcomes regarding patient protection, but also have adverse impacts on other patients in the therapeutic environment (Lan et al., 2017). The evidence-based quality-improvement project added to the body of knowledge in the care of patients with mental illness, especially when providers understand how individual characteristics might affect the use of restraint while promoting patient safety. The evidence-based practice supports the project, as the emphasis was on improving patient safety using the interprofessional care model as an educative tool for care providers while maintaining ethics and professionalism during care (Reeves et al., 2013). The ICPM supports the promotion of communication and respect for individual stakeholders as a unique contribution to care. Moreover, the model combines responsibility, accountability, coordination, assertiveness, autonomy, cooperation, and mutual trust (Gaudet, Kelley, & Williams, 2014).

Additionally, the project enhanced quality care, promoted the cost-effectiveness of care, and improved the patient-provider relationship through shared decision-making. Peplau's (1992) theory of interpersonal relations served as the framework for understanding the practice patterns in screening, assessing, treating, and using restraints. Visualization of an individual's intention to involve behavior that is beneficial to the care

of a patient with mental illness at a precise time and place is the strength of the theory. The project advanced knowledge of Peplau's theory using the ICPM in the education of nurses and doctors, in the enhancement of existing care services, and in focusing on safety through the reduction of restraint use during the care of individuals in the psychiatric emergency department.

The education of future care providers using interprofessional collaborative practice is essential to advance the attainment of skills, population health, and patient-care outcomes (Shrader, Farland, Danielson, Sicat, & Umland, 2017). The educational intervention for the project involved two days of an in-the service ICPM education program for care providers in the psychiatric emergency department. The educational intervention helped build providers' knowledge, improve their practice, and increase their confidence related to the assessment, awareness, and implementation of person-centered interventions adapted for the reduction of restraints. CPAT (Selleck et al., 2017) was the instrument used to evaluate the outcome of the intervention. The instrument measures collaborative practice among all stakeholders during care to promote adequate decision-making, team intensity, and limitations in errors and educational efforts.

Significance of the Project

The use of restraints in the psychiatric area and among the mental health population has been a consistent issue in the health care setting. The effect on all stakeholders involved in the use of restraints might differ, but the common value among the group include respect and human dignity. Historically, stakeholders positively emphasized the use of restraints to prevent harm and remain beneficial to the patient and the population (Masters, 2017). However, a rising protest about the use of restraints as a form of de-escalation is emerging, especially among the mental health population (Bell &

Gallacher, 2016). A modest approach focuses less on the elimination of restraints, recognizes the occasional necessity, and implements ways to promote patient dignity and recovery (Sacks & Walton, 2014).

This project is relevant, as it examined a reduction in the use of multiple restraints in the psychiatric emergency department through the ICPM education program as an evidence-based intervention. Furthermore, the project improved the initial care assessment of patients with mental illness and reduced the need for the use of multiple restraints. Moreover, the project bridged the gap of knowledge in the clinical area about the care of patients with mental illness, using the ICPM as an educational intervention for care providers, and, improving the initial encounter with patients in the psychiatric emergency department.

In addition, the project assisted in understanding the detailed clinical presentation of patients with mental illness that might trigger aggression and included ways to provide safety through the reduction of multiple restraints during the provision of care in the psychiatric emergency department. The project motivated care providers to improve the safety of individuals during restraint and provide significant support for the reduction of multiple restraints during the care of the population with mental illness.

Rationale for Methodology

A quantitative method was appropriate to pilot the project because it was suitable for measuring the identified variables in the project. The quantitative method is the choice in natural-sciences research since it is objective and provides a generalized explanation regarding the effect of an evidence-based intervention with the use of multiple restraints in the project using a pre and post-intervention design. The quantitative approach remains the dominant method for producing the highest levels of

evidence and occupies the pinnacle of methods hierarchies in medical studies (Bishop & Holmes, 2013). The numerical and statistical effect of the technique allows objectivity that promotes accuracy in data collection and results (Yilmaz, 2013). The quantitative methodology was appropriate for this project because the numerical data collected helped the primary investigator in describing what transpired before and after the implementation of the ICPM education program as it relates to the use of multiple restraints in the psychiatric emergency department.

The method is also appropriate since it is unethical to influence samples during intervention on the quality and outcome of care in any health care setting (Papastavrou, Andreou, & Efstathiou, 2014). For this project, the quantitative process was useful as it provided a better way of measuring the real effect of the project intervention and prevented personal bias during data collection and the final analysis of the data (Peersman, 2014). A quantitative project, primarily conducted in a structured environment, often allows adequate data collection because the investigator controls the study variables, situation, and study questions (Long, 2014), as obtained in this project. Likewise, a quantitative study assists in determining the relationships between variables and outcomes.

Other potential methods are qualitative and mixed methods. Qualitative studies focus on the social aspect of research. Researchers usually employ a qualitative methodology when the problem is not well understood, and their desire to explore the issue thoroughly (Grossoehme, 2014). Mixed methods, on the other hand, favor the collection and examination of data, incorporate the findings, and draw inferences using qualitative and quantitative approaches and methods in a single study (Rutberg & Bouikidis, 2018).

The use of an appropriate tool, which the quantitative approach provides, ensures the reliability, validity, and objectivity of a project (Antwi & Hamza, 2015). Moreover, the approach allows for a sample size that serves as a representation of the population with mental illness (Creswell & Creswell, 2017). According to Yilmaz (2013), the value of statistical analysis involved in the quantitative approach yields a pattern or relationship between the variables. Furthermore, the choice of the quantitative method will prevent bias and generalize the findings to the specific project population (Yilmaz, 2013).

Nature of the Project Design

The selection of the quasi-experimental, pre and posttest-intervention design for the project allowed the description of the various stages during data collection and involved no treatment or manipulation of the sample. The design was appropriate for the project because it allowed a quicker way for data collection and provided a clear description between the pre-intervention and the post-intervention education program period as it relates to the use of multiple restraints. Moreover, the design supported ways to address the problem statement and clinical questions better than other designs in a way that does not affect human function or dignity (Yilmaz, 2013).

The ICPM education program (Appendix D) is a patient-centered intervention that combines assessment, communication, cooperation, decisiveness, independence, trust, and respect during care (Nancarrow et al., 2013). The core element of the model (Interprofessional Education Collaborative, 2016) promotes a therapeutic environment, knowledge, and listening skills; reduces weaknesses; and increases strength that helps reduce the use of multiple restraints, thereby guiding toward an answer to the project clinical question. The primary investigator, in conjunction with nurse educators at the southeastern hospital in the USA, used the core competency for Interprofessional

Collaborative Practice (which does not require approval from the developers) to educate the care providers (who take care of the mental health population), towards the reduction in the use of multiple restraints in the psychiatric emergency department. A convenience sampling technique was the choice in selecting 12 health care providers for the ICPM education program (evidence-based intervention). Additionally, 278 patient baseline charts reviewed using the same sampling technique for the pre and post-intervention comparison of the use of multiple restraints.

Furthermore, the convenience- sampling technique was less expensive and allowed a balanced representation of the project sample. The convenience sampling technique maintains a more straightforward element as compared to the simple random sampling technique. The simplified nature of the convenience sampling technique makes it more appropriate for the current project (Etikan, Musa, & Alkassim, 2016).

Definition of Terms

The definitions of operational and unique terminologies in the project follow:

Care outcome. Care outcome refers to the care patients receive that meets set goals for health improvement (Frosch, 2015).

Chemical restraint. Chemical restraint is any form of medication used for discipline or convenience but not required to treat medical symptoms (Jacob et al., 2015).

Interprofessional collaborative practice model (ICPM). When health care providers from various disciplines and professional backgrounds provide comprehensive services by working with patients, families, other caregivers, and communities to deliver the highest quality of care, they are using collaborative practice (World Health Organization [WHO], 2010). The model provides benefit for the patient during care through communication, decision-making, knowledge interaction, and skills among care

professionals. Additionally, the model promotes the patient experience of care, advances population health, and reduces health care costs (Fleming & Willgerodt, 2017)

Mental health. Mental health is a dynamic state of internal equilibrium that allows individuals to use their mental abilities in harmony with the universal values of society. In addition, it allows individuals to perform social functions and exhibit a harmonious relationship between body and mind (Galderisi, Heinz, Kastrup, Beezhold, & Sartorius, 2015).

Mental health illness. Mental health illness denotes conditions that affect an individual's cognition, behavior, and emotion, mirroring a dysfunction in the psychological, developmental, and biological processes related to mental functioning (McLean, 2017).

Physical restraint. Physical restraint involves the manual restriction of a person's freedom of movement (Cunha et al., 2016).

Quality improvement. Quality improvement is the aim of educating health care workers to improve care delivery to patients by incorporating people-centered health services and consolidating health systems to achieve universal health coverage (Bell & Gallacher, 2016).

Restraint. Restraint is an automatic, manual, or chemical means of reducing an individual's movement (Putkonen et al., 2013).

Assumptions, Limitations, Delimitations

The primary investigator made numerous assumptions in this project, but the primary investigator paid attention to most of the assumptions which might be erroneous or wrong. The project used baseline chart-review data from the electronic medical records of patients and evidence-based intervention to reduce the use of multiple

restraints in the psychiatric emergency department. Assumptions, limitations, and delimitations may influence the methodology, control findings, or constrain full functions.

Assumptions. The first assumption was that restraints are to ensure the safety of the patients and others in a caring environment. This assumption follows the traditional form of nursing that restraints are justified when patients become unruly (Masters, 2017). The rationale for this assumption was to prevent injury to all stakeholders in the care area. The next assumption was that care providers could deescalate situations before they reached the point where restraints are necessary. This follows the assumption of Peplau's (1992) theory that care providers create a therapeutic interaction with patients that result in a calm environment. The rationale for this assumption was that care providers are to care for patients in any situation. Another assumption was that health care providers tend to forget the use of the much-labored technique taught as preventing and managing crises (PMCS) and are on the defensive rather than protecting individuals with mental health. The rationale for the assumption follows the notion that providers, as human beings in the health care profession, can react to situations in different ways.

Next is the assumption that the use of restraints by care providers occurs without bias, and is to achieve a positive, clear outcome. The rationale for the assumption follows the "safety first" logic, which is the practice. Lastly is the assumption that a change in the provider's way of communication that might lead to the use of restraints becomes a fundamental part of the care provider's function in all aspects of the health care system. The rationale follows that if adequate communication occurs between patient and provider during care, there will be no need for restraints.

Limitations. The limitations are the constraints that might occur in the project, affecting the methodology and, subsequently, the results of the project. The time constraint was a primary limitation of the project because it took place in a course program. The time factor does not allow patient input in the project. Another limitation was the use of convenience sampling might also act as a limiting factor in the findings. Another form of sampling would have been better for this project because the convenience sample is not a good representation of the population with mental illness.

Delimitations. Delimitations regarding the achievement of the project goal are the writer's prerogative because the investigator is the only person that understands and can describe the process of the project. Delimitations are necessary to achieve the project objective and curtail inadequacies during the project. Major delimitation is the choice of health care workers who care for the population with mental illness for the project in place of any other. The sample was intentional as the population with mental illness remains underserved despite technological advancements in the health care system. The intent to use a quantitative method for the project lies in the notion that it was appropriate for the question because it started with the unspecific to focus on a specific issue to generalize the findings to the population with mental illness. The project setting was the psychiatric emergency department in a hospital in the Southeastern United States. The choice for the setting was to allow sample proximity to the primary investigator.

Summary and Organization of the Remainder of the Project

The project was of vital importance in reducing the use of restraints using the ICPM education program as an evidence-based intervention. The immediate intervention and implementation of the program as an appropriate mode of evaluation were beneficial to patients with mental illness primarily in the psychiatric emergency department as it

supported evaluation, care process, and provides ways of communicating with patients (Zun, 2016). In addition, available research studies on the use of multiple restraints have shown the use of restraints in various clinical areas, with limited literature available in comparing the ICPM education program's effect on the use of multiple restraints (Reeves, Perrier, Goldman, Freeth, & Zwarenstein, 2013). The chapter discussed the background, methodology, and scientific importance of the project; defined the relevant key terms; and outlined the assumptions and delimitations that supported the project. The quantitative, evidence-based quality-improvement project required understanding that the use of multiple restraints should follow the standard protocol, based on the use of alternative means of restraint, as stipulated by the organization (Craig & Sanders, 2018). The project ventured into the use of an alternative approach when addressing violence among the population with mental illness. Additionally, the project promoted and emphasized a change in the use of multiple restraints by providers of care for mental health providers' patients in the psychiatric emergency department.

Chapter 2 of the project synthesizes a literature review of relevant studies that structured and supported the development of the project and helped answer the clinical question. The chapter also evaluates and analyzes literature related to the background of the problem, theoretical foundation, and the ICPM as an evidence-based intervention. Chapter 3 contains an extension of the quantitative, pre, and post-intervention concepts of the project. Chapter 4 presents the collected data and describes the analysis of the project findings. The last chapter of the project (Chapter 5) provides a summary and conclusion of the project findings. Additionally, Chapter 5 includes a discussion of findings and recommendations for future projects and nursing practice.

Chapter 2: Literature Review

The purpose of this chapter is to synthesize the relevant literature in addressing the use of multiple restraints in the psychiatric emergency department. This literature review addressed the overall purpose of the study, which was the implementation of the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The association of restraint with mental illness frequently prevents appropriate evaluation, especially in patients with violent behavior, retaining a challenge in the health care system (Berring, Pedersen, & Buus, 2016). However, some studies indicated that restraints are beneficial in supporting individuals with psychiatric disorders to establish internal control and as a form of de-escalating situations that are harmful to the patient, others, or property in the care vicinity (Hottinen et al., 2013).

In a psychiatric emergency department, the presenting attitude of a patient plays an essential role in the type of restraint during evaluation. Depending on the type of restraint use-physical or in some instances, chemical or pharmacological, caregivers blame the patient's behavior in all cases. Presenting mentally ill behaviors include aggression, violence, suicide, or any behavior that poses a danger to others or property in the department. Factors related to these behaviors are age, gender, intellectual disability, development, anxiety disorder, other disruptive behaviors, and previous psychiatric history (Sheehan et al., 2015).

The chapter synthesizes the relevant literature that structured and supported the development of the project, in the following sections: background of the problem, theoretical foundation, and review of the literature using identified themes: mental health,

clinical decision-making, and ethical decisions. Additionally, the review covers the following sub-themes, patient factors, therapeutic environment, knowledge, trust, beneficence, and non-maleficence of restraints.

The review of literature, which covers various studies reviewed for the project, starts with a discussion of the gap/limitations, and research questions related to the project. Next is a thorough review of existing research presented in the order of identifying themes (mental health, clinical decision-making, and ethical decisions) and, subthemes (patient factors, therapeutic environment, knowledge, trust, beneficence, and non-maleficence use of restraints), to disclose current gaps in knowledge and practice addressed by the project. Finally, the chapter ends with a summary. The primary investigator used the following keywords in the search process: types of restraints, characteristics of the individual on restraints, and evidence-based interventions. Research articles were mainly from the Grand Canyon University (GCU) library. Databases searched in the library included the Cumulative Index of Nursing and Allied Literature (CINAHL), Public/Publisher Medline (PubMed), ProQuest, and Psychological Information (Psych INFO).

Further searches included the use of Google Scholar, Researchgate.net, WorldCat.org, and BioMED Central. The searches of these resources from 2013 to 2018 resulted in more than 10,000 articles, narrowed to approximately 350 articles written in the English language and relevant to the project. The articles were reviewed to decide the strength of evidence (originality of research, clinical benefit, quality assessment, and summary of findings). The articles were peer-reviewed and took place within 5 years of the current study.

Background

The use of restraints as an intervention in the care of patients with mental illness dates to 300 years (Masters, 2017). Mental illness is a condition that disturbs individuals' psychological, emotional, and social-life patterns. Furthermore, mental illness interrupts the daily functioning and general outlook on life. Individuals' attitudes change in response to the condition in various forms, including poor impulse control, inappropriate behavior, isolation, poor insight/judgment, and violence (Taghva et al., 2017).

Approximately 1 in every 25 adults in the United States shows signs of mental illness, and the number changes every year to nearly 9.8 million Americans (WHO, 2014). Health care providers use restraints as a form of management in the care of the population with mental illness (Slemon, Jenkins, & Bungay, 2017). In most instances, multiple forms of restraints are beneficial in the management of severe aggressive and manic behaviors (Belete, 2017). Apart from the notion that the use of restraints procures ethical, legal, and professional concerns during care, individuals who experience the use of multiple restraints frequently encounter problems that include physical, emotional, and psychological trauma (Steinert et al., 2013). Researchers insist that the use of restraints in any form, without the permission of the individual, breaches patient autonomy and rights (Ye et al., 2018). Regarding the clinical characteristics of individuals with mental illness, almost 450 million people live with one form of mental disorder at any given time, including 24 million individuals with schizophrenia and 121 million with depression; all numbers that will probably increase by 2020 (WHO, 2018).

The use of restraints remains a treatment measure in the psychiatric emergency department, although prior studies have indicated a contradiction between the use of restraints as a safety measure and the protection of patients' dignity in the psychiatric

setting (Kodal et al., 2018). The characteristics of individuals restrained with more than one form of restraint vary in age, gender, religion, education, occupation, diagnosis, and treatment. The use of multiple restraints remains an issue that plagues the health care setting because restraints do not necessarily tackle the complex challenges of mental illness (Lake & Turner, 2017).

Theoretical Foundations

Theory serves as an indicator in guiding and bringing about events for the possible realization of the set objectives of the quality-improvement project. In addition, theories provide a framework that simplifies and promotes the clarification of facts and pushes toward a better understanding of study objectives (Nilsen, 2015). The need to understand and recognize approaches based on a new perception of patients with potential for aggression and violent behavior remains the best intervention to support the reduction of restraints in any psychiatric emergency department. Because the goal of using multiple restraints is to prevent aggression/violence, and the process requires understanding the factors that influence violence, Peplau's (1992) theoretical model of interpersonal relations and the social-ecological model (SEM) (Bronfenbrenner, 1979) stands out as frameworks that will identify and improve care outcomes.

Peplau's interpersonal relations theory help in understanding and educating health care providers in reducing the use of restraints. The theory is a middle-range theory that focuses on psychodynamic nursing, involving nurses' needs to understand themselves and the behavior of people in their environment. Peplau's theory focuses on the following nursing concepts: person, health, and environment. The theory aligns with the clinical question as it primarily focuses on improving providers' knowledge and mode

of communication with patients from the orientation phase through the identification, exploitation, and termination phases.

Peplau's theory: Peplau's (1992) theory supports understanding of nurse-patient interactions through holistic communication (Deane & Fain, 2016). The theory rests on four phases that support the nurse-patient relationship: (a) orientation, (b) identification, (c) exploitation, and (d) termination.

Orientation phase: During the orientation phase, the nurse presumes the role of a stranger during the first interaction with the patient. The identification of the patient problem is the focus and involves objectivity and making the patient the center of care. In the orientation phase, the nurse serves as a teacher and a care provider in providing education, information, and treatment (Hagerty, Samuels, Norcini-Pala, & Gigliotti, 2017).

Identification phase: This phase starts with a patient assessment whereby the provider learns more about the patient and the patient gains confidence in expressing feelings and concerns to the provider. Learning about the patient supports the nurse in providing appropriate services needed by the patient. During this working phase, the provider fulfills various roles, including counselor, resource manager, health educator, and communicator (Deane & Fain, 2016).

Exploitation phase: In this phase, the patient starts to explore necessary health care services and use professional assistance to identify problem-solving choices. The patient also begins to trust and imitate the behavior of the caregiver, which produces a constructive interaction between the nurse and the patient (Hochberger & Lingham, 2017).

Termination phase: This is the discharge-planning phase, and success depends on the first three phases. The primary function of the termination phase is the discharge teaching that covers the management of symptoms at home and the use of the support system (Hagerty et al., 2017).

Peplau's (1992) theoretical model served as a framework to provide the appropriate conditions for the sustainability of patient safety and the reduction of restraint use through teamwork, which was the basis of the ICPM. Specifically, Peplau's theory served as a framework in the implementation of the ICPM as an intervention toward reducing restraints in the psychiatric emergency department. The theory supported the ICPM in providing an educational intervention in elevating providers' knowledge and clinical judgment on the use of restraints, which, before the initiation of the project, relied on individual judgment. The ICPM promotes shared decision-making between disciplines, which is the core of patient-centered care (Chong, Aslani, & Chen, 2013). According to the theory, health promotion is a process of intervention that enables individuals and communities to take control of the maintenance and improvement of their health (Laverack, 2017). The introduction of ICPM provided an alternative intervention to reduce the use of multiple restraints in the psychiatric emergency department.

Furthermore, the theory maintains that it is proper to prioritize effective preventive strategies through evidence-based health promotion. The theory emphasizes the need to promote preventive health and deliver beneficial services, with a reduction in harm and emotional stress among the population with mental illness. Therefore, advocating for an intervention that is evidence-based and involves collaborative approaches to health remains a priority in the care of patients with mental illness in the psychiatric emergency department.

Social-ecological model: The SEM (Bronfenbrenner, 1979) was also valuable in promoting changes in the behavior of providers because the project entailed quality care improvement. The reduction in uses of multiple restraints as it relates to the individual, environment, culture, people, institutions, and structural support—was beneficial in promoting behavioral changes. The SEM is a theoretical framework for understanding the far-reaching and collaborative outcomes of personal, operational, and social factors that determine behaviors, and for detecting the behavioral and institutional impact on health campaigns in the system (Bronfenbrenner, 1979). The SEM has four levels: (a) individual, (b) community, (c) organization, and (d) policy/enabling environment.

Individual: Individual characteristics include behaviors, attitudes, knowledge, self-effectiveness, demographic history, socioeconomic status, life purpose, orientation, and other characteristics. This level addresses an individual's support system—social networks that may influence behaviors—including family, friends, peers, coworkers, religious networks, and customs or traditions (Saquib, 2018).

Community: The community-level embeds personal involvement with the population: organizations, institutions, and information networks with distinct limitations. The community also involves a unique relationship in a built environment, such as entertainment centers and community associations, community forerunners, establishments, and communication (Kilanowski, 2017).

Organization: Organization involves policies and regulations that affect the facility regarding the use of restraints in the population with mental illness. The theory emphasizes that an individual cannot be merely the product of the environment, but also a partner in creating the environment (Dombrowski, Snelling, & Kalieki, 2014).

Policy/enabling environment: This level involves the distribution of resources, access to health care services, restrictive policies, or lack of policies that require modification of restraint guidelines under the guidance of the state, local, federal, and global laws and policies (Dombrowski et al., 2014). The theory provides a synchronized method in the awareness of intervention regarding care in the use of multiple restraints. Besides, the policy/enabling environment allows for incorporating specific hazard and preventive factors under one setting.

In a study conducted by Carlson & Hall (2014), using semi-structured interviews that involved 21 participants (made up of nurses, doctors, social workers and) and the use of a 16-item life -event checklist, the authors asked participants to state their experience when they encountered with a patient that could potentially be restrained. In addition, participants were asked to state their action in preventing the incidence. The researchers used SEM as a conceptual framework and concluded that the theory provides a lens by which care providers explore the patient experience with care providers. ICPM education, which is the project intervention, fits the SEM because it embodies practical elements of collaboration, and combines the roles of people, management, community environment, and atmosphere (Mahdizadeh & Heydari, 2015). McElfish, Post, & Rowland (2016), in a case study approach, addressed the issue of significant health disparities through the SEM. The authors analyzed activities that described how multiple factors across the social ecology are addressed simultaneously through collaboration. The authors maintained that through knowledge transfer, SEM support maintenance of behavior, and, demonstrate collaboration among individuals, community, environments, and organization. The study emphasized the influence of SEM on the sustainability of

interventions by facilitating support and promoting interactive characteristics of individuals to enhance care outcome.

The above theories guided the clinical question for the project. These theories justified the need for evidence-based intervention in upholding the trust and dignity of patients with mental health during nursing care. Likewise, the connection and collaboration established among care providers through the implementation of the project intervention, promote changes in behavior as established by the various levels of SEM. Additionally, the theories support a reduction in the use of multiple restraints in the psychiatric emergency department base on the various phases that theories towards the promotion of empathy, confidence, and active listening, which overpower most behavioral issues.

Review of the Literature

The review of the literature section of the project discussed studies on existing literature on the use of multiple restaurants and the ICPM education program as an evidence-based intervention. Additionally, the review of literature provided a brief discussion regarding gaps in the literature, research questions, and methodologies, about the use of multiple restraints. Furthermore, the primary investigator used the identified themes (mental health, clinical decision-making, and ethical decisions) and subthemes (patient factor, therapeutic environment, knowledge, and, trust,) as they relate to this project in organizing the review of the literature.

The use of restraints has been a long-standing method of subduing patients with mental illness who show aggression and other negative attitudes. However, the quality of care for mental disorders has not improved when compared to that for physical conditions (Kilbourne et al., 2018). The use of multiple restraints occurs in most acute-care settings,

and the determination to use restraints needs a thorough understanding of the ethical and legal implications for stakeholders and nursing practice (Kalula & Petros, 2016).

In the United States, the prevalence of the use of restraints among patients with mental illness ranges from 7.4 to 17% (Rutledge & March 2013). Using restraints on any patient with mental illness does not follow the United Nations statement, specifying that the treatment of every individual with a mental illness must be with humanity and respect for the fundamental dignity of the person (Belete, 2017). The adverse effects of restraints include poor peripheral circulation, cardiovascular stress, muscle atrophy, ulcers, infection, and agitation; use of multiple restraints can lead to devastating and irreversible damage (Said & Kautz, 2013). However, little evidence exists about the rate of restraints used in mental hospitals in developing countries (Hadi, Khosravi, Shariat, & Jalali Nadoushan, 2015). Only sketchy reports about sporadic cases of injuries or fractures exhibit a possible prevailing problem (Hadi et al., 2015). These findings call for immediate intervention for the reduction in the use of multiple restraints, especially among the population with mental illness.

The use of ICPM education as an evidence-based intervention for care providers remains a contributory factor in the delivery of better care services that eventually lead to improved population health outcomes and the delivery of quality and safe health care (Brandt, Lutfiyya, King, & Chioreso, 2014). Busari, Moll, and Duits (2017) conducted an ethnographic-approach study in which nurse-physician communication perceptions of patient care were the objective. The authors expressed the significance of continuous improvement in educational intervention through communication and continuous professional development among care providers.

The literature review included a reflection on the many gaps and limitations related to the project. The goal was to prevent a repetition of flaws in future quality-improvement projects. The identification of the gap/limitation provides transparency in areas of attention in practice, narrowing the gap, and supporting provider collaboration (Leach & Tucker, 2018). In a systematic review by Ye et al. (2018), the authors reviewed the protocol for the management of psychiatric patients with psychomotor agitation by searching the most relevant articles in emergency settings and using consensus among international experts on the topic of psychomotor agitation, using the Delphi methodology. The experts for the study included eight psychiatrists, two nurses, and one psychologist. Samples for the study were current international clinical guidelines. The authors indicated a gap in the adoption of intervention protocols in the assessment and management of psychiatric patients with psychomotor agitation that leads to some form of restraint. The study authors advocated that caregivers should ensure the physical safety of the patient and caregiver while minimizing the risk of escalation to aggression. The study limitations included the use of convenience samples of current international clinical guidelines. Another limitation was that no current best practices exist for the care of psychiatric patients to ensure honest, implementable, and practical recommendations.

Jegede, Ahmed, Olupona, and Akerele (2017) conducted a systematic retrospective case-by-case review of all restraining orders between January of 2016 and June of 2016 in the psychiatric emergency department of a community hospital. The authors analyzed the data using descriptive statistics and chi-square to establish relationships between patient clinical characteristics, diagnoses, and the use of restraints. The study results suggested that the literature lacks a description of the effect of continuous training of physicians and nursing staff on the use of restraint, providing

insight on ways to reduce the use of restraints in the psychiatric emergency department. Study limitations included the use of the small study sample of 95 patients who required restraint (67.4% were men), majority been patients with positive urine toxicology. Another limitation of the study was the use of a systematic retrospective review in which inadequate documentation into EHRs might be a factor in the final analysis.

The review of existing literature on research questions related to a study further contributed to the project approach (Grewal, Kataria, & Dhawan, 2016). In most of the articles reviewed, the authors guided individual studies with evidence-based questions that defined problems in the care of patients with mental illness and focused on visible interventions. The questions tend to clarify the aspect of restraints affecting the care of patients with mental illness.

Cunha et al. (2016), in a cross-sectional descriptive study on the use of the physical and chemical restraints on patients, asked, "What is the level of knowledge in nursing about physically and chemically restraining?" Data collection for the study was a survey of nurses' knowledge about physical and chemical restraints patients. The study used a convenience sample of 156 nurses between the ages of 24 and 57, 79.2% of them women. The authors used the Knowledge Questionnaire on Patient's Physical and Chemical Restraint to collect data on providers' knowledge of restraints. The study analysis focused on patient safety, legal and ethical practice, scientific knowledge, and quality of care. Findings indicated that participants demonstrated unsatisfactory knowledge of patient safety. On legal and ethical practice, participants did poorly, whereas, on scientific knowledge, their performance was high. On the quality of care, Cunha et al., indicated that study participants were knowledgeable. The authors

concluded that the promotion of specialized training for professionals was a way to minimize the dangers and complications of physical and chemical restraints for patients.

In a study on post-seclusion and restraint by Goulet and Larue (2016), the authors used the qualitative method that involved a comprehensive scoping review in answering the following question: What is known about post-seclusion and restraint review in psychiatry? (Goulet & Larue, 2016). Using English or French and adult psychiatry as the limiting criteria for sample selection, the authors used 20 of 156 articles. In answering the question, the authors proposed the post-seclusion and restraint review intervention, which focuses on the patient, the treatment team, or both to initiate collective reflection. The authors concluded that, for interaction to exist between patients and caregivers, the patient-nurse relationship should remain the essential focus of the decision whether a restraint should be part of patient care. Finally, the authors agreed that it was appropriate to choose an intervention that will educate care providers and involve all levels of care (Goulet & Larue, 2016).

Cunha et al. (2016) established the need for knowledge as an intervention and used the Knowledge Questionnaire on Patient's Physical and Chemical Restraint as an instrument for data collection. Although the instrument was appropriate, the authors failed to identify an evidence-based intervention model of knowledge. In contrast, Goulet and Larue (2016) used the post-seclusion and restraint review intervention, which is an evidence-based intervention, to rebuild the therapeutic relationship among providers and agreed on the importance of a nurse-patient relationship during care. In the present project, the ICPM education as the intervention thrives on information sharing, excellent communication, participative decision-making, addressing new ideas, and ways to organize care (Andvig, Syse, & Severinsson, 2014).

Identified Themes and Subthemes

The primary investigator based the identification of the themes and subthemes on their relevance to the focus of the project clinical question and relevance in organizing the review of literature for the project. The identified themes rest on the importance of education in reducing the use of multiple restraints. The themes are (a) mental health, (b) clinical decision-making and, (c) ethical decisions on the use of restraints.

The mental health factors. The inability of an individual to meet the three components of maintaining health results in disarray regarding thinking, emotional, and functioning capability (Flett, Hewitt, & Molnar, 2016). Mental illness includes schizophrenia, paranoia, depression, mood or bipolar, and attention-deficit-hyperactivity disorder. These disorders may be of the genetic or environmental origin or to individual behaviors or socioeconomic factors. The theme of mental illness eventually leads to two subthemes: a patient factor, based mostly on a lack of awareness about the illness, and the therapeutic environment (Kim & Kim, 2017).

The patient factors. The patient factor, in most cases, is due to a lack of awareness, which may be due to changes in mental status, a lack of knowledge about admission, or fear of a lack of a support system during admission. Lack of awareness regarding illness is the first pointer in a patient's refusal to seek help and receive adequate care (Hegde & Ellajosyula, 2016). Most patients who undergo restraint either have no insight about symptoms of illness or feel the admission is unwarranted. For the provider, the restraint becomes the best treatment to control the patient's lack of awareness, displayed as aggression and potential violence. The assumption is that the use of restraint is usually to prevent harm to the patient and protect others from the potential of violence from the patient (Thomas & Moore, 2013).

Eltaliawi, El-Shinawi, Comer, Hamazah, and Hirshon (2017) conducted an observational cross-sectional study at four large acute-care hospitals in Egypt on the prevalence of physical and chemical restraint in selected elderly hospitalized patients. The study convenience sample included 287 elderly patients restrained, 59 doctors, and 159 nurses who completed a specially constructed questionnaire, and data analyses using descriptive statistics expressed in numbers and percentages. The authors found that the use of any form of restraint varied from 5.3 to 22.9% per hospital, with frequent use across the four hospitals of 11.1%. The highest rate of any form of restraint in use was at the private hospital (22.9%).

In another retrospective case-controlled study conducted in Iran Psychiatric Hospital in Tehran by Hadi et al. (2015), the authors investigated the predictors of physical restraint in a psychiatric emergency setting. The sample was a convenience sampling of the files of 607 patients: 186 were in the restrained group and 421 in the unrestrained group. The authors used the IBM Statistical Package for Social Science (SPSS) version 20, *t*-test, and the chi-square test to analyze the study data. Study findings indicated that most reasons for referrals of restrained patients included violence, an Axis I diagnosis of methamphetamine-induced psychotic disorder, and Axis II diagnosis of Cluster B personality disorder with longer length of stay in the psychiatric emergency department. The study concluded that, although patient factors such as age and multiple medications played a significant role in the restraint of patients in the psychiatric emergency department, the use of restraint was not according to the programmed recommendations or as a standard treatment intervention in several cases.

Both studies reviewed for the patient factor used convenience sampling. Although Hadi et al. (2015) compared the characteristics of patients in restraints, Eltaliawi et al.

(2017) compared the group of patients restrained. The authors did not use any intervention in the studies, but conclusively advocated for the use of a standard guideline on the use of restraints, regardless of the presenting patient factor.

The therapeutic environment. The displacement of individuals from their natural habitats creates a form of mental stress and a feeling of incarceration, especially when under lock throughout the day and night, as in a psychiatric emergency department. The environment may trigger violence, as the psychiatric emergency department serves as an accommodating, therapeutic, and caring environment. Furthermore, the psychiatric emergency department is a place to groom patients in social function, to provide safety from hazards, and to serve as a place where people live, work, and visit.

Papoulias, Csipke, Rose, McKellar, and Wykes (2014), reviewed the effects of ward design on patient outcomes and the well-being of patients and staff. The authors identified the therapeutic environment as a significant factor in the care outcome at the hospital. The authors used a systematic review of the literature carried out on Medline, EMBASE, and PsycINFO. The literature included in the study provided suggestions on the types of possible benefits, ranging from adopting a more flexible approach to including a review of qualitative, quantitative, and mixed-method approaches. The authors identified 23 papers for the study with no links between design and clinical outcomes. The authors concluded that intimate spaces and a comfortable environment might contribute to positive patient-care outcomes because various stakeholders may experience the psychiatric emergency department in differing ways; the environment serves as a symbolic and social dimension for patients.

Ling, Cleverley, and Perivolaris (2015) examined debriefing data to understand the use of restraints and the emotional event from the patients' perspective at an urban

mental health and addiction hospital. The authors indicated that an improved therapeutic environment might change patient perceptions of care and promote a strong patient-provider relationship. Ling et al., (2015), used qualitative data from the restraint event, client–patient debriefing, and comments form. The sample had experienced a restraint event, and the completion of the debriefing forms was between September 2009 and February 2013. The themes of fear, rejection, needing comfort, lost trust, neutrality, and change of scene were analyzed using Braun and Clarke's steps of thematic analysis, followed by qualitative analysis. The study emphasized the importance of regular, individual communication between inpatients and providers as a means of promoting a therapeutic environment.

The authors of the two studies explained the importance of a therapeutic environment in the care of the population with mental illness. Although the study by Papoulias et al. (2014) discussed space and a homelike environment, it failed to emphasize the importance of communication among the various stakeholders as a contributing factor to creating a better therapeutic environment. However, it is clear from the two studies that there is a possibility in the provision of a calm, fear-free, patient-provider environment in the care of the population with mental illness.

Clinical decision-making. The use of multiple restraints in a psychiatric emergency department remains a challenge, due to inadequate justifications, psychological/emotional adverse effects, and the scarcity of alternatives to restraints. The need for evidence-based clinical decision-making is essential in preventing the inadequate use of restraint. Further, such evidence-based decision-making would avoid unnecessary adverse effects that contradict the ethics in the use of restraints (Kirwan & Coyne, 2017).

Li and Fawcett (2014) conducted a systemic review of 39 articles relevant to decision-making strategies. The authors used intuition and heuristics thematic synthesis to analyze data and concluded that most nurse's base clinical decision-making regarding restraints on intuition and the heuristic model, which makes the quality of the decision's problematic. The existing quality-improvement project advocates the use of an evidence-based intervention (ICPM) in any clinical decision-making. The assumption is that restraint can prevent potential aggression that might lead to violence, but an alternative to restraint can be less problematic (Thomas & Moore, 2013). The two subthemes for clinical decision-making for the project are knowledge and trust.

Knowledge. Educational qualification and skill in the use of restraints are essential in the reduction of restraints in a psychiatric emergency department. In a quantitative descriptive, cross-sectional survey at a psychiatry department at a tertiary care center, Gandhi et al. (2018), examined how nurses' knowledge, attitudes, and practice impacted the use of restraints among psychiatric patients. Gandhi et al., used a convenience sampling of 140 nurses with the following inclusion criteria for the study: all genders, nurses in the psychiatric units with a minimum one year of experience. Participants used self-administered questionnaires for data collection; six participants were not present during data collection. The authors also conducted a feasibility survey using 15 participants and found the study to be feasible. As mentioned in the study, the authors used data analyzed with *R* statistical analysis (revised) software and a *t*-test to determine significant differences between the participants, knowledge, attitude, and practice scores. The authors concluded that adequate knowledge, positive attitudes, and ethical practices reflect the proper use of restraints in the psychiatric emergency department.

In a descriptive cross-sectional epidemiological study, Stinson (2016) examined the relationships between registered nurses' clinical experience, practice issues, and nurses' actions while caring for physically restrained patients, and their attitudes toward the use of physical restraints. The author used a descriptive correlational methodology to answer the research questions. Data collection accrued from two instruments: a demographic scale originated by the researcher and the Physical Restraint Questionnaire with the content validity of the instrument established. The author used only two of the questionnaire subscales: nursing practice issues and attitudes toward physical-restraint use. Participants were 413 nurses, 91% White, between the ages of 19 and 68 from the United States; 47% held a Bachelor of Science in nursing. Data analysis was by multiple regression. Stinson suggested that education on restraints should be a continuous part of the nursing curriculum. Based on the various quantitative studies, the author concluded that knowledge and skill in the use of restraints are the result of education on the benefits and adverse effects of restraints. Stinson advocated the use of evidence-based education programs for providers on the use of restraints.

Understanding the importance of patient safety as it involves care providers' knowledge of restraints acquired through education and skill gained from practice remains a priority in the care of the population with mental illness. The two studies affirmed the importance of closing the knowledge gap and encourage positive behavior among care providers through the collaboration of care. The authors concluded that the identification of knowledge, as an element of care by care providers, will promote positive care outcome. The literature on educative interventions for care providers emphasized the use of ICPM education for care providers as an evidence-based method in the delivery of better care services that eventually lead to improved population health

outcomes and the delivery of quality and safe health care (Brandt, Lutfiyya, King, & Chioreso, 2014). The authors expressed the significance of continuous improvement in educational intervention through communication and continuous professional development among care providers.

Trust. The voluntary or involuntary admission of a patient to the psychiatric unit is a cry for safety (Johnson & Stern, 2014). Therefore, the care provider must provide the utmost safety to the patient and others in the therapeutic milieu to promote trust. Trust in the power to heal and protect is an expectation from the provider by the patient. Patients expect more than vital-sign checks; their expectations include safety and reliability (Vahdat, Hamzehgardeshi, Hessam, & Hamzehgardeshi, 2014). Trust in the care provider is a potential way to reduce aggression and violence and thereby promote the reduction of restraints in the psychiatric emergency department (Ramacciati, Ceccagnoli, Addey, Lumini, & Rasero, 2016).

Van den Berk-Clark and McGuire (2014) performed a longitudinal quasi-experimental outcome study that evaluated the success of the integrated services in a sample of homeless veterans with severe mental illness or substance abuse. The authors suggested that individuals with more significant levels of trust in health care providers are likely to build a nurse-patient relationship that might prevent the use of restraints. The study results indicated that these groups are more compliant with treatment and follow-up care with providers. The authors concluded that trust is an essential part of health care because it promotes a strong patient-provider relationship. The authors maintained that the relationship between stakeholders should focus more on trust. This project maintains that the focus on trust should start at the patient's first point of contact.

Furthermore, Roberts, Unadkat, Chandok, and Sawtell (2013), in a pilot study, attempted a change in the manner of care by improving communication and collaboration in west London. The sample for the study included workers in primary care, acute hospitals, mental health, community trusts, social care, and patient-charities care, along with 84% of providers. The authors used an approach called the integrated care pilot to develop a more practical approach to patients with long-term conditions. The authors concluded that trust offers motivational reinforcement to patients and supports care-seeking behaviors when and where needed. In addition, Roberts et al. (2013), indicated that health care professionals' engagement in implementing and delivering integrated health and social care could relate to productive relationships built across organizational boundaries.

The authors jointly agreed that trust on all sides of the health continuum, promote dependability and awareness of care. Additionally, the study supports the fact that trust improves communications, decreases aggression, and promote compliance, especially within the mentally ill population. Studies jointly agreed that a nurse-patient relationship built on trust help the patient regain control physically and promote better care outcome.

Ethical decision-making in the use of restraints. The use of restraints is an ethical challenge in a psychiatric emergency department, especially with patients who exhibit aggressive, violent, or destructive behavior and those restrained, to avoid injury to themselves and any harm to others in the environment (Ye et al., 2018). In most cases, restraints are for the safety of all stakeholders present and the protection of property within the therapeutic environment. To ensure an ethical decision, the care providers must make sure that the benefits outweigh the adverse effects of the restraints on the patient. Ethical challenges occur in the use of restraints due to patients' lack of decisional

capability or because of uncertainty or disagreement about when and how to use the constraint (Molewijk, Hem, & Pedersen, 2015). Busari, Moll, and Duits, (2017), conducted an ethnographic-approach study in which the objective was nurse-physician communication perceptions of patient care. The authors expressed the significance of continuous improvement in educational intervention through communication and continuous professional development among care providers.

The studies reviewed, recognized the fact that communication and collaboration by care providers promote ethical decision-making during care. Based on the reviewed studies, the persists notion remains that, the incorporation of ICPM education for providers will prevent fragmented care and reduce the use of restraints. Two subthemes emerged from the theme: beneficence and non-maleficence.

The beneficence of the restraint. The beneficence of the restraint means merely the application of the device for the benefit of the patient and other stakeholders in the therapeutic environment (Ye et al., 2018). In a qualitative, hermeneutics design based on nine cases, Smebye, Kirkevold, and Engedal (2016) explored ethical dilemmas concerning identified autonomy. Participants were 26 adults with a diagnosis of dementia, aged 67 years old. The collection of data was through a semi-structured interview guided with open-ended questions. The findings indicated that the use of restraints might present practical therapeutic interventions for patients and ensure patient and caregiver safety, but that a relationship exists between injuries/fatalities and the use of restraints. In another study conducted by Chambers et al. (2014) on the issues of dignity in care, within three mental health hospital settings, in the South East of England, the authors used purposive sampling technique in 19 patients. Data for the study was collected through interviews with 19 patients. The study suggested that the denting or

boost of dignity should be in the best interest of the patients and supported by the principle of beneficence.

The studies reiterated the fact that the benefit of the use of restraint should not supersede the patient's capacities for independence. In both studies, the authors emphasized the importance of communication and collaboration among care provider towards better decision-making during care. The authors also established that care providers must protect the interest, self-esteem, and dignity of the patient in the use of restraint.

Non-maleficence uses of restraints: Non-maleficence is the responsibility of the care provider to avoid harming the patient because justice is fairness in the distribution of care and respect during care. The principle of non-maleficence (avoiding harm) governs the use of restraints, which means that, during restraint, it is essential to prevent unnecessary and undesirable harm to the patient. Hughes & Lane (2016) explored ethical, legal, and political issues associated with restraints and noted that the use of restraints requires moral consideration and entail no harm during practice to the required population. The authors also concluded that the use of restraints affects the emotional wellbeing of patients; it is traumatic, denies individuals of freedom, and has aggressive insinuations. Ye et al. (2018), in a synthesized study of ethical issues, recommended that care providers must realize that the therapeutic objective of any form of restraints should surpass the adverse effects during care.

Overall, the authors implied, that the use of restraints is an apparent intrusion of individual right, and care providers must evaluate the need to promote non-maleficence uses of restraints during care. The two authors agreed that the concept of non-maleficence

is a powerful element in care and care outcome. The aspect of non-maleficence in care by care provider should prevent aggression, promote safety, and reliability in care.

Summary

The use of multiple restraints calls for a reduction and a better alternative intervention to meet the complex ethical challenges care providers' encounter and promote care outcomes among the population with mental illness in any psychiatric emergency department. Restraints among mentally ill patients range from 7.4% to 17% (Rutledge & March 2013). Apart from the notion that the use of restraints procures ethical, legal, and professional concerns during care, individuals who experience the use of multiple restraints frequently encounter problems that include physical, emotional, and psychological trauma (Steinert et al., 2013). Previous studies have indicated a contradiction between the use of restraints as a safety measure and the protection of patients' dignity in the psychiatric setting (Kodal et al., 2018). Consideration for safe, patient-centered, timely, efficient and equitable care as stipulated by the national quality measure (IOM, 2001) to improve the health care quality of the population with mental illness makes it necessary to educate care providers on communication and collaboration of care.

Various literature reviewed for this project addressed the need for an evidence-based intervention in reducing the use of multiple restraints in various health care settings. The diversity in care makes it necessary to provide a modified approach to the method of assessment, de-escalation, and treatment as it relates to the use of multiple restraints. The literature reviewed in this chapter supported the need for the current project, indicating significant gaps in knowledge and practice as addressed in the project. The literature reviewed reflected gaps in areas of adoption of the intervention protocol in

the assessment and management of psychiatric patients with psychomotor agitation that leads to one form of restraint or the order (Ye et al. 2018). Studies revealed the importance of continuous improvement in educational intervention through communication and continuous professional development among care providers (Busari, Moll, & Duits, 2017).

Peplau's theory, which rests on four phases, (a) Orientation, (b) identification, (c) exploitation, and (d) termination) and the Social-ecological model supports the understanding of the nurse-patient interaction through comprehensive communication and collaboration. In addition, theories provided a framework that simplifies and promotes the clarification of facts and pushes toward a better understanding of the project objectives (Nilsen, 2015). In most of the articles reviewed, the authors guided individual studies with evidence-based questions that defined problems in the care of patients with mental illness and focused on visible interventions. Ultimately, Goulet and Larue (2016) agreed that it was appropriate to choose an intervention that will educate care providers at all levels of care.

Significant studies exist that indicate the use of advanced teaching strategies as a method of improving beliefs, assumptions, and to promote a commitment towards improving care for people with mental illness (Poreddi, Thimmaiah, Pashupu, Ramachandra, & Badamath 2014). The studies reviewed emphasized that ICPM education promotes collaboration in all aspects of healthcare and improve care providers' knowledge, which led to changes in behavior during care and practice (Green & Johnson, 2015). The review of existing literature further straightened this project approach (Grewal, Kataria, & Dhawan, 2016) as it relates to the use of quantitative methodology and a descriptive pre and post-intervention design. Chapter 3 addressed the statement of the problem,

project methodology, project design, population/sample selection, identification, inclusion and exclusion criteria, instrumentation, validity, and reliability. The chapter also discussed the data-collection procedures.

Chapter 3: Methodology

This chapter addressed methods used in the sampling and data collection of the quality-improvement project and presenting the methodology that guided the project to reduce the use of multiple restraints in the psychiatric emergency department, using the ICPM as an evidence-based intervention. The purpose of the quantitative, pre and post-intervention quality-improvement project was to implement the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The ICPM involves the collaborative practice of health care providers from various disciplines and professional backgrounds to provide comprehensive services by working with patients, families, and communities to deliver the highest quality care (WHO, 2010).

This chapter discusses the following: the statement of the problem, project methodology, project design, population and sample selection of the study, instrumentation, the variables, survey administration, validity, and reliability. In addition, the chapter includes the data-collection procedures for the project and the operationalization of relevant constructs. Furthermore, the chapter reviews the data-analysis technique used for the project, addresses ethical considerations and limitations, and finally, summarizes the chapter.

Statement of the Problem

Although the literature indicated that the use of restraint in any form violates the integrity and rights of an individual, patients with mental illness are restrained continuously as a way of protecting the individual, others, and properties in the area of care. It was unknown to what extent, the implementation of the ICPM education program,

as an evidence-based intervention for providers, impact reduction in the use of multiple restraints in a psychiatric emergency department. The project focused on examining the impact of ICPM education as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department using Peplau's (1992) theory of interpersonal relations, and the SEM (Bronfenbrenner, 1979) as the framework for the study. ICPM education program served as an intervention that supported the understanding and education of health care providers toward the reduction of restraints in the psychiatric emergency department. The project supported care providers' patterns of screening, assessing, and treating patients who are mentally ill appropriately, thereby reducing the use of multiple restraints during care.

Clinical Question

The PICOT format provided direction to answer the project question and insight into the ability to provide answers that affected the gap in practice and the current body of knowledge. The directing PICOT question that guided the data collection for the project was: How will the use of an ICPM education program for providers affect the reduction in the use of multiple restraint in the psychiatric emergency department?

In order to reduce the use of multiple restraints within the mental health population during care, the primary investigator sought to educate the health care providers who care for the mental health patients in the psychiatric emergency department. The project used the ICPM education program to educate and guide care providers during the assessment and continuous patient care in the psychiatric emergency department. The comparison was between the use of multiple restraints before the implementation of the ICPM education program and the use of multiple restraints after the implementation of the ICPM education program intervention. The outcome of the

project was a reduction in the use of multiple restraints in the psychiatric emergency department. The project period was three weeks. The dependent variable for the project was the use of multiple restraints. Data accrued through a baseline chart review from December 2018 to January 2019 (15 days), from patients' EHRs. The measurement for multiple restraints was the number of times a patient restraint occurred during the marking period, as documented in nursing notes and other related baseline records from EHRs for the 15 days from December 2018 to January 2019. The data included demographics, social history, past psychiatric history, diagnosis, and treatment.

The independent variable was the use of the ICPM education program as an evidence-based intervention. Evidence-based interventions are interventions that have been established and tested according to best practice. The project applied an educational program using the ICPM, which is evidence-based (Selleck et al., 2017). CPAT, the survey instrument, served as the tool for data collection. The pre-evidence-based intervention data lasted 15 days after the implementation of the ICPM education program, which was the project educational intervention. The intervention, education focused on promoting adequate communication among health care providers, early assessment of aggressive behavior, and preventing behaviors that emanate due to clinical characteristics among the population with mental illness. Knowledge of the effect of restraints and alternative methods to restraints can support a reduction in the use of multiple restraints in the psychiatric emergency department. Understanding the management of aggressive and violent behavior upon presentation in the psychiatric emergency department can reduce the use of multiple restraints. EHRs served as the database in planning and collecting the data, checking for errors, data analysis, and appropriate archiving and dissemination of findings. The pre and post-intervention design

was the best approach to answer the clinical question because it measures the provider's knowledge of the ICPM education program before the intervention and evaluates knowledge after the intervention as it relates to the use of multiple restraints in the psychiatric emergency department.

Project Methodology

In achieving the purpose of the project, the quantitative methodology selected as it supported the clinical question. The methodology was a significant aspect of the project as it expressed the philosophical assumptions, outlined the project procedure, and guided the selection of project designs (Long, 2014). Three types of methods were available for the project: quantitative, qualitative, and mixed methods. The quantitative method was the best approach for the project as it examined the impacts of an evidence-based intervention with the use of multiple restraints in the psychiatric emergency department. The quantitative method uses statistical validity and reliability in establishing the findings of the project regarding what extent, the implementation of the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention impact the use of multiple restraints in the psychiatric emergency department. The quantitative method uses numerical calculation, which helps to identify the project findings. This method, rather than the qualitative method, incorporates methodological strategies that ensure the "reliability" of the results (Sarma, 2015). Moreover, the quantitative approach serves as one of the three standard methods for conducting projects when compared to qualitative and mixed-method approaches.

The use of the quantitative method clarified the type of question for the quality-improvement project because it focused on numerical data to classify features and provide information to answer the question on the effect of an evidence-based

intervention in the use of multiple restraints in the psychiatric emergency department. The quantitative approach was the best option for the project because the approach builds on a subjective notion. A subjective notion, as in a qualitative project, will not produce the desired intention of implementing the project. Although the mixed-method approach combines the techniques of qualitative and quantitative approaches to conclude a project, it takes a longer time to complete and implement. The quantitative approach provides objective disclosures through the collection and exploration of data (Sutton & Austin, 2015).

The quantitative approach relied on the project question to predict and apply objective means in showing to what extent, the implementation of the ICPM education program, as an evidence-based intervention for providers, impact reduction in the use of multiple restraints in a psychiatric emergency. The experimental, nonexperimental, and quasi-experimental types of quantitative approach begin with a hypothesis, followed by data collection and analysis (McCusker & Gunaydin, 2015).

Data on the quantitative approach are statistical information gathered from samples of a population and can be primary or secondary data. Primary data are data the investigator collects. In this case, data from the ICPM educational program using a survey conducted with care providers were the primary data. Secondary data accrued from EHRs representing the use of multiple restraints, from nurses' log, and another document, as they affect patients with mental illness in the psychiatric emergency department. The primary investigator used the Intellectus Statistical Analysis Software for data analysis.

Project Design

The selected design for the project was quasi-experimental, pre and post-intervention design. Researchers use pre-intervention and post-intervention design to examine the causal relationship between variables and avoid the random assignment of participants to the intervention. In this project, the primary investigator used the quasi-experimental pre-intervention and post-intervention design to examine to what extent the implementation of the ICPM education program, as an evidence-based intervention for providers, impacted reduction in the use of multiple restraints in a psychiatric emergency department. The pre and post- design, along with the descriptive, correlational, quasi-experimental, and experimental, are the fundamental designs in the quantitative domain (Creswell, 2013; Hartas, 2015). The quasi-experimental, pre and post-intervention design help describe what occurs between the project's variables without proving the effectiveness and strength of the variables. The design also describes answers from survey questions and provides various ways for data collection. The quasi-experimental design involves pre and posttest -intervention studies using experiments in which the intervention is not randomly assigned and manipulated (Handley, Lyles, McCulloch, & Cattamanchi, 2018). The quasi-experimental, pre and post-intervention design rise above all other designs for this project in that it does not entail manipulation but provides insights into the relationship between the variables.

The quasi-experimental, pre-intervention and post-intervention design was the most effective because the intention was to use the natural setting and not to manipulate the sample. The quasi-experimental, pre and post-intervention design intent of this project was to explore the impact of the ICPM education program, offered to care-providers, to impact their use of multiple restraints in the psychiatric emergency

department. The design upholds and does not contradict any ethical research issue because it explores the use of intervention with no treatment or manipulation of the sample.

The evidenced-based intervention for the project was the ICPM education program for care providers. The quasi-experimental, pre-intervention, and post-intervention design assists in understanding the use of a baseline chart review. The design provides a means of gathering patient-focused data, stored in an electronic database towards answering the project question. The data collection also included nurses' notes and patients' logs on restraints. The baseline chart review was advantageous for this quality-improvement study, along with the continuing education of providers in clinical areas (Vassar & Holzmann, 2013).

The completion of the data analysis was through statistical methods with the use of descriptive and inferential analysis to determine the pattern and answer the project question. The importance of this project was to explore the impact of the ICPM education program for care providers as an evidence-based intervention to reduce the use of multiple restraints in the psychiatric emergency department.

To adequately address the project question and support the translation of the project into clinical practice, a quantitative, quasi-experimental, pre and posttest-intervention design was the most appropriate design. The pre and posttest-intervention design was appropriate in describing the anticipated variables of the project, which produced results that can improve clinical practice toward the reduction in the use of multiple restraints in a psychiatric emergency department.

Population and Sample Selection

The target population for the project is the mental health population composed of individuals with mental illness. The project addressed the target population through an evidence-based education for health care providers that provide care to the population. The education of health care providers who care for the population of mentally ill people was advantageous in reaching the mental health population. The setting was a not-for-profit health care organization with 200,000 outpatient visits annually. The organization serves uninsured, underinsured, and underserved populations in the Southeastern regions of the United States. The sample was a convenience sample of 12 health care providers (eight nurses and four doctors) and a baseline chart review of 278 patients. The source for the pre- and post-intervention comparison entailed gathering the baseline charts of 278 patients with mental illness, gleaned from the database in the psychiatric emergency department and the use of a CPAT survey of the 12 care providers.

The sample size was calculated using a confidence interval of 95% and a 3% margin of error from a population size of 1,000. That population size justifies a sample size of 278. The number was determined using a sample calculator. A minimum of 12 health care providers and the use of - 278 patients between 18 and 61 years old (December 2018 to January 2019) comprised the population for the project.

The sampling technique for the project was a convenience sampling, which is a form of nonprobability sampling. Convenience sampling is a form of nonprobability or nonrandom sampling such that members of the target population who meet specific criteria (including geographical vicinity, accessibility, availability, and willingness) are included in the project (Etikan, Musa, & Alkassim, 2016). The inclusion criteria for the patient sample included data from patient charts from December 2018 to January 2019.

All participants in the project spoke, read, and write in English and were under care during the entailed period of study as indicated on patient charts. Participants' ages were between 18 and 61 years because patients in that age range are often self-reliant and well informed of the benefits or potential risks (Abay, Addissie, Davey, Farsides, & Addissie, 2016). Participants had two or more restraints used during the admission.

Sample exclusion criteria included data of patients not restrained during the project period, data of patients employed in the project setting, or those discharged from the hospital on the last day of data collection. The primary investigator followed the hospital-restraints policy regarding the use of informed consent and the Health Insurance Portability and Accountability Act of 1996 (HIPAA) regulations to ensure individual confidentiality regarding personal and sensitive information during data collection, transcription, and analysis. Maintenance of confidentiality about data appropriation followed hospital and project protocols. Protocols included approval from the hospital Institutional Review Board (IRB) before the use of any patient information and the appropriate use and disposal of data after use. The process of maintaining patient confidentiality during the use of EHRs was using the patient de-identification of data by the primary investigator.

The project sample also included 12 health care providers who care for the population with mental illness in the psychiatric emergency department of the hospital. The sample male comprised of and female health care providers. Recruitment for providers was through flyers posted by the primary investigator to inform providers of the intended quality-improvement project. Inclusion criteria included being that the participants were a nurse or a doctor in the psychiatric emergency department. Consent proffered as a yes or no to involvement before completion of the CPAT online survey.

Instrumentation

A data-collection tool for the project included the use of a baseline chart review and the CPAT survey. EHRs were the main instrument for use in the project for collecting data on the use of multiple restraints in the psychiatric emergency department. The EHR system is a form of health information technology for improving the quality and growing impact on health care management with the clinical and administrative data of all patients in health care systems. The instrument provided data availability, accessibility, and accuracy for use in the project. The data collection for the project included demographics, health information, and treatment records. The EHR is a tool that advances care practice and can enhance patient-reported measures of patient-centeredness (Tai-Seale et al., 2014).

The survey tool included questions that used open-ended questions to reflect participants' understanding of the evidence-based intervention. The instrument for the project sample was the CPAT (Appendix C), a survey instrument to assess levels of collaboration intended to assist clinical teams in identifying strengths and weaknesses during the collaborative practice, thereby providing opportunities for focused educational interventions. The CPAT has 56 items with a 7-point scale that assesses collaborative practice in the following nine domains: mission and goals, relationships, leadership, role responsibilities and autonomy, communication, decision-making and conflict management, community linkages and coordination, perceived effectiveness, and patient involvement (Shrader et al., 2017). The instrument also contains three open-ended questions. The instrument functions in different settings and is valid and reliable in assessing levels of collaborative practice on teams (Schroder et al., 2011).

Independent variable. The independent variable was the impact of the ICPM education program as an evidence-based intervention for providers. The evidence-based intervention for the project (the ICPM) tested using the CPAT. The CPAT developed was and tested by a team of researchers who used samples of healthcare and non-healthcare professionals in two pilot tests in 2009 (Schroder et al., 2011). The instrument measured providers' responses to the ICPM. The CPAT is a valid and useful instrument that measures the collaborative practices of health care professionals. The instrument also assessed the validity of professional changes in the use of restraints. The intervention was the use of the ICPM education model to educate providers.

Dependent variable. The use of restraints in the psychiatric emergency department was the dependent variable. Collection of data was through a baseline chart review of EHRs.

Validity

Validity means data are the embodiment of what they claim to represent (Weiskopf & Weng, 2014). EHRs were the instrument of choice for the data collection on the use of multiple restraints in the hospital. According to Hoeven et al. (2017), in a study review of 35 empirical studies using electronic health care data, 66% of the studies indicated data accuracy, 57% specified data completeness, and 23% of data indicated comparability. In another study by Weiskopf and Weng (2014), the indication was that EHRs met the golden standard as follows: Completeness denotes whether the fact regarding a patient was present in the EHR. (b) Correctness, which denotes the accuracy, error, and quality of the EHR; (c) compatibility means the information is compatible regarding the components of EHR; (d) plausibility means that the EHR contains required information regarding the diagnosis and other medical information; and (e) currency

refers to the timeliness and accuracy of the data stored in EHRs. The CPAT was the instrument of choice for the data collection of care providers' post-intervention implementation of the ICPM, and validity was of utmost importance. Regarding the content validity of the instrument, the 56 items and the eight sub-scores for the questionnaire adequately covered the content necessary concerning providers' collaborative practice in the evidence-based intervention, which was the independent variable in the project.

The following three components of validated instruments are required when using a quantitative method:

1. Consistency: The CPAT was a useful measure of the collaborative practice it was designed to measure.

2. Convergence: The CPAT compares appropriately with instruments measuring similar constructs.

3. Divergent validity: The CPAT weakly correlates with social desirability, which means that the social - desirability bias will not affect any CPAT scales regarding the collaborative practice (Bookey-Bassett, Markle-Reid, McKey, & Akhtar-Danesh, 2016). The interpretation of findings from the two pilot studies indicated that both the internal and external validity of the CPAT is accurate and free from bias (Schroder et al., 2011). The application of the Intellectus statistical software also provided additional data cleansing, thereby improving the validity of the information (Intellectus Statistics, 2017; Sylvia & Terhaarm, 2014).

Reliability

Reliability is a method of assessing the quality of measurement and is an interrelated concept that addresses accuracy and consistency. Reliability determines if a

measurement is stable, accurate, dependable, and repeatable. The reliability of the CPAT in measuring the collaborative practice of providers provided valid, accurate interpretations and credibility of the project clinical questions (Modgill, Patten, Knaak, Kassam, & Szeto, 2014). The reliability of the project tool forms an evidence-based argument regarding how well the tool measures the impact of care providers' attitudes on care outcomes of patients with mental illness. According to this study, the CPAT had an acceptable internal reliability of the 56 items (as in Selleck et al., 2017). The reliability measurement of CPAT prevented the introduction of bias into the project, which might occur in cases of contradiction during translation. Upon review, the confirmatory factor analysis confirmed that the 56 items in the CPAT, (based on the two pilot test), was reliable: Communication and information exchange 0.74, community linkages and coordination of care 0.73, decision-making and conflict management 0.74, mission, meaningful purpose, goals 0.78, general relationship 0.81, team leadership 0.84, and general role responsibilities, autonomy 0.73 (Schroeder et al., 2011). The reliability statistics developed through two pilot tests indicated that the instrument is valid and reliable with a Cronbach alpha score for the subscales ranging from- .67- .89 (Schroeder et al., 2011). Data were entered into an Excel spreadsheet to examine the correctness, and Intellectus statistical software also provided additional data refining, thereby improving the reliability of the information (Intellectus Statistics, 2017; Sylvia & Terhaarm, 2014).

Data Collection Procedures

The data-collection procedure for the project allowed correction and ensured accuracy during the collection for a useful result. Data collection for the project commenced after the primary investigator received the IRB approval from Grand Canyon University. The collection of patient data from the EHR was by a manual process using a

data-abstraction tool as a guide and following the organization protocol on the use of patient data. Data included restraint log from nurses' notes presented at the emergency department during care. The collection included structured and unstructured data from the EHR. The data contained only the project number and exempted patient social security number, date of birth, registration number, and home address.

The first step in data collection entailed the primary investigator applying for site authorization. Next was the application and approval from Grand Canyon, Institutional Review Board (GCU /IRB). Data collection began following GCU/IRB approval. Data collection took place before and after the ICPM education intervention. The second step was the posting of recruitment flyers and information regarding the project in strategic locations to raise awareness about the project. Patient data for the project was archival, and protection of patient information followed the HIPAA regulation and the setting protocol on PHI. The primary investigator then collected the pre-intervention data, which was before the start of the ICPM education program -the data accrued from care providers through the completion of the online CPAT. Next was the manual collection of patient-restraint data from the nurses' logbook and the EHR. Initial data collected on participants included demographics, assessment, and treatment plans for patients. The demographic and pre-ICPM education evaluation using the CPAT online survey for care providers was also collected. All data contained only the project number.

The introduction of the ICPM education program to the care providers then followed. The ICPM education program covered the following steps: mission and review of current practices on restraints, collaboration, communication (assessment and behavioral observation of patients), teamwork, patient-centered care, and program sustainability. The education also included emphases on restraint guidelines stipulated by

the institution and implementation of the ICPM education intervention in the psychiatric emergency department. The fifth step entailed collecting post-intervention data on restraints after 15 days of ICPM education-program implementation to answer the clinical question: How will use of an ICPM education for providers affect the reduction in the use of multiple restraint in the psychiatric emergency department? The final step in the data collection was the process of ensuring the safety of the collected data. The primary investigator secured and encrypted the data collected to enable personal identification. The primary investigator shredded all other documents related to the project that were no longer in use.

Data Analysis Procedures

The data- analysis procedure followed the project variables derived from the clinical question and arranged into two categories for analysis: pre-intervention data and post-intervention data. The data included the pre and post-intervention CPAT survey from the 12 health care providers that took part in the ICPM education program, and data for the use of multiple restraints of the baseline chart review of pre-documented, patient-focused data stored in electronic databases and the nurses' logs. The first step was the arrangement of the pre-intervention data. The pre and posttest-intervention data for the independent variable were data accrued from CPAT survey given to providers before the ICPM education program for providers. The pre and posttest-intervention data for the dependent variable were data accrued from the use of a baseline chart review of pre-documented, patient-focused data stored in electronic databases and the nurses' logs on the use of multiple restraints before the implementation of the ICPM education program. The data were organized in order using the Intellectus Statistical Analysis Software spreadsheet for analysis (Intellectus, 2017).

The adequate step was taken in order to compare the data accrued before and after the implementation of the ICPM education in the psychiatric emergency department. For each set of variables measured at pre and post, a single paired sample *t*-test was performed. The paired sample *t*-test is an analysis used when comparing the means of a sample for two measurements when each participant in the sample can be matched or paired such that the values for both measurements attributed to the same individual (Urdan, 2010). A single paired sample *t*-test is commonly used when the two scores are repeated measures, such as in situations when the assessment used as a pretest before the intervention and as a posttest after the intervention (Morgan, Leech, Gloekner, & Barrett, 2007).

This is a form of repeated-measures analysis in which the same participants' scores on a single variable (as indicated in the case of the CPAT survey), the data compared in the project pre and post-intervention design. The assumption and conditions of the paired sample *t*-test examined were before analysis. In addition, the paired-sample *t*- test's assumptions state that the measurements are independent of one another such that they do not influence one another (i.e., independence) and that the dependent variables distributed per the assumption of normality (Pallant, 2016). Finally, the scores at pre and post must have a similar degree of variance; this assumption is homoscedasticity (Pallant, 2016). The assumption of normality was with one sample Kolmogorov Smirnov (KS) test, while homoscedasticity was tested using Levene's test (Howell, 2010).

The data entered into an Excel spreadsheet for correctness, and Intellectus Statistical Software for analysis were finally summarized using descriptive analysis. The primary investigator also checked for missing data after collection and examined the item means and medians to determine score distributions. The primary investigator used the

statistical method with a significance level of $\alpha = 0.05$ to summarize the sample, data, and information on the variables.

Ethical Considerations

Conducting the clinical project involved the use of human data in a health care organization, which remained a moral issue. The primary investigator guarded against bias in the choice of participants, which may have been an ethical issue. The primary investigator also followed an adequate method and ensured that the sample for the project was from the population with mental illness to prevent potential sample bias. The use of coercion or any form of penalty against a provider due to withdraw from the project remained a potential ethical consideration in the project. Another ethical consideration was the protection of human participants' confidentiality through proper data-collection storage.

The inability to protect the privacy and confidentiality of participants through the proper handling of electronic data remains an ethical consideration. Furthermore, the use of patient data without following the Protected Health Information (PHI) rule, which indicates that any individually recognizable health information created or gathered must be in a secure electronically storing unit (Liu, Musen, & Chou, 2015), was considered a potential ethical risk. PHI includes any unique, recognizable numbers, characteristics, images, codes, or combinations of those that allow for the identification of an individual.

PHI relates explicitly to the following categories of data: complete data on physical or mental health or condition, the full record of health care providers of an individual, and history of payment in connection to health care provided to an individual. HIPAA allows for the protection of identifiable health data, and it remains a context-centric approach to health information privacy that will also be in effect during the

various stages of data handling. The data considered PHI were made available to authorized users only (Goldstein & Pewen, 2013). The project design, sampling procedures, theoretical framework, statement problem, and question follow the fundamental principles of "The Belmont Report" on the protection of human subjects of biomedical and behavioral research (respect, justice, and beneficence; (U.S. Department of Health, Education, and Welfare, 2014). The project also protected the confidentiality of participants, in confounding aligning with the ethical and legal aspects of the project. Protection of the project data remains the priority of the primary investigator. After project completion, data storage and retention of the data will be for three years, according to federal regulation and follow the project site regulation in protecting the project record for 5 years. All papers related to the project were shredded and recycled by the primary investigator on completion of the project.

Limitations

Limitations related to the quantitative pre and post-intervention design for the project included the fact that the project finding was unable to conclude that the intervention was entirely responsible for the reduction in the use of restraints and an improved care outcome for the population with mental illness. The current limitations are unavoidable due to the duration of the project, but the time factor did not affect the results negatively. Furthermore, the fact that the project used archival data from the EHR caused it to lack the benefit of direct observation, interview, and or any direct contact with the participants, which is an advantage that the qualitative approach would have provided.

Additionally, the sample size for the project was small, perhaps requiring another study with a larger size for a better result. A small sample might prevent the findings

from being generalized (Faber & Fonseca, 2014). The EHR has internal consistency, assumed satisfactory, especially with the quality of documentation by the health care providers in the psychiatric emergency department. However, the human factor in providing accurate information was another limitation during data collection. Finally, time was a factor in the data collection and data analysis of the project, as the project period was one month.

Summary

The purpose of the quantitative, quasi-experimental, pre-post intervention design project was to implement the ICPM education program for providers as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The chapter discussed the statement of the problem, project methodology, project design, population and sample selection of the study, instrumentation, the variables, survey administration, validity, and reliability. In addition, the chapter included the data-collection procedures and the operationalization of relevant constructs. Furthermore, the chapter reviewed the data-analysis technique used for the project, which is the paired sample *t*-test. The paired sample *t*-test is a form of analysis used when comparing the means of a sample for two measurements when each participant in the sample can be matched or paired such that the values for both measurements are attributed to the same individual (Urdan, 2010).

The data collection for the project relates to the ICPM education program as an evidence-based intervention for care providers and the use of multiple restraints in the psychiatric emergency department. The use of adequate communication, knowledge, and skill through the recommended intervention in de-escalating aggressive behavior in patients with mental illness was a significant consideration for the project. Moreover, the

project used a quantitative methodology and the pre and post-intervention design, which provided a simple way to implement the project. The project dictated a positive change and a reduction in the challenges involved in the use of restraints in the health care system, especially in the psychiatric emergency department. The project appealed to improvement in clinical decisions and therapeutic care to prevent the use of multiple restraints during the process of care.

A quantitative method was appropriate to pilot the question because it started with an unspecific focus on the specific issue to generalize the findings to the population with mental illness. The methodology helped answer the question regarding the relationship between the use of multiple forms of restraints and health care providers' approaches in the care of patients with mental illness in the psychiatric emergency department. The chapter also addressed ethical considerations and limitations, and finally, provided a summary.

Overall, this project contains five chapters. The two remaining chapters follow in progress, as indicated by the Direct Project Implementation timeline. The next chapter described the descriptive data, and, explains the data analysis procedures. The chapter details the data collection and analysis as they related to the interpretation of the clinical question of this quality-improvement project — the chapter completed with a summary and a brief review of the next chapter. Chapter 5 starts with an introduction and provides a comprehensive summary of the project. The chapter further summarizes the findings, provides implementations, and recommendations for future projects and practice. Chapter 5 concludes the quality improvement project.

Chapter 4: Data Analysis and Results

The purpose of this chapter is to review the data analysis and findings from exploring the impact of an evidence-based intervention on the use of multiple restraints in the psychiatric emergency department between December of 2018 and January of 2019. The purpose of the quantitative quality-improvement project was to implement the interprofessional collaborative practice model (ICPM) education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The data collection focused on answering the clinical question: How will the use of an evidence-based intervention influence the use of multiple restraints in the psychiatric emergency department? The clinical question forms a fundamental aspect of the quality improvement project that supports the primary investigator on a clear pathway and generated evidence that has meaning for patients and the care providers (Ravindra & Kestle, 2018).

The project used a quantitative, quasi-experimental, pre and posttest-intervention design and with an extraction tool, survey, and baseline charts review from EHRs for data collection. The data-collection method involved gathering baseline statistics in assessing the impact of the ICPM education program on the use of multiple restraints in the psychiatric emergency department. Data collection involved a pre- and post- knowledge survey answered by health care providers at the beginning and the end of the ICPM education program. The CPAT was the survey instrument for data collection before and after the evidence-based intervention of care providers on the effect of the ICPM as an educational intervention in the use of multiple restraints in the psychiatric emergency department. The primary investigator used a self-developed data-extraction tool to collect

from EHR related data to the use of multiple restraints in the psychiatric emergency department.

The data collection was to answer the clinical question and to determine whether the implementation of an evidence-based intervention is useful in reducing the use of multiple restraints in the psychiatric emergency department. The previous chapter discussed the planning and organization of data collection. The primary investigator reviewed data for 278 patients from December 2018 to January of 2019, while maintaining patient confidentiality during the process. A statistical analysis of the data using the Intellectus Statistical Package helped to define the study findings. This chapter summarized the collected data with a description of the sample. Inclusively, this chapter described the project findings using tables, figures, and text, according to the sections of the data extraction tool. The chapter also presents the results of the quality-improvement project.

Descriptive Data

Descriptive data help summarize the project data in an organized manner by describing the relationship between variables in a sample (Kaur, Stoltzfus, & Yellapu, 2018). The target population for the project is the mental health population comprised of individuals with mental illness. The sample consisted of nurses and doctors who cared for the population with mental illness in the psychiatric emergency department from December 2018 to January 2019 in the Southeastern region of the United States. Data for the project included demographics, primary, and secondary data. The demographic data describing the composition of the sample consisted of the age, gender, educational status, and ethnicity of the project sample. The information gathered helps health care providers in assessing the specific populations in a more realistic form (Kaur et al., 2018).

Demographic data. The demographic data for patients and care providers supported the understanding of the sample composition for the quality-improvement project. The demographic data collection included data accrued from the baseline chart review of 278 patients, using a unique identifier, which was the project identification number for patient anonymity. Other demographic data were from 12 healthcare sample providers.

Patient demographics. The patient demographic data included the age, gender, ethnicity, language, and educational status of the project sample of patients.

Age of sample. The total from the baseline chart review was 278 patients from the population with mental illness of the psychiatric emergency department. The project sample age ranged from age 18 to 61, and patients grouped into four groups, according to age and restraint prevalence, shown in Table 1. The largest group in the sample was the 29–39 age group, which comprised 44.6% of the sample. The 51–61 age group was the smallest of the groups, comprising only 1.8% of the sample from the population with mental illness. The data consisted of the age frequency and percentage of the appropriate data collection, indicated in Table 1.

Table 1

Age of the Patient Sample

		Frequency	Percent (%)	Valid percent (%)	Cumulative percent (%)
Valid	18–28	98	35.3	35.3	35.3
	29–39	124	44.6	44.6	53.6
	40–50	51	18.3	18.3	55.4
	51–61	5	1.8	1.8	100.0
	Total	278	100.0	100.0	100.0

Gender of the sample. Collection of data accrued from the baseline chart review of patient data, which included information collected from EHRs. Data collection was homogenous and was gathered from both frequency and percentage of the sample were calculated from available data to indicate that 198 patients were male (71.2%), and 80 were female (28.8%). The gender distribution of the sample data appears in Table 2.

Table 2

Gender of the Sample from a Baseline Review

		Frequency	Percent *(%)*	Valid percent	Cumulative percent *(%)*
Valid	Female	80	28.8	28.8	28.8
	Male	198	71.2	71.2	100.0
	Total	278	100.0	100.0	

Ethnicity of the sample. The baseline data collection of the 278 patients included the following ethnic groups: African American, African descent, Hispanic, and others identified as white/others. Specifically, more than a third of the sample was African Americans. Table 3 shows the representation of sample ethnicity.

Table 3

Ethnicity of Sample

		Frequency	Percent (%)	Valid percent	Cumulative percent (%)
Valid	African American	109	39.2	39.2	39.2
	African	16	5.8	5.8	45.0
	Hispanic	136	48.9	48.9	93.9
	White/Others	17	6.1	6.1	100.0
	Total	278	100.0	100.0	

Language of the sample. Data collection followed the data-abstraction tool, grouping the sample into English only and English/another language after the pre-survey assessment of care providers using the CPAT. The importance of collecting language data is to acknowledge the use of appropriate language services during communication with providers before the use of multiple restraints. Data collected on language indicated that a third of the sample spoke "only English," whereas two -thirds spoke "English and another language," shown in Table 4, which depicts the sample sum, frequency, and percentage sample calculated.

Table 4

Languages of Sample

		Frequency	Percent (*%)*	Valid percent	Cumulative percent (*%)*
Valid	English only	97	34.9	34.9	34.9
	English and other languages	181	65.1	65.1	100.0
	Total	278	100.0	100	

Education status of the sample. Four datasets collected provided an understanding of the educational level of the project sample. The sample data included the following from the baseline review: no formal education, elementary, high school, and college educational status. The data organization, shown in Table 5, indicates the frequency and percentage of the sample education level. Specifically, more than half of the sample had an only elementary education; 12.2% had no formal education.

Table 5

Education Status of Sample

		Frequency	Percent (*%*)	Valid percent	Cumulative percent (*%*)
Valid	No formal Education	34	12.2	12.2	12.2
	Elementary	145	52.2	52.2	64.4
	High School	84	30.2	30.2	94.6
	College	15	5.4	5.4	100.0
	Total	278	100.0	100.0	

Health care provider demographics. The demographic data included the age, gender, and profession of the 12 health care providers in the ICPM education program intervention. Data accrued from the survey (CPAT) completed by the health care providers. The data collection was also homogenous and comprised of men and women.

Age of care providers. The frequency and percentage of the age of health care providers were calculated from data, indicating that the age range of health care providers was between 20 and 60 years. As shown in Table 6, half of the providers were in the 31 to 40-year-old range.

Table 6.

Age of Care Providers

		Frequency	Percent *(%)*	Valid percent (%)	Cumulative percent (*%*)
Valid	20–30	3	25.0	25.0	25.0
	31–40	6	50.0	50.0	75.0
	41–50	1	8.3	8.3	83.3
	51–60	2	16.7	16.7	100.0
	Total	12	100.0	100.0	

Gender of care providers. Data collection for the care providers' gender indicated that most of the providers were women at 66.7% of the sample (see Table 7).

Table 7

Gender of Care Providers

		Frequency	Percent (*%)*	Valid percent	Cumulative percent (*%)*
Valid	Male	4	33.3	33.3	33.3
	Female	8	66.7	66.7	100.0
	Total	12	100.0	100.0	

The profession of care providers. The sample was purposively chosen. Primarily two-third of providers were nurses with the remainder being doctors. The data collection based on the completion of the CPAT tabulated in Table 8.

Table 8

The profession of Health Care Providers

Profession		Frequency	Percent (%)	Valid percent (%)
Valid	Doctor	4	33.33	33.33
	Nurse	8	66.66	66.66
	Total	12	100.0	100.0

Summary of demographic data. Summary of demographic data. The following is the summary of the study demographic data, which consists of the age, gender, ethnicity, language, and education status of the 278 patients in the study sample, collected from EHRs and health care providers in the psychiatric emergency department. Most patient data for the project included data of patients between the ages of 18 and 61 years old, in four ethnic groups with subdivided language and educational status. Health care providers' ages were from 20 to 60 years. After collecting and organizing the data, it was necessary to establish internal control and identify a way to deescalate situations that are harmful to the patient, others, or property in the care vicinity; moreover, causative variables remained significant and must be understood (Hottinen et al., 2013).

Data Analysis Procedures

The data analysis started after the collection and arrangement of data for the implementation of the evidence-based intervention (independent variable) and the use of multiple restraints (dependent variable) in the psychiatric emergency department. In order to answer the clinical question; it is a priority to make correct decisions in the design and data analysis procedures for the project (Blanca, Alarcón, & Bono, 2018). The primary investigator used Intellectus Statistics computer software for data analysis. The data for the use of multiple restraints were taken from nurses' logs for restraints and baseline review charts before and after the ICPM education program. The primary investigator reviewed 139 charts before the education program and another 139 on completion of the program using Intellectus Statistics computer software. The pre- and post-knowledge responses of the health care providers gathered through the CPAT survey were also analyzed and described using the Likert-type scale for every answer to each question. The mean and percentage were calculated based on the total number of responses.

In addition, for each set of variables measured at pre and post, a single paired sample *t*-test was performed, which compared the means between the two project variables. The pre- and post-intervention survey supported the understanding that the data-analysis procedures answered the clinical question: How will the use of an evidence- based intervention impact the reduction of multiple restraints in the psychiatric emergency department? In the quantitative pre and post design, quality-improvement project, the primary investigator used descriptive statistics to analyze data following the organization and preparation of data for analysis.

Secondary data. Secondary data analysis for the project included EHR data for the sample. The secondary data revealed whether patients had a psychotic disorder, mood

disorder, substance-use disorder, or anxiety disorder that might lead to restraints, shown in Table 9 and pre-data on the use of restraints conducted from nurses' logs and other patient EHR documentation on restraints on Table 10.

Table 9

Diagnosis

		Percent (*%)*	Valid Percent (*%)*
Psychosis	66	23.70.	23.70
Mood disorder	33	11.85.	11.85
Substance use	82	29.60.	29.60
Anxiety	52	18.70	18.70.
Multiple disorder	45	16.18.	16.18.
	Total	100	100.

Diagnosis. The diagnoses of the sample were mostly Axis I diagnoses due to disruption, impulse-control, and conduct disorders, in addition to mood and anxiety disorders (aligned with Regier, Kuhl, & Kupfer, 2013). However, collected data indicated that some patients had multiple diagnoses, which in some way contributed to behavioral changes. As shown in Table 9, although the percentages are below 39%, substance-abuse disorders top the category with 29.60%. The indication was that 16.18% of the baseline sample reviewed had multiple disorders, which remained a factor in the use of multiple restraints.

Use of restraints. The total number of restraint episodes from the nurses' logbooks from December 2018 to January 2019 included physical, chemical, or both types of restraints,

with data collected and organized. The table below indicates the pre-intervention usage of restraints by care providers.

Table 10

Pre-Intervention Use of Restraints

Use of restraints	Pre-education
Physical	98
Chemical	76
Both Types	78
Total	252

Primary data. The primary data consisted of the 12 CPAT surveys completed by the health-care-provider sample. The first data collection occurred before the start of the ICPM education, whereas the concluding collection occurred after completion of the education program. In assessing content validity, the CPAT was able to measure the collaborative knowledge that care providers gained from ICPM education. No differences emerged in the data analysis process from the explanation in Chapter 3. The fact that the measurement of the ICPM education (intervention) was quantitatively applied while using the appropriate choice of recognized variables by the primary investigator did not affect the results.

The CPAT measured areas of mission, meaningful purpose and goals, communication, team relationship, general relationship, patient care, and decision-making, aimed at reducing multiple restraints. The 12 care providers who comprised the

sample for the project completed the CPAT survey online. The data signified a 100% completion rate of the pre-ICPM education program-evaluation survey pre and post-intervention by the providers. Data were collected through the CPAT survey and subjected to frequency counts and means presented in domains. The first section of the CPAT survey was the mission, meaningful purpose, and goals, with eight subsections.

Meaningful, Purpose, and Goals. The primary investigator observed that both the pre and post-intervention score for meaningful purpose and goals had an average of 7.00 (SD = 0.00, SE_M = 0.00, Min = 7.00, Max = 7.00). Because there was no variation in the scores at either pre or post (i.e., all participants had a score of 7), there was no way to test for differences statistically. This is because the pre and post scores were constants, and because there was no change from pre to post. Based on the summary statistics below, there was no change in meaningful purpose and goals.

Table 11

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*N*	*SEM*
Pre-Meaningful purpose and goals	7	0	11	0
Post-meaningful purpose and goals	7	0	11	0

General role, Responsibility, and Autonomy. The primary investigator then conducted a two-tailed paired samples *t*-test to examine if a difference exists between the pre and post-intervention score in general, role, responsibility, and autonomy. The assessment of

the assumptions of normality and homogeneity of variance was performed. The normality using a Shapiro- Wilk test to determine whether the difference could be due to a normal distribution (Razali & Wah, 2011) also was conducted. The result was insignificant, with W = 0.91, *p* =. 209, which imply that any deviation from the normal curve might be by random chance, thereby the assumptions of normality hold. The sustenance of the homogeneity of variance assessed was using the Levene's test for equality of variance. The result of the test was significant, F (1, 22) = 11.28, *p* =. 003, indicating the violation of the assumption of homogeneity of variance. The result of the two-tailed paired samples *t*-test was not significant, *t* (11) = 1.09, *p* =. 300, suggesting that the actual difference in the means of the pre-general role, responsibility, autonomy, and post- general role, responsibility, autonomy was not significantly different from zero, as indicated in Table 12.

Table 12

Two-Tailed Paired Samples t-Test for the Difference between Pre, general, role, responsibility, autonomy and Post, general, role, responsibility, autonomy

Pre-general role, responsibility, and autonomy		Post general role, responsibility, and autonomy				
M	*SD*	*M*	*SD*	*t*	*p*	*D*
6.38	0.52	6.26	0.18	1.09	.300	0.32

Note. Degrees of Freedom for the *t*-statistic = 11. *d* represents Cohen's *d*.

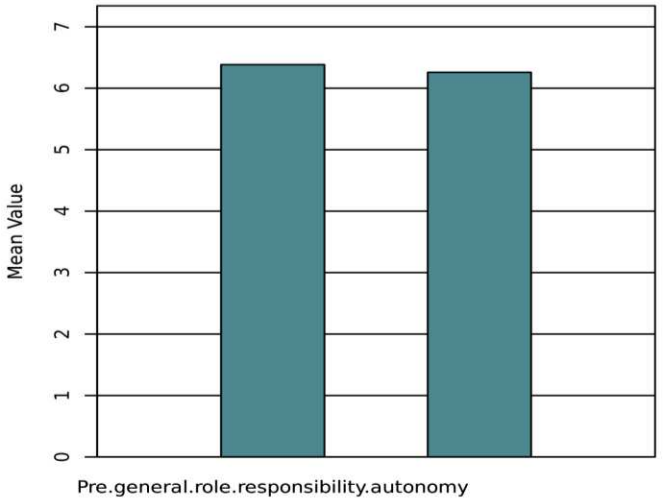

Figure 1. The means of Pre-general role, responsibility, autonomy and Post-general, role, responsibility, autonomy.

General Relationship. The general relationship among care providers during the care area among providers was the next domain (see Table 13). A two-tailed paired samples *t*-test also was performed to assess whether any change between pre-general relationships, and post-general relationships were significantly different from zero. The Shapiro-Wilk-test was performed for normality to determine if the difference was by a normal distribution (Razali & Wah, 2011). The outcome of the Shapiro-Wilk test was not significant, as W = 0.93, and *p* =. 382. These indicated that the deviations from normality are by random chance; therefore, normality is assumed. Levene's test for equality of variance also was used to assess the homogeneity of variance. Levene's test showed significance, with F (1, 22) = 6.02, *p* =. 023, indicating the violation of the assumption of homogeneity of variance and results interpreted with caution. The mean of the pre-general relationships (M = 5.79) was significantly lower than the mean of post general-

relationships (M = 6.92) as presented in Table 13 and Figure 2 that showed the results of the two-tailed paired-samples *t*-test of the pre-general relationships and post-general relationships.

Table 13

Two-Tailed Paired Samples t-Test for the Difference between Pre-general relationships and Post-general relationships.

Pre-general relationships		Post-general relationships				
M	*SD*	*M*	*SD*	*t*	*p*	*d*
5.79	0.42	6.92	0.15	-8.50	< .001	3.53

Note Degree of Freedom for the *t*-statistic = 11. *d* represents Cohen's *d.*

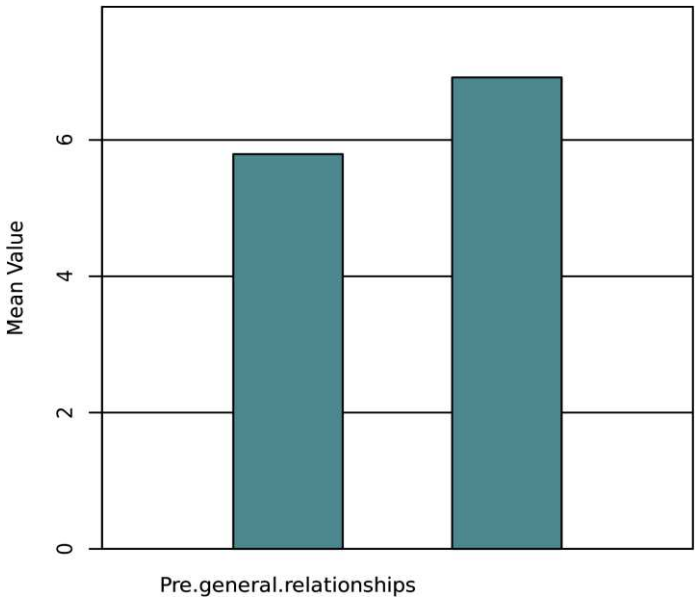

Figure 2. The means of Pre-general relationships and Post-general relationships

Team Leadership.

The statistical analysis was not performed on team leadership scores, as all participants had the same score at pre and post. The primary investigator observed that the pre-team leadership had an average of 6.25 while the post-team leadership had an average of 6.25, where a standard deviation of zero indicated that all participants' scores were identical. This indicates no change following the education program in terms of team leadership. Skewness and kurtosis were also calculated, and Table 14 provides the summary statistics for these scores. When the Skewness is greater than 2 in absolute value, the variable is considered asymmetrical about its mean. When the kurtosis is greater than or equal to 3, then the variable's distribution is markedly different from a normal distribution in its tendency to produce outliers (Westfall & Henning, 2013).

Table 14

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*N*	SE_M
Pre-team leadership	6.25	0	12	0
Post-team leadership	6.25	0	12	0

Patient Involvement. The statistical calculation of pre-patient involvement and post -patient involvement was accomplished through descriptive statistics rather than a *t*-test, as the scores at pre and post were both a constant. Results indicated that pre-patient

involvement had an average of 7.00 and post-patient involvement had an average of 7.00 (SD = 0.00, SE_M = 0.00, Min = 7.00, Max = 7.00). The standard deviation of zero indicated that all participants had identical scores for pre and post — results of this descriptive analysis presented in Table 15.

Table 15

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*n*	SE_M
Pre-patient involvement	7	0	11	0
Post-patient involvement	7	0	11	0

Decision Making and Conflict Management

A two-tailed paired samples t-test performed to examine whether the difference between pre-decision -making and conflict management and post- decision-making and conflict management showed that the change in the score was significantly different from zero. The Shapiro-Wilk test performed showed no significance as W = 0.93, p =. 340, suggesting that the assumption of normality was met. Test for homogeneity of variance using the Levene's test was significant, with F (1, 22) = 20.61, p <. 001, which meant the violation of the homogeneity of variance as an assumption. As indicated by Table 16 and Figure 3 below, the two-tailed paired samples t-test was not significant, t (11) = -1.56, p =. 147, which suggests that the difference in the means of pre-decision -making and

conflict management and post- decision-making and conflict management was not significantly different from zero.

Table 16

Two-Tailed Paired Samples t-Test for the Difference between Pre- decision -making and conflict management and Post- decision-making and conflict management

Pre-decision -making and conflict management		Post- decision-making and conflict management				
M	*SD*	*M*	*SD*	*T*	*p*	*D*
5.47	1.03	5.96	0.24	-1.56	.147	0.65

Note. Degrees of Freedom for the *t*-statistic = 11. *d* represents Cohen's *d*.

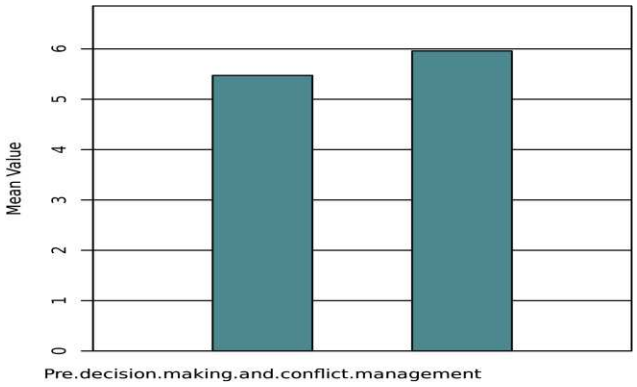

Figure 3. The means of Pre and Post decision-making and conflict management

Community Linkages and Coordination of Care

The post-scores for community linkages and coordination of care were constant; *t*-test analyses not performed on this variable. Statistical calculation of pre -community linkages and coordination of care had an average of 4.15 (SD = 1.28, SE_M = 0.37, Min = 2.00, Max = 6.25), while the post -community linkages and coordination of care had an

average of 7.00 (*SD* = 0.00, SE_M = 0.00, Min = 7.00, Max = 7.00). The standard deviation of zero indicated that post-scores were constant and that all participants scored a 7. Although there was, no test associated with this variable, the data show an increase from the mean of 4.15 wherein each participant's score following the education program was at the maximum score of 7. Figure 4 provides a range of scores for community linkages and coordination of care before the implementation of the education program.

Table 17

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*n*	SE_M
Pre-community linkages and coordination of care	4.15	1.28	12	0.37
Post-community linkages and coordination of care	7	0	12	0

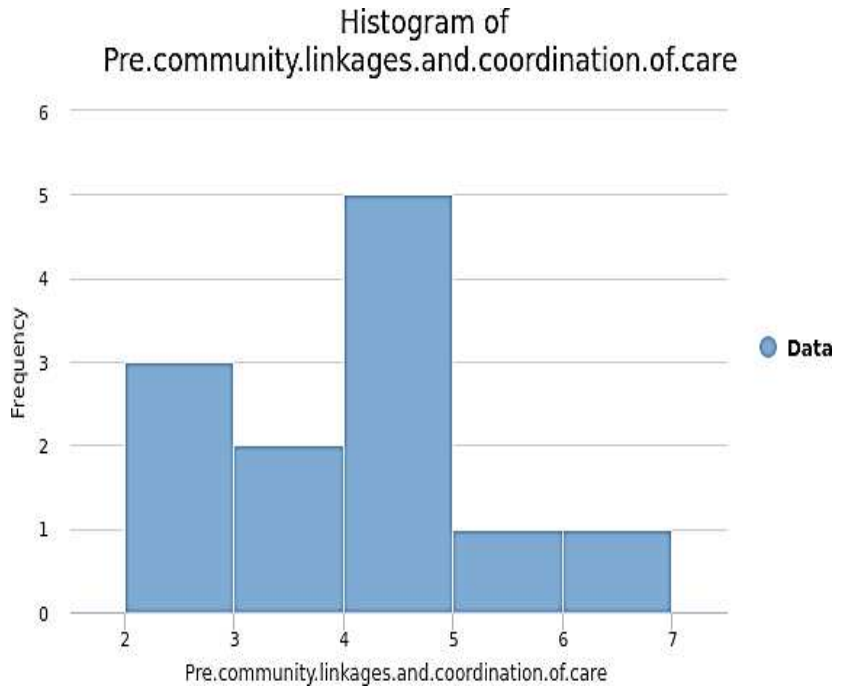

Figure 4. Histogram of pre-community linkages and coordination of care scores

Communication and Information Exchange

Since the post-scores for communication and information exchange were also constant, the *t*-test was not available for this variable. Statistical calculation of pre-communication and information exchange had an average of 5.92 (SD = 0.80, SE_M = 0.23, Min = 4.83, Max = 7.00). The observations for post-communication and information exchange had an average of 7.00 (SD = 0.00, SE_M = 0.00, Min = 7.00, Max = 7.00). The standard deviation of zero at post indicates that all participants had the maximum possible score of seven. Though results could not be calculated to confirm that this was significant, it is obvious that the score of 5.92 showed a consistent increase following the education program. Figure 5 shows the range of scores before the implementation of the education program.

Table 18

Summary Statistics Table for Interval and Ratio Variables

Variable	*M*	*SD*	*n*	SE_M
Pre-communication and information exchange	5.92	0.80	12	0.23
Post-communication and information exchange	7	0	12	0

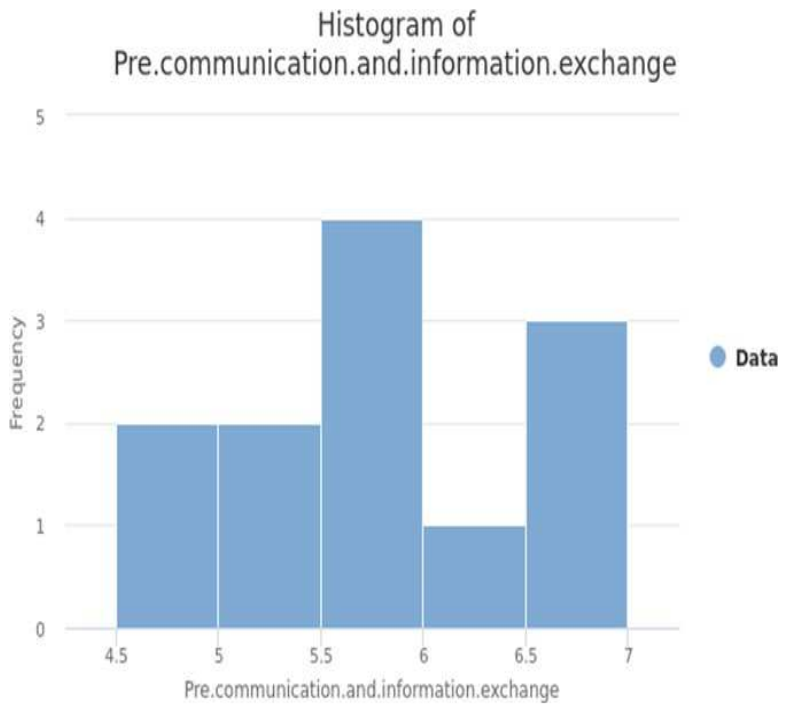

Figure 5. Histogram of pre-communication and information exchange scores

Results

The clinical question for the project indicated the need for the implementation of the ICPM education on reducing the use of multiple restraints in the psychiatric emergency department. The primary investigator reviewed 139 baseline charts for the pre-implementation of the intervention, included during the data collection for the pre-intervention. For the post-intervention, 139 baseline charts also reviewed. The completed pre-surveys corresponded with the number of care providers for the project, indicating prior pre-knowledge of the evidence-based intervention toward the use of multiple restraints in the psychiatric emergency department, provided by education using the ICPM. The clinical data collected and analyzed provided a knowledge-based resource to

answer the clinical question for this project (Ho, Liew, Ng, Shunmugam, & Glasziou, 2016).

The results denoted a reduction in the use of multiple restraints from the baseline data between December 2018 and January 2019 after the intervention. The overall result of the two-tailed paired samples t-test for most of the set variables was significant, t (11) = -8.50, p <. 001, indicating a difference since it is less than the suggested significance level ($\alpha = 0.05$) post-intervention. The evidence after testing the difference suggested a statistically significant decrease in the use of restraints. The results also indicated changes in care providers' knowledge, observed in the post-intervention survey results after the interprofessional model education provided as the intervention. However, the result of the two-tailed paired samples *t*-test was not significant, t (11) = -1.56, p =. 147, for the pre and post-decision-making and conflict management, suggesting that the true difference in the means was not significantly different from zero. The difference between the pre- and post-survey results signified the importance of collaborative care and communication among professionals after the intervention and subsequent reduction of restraint use. The calculation of the results rested on the post-intervention data of restraints during the period, compared to before the intervention answer the clinical question. The pre- and post-survey responses by care providers are shown in Tables 11 to 18, as well as Figure 1 to 5. Results showed that health care providers gained knowledge about de-escalating aggressive behaviors that might lead to the use of multiple restraints in the psychiatric emergency department. Table 19 indicated a reduction in the use of restraints post ICPM education intervention. Additionally, the survey instrument provided theoretical intent, similar to the items measured to reduce the use of multiple restraints. The CPAT used to measure the intervention implemented by the primary

investigator, compared favorably with previous literature results that used the same survey instrument. The indication was that the CPAT was a reliable instrument for the project and allowed for drawing conclusions that might be generalized beyond the sample. The CPAT measured knowledge, teamwork, decision-making, and patient-centered care necessary to reduce the use of multiple restraints.

Table 19

Post Intervention Use of Restraints

Use of restraints	Post- education
Physical	55
Chemical	30
Both Types	45
Total	130

Summary

Chapter 4 of the quantitative, quasi-experimental, pre and posttest-intervention design project organized, analyzed, and summarized the collected data in a descriptive and statistical order. The chapter, followed the quantitative, pre and post-intervention design to provide findings and results that were related to the implementation of the ICPM education program for providers on reduction in the use of multiple restraints in the psychiatric emergency department. The focus of the chapter was to analyze and provide an answer to the clinical question whether the implementation of an evidence-based intervention is useful in reducing the use of multiple restraints in the psychiatric emergency department. The chapter provided a descriptive statistic on the sample

demographic data. The demographic data consist of age, gender, sample ethnicity, language, and education status.

The chapter provided a descriptive summary of the total patient sample (n=278), in which most of the patients were male (71.2%). According to the literature reviewed, fewer females are exposed to restraint (Reitan, Helvik, & Iversen, 2018). The age range was from 18 to 61, and the highest frequency of multiple restraints was within the 29 to 39 group (44.6%). The organization and analysis of the demographic data described in the frequency and percentages provided general information about the sample in the project. The chapter also analyzed secondary and primary data, as related to the project. The secondary data derived from the EHR revealed disorders that might lead to restraints as shown in Table 9 and pre-data on the use of restraints conducted from nurses' logs and other patient EHR documentation on restraints on Table 10. The primary data consisted of the pre and post-CPAT surveys completed by the health-care-providers.

The CPAT measured areas of mission, meaningful purpose and goals, communication, team relationship, general relationship, patient care, and decision-making, which were the core content of the ICPM education program. Literature indicated the importance of education to staff as an effective intervention in reducing the number of restraints for these sets of patients (Hadi, Khosravi, Shariat, & Jalali Nadoushan, 2015). According to Goulet & Larue (2016), it is crucial to choose an intervention that will educate care providers and affect all levels of care. A single paired-sample *t*-test was performed on each set of variables measured at the pre and post-education intervention, with results presented logically in both descriptive and statistical form using tables and figures.

Chapter 5 provides a chapter-by-chapter review of the project, which includes an overview of the background, problem statement, clinical question, methodology, and a summary of significant findings, with an emphasis on answering the clinical question of the quality improvement project. Chapter 5 concludes the project, providing a summary, conclusions, and recommendations for the quantitative, pre and post design project, which explored the impact of an evidence-based intervention on the use of multiple restraints in the psychiatric emergency department. Furthermore, the chapter details the limitations and provides recommendations for practice and further projects to reduce the use of multiple restraints.

Chapter 5: Summary, Conclusions, and Recommendations

The psychiatric emergency department serves as a point of entry to the healthcare system for most mental health with mental illness. Therefore, for care providers in the psychiatric emergency department, it is a priority for providers to overcome the challenges encountered in the use of multiple restraints through excellent communication and collaborative decision- making while providing care to the population with mental illness. This project was significant in promoting collaboration among care providers to reduce the use of multiple restraints in the psychiatric emergency department. The project used a quantitative, pre and post-intervention design in understanding the implementation of the ICPM education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department.

The purpose of this chapter is to provide a summary, conclusions, and recommendations for the quantitative, pre and post design project, which explored the impact of an evidence-based intervention on the use of multiple restraints in the psychiatric emergency department. The project used the ICPM as an educative model and the CPAT as a survey tool to assess care providers' knowledge before and after education to reduce the use of multiple restraints in the psychiatric emergency department. The adverse effects of restraint on patients and employees are enormous and include physical, emotional, and psychological injuries (Moghadam et al., 2014). Physical injuries may range from simple cuts to severe trauma, and emotional injuries can relate to fear, anger, feelings of incarceration, dehumanization, victimization, and humiliation (Johnston, 2013).

The chapter incorporates the project findings associated with the literature focused on the factors that favor the reduction of restraints. Part of the chapter includes the discussion of the results and limitations of the project. The latter part of the chapter provides a comprehensive summary of the findings, results, conclusions, and recommendations, based on the data analysis in Chapter 4.

Summary of the Project

The quality-improvement study focused on the impact of an evidence-based intervention in the use of multiple restraints in the psychiatric emergency department. The project aimed at reducing the knowledge gap in practice and improving the quality of care by reducing the use of restraints in the population with mental illness. The project sought to explicitly promote evidence-based care and reduce the use of restraints in the psychiatric emergency department for patients with mental illness by using the ICPM-guided education program as an evidence-based intervention. The project description is composed of the following five chapters.

The first chapter served as an introduction to the project and provided a brief overview of the use of multiple restraints in the population with mental illness. The chapter mentioned that the use of multiple restraints in the psychiatric setting had been a challenge and a source of controversy regarding its ethical, legal, and clinical utility in the psychiatric emergency department (Jegede et al., 2017). The need to understand the problems created because of the use of multiple restraints and the significance of the project to reduce the use of restraints discussed in the chapter. The consequences of the use of multiple restraints—which include injuries to patients, staff, and property—were indicated and highlighted the need for an evidence-based intervention to reduce the use of restraints in the psychiatric emergency department. The PICOT question that guided the

data collection, analyses, and findings summarized the purpose of the project with the dependent variable as “the use of multiple restraints in the psychiatric emergency department” and the independent variable as “the impact of an evidence-based intervention.” The research question was: “How will evidence-based intervention affect the use of multiple restraints in the psychiatric emergency department?”

The chapter provided a concise history of the identified problem and the background of the project. In addition, the chapter provided the problem statement and the significance of the project. The focus of the project was to fill the gap in the literature on the use of multiple restraints in the psychiatric emergency department and to explore the effect of evidence-based education on a reduction in the use of multiple restraints. The objective of the project was to understand if an evidence-based intervention could impact the use of multiple restraints in the psychiatric emergency department.

Peplau’s (1992) theory was the framework for understanding the practice patterns of the need for adequate screening, assessment, and treatment in the use of restraints in the emergency department during the care of the population with mental illness. The four phases of the theory—orientation, identification, exploitation, and termination phases—support the nurse-patient relationship, which begins with adequate communication. The theory favors the intention of intervening through evidence-based education for providers. The framework also supports the ICPM as an interventional care model for educating providers during data collection. The ICPM involves collaboration among multiple health workers from different professional backgrounds working together with patients, families, other caregivers, and communities to deliver the highest quality of care. Finally, the chapter summarized the expectations of the next chapter, which was the review of the literature.

The literature review presented a discussion of different studies related to the project with an emphasis on the use of restraints and ways to reduce the procedure during care. Specifically, the literature review focused on articles with related research questions that guided the project. Furthermore, the review focused on understanding factors related to the use of restraints and other evidence-based alternatives for the reduction and possible elimination of the use of restraints during the care of the mental health population. The literature review related to the application of restraints encouraged the primary investigator to seek more studies on the reduction of restraints among the population with mental illness. In addition, the literature reviewed provided insights into the reasons for extensive investigations of the various factors that result in the uses of restraints among the population with mental illness in the psychiatric emergency department. Themes and subthemes derived from the reviewed literature mapped out based on relevance to the project PICOT question. The identified themes were (a) mental health, (b) clinical decision-making, and (c) ethical decisions on the use of restraints. Subthemes from the literature review were the patient factor, therapeutic environment, knowledge, trust, and beneficence and lack of beneficence in the use of restraints.

In summary, the literature review reinforced the notion that caregivers should provide diversity in care. In addition, caregivers require understanding that an individualized approach to the method of assessment, de-escalation, and treatment should follow standard protocols. Furthermore, health care providers should understand that restraints are not always the answer to deescalate aggression or violence.

The third chapter focused on the project methodology, which used a quantitative, pre and post-intervention design. The chapter explained the project methodology in detail to encourage possible project replication. Additionally, the chapter compared other

approaches to the quantitative methods chosen for the project. The project also used a baseline chart review and a pre and post-intervention design. Any form of variable manipulation was excluded from the project. The use of a data-abstraction tool provided by the primary investigator also featured during data collection. The primary investigator used EHRs of the patients in the psychiatric emergency department from December 2018 to January 2019. Patient names and medical records were removed from the data; the primary investigator used unique study numbers in place of names and medical record numbers. Moreover, the data-collection tool contained only the study number and excluded any identifying information, such as medical records, date of birth, or name. In addition to the demographics, the study used restraint logs documented by nurses in EHRs. For the intervention, the assessment was a pre- and post-survey using the CPAT as the instrument to assess care providers' knowledge of the ICPM education provided.

The target population for the project is the mental health population composed of individuals with mental illness from the Southeastern area of the USA. The project also used a sample of the care providers from the psychiatric emergency department of the Southeastern area of the USA. The setting was a hospital health care organization that serves people who are uninsured, insured, and underserviced. The sample also included a purposive sampling of 278 baseline records and 12 care providers, based on power analysis and exclusion criteria defined appropriately. The sample divided into pre and post-intervention. Data on patients with mental illness from the database in the emergency department, from December 2018 to January 2019 served as the data source. The ICPM served as an intervention in educating staff continuously during care throughout the project. Health care providers' readiness to change and, the priority of

patient-centered care was under consideration during the implementation of the evidence-based intervention.

Data collection and analysis was the focus of the project's fourth chapter detailing the collection of primary and secondary data for the project. The data organization and the explanation of the demographics, the baseline data of the patient sample, care providers, and the use of multiple restraints discussed were through descriptive statistics. The data analysis used the Intellectus Statistical Software to understand whether a possible association exists between the two project variables.

This current chapter incorporates the implications of the conclusions as they relate to theory, practice, and future study. Furthermore, the chapter discusses recommendations for future projects on ways to reduce the use of restraints in the psychiatric emergency department. This last chapter of the quality-improvement project also summarizes the findings of the project and provides concluding thoughts on the use of an evidence-based intervention in the reduction of multiple restraints in the psychiatric emergency department. Additionally, the chapter provides implications of the project to nursing practice and recommendations for future study and practice. The chapter summarized the project quantitative, quasi-experimental, pre and post-intervention design project in the implementation of the ICPM education program for providers, as an evidence-based intervention in reducing to reduce the use of multiple restraints in the psychiatric emergency department.

Summary of Findings and Conclusion

The psychiatric emergency department serves as a point of entry to the health care system for most mental health patients with mental illness. Therefore, it is a priority for providers to overcome the challenges encountered in the use of multiple restraints

through adequate communication and collaborative decision- making during care of the population with mental illness. This project was significant in promoting collaboration among care providers to reduce the use of multiple restraints in the psychiatric emergency department. The project used a quantitative, correlational design into understanding the implementation of the ICPM education program for providers, as an evidence-based intervention in reducing the use of multiple restraints in the psychiatric emergency department. The findings demonstrated the feasibility of implementing an ICPM education intervention toward the reduction of multiple restraints in the psychiatric emergency department. The findings answered the clinical question of the quality improvement study: "How will evidence-based intervention affect the use of multiple restraints in the psychiatric emergency department?"

The findings for the quality-improvement project included the achievement of more than a 50% reduction in the use of multiple restraints as a result of the intervention through the ICPM to providers in the psychiatric emergency department. The findings were divided into three sets of data according to data sources, and analysis helped in answering the clinical question. The demographics as they relate to the project samples, the use of restraints, and the intervention data were the three sets of data collected. One outstanding expectation of the results was the identification of collaborative ways providers can deescalate triggers that result in behavioral problems and eventually lead to the use of multiple restraints. The finding indicates that the ICPM in the education of nurses and doctors enhances the existing care services, through adequate collaboration and support safety through the reduction of restraint use during the care of individuals in the psychiatric emergency department. The findings established a statistically significant difference among the demographics in the project, such as age, gender, ethnicity, and

education, but found no specific relationship between educational level and clinical characteristics when considering restraints. The findings indicated consistency with the literature review, which revealed that the prevalence of restraint at 3.8% to 20% and most frequently associated with male gender, younger age, ethnicity, mental illness, involuntary admission, aggression or trying to get away, and the presence of male staff (Beghi et al., 2013). The outcome measures for the project included the difference in providers' knowledge and the number of restraints used in the pre and post-implementation of the ICPM education program. The knowledge gained from the education program, as indicated, supported care providers' patient assessments and a reduction in the use of multiple restraints in the psychiatric emergency department.

Implications

Peplau's (1992) theory stands out as the framework for this quality-improvement project. In answering the clinical question, the primary investigator used the ICPM as the evidence-based educational intervention assessed by the CPAT, which served as the instrument to measure care providers' understanding of collaboration in care. The selection of the ICPM as an evidence-based intervention for the project was to enhance the education of care providers in understanding the importance of adequate communication as a way of de-escalating aggression and preventing the use of multiple restraints in the psychiatric emergency department. It is the expectation of the primary investigator that the implementation of the ICPM will improve providers' ongoing understanding of methods to deescalate behavioral issues and prevent incidence that might involve the use of restraints.

Theoretical implications. Peplau's (1992) middle-range theory of interpersonal relations provided an appropriate structure for the data collection in the project. The

results of the project might imply the need for proactive means of communication during interaction with the population with mental illness, as speculated by Peplau's theory, in the psychiatric emergency department. The use of the theory in the project might help create therapeutic relationships between providers and individual patients. Moreover, the findings from the intervention might answer the question and reinforce that Peplau's theory is the correct framework for the project. The four phases of the theory promote the use of empathy, confidence, and active listening, which defeat most behavioral challenges and resolve issues that might require the use of multiple restraints during the provision of care in the psychiatric emergency department. Peplau's theory stressed that patient involvement is needed in care related to the relationship that exists between the patient and the provider (Hagerty et al., 2017).

Practical implications. The results of the project supported the notion that the implementation of the ICPM as a crucial evidence-based educational intervention for care providers might reduce the use of multiple restraints in the psychiatric emergency department. Because the overall goal of the project was to promote quality improvement in the mental health population, the practical implication of the changes in providers' communication methods and patient assessments before considering the use of multiple restraints will promote patient-centered care and better health care delivery.

Findings following the use of the ICPM to educate care providers might support the idea that adequate communication between care providers and patients will promote a reduction in the use of multiple restraints. The implementation of an ICPM education program as an evidence-based intervention for health care providers in the psychiatric emergency department will help promote safety and patient-centered care. The practical implication of the project includes that ICPM education in any care setting will

encourage interdisciplinary communication and increase care collaboration among health care professionals. Additionally, the implementation will improve care and promote a reduction in the use of multiple restrains, especially in the psychiatric emergency department. The provider-patient relationship will influence the appropriate reinforcement of behaviors, create a more therapeutic forum for patients and families, and diminish the use of multiple restraints. The reduction in the use of multiple restraints will reduce emotional and physical risk among stakeholders and improve care outcomes.

Future implications.

The project is the first to apply the ICPM as an intervention when considering predisposing factors in the use of multiple restraints. The project might appropriately advocate for excellent communication between providers and patients in the future, before restraint, based on study findings. Based on the study intervention, findings indicated that providers miss opportunities to connect with inpatients, which might be a factor that affects patients' show of aggression and other violent behaviors that might result in restraints. Therefore, project findings favor the discussion of policies and other regulations related to patients that care providers should implement before proceeding to restraints.

The strengths of the project include the methodology and the tool for data collection and analysis. The present project used a descriptive design, and as such, the results are limited by the general limitations of nonexperimental studies, including the inability to investigate variables responsible for the use of restraints. More time should be available for the implementation of quality improvement projects in the future, as time remains a weakness in the present project.

The primary investigator reemphasizes the importance of de-escalating incidents that might lead to any form of restraint by understanding how various clinical characteristics impact restraint use, to enable improvement in the quality of inpatient mental health care. Jegede et al. (2017) suggested that a gap exists in the literature regarding the impact of continuing training of care providers on the use of restraints, which would allow for insights on ways to reduce restraint use in the psychiatric emergency department. The primary investigator of the current project advocates for continuous quality-improvement projects on the use of restraints, irrespective of clinical characteristics. Furthermore, the primary investigator acknowledges the need for a project that exemplifies ways to evaluate the effects of de-escalating aggression through providers' knowledge of alternative ways to reduce restraint use in emergency care settings.

Recommendations

This quality improvement project stresses the importance of continuous education to empower care providers in making an adequate assessment of the use of multiple restraints in the psychiatric emergency department. Considering the danger and challenges of using restraints, continuing education for care providers should take precedence in the care of the mentally ill population (Moghadam, Khoshknab, & Pazargadi, 2014). Use of the ICPM education program should be a priority, especially for care providers that are the first point of contact for the mentally ill population. The project recommends standardization and interprofessional collaboration of care regarding patient debriefs and the reduction in the use of restraints.

Recommendations for future projects. Based on known concepts in the use of restraints and possible findings of this study, it is evident that a compelling need exists

for future study toward the reduction of restraints in the psychiatric emergency department. Future projects should focus on the following areas: First, a project that seeks a better understanding of patients' feelings about the use of restraints is essential, as it will provide knowledge about why providers should consider the patients' feelings and communicate collaboratively before using multiple restraints during care. Second, studying the precipitating behaviors that result in the use of restraints is another potential future project. Knowledge of precipitating factors for patient behaviors might reduce stress and injuries that mostly occur during restraint use. Third, providers' attitudes toward the use of restraints in the psychiatric emergency department is another potential area of study. Providers should bear in mind during care that individuals are different, and so are their behaviors.

Moreover, the literature findings that show that male staff influence the use of restraints indicates a reason to study how and what can reduce the attitude in male staff that serves as a trigger. In addition, the effects of continuous staff education as an intervention to the crisis should be a focus of future study. The possible outcome of continuous staff education as a de-escalation method would provide a better understanding of the essential components of care when it involves patients with mental illness who have aggression or other behavioral issues. Finally, a recommended future area of study is the legal and ethical implications of restraints. Specifically, a future study on the legal and ethical implications of restraint use will reinforce the need for providers to follow specified guidelines on restraints and prevent the risk to the patient and other stakeholders during care. The above recommendations relate to the projects with the headings significance of the Project and advancing scientific knowledge sections in Chapter 1. In contrast, the following recommendations apply to future practice.

Recommendations for practice. The establishment of recommendations for future practice is based on the statistical significance of the project findings. The project may help ensure a reduction in the use of restraints by using the ICPM education program as an intervention of care in the psychiatric emergency department from the time of patient arrival at the emergency waiting room. The collaborative model brings together all stakeholders involved in care. Moreover, the model promotes patient-centered care that allows the patient the forum to express feelings instead of acting aggressively (Jegede et al., 2017).

Continuous education of frontline care providers and the interdisciplinary care team on the need for assessment and consideration of the use of alternative methods to restraint use is another future practice recommendation. The various roles of each team member collectively help everyone on the team understand the patient and de-escalate high-risk situations. Education promotes knowledge in the use of restraints, and clinical presentations of patients in the emergency department will support the reduction of restraints through communication and adequate decision-making capability. Ultimately, the continuous education of providers may reduce the complexity in communication between all stakeholders and provide benefits in care.

The project used a quantitative, descriptive study design to examine the impacts of an evidence-based intervention on the reduction in the use of multiple restraints in a psychiatric emergency department. The project introduced the ICPM as an evidence-based intervention in promoting collaborative care toward the reduction of restraints in the emergency department. Recommendations from the expected project findings might open effective ways of provider-patient means of communication that will reduce restraint use in the mental health population.

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Appendix A

IRB Outcome Letter

3300 West Camelback Road, Phoenix Arizona 85017 602.639.7500 Toll-Free 800.800.9776 www.gcu.edu

DATE: January 11, 2019

TO: Juliet Udo-

FROM: COLLEGE OF NURSING AND HEALTH CARE PROFESSIONALS

STUDY TITLE: Use of Multiple Restraints in the Psychiatric Emergency Department

ACTION: DETERMINATION OF QUALITY IMPROVEMENT/PROGRAM EVALUATION STATUS

DATE: January 11, 2019

REVIEW CATEGORY: QUALITY IMPROVEMENT/PROGRAM EVALUATION

In collaboration with the Institutional Review Board, The College of Nursing and Health Care Professions at Grand Canyon University has determined that this submission does not meet the definition of human subject research. The submission qualifies as Quality Improvement and/or Program Evaluation; therefore, further IRB review is not required. In future publications and presentations, please refer to this submission as Quality Improvement and/or Program Evaluation, not research. If the results of the project will not be published, presented, or disseminated outside of the institution, ensure that all those associated with the project are aware that the project is ongoing.

We will put a copy of this correspondence in your student file in our office. If you have any questions, please contact The DNP Program Lead Faculty, Dr. Amanda Ziemendorf in the College of Nursing and Health Care Professions, Amanda.ziemendorf@gcu.edu. Please include your study title and reference number in all correspondence with this office, IRB@gcu.edu.

Appendix B

Permission letter for Survey Tool

Anne O'Riordan <ao3@queensu.ca>

Wed 11/28/2018 3:21 PM

Permission Letter for survey tool

Hello Juliet,

Thank you for your inquiry about the Collaborative Practice Assessment Tool. As the corresponding author for the CPAT, I give you permission to use the CPAT for your research project. I would be interested in hearing about the results of your work, but there is no need to send data. All but one of the original faculty researchers/authors have retired. Dr. Jennifer Medves is now the Director of the School of Nursing at Queen's University. The letter for permission is attached. If you require any additional documents related to the CPAT, please let me know. (i.e., scoring guide, introductory page, and optional demographics page).

Best wishes in your research.

Anne O'Riordan.

Juliet Nneka Udo
Monday, November 26, 2018

Dr. Corinne Schroder

CPAT: Collaborative Practice Assessment Tool

Dear Sir/Madam,

RE- CPAT: Collaborative Practice Assessment Tool

I am a doctoral student from Grand Canyon University writing my Doctor of Nursing Practice (DNP) project that is potentially titled "Use of Multiple Restraints in the Psychiatric Emergency Department" under the direct supervision of the project committee chaired by Dr. Sara Torres who can be reached by phone.

I would like your permission to reproduce the instrument for use in my project. I want to use and make copies of the tool under the following conditions:

I will use the survey only for my project and will not sell or use it with any compensation or curriculum activities.

I will include a copyright statement on all the copies of the instrument.

I will send a copy of the DPI project using the survey data appropriately to your attention.

If the term is acceptable, please indicate by signing a copy of this letter and return it to me either through email.

Sincerely,

Juliet N. Udo

Doctoral Candidate

Corresponding Author: Anne O'Riordan, School of Rehabilitation Therapy (retired), Queen's University, Kingston, Ontario. Canada

Email: ao3@queensu.ca

Appendix C

The Collaborative Practice Tool

Mission , Meaningful Purpose, Goals	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
1. Our team mission embodies an interprofessional collaborative approach to patient/client care.							
2. Our team's primary purpose is to assist patients/clients in achieving treatment goals.							
3. Our team's goals are clear, useful and appropriate to my practice.							
4. Our team's mission and goals are supported by sufficient resources (skills, funding, time, space).							
5. All team members are committed to collaborative practice.							
6. Members of our team have a good understanding of patient/client care plans and treatment goals.							
7. Patient/client care plans and treatment goals incorporate best practice guidelines from multiple professions.							
8. There is a real desire among team members to work collaboratively.							
General Relationships							
9. Respect among team members improves with our ability to work together.							
10. Team members care about one another's personal well being.							
11. Socializing together enhances team work effectiveness.							
12. It is enjoyable to work with other team members.							
13. Team members respect each other's roles and expertise.							
14. Working collaboratively keeps most team members enthusiastic and interested in their job.							
15. Team members trust each other's work and contributions related to patient/client care.							
16. Our team's level of respect for each other enhances our ability to work together.							

Team Leadership	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
17. Procedures are in place to identify who will take the lead role in coordinating patient/client care.							
18. Team leadership ensures all professionals needing to participate have a role on the team.							
19. Team leadership assures that roles and responsibilities for patient/client care are clearly defined.							
20. Team leadership discourages professionals from taking the initiative to support patient/client care goals.							
21. Team leadership supports interprofessional development opportunities.							
22. Our team leader models, demonstrates and advocates for patient/client-centered best practice.							
23. Our team leader is out of touch with team members' concerns and perceptions.							
24. Our team leader encourages members to practice within their full professional scope.							
25. Our team has a process for peer review.							
General Role Responsibilities, Autonomy							
26. Team members acknowledge the aspects of care where members of my profession have more skills and expertise.							
27. Physicians assume the ultimate responsibility for team decisions and outcomes.							
28. Team members negotiate the role they want to take in developing and implementing the patient/client care plan.							
29. Team members are held accountable for their work.							
30. It is clear who is responsible for aspects of the patient/client care plan.							
31. Physicians usually ask other team members for opinions about patient/client care.							
32. Team members feel comfortable advocating for the patient/client.							
33. Each team member shares accountability for team decisions and outcomes.							
34. Team members have the responsibility to communicate and provide their expertise in an assertive manner.							
35. Team members feel limited in the degree of autonomy in patient/client care that they can assume.							

Communication and Information Exchange	Strongly Disagree	Mostly Disa	Somewhat Disagree	Neither Agr nor Disagre	Somewhat	Mostly Agre	Strongly Ag
36. Patients/clients concerns are addressed effectively through regular team meetings and discussion.							
37. Our team has developed effective communication strategies to share patient/client treatment goals and outcomes of care.							
38. Relevant information relating to changes in patient/client status or care plan is reported to the appropriate team member in a timely manner.							
39. I trust the accuracy of information reported among team members.							
40. Our team meetings provide an open, comfortable, safe place to discuss concerns.							
41. The patient/client health record is used effectively by all team members as a communication tool.							
Community Linkages and Coordination of Care							
42. Our team has established partnerships with community organizations to support better patient/client outcomes.							
43. Members of our team share information relating to community resources.							
44. Our team has a process to optimize the coordination of patient/client care with community service agencies.							
45. Patient/client appointments are coordinated so they can see multiple providers in a single visit.							

Decision-making and Conflict Management	Strongly Disagree	Mostly Disagree	Somewhat Disagree	Nether Agree nor Disagree	Somewhat Agree	Mostly Agree	Strongly Agree
46. Processes are in place to quickly identify and respond to a problem.							
47. When team members disagree, all points of view are considered before deciding on a solution.							
48. Disagreements among team members are ignored or avoided.							
49. On our team, the final decision in patient/client care rests with the physician.							
50. In our team, there are problems that regularly need to be solved by someone higher up.							
51. Our team has an established process for conflict management.							
Patient Involvement							
52. Team members encourage patients/clients to be active participants in care decisions.							
53. Team members meet face-to-face with patients/clients cared for by the team.							
54. Information relevant to health care planning is shared with the patient/client.							
55. The patient/client is considered a member of their health care team.							
56. The patient's/client's family and supports are included in care planning, at the patient's request.							

Appendix D

Request to use Core Competencies

Interprofessional Education Collaborative

I

ip <ip@aamc.org>

JULIET N UDO;

ip <ip@aamc.org>

LETTER SEEKING PERMISSION-1.docx

13 KB

Save to One Drive - Grand Canyon University

Dear Ms. Udo,

Thank you for your interest in the IPEC Core Competencies. Page i of the 2016 Report provides that "This document may be reproduced, distributed, publicly displayed and modified provided that attribution is clearly stated on any resulting work and it is used for non-commercial, scientific or education – including professional development – purposes. If the work has been modified in any way, all logos must be removed." Based on your attached letter, you are seeking permission to use the report to further your

dissertation, which is for educational purposes; therefore, no additional permission needs to be sought.

Sincerely,

Amber Sterling, JD

Corporate Counsel

Association of American Medical Colleges