Demographic variables as predictors of seclusion and restraints for adult psychiatric inpatients

By

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In psychiatric settings, the use of seclusion and/or restraints can be emotionally and psychologically traumatizing for patients. Patients often experience these interventions as inhumane and humiliating, and such interventions can have physical and mental adverse effects and in some cases can be fatal. This study examined the role of demographic, clinical, and hospital variables in predicting seclusion and/or restraint episodes in adult psychiatric inpatients. A total of 395 patients were included in the study. Adult psychiatric inpatients previously restrained (n = 91) were compared to psychiatric inpatients never restrained (n = 304). A binary logistic regression research design was used to examine the relationship of demographic variables, clinical variables, and hospital variables on the likelihood of being placed in seclusion or restraints. The results yielded age as a significant predictor for patients being restrained. Also, individuals diagnosed with bipolar disorder were less likely to experience a seclusion and/or restraint event than patients diagnosed with depressive disorder or within the schizophrenia spectrum. In addition, findings suggest that adult psychiatric inpatients that experienced
restraint episodes were restrained within the 1st month of admission, during the weekday and during the 1st shift.

In summary, given the findings from this study, knowledge of risk factors that precede patient restraint could enhance education and provide staff with information necessary to meet the clinical needs of the psychiatric inpatient population. Research indicates that the use of seclusion and restraint has decreased followed by implementation of educational programs designed to help staff assess patient clinical care needs and develop more therapeutically appropriate alternatives (Bower et al., 2003). By being aware of possible risk factors associated with seclusion and/or restraint, mental health providers can use early intervention and prevention strategies to reduce the use of seclusion and/or restraint. This would provide safer environments for mental health patients receiving treatment.
DEDICATION

This dissertation is dedicated to the memory of my father, Walter R. Weston and to my loving mother, Güner Weston. My father was my best friend and my biggest motivator and I miss him deeply. He taught me the value of education, dedication, hard work and achievement, allowing me to achieve this level of education. Deep appreciation goes to my awesome mother “Anne”. You have always provided unconditional love and support for all my endeavors. A heartfelt thanks to my husband Odell, this journey has been a long one, and you have given me the strength, comfort and love all along the way. To my beautiful children, you have made me stronger, better and more fulfilled than I could have ever imagined. I love you to the moon and back.

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I hope that this research helps mental health providers to help the individuals with mental disorders we serve.
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CHAPTER I
INTRODUCTION

Issues surrounding reduction and/or elimination of episodes of seclusion and restraints from patients with behavior problems in crisis clinics, emergency departments, inpatient psychiatric units, and specialized psychiatric emergency services are areas of concern and debate among mental health clinicians (Knox & Holloman, 2012). Traditionally, interventions to manage violence among patients with mental illness have consisted of a variety of measures including the use of chemical and physical restraint and seclusion (Colaizzi, 2005). Despite being commonly used, research has shown no evidence that the use of seclusion or restraint has any long-term therapeutic benefit (Finke, 2001). In order to establish more effective interventions, it is necessary to identify common variables that may place an individual at higher risk for being secluded or restrained.

The concept of using seclusion and restraint dates back to the earliest records of the history of psychiatric institutions (Noll, 2009). Psychiatric hospitals are facilities that provide care for individuals with psychiatric, behavioral health, and chemical dependency illnesses. The earliest known mental hospitals were established in the Arab world, in Baghdad (AD 918) and in Cairo, with the special consideration traditionally given to disturbed people who were referred to as the afflicted of Allah (Noll, 2009).
In more recent times, various hospitals have claimed that they were the first to have provided care to individuals suffering with mental illnesses (Testa & West, 2010). Among them, in 1403, London’s Bedlam Hospital, which had been in operation since the mid-1200s as a standard medical hospital, began operating an asylum for the provision of inpatient care to people with mental illnesses and the Hospital de los inocentes (Hospital of the Innocents) was founded in Valencia, Spain in 1410 (Testa & West, 2010). Several centuries later, inpatient psychiatric facilities emerged in the United States. Between 1817 and 1824, four privately funded asylums were established in the northeastern states of Connecticut, New York, Massachusetts, and Pennsylvania. Public asylums were opened in the southern United States, and the widespread establishment of state-run mental institutions soon followed (Testa & West, 2010). Many hospitals for the mentally ill were built in the latter half of the 18\textsuperscript{th} Century. Some of them, like the York Retreat in England, were operated based on humane and enlightened principles, whereas others, like the York Asylum, gave rise to scandal because of their brutal methods of treatment procedures and the filthy conditions in which patients were kept (Testa & West, 2010).

The conditions in which individuals are hospitalized have also changed substantially. In earlier times, individuals were hospitalized against their will by anyone who could make cases against their sanity. During the era of institutionalization, the societal view of the U.S. was that persons with mental illness lacked the capacity to make decisions. There was no distinction between voluntary and involuntary admission to psychiatric hospitals; all admissions were involuntary (Testa & West, 2010). Due to the fact that many institutions operated on private funding, it was possible for families to purchase the confinement of unwanted relatives (Anfag & Appelbaum, 2006). When
patients were eventually released from asylums, they often found that they had lost many of their civil rights (e.g., their property and custody rights; West, Friedman & Shand, 2011).

The case of Mrs. Elizabeth Packard illustrates the problematic nature of civil commitment standards. Mrs. Packard was committed to a Jacksonville, IL asylum in 1860 at the behest of her husband who was a clergyman (Gamwell & Tomes, 1995). Mr. Packard initiated the hospitalization of his wife to punish her for having an unclean spirit, a decision that he based on her exploration of spiritual traditions outside the doctrine of the Presbyterian Church (Gamwell & Tomes, 1995; Himelhoch & Shaffer, 1979). Mrs. Packard was diagnosed with moral insanity and held involuntarily in the hospital for three years before ultimately being declared sane. Once released, Mrs. Packard learned that she had lost custody of her children and ownership of her property, as a result of her hospitalization and diagnosis (Himelhoch & Shaffer, 1979). She filed a lawsuit for wrongful confinement and won (Testa & West, 2010). It was the legal standard of civil commitment in 1860 that allowed Mrs. Packard to be hospitalized. Mrs. Packard’s case led to a shift in involuntary hospitalization. The standards of today require the presence of a diagnosed mental illness and a recommendation for treatment to be established and prove that admission of an individual to a psychiatric hospital against his or her will is necessary (Anfag & Appelbaum, 2006).

In 1960, state hospitals were portrayed as, and criticized for, being places in which little effective treatment was administered (Baillargeon & Binswanger, 2009). They were described as run-down archaic establishments that simply housed the mentally ill (Baillargeon et al., 2009). The civil rights movement, which was gaining momentum
in the United States at that time, lent to the public effort for the abandonment of mental institutions in favor of more humane psychiatric care.

Deinstitutionalization largely occurred in the aftermath of the Vietnam War; institutions could not hold the caseloads and community mental health was established (Baillargeon et al., 2009). President John F. Kennedy signed the Community Mental Health Centers Act in 1963 as a means of facilitating the transitioning of patients from inpatient psychiatric hospitals out into communities. In 1964, Washington, DC, instituted a standard for civil commitment that required an individual be determined to have a mental illness before he or she could be hospitalized against his or her will. Additionally, the individual had to pose an imminent threat to the safety of himself or herself or others, or prove to be “gravely disabled,” (Anfag & Appelbaum, 2006, p. 210) meaning that he or she could not provide the necessities for basic survival.

The legal requirements for a civil commitment are further clarified in the Mississippi Code Title 41 - PUBLIC HEALTH Chapter 21 - INDIVIDUALS WITH MENTAL ILLNESS OR AN INTELLECTUAL DISABILITY PERSONS IN NEED OF MENTAL TREATMENT § 41-21-102 – Patient’s Rights, read as follows:

A person receiving services under Sections 41-21-61 through 41-21-107 has the right to receive proper care and treatment, best adapted, according to contemporary professional standards, to rendering further custody, institutionalization, or other services unnecessary. The treatment facility shall devise a written program plan for each person which describes in behavioral terms the case problems, the precise goals, and to modify the program plan as necessary. The program plan shall be reviewed with the patient.
A patient has the right to be free from restraints. Restraints shall not be applied to a patient unless the director of the treatment facility or a member of the medical staff determines that they are necessary for the safety of the patient or others. Each use of a restraint and reason for such use shall be made part of the clinical record of the patient under the signature of the director of the treatment facility (Mississippi Codes, 2013).

Restraints have been used since the 1700s as a means of managing dangerous psychiatric patients. Philippe Pinel is one of the first psychiatrists to write about his experiences with the “insane” (Weiner, 1992, p. 730) and discuss restraining patients. Pinel did not agree that restraint was inappropriate under all conditions. In his Treatise on Insanity, Pinel supported the advantages of restraint and the potential for limiting dangerous behaviors. In 1801, Pinel took over the Bicêtre Insane Asylum in France and forbade the use of chains and shackles on patients. He and his assistant were responsible for replacing shackles with strait-jackets in their work with the mentally ill. When reformers discontinued the use of physical restraints because they believed them to be a cruel treatment, an increase in the use of cell restriction or seclusions for the violent and combative patients followed (Weiner, 1992).

The use of restraints in the care of psychiatric patients has been a topic of ethical controversy since the beginning of psychiatric medicine. John Conolly, a British psychiatrist of the mid 1800s, claimed it was possible to treat psychiatric patients without the use of mechanical restraints, but strangely he made liberal use of seclusion and physical restraint to manage violent behavior. The first state-run mental hospital in the United States was established in 1822, and at that time rather than seeing restraints as
evidence of mistreatment, physicians in the U.S. believed that restraints were a valuable tool to keep patients safe (Testa & West, 2010). They also believed that patients of a democratic nation were less tolerant of authority, and that they were more violent than their British counterparts. In contrast, British asylum superintendent John Conolly invented the padded seclusion room to control violent patients without the use of mechanical restraints, such as the straight jacket. For the British, mechanical restraint was the greatest evil, and they did not recognize the problems involved in holding patients or locking them in seclusion rooms (Testa & West, 2010).

Today, the primary purpose of restraints is to protect psychiatric patients from harming both themselves and others. Prior to initiating a seclusion and/or restraint, other less restrictive measures must be attempted and/or exhausted (Centers for Medicaid & Medicare Services [CMS], 2008). The CMS defined physical restraints in the State Operations Manual (SOM), as, “any manual method or physical or mechanical device, material, or equipment attached or adjacent to the resident’s body that the individual cannot remove easily that restricts freedom of movement or normal access to one’s body” (CMS, 2008, p. 32). The Mental Health Act 1983 (MHA) defined seclusion as “sole confinement in a room that it is not within the control of the person confined to leave” (Keown, Mercer, & Scott, 2008, p. a1837).

The Mississippi Department of Health and Human Services refers to restraints as methods of restricting an individual’s freedom of movement (Department of Health and Human Services, 2006). According to Department of Health and Human Services, restraint can be chemical, physical, or mechanical. Chemical restraint refers to the use of medication to control aggressive behavior or restrict a person’s freedom of movement of
their legs, arms and head. Physical restraint generally involves restricting a person’s movement by physical force, such as holding, escorting or carrying. Department of Health and Human Services states that mechanical restraint generally refers to use of an external device (e.g., straps, belts, or cuffs) to restrict a person’s freedom of movement. There are two types of mechanical restraints: four-point restraint, which involves restraining the individual in a prone position, with wrist cuffs and ankle cuffs; and five-point restraints, which involves restraining the individual in a prone position, with wrist cuffs, ankle cuffs, and a belt across the waist. Another form of restraint includes mittens to prevent self-harm, such as scratching self, hitting self, and picking at skin (Department of Health and Human Services, 2006).

The Department of Health and Human Services (2006) defines seclusion as involuntarily confining an individual alone in a room from which he/she is physically prevented from leaving. Seclusion can be used independently or in conjunction with mechanical restraints. Indicates, when a patient is placed in mechanical restraints, he/she is also considered in seclusion, because he/she cannot freely leave the area. When this occurs it is referred to as seclusion or restraint. For the purpose of this research, mechanical, chemical and physical restraints will be referred to as restraint(s).

Issues surrounding reduction and/or elimination of episodes of seclusion and restraint for patients with behavioral problems in inpatient psychiatric units continue to be an area of concern and debate among mental health clinicians (Gaskin, Elsom, & Happell, 2007). The use of seclusion and/or restraint must be justified by clinicians, but there is no strong evidence to demonstrate that its use is therapeutically effective. Although controversial, the use of seclusion and/or restraints is a common occurrence in
psychiatric inpatient facilities (Gaskin et al., 2007). Therefore, identifying patients at risk of being restrained may allow clinicians to employ strategies to improve trust and reduce the use of restraints.

Mississippi has 14 hospital-based and two freestanding adult psychiatric facilities with a capacity of 588 licensed beds for adult psychiatric patients (Mississippi Department of Mental Health, 2016b). In addition, Mississippi has four state-operated hospitals (East Mississippi State Hospital, Mississippi State Hospital, North Mississippi State Hospital, and South Mississippi State Hospital) and nine crisis intervention centers that provide the majority of inpatient psychiatric care and services in Mississippi (Mississippi Department of Mental Health, 2016b). In 2013, the four state-operated facilities reported that 3,269 adults received psychiatric inpatient services. At all of these facilities, individuals may be treated for various mental diagnoses ranging from depression to psychosis. During hospitalization, the patient with these serious conditions may become self-injurious and/or assaultive, and it becomes the responsibility of the hospital staff to manage those behaviors safely. Therefore, restraining a patient may be used to assist in preventing the patient from hurting him/herself or others (Brown, 2000). Seclusion and restraints are used primarily with the acute care and most disturbed patients (Brown, 2000). Despite the general movement toward the least restrictive environment in treatment, coercive measures are widely used in psychiatry (Gaskin et al., 2007). The preferred methods (i.e., mechanical restraint, physical restraint, seclusion) and the frequency of the use vary, but coercive measures are nevertheless frequently used.
Statement of the Problem

The purpose of this study is to examine the role of demographic, clinical, and hospital variables in predicting seclusion or restraint episodes in adult inpatient psychiatric patients. Having worked in a psychiatric institution, it is common that treatment success is measured by rates of seclusion and/or restraints. It is a procedure utilized in psychiatric inpatient facilities to control behavior and maintain the safety of not just the patient, but everyone in the treatment environment (Flannery, Farley, Tierney, & Walker, 2011). According to Flannery et al. (2011), patients who use mental health services may require further treatment on acute psychiatric wards, the setting in which restraint is most frequently used. The restraint rate in acute psychiatric wards is reported to range from .01% to 31%. There is copious information reported nationally about the use of restraints, such as the frequency of restraints, patient and staff perception of restraints, and the proper use of restraints; however, knowledge is limited about the characteristics of patients for whom this intervention is deemed necessary compared to those who do not experience seclusions and restraints.

Justification of the Study

The use of seclusion and restraint in psychiatric inpatient mental health settings has drawn considerable international and national debate, such as whether or not seclusion and restraints are effective or useful in managing aggression (Steinert et al., 2010). The review of the literature shows that there are various opinions about the effectiveness of seclusion and restraint. Some research indicates that the use of seclusion and restraint may be beneficial, because it provides a functional purpose (i.e., safety for the patients and staff) and it is therapeutic in treatment. Even so, other research notes that
the use of seclusion and restraint were often misused and patients were secluded without having met the necessary criteria for seclusion. This research also noted, making changes to the environment would be better in reducing aggression then using seclusion and restraint as an intervention. Also, there are certain variables, such as history of violence and substance abuse that have been shown to be highly associated with the use of seclusion and restraint. During the past ten years, the push has been toward reducing and/or eliminating the use of seclusions and restraints (Scanlan, 2010).

**Content Analysis**

Krippendorff (2004) defined content analysis as “a research method for the subjective interpretation of the content of text data through a systematic classification process of coding and identifying themes or patterns” (Krippendorff, 2004, p. 1278). Content analysis is a research technique used to make valid interpretations from text providing insight and increasing researcher understanding of phenomena. Content analysis is an exploratory process with an empirically grounded method, predictive in intent, using hermeneutics, the branch of knowledge that deals with of the Bible or literary text, to create interpretations of central themes.

Thompson (1999) conducted a study of journal articles analyzing women and feminism. The methodology within this study identified and described various patterns found in the journal articles, using defined rules of analysis. Examination of the content created numeric and thematic trends appearing in the articles. According to Priest, Roberts, and Woods (2002), content analysis is a reliable method of analyzing textual data because the systematic approach allows researchers the opportunity to revisit previously coded data to test reliability.
This study used a content analysis to identify prior research on existing central concepts associated with seclusion and restraints. For this study, 122 journal articles on the topic of restraints dating from 1973 to 2016 were reviewed to identify central themes of common variables. Journal populations ranged from adolescents, individuals with autism, individuals with intellectual and developmental disabilities to adult’s psychiatrics. The results of the content analysis reflect there is limited current research available on the cluster of demographic, clinical and hospital variables as predictors of seclusion. Consequently, this study will add to the literature by examining the role of demographic, clinical, and hospital variables in predicting seclusion and/or restraint episodes in adult psychiatric inpatients. This may assist health care workers to implement effective clinical individualized interventions and target more resources to those who are most at risk of being secluded and restrained.

**Research Questions**

The purpose of this study was to examine the role of demographic, clinical, and hospital variables in predicting seclusion and/or restraint episodes adult psychiatric inpatients at East Mississippi State Hospital by addressing three research questions:

Research Question 1: Is there a relationship between demographic variables (age, gender, and ethnicity) and being restrained among adult psychiatric inpatients?

Research Question 2: Is there a relationship between clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse) and being restrained among adult psychiatric inpatients?
Research Question 3: Is there a difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred among adult psychiatric inpatients?

**Binary Logistic Regression Analysis to Answer Research Questions**

To examine the relationship of the: (a) demographic characteristics, (b) clinical variables, and (c) hospital variables on the likelihood of being restrained in adult psychiatric inpatients, the following binary logistic regressions were used to evaluate the data and answer the following hypotheses:

H₀₁: The demographic variables (age, gender, and ethnicity) do not predict restraint among adult psychiatric inpatients

H₀₂: The clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse) do not predict restraint among adult psychiatric inpatients

H₀₃: There is no statistical significant difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred among adult psychiatric inpatients.

**Conceptual and Operational Definitions of Terms**

Conceptual and operational definitions used in this study are as follows:
1. Behavioral health program - a program that provides inpatient services for people (adults and children) with mental disorders and/or substance use disorders (Mississippi Department of Mental Health, 2016b).

2. East Mississippi State Hospital (EMSH) - a state owned and operated behavioral health program that provides inpatient mental health services for adults and adolescents with serious mental illness and/or substance abuse (Mississippi Department of Mental Health, 2016a).

3. Involuntary civil commitment - the admission of individuals against their will into an inpatient psychiatric facility. Generally, there are three reasons why an individual would be subject to involuntary civil commitment under modern statutes: a) mental illness, b) developmental disability, and c) substance addiction. In the case of mental illness, dangerousness to self or others defines the typical commitment standard, with almost all states construing the inability to provide for one's basic needs as dangerousness to self. In terms of process, every state provides for a hearing, the right to counsel, and periodic judicial review, while most states have statutory quality standards for treatment and hospitalization environment (Reisner, 1985).

4. Mental disorder - a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning. Mental disorders are usually associated with significant distress in social, occupational, or other important
activities. An expectable or culturally approved response to a common stressor or loss, such as the death of a loved one, is not a mental disorder. Socially deviant behavior (e.g., political, religious, or sexual) and conflicts that are primarily between the individual and society are not mental disorders unless the deviance or conflict results from a dysfunction in the individual, as described above (American Psychiatric Association, 2013).

5. Mental health staff - a professional who provides mental health services for people with mental disorders in an acute inpatient mental health setting. For the purpose of this study, mental health staff refers to psychologists, counselors, social workers, nurses and direct care workers (East Mississippi State Hospital, 2016a).

6. Mental illness - is a medical condition that disrupts a person’s thinking, feeling, mood, ability to relate to others and daily functioning (National Alliance for the Mental Ill, 2011)(NAMI). Mental illnesses can affect persons of any age, race, religion, or income. Mental illnesses are not the result of a personal weakness, lack of character or poor upbringing. Mental illnesses are treatable. Most individuals diagnosed with serious mental illness can experience relief from their symptoms by actively participation in individual treatment plans (National Alliance for the Mental Ill, 2011).

7. Patient - individual receiving health care services. For the purpose of this study, the patient in this study will consist of an individual who received mental health services at a behavioral health program from 2010 to 2015.
8. Restraints - defined as any manual method, physical or mechanical device, or equipment that immobilizes or reduces the ability of a patient to move his or her arms, legs, body, or head freely (CMS, 2008).

9. Seclusion - is defined as the involuntary confinement of a patient alone in a room or area from which the patient is physically prevented from leaving (CMS, 2008).

**Overview**

Chapter 1 presented the statement of the problem, justification of the study, research questions, limitations, and conceptual and operational definitions utilized throughout the study. Chapter 2 will review the historical overview, developing guidelines for seclusion and restraint, purpose of seclusion and restraint in the psychiatric setting, support and opposition of seclusion and restraints, demographic, clinical and hospital variables, legal and constitutional issues, standards and regulations, reactions to seclusion and restraint, concerns and risk associated with seclusion and restraint and summary of the literature reviewed. Chapter 3 will review the methodology including research design, research site, participants, instrumentation, procedure, data analysis and binary logistic regression analysis. Chapter 4 will present and discuss the results of the study. Chapter 5 will present a summary, limitations, recommendations for future research and implications and conclusion. Future recommendations for counselor educators and clinicians will also be discussed.
CHAPTER II
REVIEW OF LITERATURE

Seclusion and restraint reduction and elimination is an area of focus for mental health providers (Van Doeselaar, Sleegers, & Hutschemaekers, 2008). This chapter will review all literature on the use of seclusion and physical restraint, including possible variables that may influence the use of each. Patient variables such as demographic information and clinical factors may both influence likelihood of the use of seclusion and restraint. This chapter presents a review of the literature on historical information regarding the evolution in the use of seclusion and restraints in the treatment of the mentally ill, as well as findings regarding demographic and clinical components in research in restraint and seclusion. This chapter will also present examples of the various opinions about the use of seclusion and restraint. National efforts are being made in mental health practices today to not only reduce, but eventually eliminate, the use of these interventions (Van Doeselaar et al., 2008).

Clinical professionals encounter a variety of obstacles when making decisions regarding the best methods to respond to patient behaviors (Busch & Shore, 2000). Seclusion and restraints are essentially only two of the many options used to cope with violent and disruptive behaviors in psychiatric settings. Restraints and seclusion in the literature are collectively referred to as behavior management, behavioral intervention, and intrusive or restrictive measures and coercive measures (Salias & Wahlbeck, 2005).
According to the Department of Health and Human Services federal register, definitions and provisions for restraint and seclusion have been combined and expanded to include most if not all possible events considered under approved behavioral interventions (Department of Health and Human Services, 2006). These interventions are both indicated and contraindicated as effective strategies for the treatment and management of challenging behaviors in inpatient psychiatric settings (Aberhalden et al., 2004). Some healthcare providers may view seclusion and restraint as the safest and most efficient intervention for the agitated patient but are relatively unaware that these interventions are associated with an increased incidence of injury to both patients and staff (Aberhalden et al., 2004).

**Historical Overview**

To understand the present use of seclusion and restraint, knowledge of its early use is found in the historical record. Seclusion and restraint have historically been used as interventions to either treat individuals who were in need of treatment, or to keep individuals who appeared to be a danger to others secure and unable to do harm (Tovino, 2007). The use of seclusion and restraint with individuals, including children and adults with mental illness, and those with varying disabilities, has a diverse history. In the eighteenth and nineteenth centuries, mental illness was loosely defined and inclusive of many characteristics that seemed odd or peculiar to others. Such characteristics included the presence of delusions, hallucinations, incoherent speech, paranoia, depression, or withdrawal from social relationships (Tovino, 2007). In addition to the term ‘mental illness’, other terms were used to describe or label individuals who were in need of mental health treatment in the eighteenth and nineteenth centuries. Such terms, which are
now considered pejorative, included mentally defective, idiots, imbeciles, feeble-minded, lunatics, insane, and epileptic (Erikson, 1992).

The first documentation of mental illness began as far back as the Greeks in 400 B.C. (Foucault, 1983). This was a time when physical theories of madness or mental illness placed the sufferer in the care of a doctor who advocated physical and psychological treatments with a minimum use of restraint. During the middle ages there were differing opinions, and the mentally ill were considered demonic, or servants of Satan. They suffered much persecution by religious leaders. In the 15th Century, the mentally ill were excluded from towns and villages and considered outcasts of society. The first use of seclusion and restraint on the mentally ill was documented during the 17th Century. Foucault (1983) pointed out that mental hospitals were used to house the poor, to keep them from being idle and begging. During this time, it was believed during that time that this would prevent the poor from becoming insane. These hospitals housed the prisoner, the demented, the poor, the jobless and those who were not working. These practices led to the work house, a place where those unable to support themselves were offered accommodation and employment, which was to be used for moral reform and correction. Foucault indicated that in this framework, seclusion became a means of punishment.

During the 18th Century, the use of the “madhouse” was practiced. This was a place in which psychotic patients were separated from the poor, to keep the poor from becoming insane (Foucault, 1983). In these times, the learned behaviors and natural instincts of the patients, such as fear, denial, revenge, and greed were viewed as the causes of mental illness, therefore, discipline was used which included the use of
seclusion and restraint. Treatments of the mentally ill during the early 18th Century were abusive and restraint was often used (Foucault, 1983).

Pinel was the first to use non-restraint in Europe in 1794 (Weiner, 1992). He believed in the moral treatment of the patient based on supervision, instruction, and non-restraint. Pinel used a more direct treatment with his patients, challenging their delusional thoughts. Pinel helped the patient recognize and monitor his/her thoughts, and to have strategies for more realistic and rational thinking (Weiner, 1992).

In the early 18th Century, families, poor houses, and almshouses were responsible to care for the mentally ill (Erickson, 1992; Tovino, 2007). If individuals became violent or out of control, they would be locked up in county jails for months or years at a time. In the later 18th Century, a small number of medical hospitals in the U.S. agreed to care for the mentally ill. The Public Hospital for Persons of Insane and Disordered Minds opened in Williamsburg, Virginia in 1773 and was the first hospital in U.S. that focused solely on treating the mentally ill (Erickson, 1992). By 1920, there had been 521 mental hospitals developed and widely used, and seclusion and restraints were common practices to control and manage aggressive patients (Tovino, 2007).

Psychiatric services continued to evolve as the need for mental health services grew in the U.S. Because there was little knowledge of the etiology of mental illness, the treatments used in mental hospitals were experimental. Tovino (2007) stated that treatment primarily used in mental hospitals included: (a) medicinal restraints, which were physical restraints used to restrain patients with the minimum of discomfort and pain and to prevent them from injuring themselves or others; (b) shock water treatments, which involved mummifying the patient in towels soaked in ice-cold water; (c) bleeding,
the withdrawal of blood from a patient to cure or prevent illness and disease; (d) blistering salves, which were chemical preparations applied to the body to draw out a blister on the head, neck, shoulder or foot, as well as seclusion, and mechanical restraints. Patients were reported to have been kept in seclusion for hours, days, months, or years at a time. Patients were also reported to have been kept in straightjackets, handcuffs, or strapped to chairs for extended periods. As the population in mental hospitals increased, it was not uncommon to see most of the patients in some sort of restraints the majority of the time. Seclusion and restraint were very popular forms of intervention for the mentally ill in the 18th and 19th Centuries (Tovino, 2007).

Seclusion was first documented as a therapeutic intervention for control in 1844 by the John Conolly and commissioners of Hanwell Asylum in Hanwell, England, who were ruling on the use of seclusion (Turner, 1989). They noted that the procedure was found to have a very powerful effect in sedating and repressing those who were excitable, due to violent outbreaks due to psychosis. As a remedy for very short periods of time in cases of extreme volatile behavior, they believed seclusion to be a valuable treatment. During this time, hospitals to direct and all doctors to record the names of those who were confined, and the length of time involved. This was a practice used to monitor the use of seclusion and individuals who might be at risk for requiring this practice (Turner, 1989).

As psychiatric care evolved in the U.S., England was innovative in the non-restraint movement in the early 1800s (Haw & Yorston, 2004). Dr. Robert Gardiner Hill and Dr. Edward Charlesworth are considered to be the founders of the non-restraint movement in England, with Dr. John Conolly and Dr. Thomas Prichard practicing the use
of non-restraints with their patients in their respective asylums (Ferleger, 2008; Haw & Yorston, 2004). Prichard believed that treatments other than the use of restraint were more humane and provided preventative approaches to treatment (Haw & Yorston, 2004). He determined that restraints were to be used minimally and were only to be used to control violent behavior. Prichard believed it was much better to use isolation, reduced food, and use showers to control violent behavior. Conolly worked under the assumption that restraining individuals was not necessary, was not justifiable, and was injurious to them. Conolly also believed it would be better to provide adequate numbers of staff, who that could provide moral treatment options to the patient. In the nineteenth century, psychiatrists in the United States did not believe in the non-restraint movement, and felt that restraints provided therapeutic treatment for patients. They also believed that its use was an acceptable practice with mentally ill patients. Services for the mentally ill in the U.S. continued to use seclusion and restraint as primary ways to treat individuals. Even currently seclusion and restraints are used as a last resort when all other less restrictive interventions have been unsuccessful (Ferleger, 2008).

In the 19th Century, the United States began abolishing the use of restraint as a means of custodial care (Colaizzi, 2005). Psychiatrists began trying other methods of assisting the mentally ill, such as medication and one to one talking. However, with very violent patients, restraints were still used and were considered necessary to insure protection and safety (Colaizzi, 2005).

**Developing Guidelines for Seclusion and Restraints**

In the 1960s, President John F. Kennedy created a more positive and less restrictive treatment style for mentally ill by promoting legislation that was oriented
toward community-based facilities (Tardiff, 1996). Local communities were to work with the federal government to provide care for the mentally ill. The services were to provide care for children, adults, and the aged through networking and combining these various services to bring care to the community (Tardiff, 1996). In the early 1980s the American Psychiatric Association (APA, 2013) took a major step in the direction of defining guidelines for the uses of seclusion and restraint. They published The Psychiatric Uses of Seclusion and Restraint, (Tardiff, 1996) which received the Guttmacher Award in 1985. This publication furthered the contention that treatment of aggression needs to be addressed as clinicians will have the skills necessary for good management of aggressive patients (Liberman, 2006).

The APA Task Force (Tardiff, 1996) delineated three indictors for the use of both seclusion and restraint: (a) to prevent imminent harm to patient or other persons when other means of control are not effective or appropriate; (b) to prevent serious disruption of the treatment program or significant damage to physical environment, and (c) to assist in treatment as part of ongoing behavior therapy. Use of seclusion alone was also indicated to; (d) decrease the stimulation that the patient receives and e to comply with a patient’s request. The APA Task Force also delineated a number of reasons for the use of both seclusion and restraint, such as the medical state of the patient, his/her reactions to medications being used solely for punishments, and only for the staff’s convenience. The APA report goes on to deny the use of seclusion and restraint merely to alleviate the anxiety of the staff over even validated danger. It further cites: “Finally, although staff anxiety is often a well-validated indicator, through contagion, of actual or incipient
dangerousness in a patient, staff anxiety alone should not be a reason for secluding a patient” (Tardiff, 1996, p. 42).

This historical review of seclusion and restraint has attempted to reflect the influence of different societies, cultures, and general time in history, on the use of seclusion and restraint. All of these factors have given rise to discussion and controversy regarding its use. Seclusion and restraint continue to be used throughout psychiatric facilities to manage violent patients, therefore, focusing on patient demographic and clinical variables that may contribute to the use of seclusion and restraints may play a significant role in decreasing the incidences of seclusion and/or restraint in psychiatric patients (Liberman, 2006). By identifying these variables early, clinicians can have a better understanding of risk factors, and thereby may be able to initiate prevention measures sooner.

**Purpose of Seclusion and Restraint in the Psychiatric Setting**

The use of seclusion and restraint has been documented to occur in several settings that serve children, adolescents, and adults with mental health concerns and disabilities (Abdelhak, Grostick, & Hanken, 2014). Such settings include public schools, private schools, day treatment programs, residential facilities, and mental health hospitals (Abdelhak et al., 2014). Historically, seclusion and restraint has been used as a form of therapeutic treatment for individuals; currently, the use of seclusion and restraint is reported to have a functional purpose with the primary goal of keeping the individual, others, and property safe (Fogt, George, Kern, White, & George, 2008). According to Butler (2014), the use of seclusion and restraint interventions should not occur unless
there is an emergency that threatens serious danger to physical safety. Butler (2014) indicated that in an emergency, these interventions are to be used to keep all parties safe and should end when the emergency is over. Though this coercive practice is only supposed to be used as a last resort when mentally ill persons physically threaten the welfare of themselves or others (Butler, 2014). Possible safe guards to decrease the use of seclusion and restraints may include identification of patients prone to restraints, education of patients, education of staff, initiation of a crisis response team, reviewing restraints episodes daily, and development of a staff incentive program (Paterson & Duxbury, 2007). Without knowing precise reasons restraints are being used, no individual health care leader, or organization, can justify the use of this practice being valid.

When research is conducted with the goal of discovering what reasons are given for the use of seclusion and restraints, the answer is not always to prevent injury to self or others. In addition to aggressiveness toward self or others, alternative reasons documented for the implementation of restraints and seclusion included destruction of property, prevention of escape, and complying with treatment rules (Raboch et al., 2010).

A meta-analysis of 22 studies reviewed by Browne and Tooke (1992) from 1972 to 1990 revealed that agitation, not violence, was the most frequently cited reason for seclusion. This trend continues today, as reported reasons for use of restraint and seclusion include: (a) suicidal threats or self-harm, (b) outwardly aggressive behavior, (c) history of aggression, (d) attempted escape (Ahmed & Lepnurm, 2001); (e) destruction of property, (f) agitation or disruptive behavior; (g) threats to attack others (Smith &
Humphreys, 1997); (h) intoxication, and (i) verbal violence (Betemps, Somoza, & Buncher, 1993).

A previous history of violence is a strong and robust predictor of violent inpatient behavior and according to Steinert (2002) no published studies have actually questioned this. Other historical variables that are related to violence are previous hospitalizations and total length of hospitalization (Chang & Lee, 2004).

**Support and Opposition of Seclusion and Restraint**

Advocates of the use of seclusion and restraints in a study of public clinic patients regarded this method as providing therapeutic and control benefits for staff and patients. Soloff & Turner (1981) affirmed that its use may involve enhancing safety, developing inner direction for patients, and assisting in the harmonious operation of the wards. In 1978, Gutheil affirmed the therapeutic value of seclusion and restraint since they provide controls for patients who are unable to direct their impulses. Gutheil (1978) further declared it buffers patients who are too sensitive with interpersonal relationships, and protect those who need isolation from too much sensory reception.

Those who are opposed to the use of restraint perceive these measures as penalizing experiences and suggest that safe, therapeutic environments can be obtained without using these maximum interventions. Irwin (1987) mentioned that, seclusion and restraint, when used ideally, should only be used as a measure of last resort, when less restrictive measures have been ineffective. Antagonists focus more on understanding what changes to the environment may provide for a safer environment and milieu, thereby reducing the use of seclusion and restraint (Soloff & Turner, 1981).
It is important that when seclusion and restraint are necessary that the staff who are restraining the patient be trained in its proper use. This is because the procedure has potential to severely harm clinicians and paraprofessionals as well as the patient. State hospitals such as East Mississippi State Hospital (EMSH), Meridian, MS provide the clinician with skills in dealing with seclusion and restraint and de-escalation (EMSH, 2016a). At EMSH, The Mandt System (The Mandt System, 2015a) is used. The Mandt System is a comprehensive, integrated approach to preventing, de-escalating, and if necessary, intervening when the behavior of an individual poses a threat of harm to themselves and/or others (The Mandt System, 2015b). The focus of The Mandt System is on building healthy relationships between all the stakeholders in human service settings in order to facilitate the development of an organizational culture that provides the emotional, psychological, and physical safety needed in order to teach new behaviors to replace the behaviors that are labeled challenging.

**Correlations and Predictors of Seclusion and Restraint**

In an attempt to understand why some inpatients are restrained, Kaplan, Schild, & Levine (1996) conducted a study to examine patient variables that lead to the use of seclusion and/or restraint investigating the significance of diagnosis. Kaplan et al. (1996) compared mood disorders to psychotic disorders, and a significant difference was found. Results indicated that patients with mood disorders were more likely to be restrained than patients with schizophrenia or schizoaffective disorder. Possible emotional reasons for violence and aggression may include increased irritability, suicidal thoughts, lack of hope about the future, and difficulty managing emotions (Kaplan et al., 1996).
Two patient-related factors noted in violent episodes among inpatients in psychiatry are diagnosis and age; however, overall findings have been inconsistent. Age appears to be one of the most common demographic variables studied. Chou, Lu, and Mao (2002) concluded that younger patients are more likely to become violent than are those who are 35 years of age or older. Owen, Tarantello, Jones, and Tennant (1998) found that elderly patients are more likely to be aggressive. Apter, Plutchik, and Van Praag (1993) found no significant difference in age as a factor.

A variety of psychiatric diagnoses have been reported to be associated with violence. The most consistent findings seem to be the correlation between schizophrenia and aggression (McNeil & Binder, 1995b) with others indicating a relationship between mania and subsequent aggression. Several studies have concluded that mild intellectual disabilities (Powell, Caan, & Crowe, 1994), substance abuse (Flannery, Rachlin & Walker, 2001) and personality disorder (Raja, Azzoni & Lubich, 1997) are significantly related to violent behavior, but there is no consistent pattern in research results linking a particular diagnosis to violent episodes.

Gender has also been studied in the context of inpatient violence. Chou et al. (2002) did not find any gender differences in patients involved in violent behavior, whereas, Steinert, Hermer, and Faust (1996) found higher prevalence in men. Flannery, Rachlin and Walker (2001) found female inpatients more violent, Krakowski and Czobor (2004) found that women with positive psychotic symptoms were most likely to be violent and violence in men was more frequent when related to substance abuse.

Swett (1994) compared 370 restrained and non-restrained adult patients over a one year interval. Swett (1994) found that young age, a diagnosis of borderline
personality disorder, and irritability were predictors of seclusion and restraint. The variables were then used in a new sample that concluded over 79% of the predicted variables were correct.

Another study examined 76 seclusion and/or restraint cases over a six-month period (Guedj, Raynaud, Braitman, & Vanderschooten, 2004). Guedj et al. (2004) stated the importance of clinical, epidemiological, and situational characteristics and specified gender, age, and diagnosis as potential warning signs. The researchers concluded that men were more likely to be restrained. The average age was 32, and the most common diagnoses are schizophrenia, personality disorders, acute psychosis, mania and substance abuse. Guedj et al. (2004) conclude that aggression, delusions, paranoia, and oppositional behaviors are the indicators that lead to patient restraint.

Forquer, Earle, Way, and Banks (1996), focused on patient variables, such as age, gender, ethnicity, legal status, length of stay, and diagnosis. Their (Forquer et al., 1996) research concluded that the best predictive variable for restraints use was the specific hospital. Klimitz, Uhlemann, and Fahndrich (1998) analyzed restraints in an institutional context, they studied 148 restraint episodes over a 10-month period and found 41% of restraints occurred during the last shift after hospital business hours when professional staffs were not present. They concluded that may be possibly due to more staff being available during regular business hours. Also the patient may believe professional staff has influence over his/her discharge. These hospital variables may play different roles in the occurrence of seclusion and restraints episodes.
Demographic Variables

Age

A substantial body of research examines the relationship between age and restraint and seclusion. Smith et al. (2005) examined rates of seclusion among patients civilly committed between 1990 and 2000. Data showed higher rates of seclusion were inversely associated with age. The youngest group had the highest rates of seclusion (6.0 episodes per 1,000 patient-days) compared to the oldest age group (.3 episodes per 1,000 patient days; \( p < .01 \)). Results from this study are consistent with similar research conducted in the US from 1990 to 2005 in general psychiatric settings by Betemps et al. (1993).

International rates of restraint and seclusion reflect similar trends relative to age (Bower, McCullough, & Timmons, 2003). Tunde-Ayinmode & Little (2004) found that Australian patients who were secluded were, on average, younger than patients who had never been secluded. Specifically these researchers found a significant difference in mean age between secluded and non-secluded patients, such that, secluded patients were younger \( (M = 33) \) than non-secluded patients \( (M = 37); \ p < .05 \). In another study conducted by Sebit, Siziya, Acuda, and Mhondoro, (1998) incidents of restraint and seclusion were examined for 95 patients. The frequency of seclusion and the characteristics of patients restrained and secluded differed by age. The researchers found that over two thirds (70.5%) of individuals secluded were younger than 35 years of age. These studies indicated individuals less than 35 years of age are more likely to be restrained or secluded.
Ethnicity

Spector (2001) found significant differences between ethnic groups in the use of seclusion, despite the fact that there were no significant differences in reported incidents of aggressive behaviors in groups by race. For example, Price, David, and Otis, (2004) performed a retrospective correlational study of patients at a forensic psychiatric facility from 1993 to 2000. In this study racial differences in violence and episodes of restraint and seclusion were examined. The researchers found no difference between racial groups either violent incidents or in episodes of restraints. However, Asian and African Americans were secluded more often than any other ethnic or racial group (Price et al., 2004). Smith et al. (2005) found that compared to White patients (2.5 episodes per 1,000 patient-days), ethnic minority groups (4.3 episodes per 1,000 patient-days) had greater rates of seclusion ($p < .07$).

A separate but related study examining patient restraint and seclusion found no difference in rates of use based on race/ethnicity. Although some researchers (Oldham et al., 1983) found rates of restraint and seclusion to be equal among racial and ethnic groups, differences when apparent may best be explained by staff variables. Fisher (1994) and McNeil (1997) separately explained that these disparities might be attributed to cultural bias or staff perceptions of patient socio-demographic factors. Consequently, hospital staff may perceive certain groups, such as African Americans, as more violent or aggressive compared to other racial or ethnic groups (McNeil & Binder, 1995b). Although the research (McNeil & Binder, 1995a) showed there were no significant differences in seclusions based on race and ethnicity, incorrect perceptions may result in seclusions and restraints.
These outcomes may suggest that ethnic minority racial groups may be overrepresented in incidents of restraint and seclusion in certain psychiatric settings. Spector (2001) examined the literature on restraint and seclusion in the U.S. and Britain and found race in conjunction with other factors (e.g., socio-economic status, geographical factors, patient compliance, and diagnosis) influenced perceptions of dangerousness. Spector (2001) concluded that African American men experienced higher rates of seclusion and restraint based on staff members’ perceptions of them as more dangerous than other groups in the psychiatric population.

**Gender**

Fisher (1994) has also examined the relationship between gender and patient restraint and seclusion. Research showed that the relationship between gender and restraint and seclusion varied across psychiatric settings (Bower et al., 2003). Some researchers contend that men are more likely than women to be secluded or restrained (Carpenter, Hannon, McCleery & Wanderling, 1988a). Specifically, Way and Banks (1990) examined patient correlations of seclusion and restraint in 23 New York adult psychiatric hospitals. The researchers compared characteristics of patient restrained and secluded to patients with no prior history of restraint or seclusion. A total of 1,409 episodes of restraint and seclusion were recorded over a one-month period for 23,596 patients. The researchers found a significant difference between men and women and recorded incidents of restraint and seclusion. Men were more likely to be secluded and restrained than women ($p < .05$).

In contrast to these findings, another study found no differences in rates of patient restraint or seclusion based on gender (Oldham et al., 1983). Sajatovic, Sultana,
Bingham, Buckley, and Donenwirth (2002) examined gender differences in patient restraint and seclusion among a mixed group of general and forensic psychiatric inpatients and found no differences in restraint or seclusion \((p < .05)\). Overall, gender and race were found to have no significant differences in restraint and seclusion rates.

**Clinical Variables**

**Diagnosis**

In addition to socio-demographic factors researchers have also been interested in understanding the association between patient restraint and seclusion and symptoms of mental illness (Bower et al., 2003). Nijman, Merckelbach, Evers, Palmstiena, and A’Campo (2002) concluded that the majority of patients who experienced at least one episode of restraint or seclusion were diagnosed with schizophrenia, bipolar, manic type, mental retardation, psychotic disorder, and substance related disorder. Kaltiala-Heino, Korkeila, Tuohimaki, Tuori, and Lehtinen (2000) examined characteristics of 1,543 patients admitted to a Finnish psychiatric facility over a 6-month period. Clinical data were retrospectively examined for persons restrained. Seclusion and restraint were more frequently used in the treatment of individuals diagnosed with organic psychotic and substance use-related disorders \((p < 0.001;\) Kaltiala-Heino et al., 2000).

El-Badri and Mellsop (2002) found patients’ diagnoses were significantly related to whether patients experienced coercive interventions in an acute psychiatric hospital. Over a nine-month period, 30% of patients diagnosed with schizophrenia, bipolar, or substance abuse disorders required some type of coercive intervention during their hospitalization. Individuals diagnosed with depression or anxiety disorders were less likely to experience a coercive intervention.
Way and Banks (1990) found differences in rates of restraint and seclusion of patients with primary diagnoses of schizophrenia and mood disorders in 23 public psychiatric hospitals in New York. Specifically, differences were found between restrained and non-restrained patients diagnoses with undifferentiated type schizophrenia, $x^2 (1, N = 657) = 18.2, p = .001$ and bipolar disorder with manic features, $x^2 (1, N = 657) = 18.8, p = .001$.

**Substance Abuse**

Yesavage and Zarcone (1983) found that a history of drug abuse was significantly correlated with various restrictive measures in a group of psychiatric inpatients. Higher rates of restraint and seclusion were also shown for individuals with substance abuse disorders (Legris, Walter, & Brown, 1999). Legris et al. (1999) examined diagnostic factors related to patient restraints in a Canadian psychiatric hospital. Fifty-one percent of persons restrained or secluded had previous histories of alcohol or drug abuse ($p < .01$). Research with community samples has suggested that demographic variables such as age and gender are more reliable indicators of risk of violence than clinical variables such as diagnosis and symptoms (Swanson, Holzer, Ganju, & Jono, 1990).

**History of Violence**

Flannery, Farley, Tierney and Walker (2011), examined patient assailant characteristics, they concluded older male patients with schizophrenia illness and histories of violence towards others and substance use disorders were the most frequent assailants. In an older study, Mattson and Sacks (1978) found the leading factors in seclusion to be violence and harm to others. Flannery et al. (2010) concluded certain
types of mental illness, such as schizophrenia, tend to show more frequent symptoms of violent behavior.

**Hospital Variables**

**Length of Stay**

Way and Banks (1990) concluded after controlling for socio-demographic factors and patients’ clinical dispositions, hospital factors were significantly associated with increasing the risk for individual patient seclusion or restraint. Tardiff (1981) found patients that were secluded were younger, in acute states of psychoses, had histories of many assaults, demonstrated low compliance to hospital regulations, had frequent hallucinations and bizarre behaviors, and were in the first days of hospitalization. Oldham et al. (1983) examined 313 patients admitted to a university hospital psychiatric ward. The researcher concluded seclusion was more likely to occur early in hospitalization because the patient is most acute and not yet regulated on medication at that time.

**Days of the Week**

Soloff & Turner (1981) reviewed patterns of seclusion by questionnaire. Over eight months, 561 patents who accounted for 107 seclusion episodes by the same 59 patients. They found acute psychotic patients were secluded more on weekdays and non-acute psychotic patients showed no change in seclusion rates by weekday versus weekend. Oldham et al. (1983) research concluded the highest occurrences of seclusion were during the weekdays at times of the day when there were smaller numbers of staff due to meetings and other duties.
Shift of Incident

Soloff and Turner (1981) reviewed patterns of seclusion and concluded the rate of seclusion did not change by shift. Schwab (1979) looked at seclusion in a university teaching hospital. The researcher found the peak of seclusions occurred between 10 pm and 2 am during staff shift change. Swett (1994) assessed trends regarding the occurrence of seclusion and restraint. He found seclusion and restraint were more likely to occur on the first shift and least likely to occur on the third shift. Despite the adequate amount of research available regarding the use of seclusion and/or restraint, there is minimal research that discusses the effect of hospital variables on the incidences of seclusion and/or restraint.

Legal and Constitutional Issues

State and federal case law on the use of seclusion and restraint have been established in the context of violation of rights guaranteed by the United States Constitution. These include liberty and due process rights (Fourteenth Amendment), right for a fair trial (Sixth Amendment), and the right to be free from cruel and unusual punishment (Eighth Amendment). Landmark court decisions such as Wyatt v. Strickney, 1972 and Rogers v. Okin have upheld a patient’s right to treatment under the least restrictive conditions, especially limited the use of restraints and seclusion to emergency situations, and prescribed standards for care during episodes of seclusion and restraint (Perlin, 2011).

In Wyatt v. Stickney, 325 F.Supp. 781 (M.D. Ala. 1971), a federal court in Alabama held for the first time that individuals who are involuntarily committed to state institutions because of mental illness or developmental disabilities have the constitutional
right to treatment that will afford them realistic opportunities to return to society. The *Wyatt v. Stickney* litigation was sparked by Alabama’s 1970 decision to cut its cigarette tax (Perlin, 2011). Because the proceeds from this tax were earmarked for mental health services, the cut set off a series of reductions in the state’s mental health system, including elimination of nearly 100 staff members at Bryce State Hospital, a hospital serving predominantly patients involuntarily committed for mental illness. Twenty professionals, including psychologists, were among those fired. On October 23, 1970, the fired staff members filed a lawsuit in the U.S. District Court for the Middle District of Alabama seeking reinstatement on the grounds that patients in the institutions would receive inadequate treatment. To strengthen their position, the group decided to include a patient, Ricky Wyatt, as a plaintiff. Wyatt, a 15-year-old juvenile delinquent with no mental illness, had been placed in the state hospital by the courts in an attempt to improve his behavior. His guardian was among the former staff members bringing the lawsuit.

The suit was gradually expanded to include patients of another state hospital for patients with mental illness, Searcy Hospital in Mount Vernon, Alabama, as well as Alabama’s state facility for people with developmental disabilities, the Partlow State School and Hospital. With this expansion, the focus of the litigation shifted from the rights of the employees to the rights of the residents (Perlin, 2011).

In the landmark case *Rogers v. Okin* (Symonds, 1979) seven inpatients, both voluntarily and involuntarily committed to two separate university affiliated units of a Boston State Hospital, were secluded for behavior control in emergency situations. The plaintiffs argued, among other factors, that the indication for seclusion was poorly defined and the guidelines for length of time served in seclusion varied widely.
issue in *Rogers v. Okin* was whether or not involuntarily and voluntarily committed psychiatric patients were competent to make treatment decisions. The judge held that in the event an individual is not competent to make treatment decision, a court should, based on substituted judgment, make the decision as to whether or not a patient should be forcibly medicated or secluded in both emergency and nonemergency situations. However, substituted judgment was neither defined nor guidance provided to assist professionals in making the decision to use coercive measures (Symonds, 1979).

Another landmark case instrumental in beginning attention to decisions made by professionals to use restraint or seclusion was *Youngberg v. Romeo*. In *Youngberg v. Romeo* (Weidert, 1982) the judge set a motion allowing professionals, rather than courts to exercise judgment in the use of seclusion and restraint to control patients exhibiting disruptive behavior that may lead to violence. Again, factors that could potentially enhance or guide professional judgment were not explicit in the decision. These court decisions raised questions about the basis for professional decisions to use seclusion and restraint in hospital settings. During the time of the *Roger v. Okin* and *Youngberg v. Romeo* cases, little was known about individual patient factors that were associated with restraint or seclusion in adult psychiatric inpatient settings. The combination of concern for patients’ rights and the court’s judgment in the use of restraint and seclusion prompted hospital accrediting agencies to improve safety and quality of care for patients and provide guidance to psychiatric facilities in the use of restraint and seclusion (Weidert, 1982).

In the United States, restraint use is prevalent throughout healthcare and not only in psychiatric settings. One descriptive study was conducted to measure restraint
prevalence from 2003-2005 at 40 randomly selected acute care hospitals in six U.S. metropolitan areas on all units except psychiatric, emergency, operative, obstetric, and long-term care (Minnick, Mion, Johnson, Catrambone, & Leipzig, 2007). Restraint prevalence was 50 per 1,000 patient days (based on 155,412 patient days). Preventing disruption of therapy was the chief reason cited for restraints. This can be viewed as forcing patients to comply with medical treatment against their will (Minnick et al., 2007).

Standards and Regulations

There has been considerable debate among mental health providers, regarding the use of seclusion and restraint and the possible violations of the United States Constitution. Several court cases have challenged (Jones & Feder, 2010; Kennedy & Mohr, 2001) the Eighth Amendment (Cruel and Unusual Punishment), the Fourth Amendment (right to be Free from Unreasonable Searches and Seizures, and the Fourteenth Amendment (right to Due Process) in relation to injuries and deaths that occurred from the use of seclusion and restraint (Jones & Feder, 2010; Kennedy & Mohr, 2001). Unfortunately, the use of Eighth Amendment rights have been deemed by the State Court of Appeals and the Supreme Court inappropriate to use in court cases regarding seclusion and restraint in educational and hospital settings.

Court cases such as Wyatt v. Strickney, 1972 and Rogers v. Okin can argue that the Fourth Amendment and the Fourteenth Amendment have been violated with individuals who have been victims of injury or death from seclusion and restraint interventions when extreme situations of seclusion or restraint have occurred. However, it is necessary for significant evidence to be presented in the court case in order to be
continued in court. Such court cases are very subjective and rely heavily on the facts and evidence presented in the cases (Jones & Feder, 2010).

The use of restraint and seclusion are regulated by standards endorsed by the CMS, (Department of Health and Human Services, 2006) and the Joint Commission (JC), (Department of Health and Human Services, 2006). In the United States, psychiatric hospitals are accredited or certified by either JC or CMS. Psychiatric hospitals accredited by either of these agencies are governed by standards derived from public interest, federal standards, and regulations and legal decisions. CMS standards on restraint and seclusions state that, “Restraint or seclusion may only be imposed to ensure the immediate physical safety of the patient, a staff member, or others and must be discontinued at the earliest possible time” (Department of Health and Human Services, 2006, p. 90). CMS has specified that when restraint or seclusion is used, the following must be documented in the patients’ health record:

The 1-hour face-to-face medical and behavioral evaluation when restraint or seclusion is used to manage violent or self-destructive behavior that jeopardizes the immediate physical safety of the patient, a staff member, or others; A description of the patient’s behavior and the intervention used; Alternatives or less restrictive interventions attempted (as applicable); The patient’s condition or symptom(s) that warranted the use of the restraint or seclusion; and The patient’s response to the intervention used, including the need for continued use of the intervention. (Department of Health and Human Services, 2006, p. 102)

The JC (2015) is an agency that grants accreditation to hospitals and ultimately decides whether they are providing adequate services to patients. The Joint Commission
(2015) has many standards regulating the use of seclusion and restraints in medical and psychiatric hospitals. Like other laws and regulations, these standards expect seclusion and restraints to be used only in an emergency to protect a patient, staff, or other person from harm. The JC (2015) is very interested in a commitment to reducing the use of these procedures and they encourage facilities to continually explore ways in which to do this.

In summary, federal and state officials and regulatory agencies have made efforts to establish laws and standards to restrict the use of these procedures. Currently, the goal is to reduce and ultimately eliminate the use of seclusion and/or restraint. Hospitals continuously strive to identify the most effective ways of maintaining safety, for patients, staff, and all involved in the treatment environment.

Reactions to Seclusion and Restraint

According to Soloff & Turner (1981) advocates for the use of seclusion and restraint believed it was therapeutic for patient and helped staff to control the environment. Soloff and Turner (1981) affirmed the utility of seclusion and restraint enhancing safety, developing inner direction for patient, and assisting the harmonious operations of the wards involved. Gutheil (1978) affirmed the therapeutic value of seclusion and restraint, because restraints provide controls for patients who are unable to appropriately direct their impulses. He further declared that seclusion and restraint buffer patients who are too sensitive with interpersonal relationships, and protects those who need isolation from too many sensory stimuli.

In a study examining the experience and opinion of the acute psychotic patient in the public clinical setting, Bower et al. (2003) found that patients were quite negative about this type of treatment. Bell and Palmer (1983) stated that attitudes concerning the
use of seclusion and restraint correlated directly with the location of the research. According to Bell and Palmer (1983) studies that favor the use of restraint were conducted in public psychiatric facilities, whereas those not in favor of the use of this treatment were conducted in private hospitals. This suggested that the reason for not using seclusion and restraint therapy stems from the history of the institution and has reinforced over time things like staffing standards and acquaintance with other possible interventions (Bell & Palmer, 1983). Adequate staffing must be maintained in order to provide the best care and reduce the risk of seclusion and restraints. Also, staff must be knowledgeable of de-escalation and other interventions, such as time-out, which may reduce seclusion and restraints.

Soloff, McEvoy, Ganguli, and Ganguli (1989) found that the incidence of seclusion and restraint differed with the setting. These researchers found more use in public versus private hospitals, in larger hospitals with increasing numbers, and in acute facilities over chronic care institutions. They discovered higher incidences of seclusion with younger patients, patients suffering from psychosis, and some Blacks as compared with Whites (Soloff et al., 1989).

**Concerns and Risk Associated with Seclusion and Restraint**

There are many concerns with the use of seclusion and restraint with patients in a psychiatric inpatient setting. Seclusion and restraint are often associated with physical injuries, psychological trauma, and death (National Disability Rights Network, 2009). Physical injuries associated with seclusion and restraint may include but are certainly not limited to bruises, broken bones, and cuts. Psychological trauma may be caused due to the humiliating risks associated of the seclusion or restraint, seclusion or restraint may
reinforce aggressive behavior as a coping mechanism, and seclusion or restraint may be non-therapeutic with individuals who have abuse histories (Ferleger, 2008).

Death is the most serious consequence of seclusion and restraint (LeBel, Nunno, Morhr, & O’Halloran, 2012). There are a number of ways an individual can die from a restraint, with the most common cause of death being asphyxia due to impaired respiratory functioning. Other causes of death during restraints include: (a) cardiac arrhythmia, (b) blunt trauma, (c) internal bleeding, and (d) suicide (LeBel, et al., 2012).

In October, 1998, the Harford Courant released an investigative report that publicly shed the light on the deaths that occurred during incidents of seclusion and restraint between the years of 1988 and 1998 (Weiss, Altimari, Blint, Poitras, & Megan, 1998). The report revealed deaths that occurred with children and adults in a variety of settings including psychiatric hospitals, psychiatric wards of general hospitals, group homes and residential facilities for troubled youth, and mental retardation centers and group homes. It was reported that 142 individuals died in the United States as a result of the use of restraints. It is believed that this number is low in relation to the true number of people that have died as a result of being restrained (Weiss et al., 1998).

Until recently, there were no standards about reporting the use of restraints. After the publication of the Hartford Courant’s investigative report on seclusion and restraint, the government, national accreditation organizations, and membership organizations began their own research on the use of seclusion and restraint (National Disability Rights Network, 2009). The government conducted research through the President’s New Freedom commission on Mental Health, the Center of Mental Health Services, substance Abuse and Mental Health Services Administration, and the Government Accountability
Office. At the conclusion of the research, the government found that the use of seclusion and restraint is harmful and creates significant risks for both children and adults that include physically injury, death, and psychological trauma (National Disability Rights Network, 2009). The Joint Commission, the Alliance to Prevent Restraint, Aversive Interventions, and Seclusions (APRAIS), and the National Association of State Mental Health Program Directors (NASMHPD) reported similar findings, stating that the potential risk and consequences of seclusion and restraint need to be taken into consideration when determining if those interventions will be used with individuals (National Disability Rights Network, 2009).

In October of 1999, the Health Care Financing Administration (Huckshorn, 2006) made a policy change that required physicians to review every seclusion and restraint procedure in person within one hour of the order. In October 2000, The Children’s Health Act was signed by President Clinton (Cutler, 2002). This law set national standards restricting the use of seclusion and restraint in psychiatric facilities. The law specified that seclusion and restraint may be used only to protect the physical safety of the patient, staff, or others, subject to a written order by physician or other licensed practitioner permitted to order restraints and seclusion by the facility and the state (Cutler, 2002). The law also mandated that all facilities must log all restraint episodes, explain the rationale behind the use, develop plans to avoid future incidences, and all deaths or serious injury from a seclusion and restraint episode must be reported to the appropriate agencies (Appelbaum, 1999).

Despite the negative views about restraining a patient, the hospital staff find themselves using these measures in order to manage violent patients (Appelbaum, 1999).
Congress has passed bills over the years to ensure that seclusion and restraint is only used as the last resort. Appelbaum (1999) reiterated the fact that all less restrictive measures must be utilized before placing a patient in seclusion or restraint (Appelbaum, 1999). Laws and regulations have set some standards to ensure appropriate and safe use of these procedures.

**Summary of the Literature Reviewed**

In summary, the use of seclusion and restraint is still a controversial issue, with benefits and risks being identified. The literature regarding the dangers of the use of seclusion and restraint intervention is prevalent, however, there is still controversy regarding the effectiveness of the use of these interventions with, children, adolescents and adults (Raboch et al., 2010). Demographic and clinical factors may impact the likelihood of seclusion and restraint being used as interventions. The reduction of seclusion and restraint must continuously be a focus of improvement for psychiatric hospitals and mental health providers. The process of reducing occurrences must involve a collective view of variables, which may increase the likelihood of seclusion and restraint. The process must also consider specific interventions that may serve to reduce the use of seclusion and restraint. Education of staff and patients, and involved caregivers must also be stressed. Staff members will have to know individual dynamics of the patient, what triggers them, and what may serve to calm them when they begin to escalate into a crisis situation. Again, seclusion and restraint must only be used as a last measure, and other less restrictive alternatives must first be attempted. Individuals with at risk demographic information should be given effective education and intervention. Staff, patients and families should also have education on diagnose, and typical features,
since the research does suggest that some diagnoses were found to have been involved in more incidents of seclusion and restraint. Education on de-escalation measures should also be reviewed. Although some therapeutic value of seclusion and restraint may be noted, its primary benefit may be to ensure safety. According to the research, its value should not be for coercion, punishment, or as convenience to staff. Education on ways to provide a therapeutic and safe environment should also be addressed, as this will also have influence on the use of seclusion and restraints.

Despite the adequate amount of research available regarding the use of seclusion and/or restraint, there is minimal research that discusses the effect of hospital variables on incidents of seclusion and/or restraint. This gap in research is somewhat surprising considering the importance of context when dealing with individuals with mental disorders. It would be beneficial for mental health providers to understand the effect of variables such as history of substance abuse, length of stay at time of the event, the shift and the day of the week on which the occurrence of seclusion and/or restraint takes place. Awareness of such factors will allow for some changes in treatment and preventive strategies.
CHAPTER III
METHODOLOGY

This chapter is designed to provide the reader with an overview of the methodology that was used to effectively address the proposed research questions. This chapter will provide information related to the research design, participants, setting, instrumentation, procedures, and data analysis procedures.

Research Design

The present research study uses a binary logistic regression research design to examine the relationship of: (a) demographic variables, (b) clinical variables, and (c) hospital variables on the likelihood of being placed in seclusion or restraints. According to Warner (2008), logistic regression is used to predict \( Y \) from \( X \) with a dichotomous outcome variable. The mathematical concept behind logistic regression is the logit or the natural logarithm of an odds ratio (Peng, Ingersoll & Lee, 2002). The odds ratio looks at two events and determines the corresponding odds that A occurs relative to B occurring (Peng et al., 2002).

For this study, a binary logistic regression research design analyzed archival data (patient demographics, clinical and hospital variables). Archival data are considered useful for identifying problem areas, assessing levels of problems, and evaluation of interventions (Nygaard, Bright, Saltz, & McGaffigan, 2007). Archival data are any data that are collected prior to the beginning of the research study. Archival data are often kept
because of legal requirements, for reference, or as an internal record. It is the result of completed activities. The use of archival data is beneficial in investigations of questions that would be difficult to study in any other way. Also, archival data are not subject to change and are therefore sometimes known as fixed data (University of Kansas, 2015). The archival data set for this study consisted of the information collected from the EMSH seclusion and restraint tracking forms and discharge summaries. These data were collected from closed health records of discharged patients, who were hospitalized between 2010 and 2015.

The dependent variable is seclusion and restraint. The independent variables are demographic, clinical and hospital variables. The relationship between the independent variables and the dichotomous outcome variable can be graphed as sigmoidal and is not linear. Logistic regression handles non-linear relationships, because logistic regression applies non-linear log transformation to linear regression (Park, 2013). When presenting the logistic regression results, four types of information are discussed, including overall evaluation of the model, statistical tests of individual predictors, goodness-of fit statistics, and the assessment of the predicted probabilities. This overall fit of a model shows strength of the relationship between the independent and dependent variables (Parks, 2013). Archer and Lemeshow (2006) stressed that a goodness of fit model must be completed to test the overall departure from the observed data. The relationship between the independent variables and the dependent variable is to be tested using a chi-square value. A significant value between these variables will improve the ability to predict the dependent variable more accurately. A Wald chi-square statistic was used to determine
what predictor variables are statically significant to the prediction of the group membership (Warner, 2008).

According to Warner (2008), the assumptions of logistic regression are as follows: (a) the outcome variable is dichotomous, coded 1 or 0; (b) the outcome variables scores must be statistically mutually exclusive; (c) the model must include all relevant variables and exclude any irrelevant predictors. The researcher conducted three binary logistic regression analyses utilizing a .05 significance level to address the following hypotheses:

H₀₁: The demographic variables (age, gender, and ethnicity) do not predict restraint among adult psychiatric inpatients

H₀₂: The clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse) do not predict restraint among adult psychiatric inpatients

H₀₃: The demographic variables (age, gender, and ethnicity) and clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse) do not predict restraint among adult psychiatric inpatient

**Research Site**

Data were collected from EMSH, a state psychiatric hospital located in eastern Mississippi. Operating under the direction of the Mississippi Department of Mental Health (MDMH), EMSH is the second largest employer in Meridian, MS. Once referred to as an asylum, EMSH is now deemed an inpatient behavioral health program, providing psychiatric and substance use disorder treatment for both adults and adolescents. EMSH is licensed with a maximum of 100 inpatient psychiatric adult beds and 50 adolescent
beds (EMSH, 2016a). The service area for EMSH psychiatric treatment encompasses the eastern 31 counties of Mississippi from the Tennessee line to the Gulf Coast. This state inpatient behavioral health program currently serves the State of Mississippi for residents who are civilly committed (EMSH, 2016b). In 2015, all of EMSH’s programs earned The Joint Commission’s Gold Seal of Approval. The Joint Commission’s accreditation and certification is recognized nationwide as a symbol of quality that reflects an organization’s commitment to meeting certain performance standards. EMSH gained this accreditation by demonstrating compliance with The Joint Commission’s national standards for health care quality and safety in hospitals (Joint Commission, 2015).

Participants
The participants records were randomly selected from archival health records at EMSH. Since this was a retrospective study, no patients were involved and all information was obtained from the patients closed health records. Samples of 395 health records were collected. Of the 395 participants, 134 (34%) were female, 261 (66%) were male, 204 (52%) were Caucasian and 191 (48%) were African American. All health records surveyed consisted of male and female adults, at least 18 years old during their hospitalization periods.

Instrumentation
A data collection sheet, seclusion and restraint tracking form, and patient discharge summaries were used to gather the specific information necessary for this study. The data collection sheet (Appendix A) was developed specifically for the purpose of this study. The seclusion and restraint tracking form (Appendix D) records
specific information including date and time of the incident, whether it was seclusion or restraint, and the reason for each seclusion and/or restraint incident. The discharge summary is a recapitulation of the patient’s hospital course and treatment progression. The health records were examined according to the number of variables, which included: demographics (gender, age and ethnicity), clinical (diagnosis, substance abuse, and history of violence), and hospital variables (length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred).

**Procedures**

Prior to collecting data, written permission was obtained from the EMSH research committee (Appendix B) and the Institutional Review Board (IRB) of Mississippi State University (Appendix C). The IRB review serves an important role in the protection of the rights and welfare of human research subjects. The data set was randomly selected using hospital admission logs. From these logs, the health records department selected every third admission from those admitted between the years of 2010 and 2015. Each closed health record was coded to categorize the data to facilitate analysis. The health records department removed all identifying information from patient discharge summaries and seclusion and restraint incident tracking forms. Demographic and clinical variables were collected from the discharge summaries and hospital variables were collected from the patient seclusion and restraint tracking form, which tracks each patient’s seclusion and restraint incident and is a part of the health record. The seclusion and restraint tracking form records specific information including date and time of the incident, whether it was seclusion or restraint, duration of the incident and the reason for each seclusion and/or restraint incident.
EMSH is governed by bylaws approved by the MDMH, who are appointed by the Governor. EMSH is accredited by The JC, who stipulates that the use of seclusion and restraint may only be used as a last resort after all other interventions have been tried and are unsuccessful. Like all hospitals accredited by the JC, EMSH is required to record all incidents of restraints. At EMSH, orders for restraint are stored in individual patient health records and incidents of restraint are reported on a monthly basis for all patients. This information is reported to the MDMH (2016a) and circulated among administrative staff involved in patient care at EMSH monthly.

The researcher has access to the health records and logs because of employment status. However, all personal identifiers were protected and kept anonymous through the use of numerical identifiers matched to health recorded numbers that were provided by the health records department. This list of information is stored in the Inpatient Services division of the hospital and will be maintained for a minimum of three years after the end date of the study to comply with federal regulations. All data extracted from the health records and logs were tracked on the data collection sheet (Appendix A). This data collection sheet does not contain or record any patient identifiers.

Data Analysis

The researcher analyzed the data using the binary logistic regression analyses to answer the research questions: (1) is there a relationship between demographic variables (age, gender, and ethnicity) and being restrained among adult psychiatric inpatients (2) is there a relationship between clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse,) and being restrained among adult psychiatric inpatients. A descriptive analysis was used to answer the research question: (3) is there a
difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred among adult psychiatric inpatients. Descriptive statistics are used when trying to describe a set of data (Howell, 2008).

The data were analyzed using IBM Statistical Package for the Social Sciences (SPSS) version 23. The data were obtained and exposed to the SPSS program. Howell (2008) states that it is important to examine the data, organize the data, and identify extreme outliers, while preparing the data for analysis. Extreme caution should be taken when entering data into this software program, to ensure the accuracy of data input. It is very important that the data are entered correctly. Having even one mistake will lead to errors in the calculations. To monitor accuracy of data coding and data entry, for this study, the research assistant examined the data input after all entries were completed.
CHAPTER IV
RESULTS AND DISCUSSION

A binary logistic regression was used to investigate the relationship between demographic, clinical and hospital variables and seclusion and restraints episodes among adult psychiatric inpatients. The following chapter will present a description of the results of the Binary Logistic Regression. The current study includes the following questions:

1. Is there a relationship between demographic variables (age, gender, and ethnicity) and being restrained among adult psychiatric inpatients?

2. Is there a relationship between clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse,) and being restrained among adult psychiatric inpatients?

3. Is there a difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred among adult psychiatric inpatients?

Analysis of the Data

A total of 395 patients were included in the study. Adult psychiatric inpatients previously restrained ($n = 91$) were compared to psychiatric inpatients never restrained ($n$
The relative proportions likely reflect the actual population rates as they were drawn.

Of the randomly selected 395 patients, 134 (34%) were women, 261 (66%) were men, 204 (52%) were Caucasian and 191 (48%) were African-American. Demographic data gender and ethnicity percentages are presented in Table 1.

Table 1

Descriptive Statistics for Restrained Group and Nonrestrained Psychiatric Inpatients

<table>
<thead>
<tr>
<th>Groups</th>
<th>Variables</th>
<th>Restrainted (n = 91)</th>
<th>Non-Restrained (n = 304)</th>
<th>Total (n = 395)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Gender</td>
<td>Men</td>
<td>64</td>
<td>70</td>
<td>197</td>
</tr>
<tr>
<td></td>
<td>Women</td>
<td>27</td>
<td>30</td>
<td>107</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>91</td>
<td>100</td>
<td>304</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Caucasian</td>
<td>41</td>
<td>45</td>
<td>163</td>
</tr>
<tr>
<td></td>
<td>African American</td>
<td>50</td>
<td>55</td>
<td>141</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>91</td>
<td>100</td>
<td>304</td>
</tr>
</tbody>
</table>
A content analysis was used to identify prior research on existing central concepts associated with seclusion and restraints. Categories were created and emerging themes included: (a) demographic variables, (b) history of restraints, (c) clinical variables, (d) use of restraints, (e) trauma and restraints, (f) hospital variables, (g) staff perception, (h) patient perception, and (i) medication and restraints and are presented in Table 2.

Table 2

*Content Analysis Categories*

<table>
<thead>
<tr>
<th>Categories</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic</td>
<td>7</td>
</tr>
<tr>
<td>History of Restraint</td>
<td>3</td>
</tr>
<tr>
<td>Clinical Variables</td>
<td>18</td>
</tr>
<tr>
<td>Use of Restraint</td>
<td>41</td>
</tr>
<tr>
<td>Trauma and Restraints</td>
<td>2</td>
</tr>
<tr>
<td>Hospital</td>
<td>5</td>
</tr>
<tr>
<td>Staff Perception</td>
<td>12</td>
</tr>
<tr>
<td>Patient Perception</td>
<td>11</td>
</tr>
<tr>
<td>Medication and Restraints</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Next, 11 subcategories were identified: (a) patient and staff perception, (b) patient perception and trauma, (c) patient perception and clinical variables, (d) staff perception and history of restraints, (e) staff perceptions and demographics, (f) demographics and
clinical variables, (g) hospital and clinical variables, (h) demographic and hospital variables, (i) use of restraints and clinical variables, (j) use of restraints and hospital variables, and (k) use of restraints and medication and are presented in Table 3.

Table 3

Content Analysis Subcategories

<table>
<thead>
<tr>
<th>Subcategories</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient and Staff Perception</td>
<td>13</td>
</tr>
<tr>
<td>Patient Perception and Trauma</td>
<td>4.5</td>
</tr>
<tr>
<td>Patient Perception and Clinical</td>
<td>4.4</td>
</tr>
<tr>
<td>Staff Perception and History of Restraint</td>
<td>4.5</td>
</tr>
<tr>
<td>Staff Perception and Demographic</td>
<td>4.4</td>
</tr>
<tr>
<td>Demographic and Clinical</td>
<td>13</td>
</tr>
<tr>
<td>Hospital and Clinical</td>
<td>13</td>
</tr>
<tr>
<td>Demographic and Hospital</td>
<td>4.4</td>
</tr>
<tr>
<td>Use of Restraint and Clinical</td>
<td>30</td>
</tr>
<tr>
<td>Use of Restraints and Hospital</td>
<td>4.4</td>
</tr>
<tr>
<td>Use of Restraint and Medication</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**Effect Size**

A binary logistic regression was selected to measure the effects of the predictor variables on the dependent variable, seclusion and/or restraint. Primarily, the test was
selected due to the characteristics of the research question and the dichotomous nature of the dependent variable and categorical nature of the predictor variables. The logistic regression analyses provided information about the strength and relationship of the variables in the model. The effect size was established through the odds ratio of the model. The odds ratios are presented such that values greater than one stand as is and values less than one are inverted to allow for clear interpretation of likelihoods.

According to Warner (2008), there must be 10 times the number of independent variables \(N = 10k\) to achieve adequate power for a binary logistic regression, which would result in 90 participations for this study \(N = 10(9) = 90\). Therefore, this study \(N = 395\) had adequate power to conduct a binary logistic regression for nine independent variables. The \(N = 10k\) equation is based on the Peduzzi, Concato, Kemper, Holford, and Feinstein (1996) Monte Carlos simulations with a .90 level of power to achieve logistic regression.

**Details of the Analysis and Results**

The researcher used three regression analyses in the statistical analysis:

**Binary Logistic Regression Analysis 1**

Is there a relationship between demographic variables (age, gender, and ethnicity) with being restrained among adult psychiatric inpatients?

A binary logistic regression analysis was performed to predict demographic variables as predictor variables. The simultaneous test of all predictor variables was statistically significant \(p = .008\) presented in Table 4.
Table 4

Omnibus Tests of Model Coefficients for Regression Analysis 1

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>11.929</td>
<td>3</td>
<td>.008</td>
</tr>
<tr>
<td>Block</td>
<td>11.929</td>
<td>3</td>
<td>.008</td>
</tr>
<tr>
<td>Model</td>
<td>11.929</td>
<td>3</td>
<td>.008</td>
</tr>
</tbody>
</table>

The goodness-of-fit for the model with all predictors, which is a measure of the fit of a model against actual outcomes, was assessed using the Hosmer-Lemeshow test. The results yielded a chi-square of 10.189 and was not statistically significant \((p = .252)\), indicating the model is internally consistent, as presented in Table 5.

Table 5

Hosmer and Lemeshow Test for Regression Analysis 1

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10.189</td>
<td>8</td>
<td>.252</td>
</tr>
</tbody>
</table>

Nagelkerke’s \(R^2\) is a widely used statistic to report the overall explanatory power in binary logistic regression (Warner, 2008). Nagelkerke’s \(R^2\) shows how well the overall regression model predicts scores on the dependent variable, the higher the value, between 0 and 1, the better the fit of the model. The results of the Nagelkerke’s \(R^2\) demonstrate a weak relationship (.045) between the predictors and dependent variable as presented in Table 6.
Table 6

Nagelkerke $R^2$ for Regression Analysis 1

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>414.462</td>
<td>.030</td>
<td>.045</td>
</tr>
</tbody>
</table>

Classification tables, which display the overall percentage of cases predicted with the predictor variables, are greater than without the predictor variables. The results indicated that 77.0 percent of the overall cases are accurately classified with the predictor variables. Sensitivity and specificity are used to evaluate the accuracy of a test that predicts dichotomous outcomes. Sensitivity refers to the proportion of the true positive or the cases correctly identified by the test as meeting a certain condition, in this model, the proportion of patients who were secluded/restrained (0%). The specificity, the proportion of true negative or the cases correctly identified by the test as not meeting a certain condition, in this model the proportion of patients who were secluded/restrained (100.0%). Therefore, the selected demographic variables do not add to the classification of patient as either having been or not having been secluded and/or restrained (see Table 7).
Table 7

*Classification Table for Regression Analysis 1*

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted Patients in Seclusion/Restraint</th>
<th>Yes</th>
<th>No</th>
<th>Percentage Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step Pt in S/R Yes</td>
<td></td>
<td>0</td>
<td>91</td>
<td>.0</td>
</tr>
<tr>
<td>No</td>
<td></td>
<td>0</td>
<td>304</td>
<td>100.0</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
<td></td>
<td>77.0</td>
</tr>
</tbody>
</table>

To assess the effect of each of the individual predictors, the Wald Chi-square statistic, which is a measure of statistical significance of individual regression coefficients, was examined. For variables found to be statistically significant, the odds ratio, a measure of effect size, is reported. An odds ratio above 1 indicates increased odds of an event, in this case predicting the occurrence of a seclusion and/or restraint event, whereas an odds ratio below 1 indicates decreased odds of an event.

Among the demographic variables ethnicity was not found to be a significant predictor of seclusion and restraint ($p = .337$). Gender was not found to be a significant predictor of seclusion and restraint ($p = .445$). Age was found to be a significant predictor of seclusion and restraint ($p = .004$) presented in Table 8. Overall, each year of age increases the predicted odds of a patient having been secluded/restrained by 3%. However, the overall model did not successfully predict status for any of the 95 patients who had been secluded or restrained (see Table 8).
Table 8

*Variables in the Equation for Regression Analysis 1*

<table>
<thead>
<tr>
<th></th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exp(B)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.028</td>
<td>.010</td>
<td>8.317</td>
<td>1</td>
<td>.004</td>
</tr>
<tr>
<td></td>
<td>1.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td>-.236</td>
<td>.245</td>
<td>.923</td>
<td>1</td>
<td>.337</td>
</tr>
<tr>
<td></td>
<td>.790</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.201</td>
<td>.263</td>
<td>.583</td>
<td>1</td>
<td>.445</td>
</tr>
<tr>
<td></td>
<td>1.222</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.206</td>
<td>.119</td>
<td>101.890</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>3.341</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Binary Logistic Regression Analysis 2**

Is there a relationship between clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse,) with being restrained among adult psychiatric inpatients?

A binary logistic regression analysis was performed to predict clinical variables as predictor variables. The simultaneous test of the predictor variables for this model was statistically significant ($p = .001$) presented in Table 9.
Table 9

*Omnibus Tests of Model Coefficients for Regression Analysis 2*

<table>
<thead>
<tr>
<th></th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>31.361</td>
<td>4</td>
<td>.001</td>
</tr>
<tr>
<td>Block</td>
<td>31.361</td>
<td>4</td>
<td>.001</td>
</tr>
<tr>
<td>Model</td>
<td>31.361</td>
<td>4</td>
<td>.001</td>
</tr>
</tbody>
</table>

The goodness-of-fit for the model with all predictors was assessed, the Hosmer-Lemeshow test yielded a chi-square of 3.242 and was not statistically significant ($p = .778$), indicating the model is internally consistent presented in Table 10.

Table 10

*Hosmer and Lemeshow Test for Regression Analysis 2*

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.242</td>
<td>6</td>
<td>.778</td>
</tr>
</tbody>
</table>

The results of the Nagelkerke’s $R^2$ demonstrate a weak relationship (.116) between the predictors and dependent variable as presented in Table 11.
Table 11

*Nagelkerke R\(^2\) for Regression Analysis 2*

<table>
<thead>
<tr>
<th>Step</th>
<th>-2 log likelihood</th>
<th>Cox &amp; Snell R Square</th>
<th>Nagelkerke R Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>395.030</td>
<td>.076</td>
<td>.116</td>
</tr>
</tbody>
</table>

As shown on the classification table, 76.7% of the overall cases are accurately classified with the predictor variables. Sensitivity and specificity are used to evaluate the accuracy of a test that predicts dichotomous outcomes. The sensitivity in this model for the proportion of patients who were secluded and/or restrained was 16.5%. The specificity in this model for the proportion of patients who were secluded and/or restrained was 94.7% (see Table 12).

Table 12

*Classification Table for Regression Analysis 2*

<table>
<thead>
<tr>
<th>Observed Predicted Patients in Seclusion/Restraint</th>
<th>Yes</th>
<th>No</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Correct</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step Pt in S/R Yes</td>
<td>15</td>
<td>76</td>
<td>16.5</td>
</tr>
<tr>
<td>No</td>
<td>16</td>
<td>288</td>
<td>94.7</td>
</tr>
<tr>
<td>Overall Percentage</td>
<td></td>
<td></td>
<td>76.7</td>
</tr>
</tbody>
</table>
Among the clinical variables, diagnosis and substance abuse were not found to be significant predictors of seclusion and restraints. History of violence was the only statistically significant predictor of seclusion and restraint ($p = .001$). Therefore, an individual who has a history of violence is 4.6 times more likely to experience a seclusion and/or restraint event, than an individual who does not have a history of violence (see Table 13).

Table 13

*Variables in the Equation for Regression Analysis 2*

<table>
<thead>
<tr>
<th>Exp(B)</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Schizo</td>
<td>-.284</td>
<td>.339</td>
<td>.701</td>
<td>1</td>
<td>.402</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.753</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipo</td>
<td>-.524</td>
<td>.302</td>
<td>3.015</td>
<td>1</td>
<td>.082</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.592</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HX</td>
<td>1.528</td>
<td>.287</td>
<td>28.320</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4.607</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>-.318</td>
<td>.278</td>
<td>1.314</td>
<td>1</td>
<td>.252</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.727</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.206</td>
<td>.119</td>
<td>101.890</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3.341</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Schizo = Schizophrenia; Bipo = Bipolar Disorder; HX = History of violence; SA = Substance Abuse
Binary Logistic Regression Analysis 3

A binary logistic regression analysis was performed on the full model to predict demographic and clinical variables as predictor variables are presented in Table 14. The simultaneous test of all predictor variables was statistically significant ($p = .001$).

Table 14

**Omnibus Tests of Model Coefficients for Regression Analysis 3**

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>$df$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>43.238</td>
<td>7</td>
<td>.000</td>
</tr>
<tr>
<td>Block</td>
<td>43.238</td>
<td>7</td>
<td>.000</td>
</tr>
<tr>
<td>Model</td>
<td>43.238</td>
<td>7</td>
<td>.000</td>
</tr>
</tbody>
</table>

The goodness-of-fit for the model with all predictors was assessed using the Hosmer-Lemeshow test, and yield a chi-square of 9.845 and was not statistically significant ($p = .276$), indicating the model is internally consistent presented in Table 15.

Table 15

**Hosmer and Lemeshow Test for Regression Analysis 3**

<table>
<thead>
<tr>
<th>Step</th>
<th>Chi-square</th>
<th>$df$</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9.845</td>
<td>8</td>
<td>.276</td>
</tr>
</tbody>
</table>

The results of the Nagelkerke’s $R^2$ demonstrate a weak relationship (.157) between the predictors and dependent variable as presented in Table 16.
Classification tables displaying the overall percentage of cases predicted with the predictor variables are greater than without the predictor variables. The analyses conclude that 77.5% of the overall cases are accurately classified with the predictor variables. Sensitivity and specificity are used to evaluate the accuracy of a test that predicts dichotomous outcomes. The sensitivity in this model for the proportion of patients who were secluded and/or restrained was 19.8%. The specificity in this model for the proportion of patients who were secluded and/or restrained was 94.7% (see Table 17).
### Table 17

*Classification Table for Regression Analysis 3*

<table>
<thead>
<tr>
<th>Observed</th>
<th>Predicted Patients in Seclusion/Restraint</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Correct</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step</td>
<td>Pt in S/R Yes</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>16</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 18 shows the Wald Chi-square value for this model, to predict restraint versus nonrestraint with the variables demographic (age, gender, and ethnicity) and clinical (diagnosis at discharge, history of violence toward self/others, and substance abuse).

Among the demographic variables, age was a significant predictor of seclusion and restraint \( (p = .007) \). Ethnicity was not found to be a significant predictor of seclusion and restraint \( (p = .865) \). Gender was not found to be a significant predictor of seclusion and restraint \( (p = 1.567) \) presented in Table 16. The results of the full model indicate as age increases, the likelihood of an individual experiencing seclusion and restraint event increases by 3%.

Of the clinical variables, substance abuse was not found to be a significant predictor of seclusion and restraints \( (p = .106) \). However, history of violence was a significant predictor of seclusion and restraint \( (p = .001) \). Bipolar diagnosis was a
significant predictor of seclusion and restraint ($p = .024$). Therefore, the analysis of the full model indicates a patient with a history of violence is 4.3 times more likely to experience a seclusion and/or restraint event than a patient with no history of violence. Also, the likelihood of a patient with a Bipolar diagnosis experiencing a seclusion and/or restraint event is fifty (50%) less than a patient who does not have a bipolar diagnosis, with all other variables held constant.
Table 18

Variables in the Equation for Regression Analysis 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>Exp(B)</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.029</td>
<td>.011</td>
<td>7.314</td>
<td>1</td>
<td>.007</td>
</tr>
<tr>
<td></td>
<td>1.029</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td>.252</td>
<td>.271</td>
<td>.865</td>
<td>1</td>
<td>.352</td>
</tr>
<tr>
<td></td>
<td>.778</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.353</td>
<td>.282</td>
<td>1.567</td>
<td>1</td>
<td>.211</td>
</tr>
<tr>
<td></td>
<td>1.423</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schizo</td>
<td>-.318</td>
<td>.352</td>
<td>.816</td>
<td>1</td>
<td>.366</td>
</tr>
<tr>
<td></td>
<td>.727</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bipo</td>
<td>-.706</td>
<td>.313</td>
<td>5.082</td>
<td>1</td>
<td>.024</td>
</tr>
<tr>
<td></td>
<td>.494</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SA</td>
<td>-.472</td>
<td>.292</td>
<td>2.609</td>
<td>1</td>
<td>.106</td>
</tr>
<tr>
<td></td>
<td>.624</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HX</td>
<td>1.449</td>
<td>.294</td>
<td>24.264</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>4.257</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>1.206</td>
<td>.119</td>
<td>101.890</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>3.341</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Schizo = Schizophrenia; Bipo = Bipolar Disorder; HX = History of violence; SA = Substance Abuse
Finally, was there a difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred in adult psychiatric inpatients.

The frequencies were computed for those adult psychiatric inpatients who were involved in a restraint or seclusion (n = 91). This section will present the results of frequency of the different levels of hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week and the shift on which the incident occurred in adult psychiatric inpatients. In table 19 is shown the distribution of the length of stay at the time of the first seclusion and/or restraint event. The length of stay at the time of the first seclusion and/or restraint was within the first month (65.6%), second month (24.7%), third month (4.3%), fifth month (4.3%) and sixth month or longer (1.1%). This suggests that individuals are likely to experience seclusion within the first month after being admitted. This may be due to various factors including: the patient instability, difficulty adjusting to the dynamic of the unit and other patient on the unit and staff being unfamiliar with patient (see Table 19).
Table 19

**Length of Stay at Time of First Seclusion/Restraint Event**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Month</td>
<td>61</td>
<td>65.6</td>
<td>65.6</td>
<td>65.5</td>
</tr>
<tr>
<td>2 Month</td>
<td>23</td>
<td>24.7</td>
<td>24.7</td>
<td>90.3</td>
</tr>
<tr>
<td>3 Month</td>
<td>4</td>
<td>4.3</td>
<td>4.3</td>
<td>95.6</td>
</tr>
<tr>
<td>5 Month</td>
<td>4</td>
<td>4.3</td>
<td>4.3</td>
<td>98.9</td>
</tr>
<tr>
<td>6 Month or longer</td>
<td>1</td>
<td>1.1</td>
<td>1.1</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Table 20 shows the distribution of the day of the week. The day of the week of the seclusion and/or restraint was the weekday (73.1%) and weekend (26.9%). Although the frequency appears to be more during the weekdays, there was not significant difference in the average daily rate of seclusion and restraint, weekdays (10.2%) and weekend (12.5%).

Table 20

**Day of the Week**

<table>
<thead>
<tr>
<th>Percent</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday</td>
<td>68</td>
<td>73.1</td>
<td>73.1</td>
<td>73.1</td>
</tr>
<tr>
<td>Weekend</td>
<td>25</td>
<td>26.9</td>
<td>26.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>
As shown on Table 21 the distribution of the shift on which the seclusion and/or restraint incident occurred. The shift on which the seclusion and/or restraint incident occurred was the first shift (86.0%) and second shift (14.0%). This indicates that individuals are more likely to be placed in seclusion during the first work shift. This may be due to more stimulation from programming, activities, and the higher number of staff available during the first shift. There is less activity during second shift hours due to less programming and patients being asleep for much of the time.

Table 21

*Shift on Which the Incident Occurred*

<table>
<thead>
<tr>
<th>Percent</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Valid Percentage</th>
<th>Cumulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>First 7am-7pm</td>
<td>80</td>
<td>86.0</td>
<td>86.0</td>
<td>86.0</td>
</tr>
<tr>
<td>Second 7pm-7am</td>
<td>13</td>
<td>14.0</td>
<td>14.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The results are as follows: 65.6% of the psychiatric inpatients that experienced restraint episodes were restrained within the first month of admission, 73% were restrained during the weekday and 86.8% were restrained during the first shift.

**Discussion of the Results**

**Demographic Variables**

The majority of studies examining age show a negative correlation between age and rates of seclusion and/or restraint. Patients more likely to be restrained are younger than 35 years of age (Betemps et al., 1993, Bower et al., 2003; Busch & Shore, 2000,
The present research shows age as a significant predictor for patients being restrained. Although there were no significant differences based on age between patients restrained and patients never restrained, patients restrained were on average 40 years of age. Overall, each year of age increases the predicted odds of a patient having been secluded/restrained by 3%. However, the overall model did not successfully predict status for any of the 95 patients who had been secluded or restrained.

This study also examined the relationship between gender and restraints. Similar to previous research, more men were restrained than women (Betemps et al., 1993; Carpenter et al., 1988b; Thompson, 1986). However, when the effects of these differences on patient restraint were examined further, gender of patient was not related to seclusion and/or restraint. Several studies showed that gender had no effect on group differences in patients’ restraint or seclusion (Oldham et al., 1983; Plutchik et al., 1978).

Research indicates that African Americans may be over represented in the use of restraint and seclusion across psychiatric settings (Spector, 2011). This study examined differences in restraint based on ethnicity. The current research found no significant difference between patient restraint groups based on ethnicity. Although the results from this study corroborate findings yielded in previous studies using similar patient populations, (Binder, 1979; Oldham et al., 1983; Plutchik et al., 1978) evidence to support ethnicity as a predictor of future seclusion and/or restraint is inconclusive.

Clinical Variables

This study examined diagnoses as a predictor of seclusion and/or restraint. Individuals diagnosed with schizophrenia, psychotic or mood disorders have historically
experienced more restraint or seclusion than any other diagnostic groups (El-Badri & Mellsop, 2002; Nijman et al., 2002; Okin, 1985). The current study supports findings from previous research. This study found that diagnosis was a statistically significant predictor of seclusion and/or restraint, and that individuals diagnosed with bipolar disorder were less likely to experience a seclusion and/or restraint event than patients diagnosed with depressive disorder or within the schizophrenia spectrum. This may be due to the characteristic symptoms of the schizophrenia spectrum disorders, such as delusions, hallucinations and disorganized thinking and behavior, which may increase agitation and aggressive behavior. In addition, characteristic symptoms of depressive disorders, which include irritability, anxiety, feelings of worthlessness and recurring thought of death, may lead to an increase in self-harming behavior and increase the occurrence of seclusion and/or restraints. Although other research showed that only substance related disorders reliably predict the likelihood that patients will be restrained, (Korkeila et al., 2002; Legris et al., 1999), the current research shows no significant difference between restraint groups in regards to substance related disorders. This could possibly be due to the symptoms usually experienced by substance abuse inpatients in an acute setting, including fatigue, physical pain, low energy, and disturbed sleep.

**Hospital Variables**

The present findings suggest that adult psychiatric inpatients that experienced restraint episodes were restrained within the first month of admission, during the weekday and during the first shift. These findings are contradictory to that of Richardson (1987) who concluded that most seclusion occurred on evening shift. Similarly, Oldham et al. (1983) concluded the highest occurrences of seclusion were during the weekdays at
times of the day when there were smaller numbers of staff due to meetings and other
duties. Kirkpatrick (1989) found that the first 24 hours of admission appeared to be a risk
factor that could result in seclusion. She noted in her findings this could be a function of
patient instability as well as anxiety about being on the unit, other patients’ reaction to the
newly admitted patient, and staff not knowing the person and being anxious about him or
her. Therefore, mental health providers need to have structured psychiatric units which
include milieu therapy, organized treatment schedules, adequate orientation of patients to
the unit, ongoing communication among staff members and continuous observation of
these newly admitted patients.
CHAPTER V
SUMMARY, LIMITATIONS, AND FUTURE RESEARCH

This chapter contains a discussion of the results of the Binary Logistic Regression conducted by the researcher. This study examined the relationship between seclusion and/or restraint episodes and demographic, clinical and hospital variables among psychiatric inpatients. This chapter includes a summary of the study, limitations, and implications of practice and future research. The review of the literature reflects there is a lack of knowledge about the characteristics of patients for whom these interventions are deemed necessary compared to those who do not experience seclusions and restraints.

Summary

Use of restraint in acute psychiatric units is highly controversial. Knowledge is limited about the characteristics of patients who are restrained and the predictors of use of restraint. Concerns have grown in recent years, from ethical, medico-legal, and clinical points of view, about the use of coercive interventions with psychiatric patients (Knutzen et al., 2011).

Patients often experience these interventions as inhumane and humiliating, and such interventions can have aversive physical and mental effects and in some case can be fatal (Knutzen et al., 2011). Many patients placed in seclusion are left with negative views of the event. Studies report feelings of anger and fear (Donat, 2002; Frueh et al., 2005; Kontio et al., 2012); the recalling of traumatic memories or of having experienced
trauma (Cano, Boyer, Garnier, Michel, & Belzeaux, 2011); and feelings of abandonment and isolation (Bonner, Lowe, Rawcliffe, & Wellman, 2002; Holmes, Kennedy, & Perron, 2004; Lazarus, 2001; Mayers, Keet, Winkler, & Flisher, 2011; Patterson & Duxburg, 2007; Wilkins, Hunter, & Silverstrein, 2004). Various studies also report an increase in violent acts and rise of injury for both patient and staff during seclusion and/or restraint episodes (Paterson & Duxbury, 2007; Weiss et al., 1998).

Despite the general movement toward using the least restrictive intervention, coercive measures are widely used in psychiatric settings. The preferred methods (mechanical restraint, physical restraint, seclusion) and the frequency of the use vary, but coercive measures are nevertheless used across legislation and services systems (Keski-Valkama et al., 2010).

The purpose of this study was to examine the role of demographic (age, gender, ethnicity), clinical (diagnosis, substance abuse and history of violence) and hospital (length of stay, day of the week, shift during which the incident occurred) variables in predicting seclusion and/or restraint episodes in adult psychiatric inpatients. Identifying these type variables to assist healthcare providers prepare treatment interventions can be critical in improving preventative measures. This can ultimately help to maintain the safety of the patient and others.

Research Questions Addressed and Key Results

The researcher used a binary logistic regression design and descriptive statistics to answer the following research questions:
Research question 1. Is there a relationship between demographic variables (age, gender, and ethnicity) and being restrained among adult psychiatric inpatients?

The independent variable was seclusion and/or restraint. Dependent variables were demographic variables (age, gender, and ethnicity).

Research results. Archival data were collected and entered into SPSS 23.0 and a binary logistic regression was conducted. The analysis showed that age can predict seclusion and/or restraint significantly better than predictions of seclusion/restraint without these three variables. For this study, the sensitivity was 0, so while the relationship is statistically significant, the functional utility was nil. As an individual gets older, the likelihood of having a seclusion and/or restraint event increases by 3%. This is inconsistent with the findings from previous studies. Patients more likely to be restrained are younger than 35 years of age (Betemps et al., 1993, Bower et al., 2003; Busch & Shore, 2000, Fisher 1994; Sebit et al., 1998; Thompson, 1987; Wynn, 2002).

Research question 2. Is there a relationship between clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse,) and being restrained among adult psychiatric inpatients?

The independent variable was seclusion and/or restraint. Dependent variables were clinical variables (diagnosis at discharge, history of violence toward self/others, and substance abuse).

Research results. Archival data were collected and entered into SPSS 23.0 and a binary logistic regression was conducted. The analysis showed that the clinical variables, diagnoses and history of violence can predict seclusion and/or restraint significantly
better than predictions of seclusion and/or restraint without these three variables. This is consistent with the findings from previous studies. Individuals diagnosed with schizophrenia, psychotic or mood disorders have historically experienced more restraint or seclusion than any other diagnostic groups (El-Badri & Mellsop, 2002; Nijman et al., 2002; Okin, 1985).

**Research question 3.** Is there a difference in the frequency of restraint in the different levels of the following hospital variables: length of stay at time of first seclusion and/or restraint event, day of the week, and the shift on which the incident occurred in adult psychiatric inpatients?

The independent variable was seclusion and/or restraint. Dependent variables were hospital variables (length of stay at time of first seclusion and/or restraint event, day of the week, and the shift).

**Research results.** Archival data were collected and entered into SPSS 23.0 and a descriptive analysis was conducted. The results indicated that adult psychiatric inpatients that experienced a restraint event were either restrained within the first month of admission, during weekday or during the first shift at the hospital. This is inconsistent with Richardson (1987) who concluded that most seclusion occurred on evening shift and consistent with Oldham et al. (1983) who concluded the highest occurrences of seclusion were during the weekdays and Kirkpatrick (1989) who concluded the first 24 hours of admission appeared to be a risk factor that could result in seclusion.

**Limitations**

There were limitations to this study. The presenting findings of this study did not consider-triggers to the seclusion and/or restraint episodes. It could be beneficial to
examine the how the role of the patient’s behavior precipitated the seclusion and/or restraint episode. For example, refusing to comply with rules, fighting with peers, and not getting needs met may be contributing factors to behaviors that lead to being placed in seclusion and/or restraint.

This study utilized information from health record documentation, which is primarily obtained from Chancery Court commitment orders, and patients and family members verbal reports. This information may not be reliable. Families of patients with mental illnesses may exaggerate patient histories of aggression in an attempt to make them appear more psychiatrically ill to ensure an admission to the hospital for their relatives. Also, patients may underreport their histories in attempt to present themselves positively. While others may have been admitted during an altered state of mind and are unable to provide accurate information. Consequently, it is difficult to determine if variables such as history of violence and substance use are accurately presented in the findings of this study.

The population is limited to one state psychiatric hospital in Mississippi. Results cannot be generalized to other regions of the United States. In addition, because the data collections were from a state psychiatric hospital, results may not be generalized to patients in private hospitals. This may be due to various factors such as: (a) Patients are involuntarily court committed to this state hospital, while most private hospital admissions are voluntary. (b) The length of stay in a state hospital may be longer when compared to a private facility. This difference is largely due to the state hospital’s ability to use treatment and discharge based upon patient strengths and level of clinical improvement, and not as much by insurance deadlines.
Recommendations based on Results of this study

In light of the results of this study, the researcher provides the following recommendations. They are divided as follows: (a) Recommendations for clinicians; (b) recommendations for mental health administrators; and (c) recommendations for future research.

Recommendations for Clinicians

1. Clinicians working in psychiatric hospitals should have generalized education on the purpose and use of seclusion and restraints and when these methods are applicable for use.

2. Clinicians frequently provide services including group therapy and individual therapy, as well as family counseling. It would be beneficial to work with patients to individualize appropriate coping tools for them to use when in crises situations. This could assist in reducing the number of seclusion and restraint episodes.

3. Since this study found that individuals with Bipolar Disorder were less likely to be secluded and/or restrained than those with diagnosis of Schizophrenia; clinicians could design program schedules with more frequent therapy to individuals with Schizophrenia, to assist in identifying coping skills.

4. This research found that as age increased, the likelihood of an individual experiencing a seclusion and/or restraint episodes occurring increases by 3%. Therefore, clinicians should consider the patient’s age when determining suitable interventions and interactions.
Clinicians and treatment organizations should continue to strive to identify ways of providing the safest and most effective treatment when seclusions/restraints are involved.

**Recommendations for Mental Health Administrators**

Hospital’s average daily census (ADC) has a magnitude of influence on the use of seclusion and/or restraints. As ADC increases, the number of seclusion and/or restraint episodes increases (Centers for Medicaid & Medicare Services, 2008). Based on the findings in this study, mental health administrators should:

1) Monitor the physical environment, and be aware of potential factors that may increase the occurrence of seclusion and restraint. Crowded units may provide more of an excess of stimulation for patients with Schizophrenia, which could possibly result in more agitation, and thus seclusion and/or restraint episodes (Feinsod, Kreinin, Chistyakov, & Klein, 1998).

2) Administrators should develop and implement a quiet room, which provides less stimulation, and is physically/psychologically less stimulating to the patient, and may allow them to calm themselves.

3) This study found that more seclusion and/or restraint episodes occurred on weekdays during first shift. Administrators should be aware of patterns in seclusion and restraint during shifts and ensure that adequate staffing is provided to meet the needs of the patient’s.

4) Since this study found that most seclusion and/or restraint episodes occur within the first month of stay, administrators should set up a process to ensure increased safety for these individuals. This should include increase levels of
observations for new admission and developing a patient orientation process, which may decrease patient anxiety and episodes of aggression.

5) Adequate educational staff training of mental disorders could possibly help reduce the use of seclusion and restraint. If staff knew which symptoms of mental disorders to expect, and how to help those symptoms, they may have better reactions/responses to patient behaviors.

**Recommendations for Future Research**

Future research should continue to focus on different variables related to the use of seclusion and/or restraint episodes. To make the research more generalizable, different geographical locations should be examined. For example, populations beyond Northeastern Mississippi should be used, thereby allowing for comparisons to be made among different populations and settings. Studies need to go more in to depth with variables that are connected to seclusion and/or restraint, (i.e., education levels, cognitive functioning levels, personalities, family relationships and involvement, and socioeconomic levels).

In the future, it would also be beneficial to explore factors related to specific treatment units within a facility. Narrowing in on specific shifts and teams of staff would supply more detailed information related to incidences of seclusion and/or restraint. This would provide more insight into the culture of the unit, specifically factors related to the staff that may influence the use of seclusion and/or restraint. For example, staff should develop and utilize an assessment, to examine the culture of the unit, specifically, the staff’s perception on the use of seclusion and restraints. If staff are involved and in an
agreement of an overall goal of reducing seclusion and restraint, staff may make efforts to implement other interventions and utilize seclusion and/or restraints as a last resort.

It is recommended that researchers examine the factors related to seclusion and/or restraint with more direct observation of the event, such as observing videos of the event. It would be beneficial if the researcher could be present during the incidences of a seclusion and/or restraint episode and collected observational data rather than archival data. This would provide contextual information such as triggering events, behaviors that lead to the patient escalating, and staff behaviors that contributed to the use of these interventions. The researcher could develop a tool to monitor specific information related to the seclusion and/or restraint episodes, such as what activity precipitated the violent behavior leading to the seclusion.

Research is also needed to examine the difference between patients who have only been admitted once and those who have had multiple admissions. This can play a significant role in understanding incidents of seclusion and/or restraint. First time admission patients may have more difficulty adjusting to being in the hospital, whereas patients with multiple admissions may be more accustomed to the culture of the hospital. This would provide facilities with more information regarding risk factors for seclusion and/or restraint with patients with mental disorders.

Future research should also examine the role of medications in incidences of seclusion and/or restraint. There is limited research regarding chemical restraints, and it is unclear if this is due to underreporting or whether it is used in conjunction with seclusion and/or restraint. Further research should examine whether or not medications
were used as means of coercion, or to gain control of a unit, rather than as needed to decrease episodes of agitation.

**Implications and Conclusion**

**Education of Staff**

The focus of this study was to identify patients with mental disorders who are at risk of being secluded and/or restrained. The present study provided support that demographic and clinical variables can predict likelihood of whether a patient is at risk for restraint. The findings indicated a significant relationship between the age of patients and a history of violence as predictors of restraint. Also, the findings indicated patients with a diagnosis of bipolar disorder were less likely to be restrained. Clinicians working with patients receiving inpatient treatment must be aware of the dynamics of the treatment environment by picking up early cues that signal escalation and managing aggressive behavior as well as evidence-based treatment interventions such as Cognitive Behavior Therapy (CBT) and ABC Model. CBT is based on the idea that if we change our thoughts to be more realistic and positive, we can change the way we experience life (Groth, 2010). Another way to understand the relationship between thoughts, feeling and behaviors is the ABC model: antecedent plus behaviors equal consequences. Thoughts can change feelings and behaviors and negative automatic thoughts can become part of vicious cycle and create what is called a negative feedback loop, resulting in even more negative thoughts, more negative feelings and more negative behaviors (Groth, 2010).

Research indicates that the use of seclusion and restraint have decreased followed by implementation of educational programs designed to help staff assess patient clinical care needs and develop more therapeutically appropriate alternatives (Bower et al., 2003).
The most effective inpatient psychiatric units are also those in which the patients feel they have roles in their treatment (Ellsworth, Maroney, Klett, Gordon & Gunn, 1971; Bowers et al., 2007). Direct care staff as well as leadership of inpatient psychiatric units can be educated and encouraged to involve patients in decisions about their own treatment as often as is possible and appropriate. When patients with mental disorders experience increased stress, they are more likely to become violent so offering additional support and structure during these times can be beneficial (Bowers et al., 2007).

**Increased Structure**

The findings of this study indicated patients are more likely to experience a seclusion and/or restraint event on weekends and/or during the first shift (7 am- 7pm) of the day. Violent behaviors are more likely to occur in a poorly structured milieu with undefined program rules and excessive unscheduled time (Swett, 1994). Inpatient programs that offer a rich assortment of productive activities diminish the likelihood of inappropriate behavior, and increase adaptive social and leisure skills (Bower et al., 2003). It is recommended that programs be designed to promote increased structure by implementing the following: a) a unit schedule which is posted for patients to review, b) a reader friendly patient information board, c) inform patients with names of all the staff members on duty and d) provide a range of programming to meet the needs of both higher and lower functioning patients. Clinicians should also be aware of the population being served and of the various triggers such as excessive noise that may increase stimulation and result in the patient escalation.
Improving Communication

Another category of research findings includes improving direct care staff’s communication with patients in order to decrease violence and reduce the need for use of seclusion and/or restraint. Excessive noise and activity may increase symptoms in low-functioning patients and in patients who already have strong symptoms (Van Putten & Emory, 1973). This research finding can be implemented in various ways. Direct care staff can be educated on the importance of building communication skills and rapport with patients. Awareness of noise reduction on inpatient units can assist in preventing symptom exacerbation among patients. Also, Low Expressed Emotion (EE) can decrease the need for seclusion and restraint and reduce relapse (Yan et al., 2004). EE refers to the amount and quality of critical comments, hostility, and emotional over-involvement expressed by a caregiver to the patient. Emotionally charged and negative interactions with patient are a major cause of aggression on inpatient units. Low EE interactions lead to more successful outcomes, patients function better and are less likely to become ill again (Yan et al., 2004).

The reduction of seclusion and restraint must continuously be a focus of improvement for psychiatric hospitals and mental health providers. The process of reducing occurrences must involve a collective view of variables that may increase the likelihood of seclusion and/or restraints. The process must also consider specific interventions (i.e., verbal de-escalation, timeout, supportive counseling). These type interventions may serve to reduce the use of seclusion and/or restraints. Education of staff and patients, and involved caregivers must also be stressed. Mental health staff will have to be aware of the individual dynamics of the patient, what triggers them, and what
intervention techniques may serve to calm them when they begin to escalate into a crisis situation. Preventive measures (i.e., identifying escalating behaviors, providing encouragement, verbal support, removing individual from the stimulating environment) should first be attempted prior to the use of seclusion and/or restraint.

Mental health staff, patients and families should also receive education on diagnoses, since the research suggests that some diagnoses are more represented in incidents of seclusion/restraint. Training of staff on de-escalation measures, such as building healthy relationships, communication skills and conflict management skill, should also be conducted annually and as needed. According to the research, the value of seclusion and/or restraint should not be for coercion, punishment, or as convenience to staff. Clinicians and treatment organizations should continue to strive to identify ways of providing the safest and most effective treatment, to all involved in the treatment process.

This study found that individuals with bipolar disorder were less likely to experience a seclusion and/or restraint event than those individuals diagnosed with depressive disorder or within the schizophrenia spectrum. It was also found that as age increases, the likelihood of an individual experiencing seclusion and/or restraint event increases. Ethnicity and the other diagnoses were not predictive factors for seclusion and/or restraint. Day shift had a higher risk than night shift for seclusion and/or restraint episodes. The findings also provide mental health facilities and mental health provider’s knowledge to be proactive in the reduction of seclusion and/or restraint episodes. By being aware of possible risk factors associated with seclusion and/or restraint, mental health providers can use early intervention and prevention strategies to reduce the use of seclusion and/or restraint.
Finally, findings of this study contribute to a body of growing literature on the importance of identifying those variables that make patients at higher risk for seclusion and/or restraint. The findings also provide evidence-based knowledge derived from clinical outcomes that would assist in providing a safer therapeutic environment for patients receiving inpatient treatment.
REFERENCES


doi:10.3928/02793695-20050201-07


Scanlan, J. N. (2010). Interventions to reduce the use of seclusion and restraint in inpatient psychiatric settings: What we know so far a review of the literature.


APPENDIX A

DATA COLLECTION SHEET
## DATA COLLECTION SHEET

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APPENDIX B

PERMISSION TO USE ARCHIVAL DATA SET
February 7, 2017

Mrs. Oya Weston Hampton  
Ph.D. Candidate  
Mississippi State University  

To whom it may concern:

On behalf of the East Mississippi State Hospital Research Committee, I would like to inform you that your research proposal was approved on November 16, 2016. You have been endorsed to proceed in your investigation of patient demographics in the closed health records data of the Inpatient Services Division. To ensure patient records remain confidential, your investigation will be conducted on Campus and arrangements will be made to provide you with the appropriate accommodations. Based upon your proposal, the Research Committee understands that your endeavor does not jeopardize any patient information and all obtained information is coded, i.e., that the information not only remains confidential but anonymous.

Please do not hesitate to contact me for any assistance and as requested by the Research Committee I would like to invite you to present your findings and results to the Committee when you have completed your work. Thank you for your application to East Mississippi State Hospital and the best to you in your investigation endeavor.

Sincerely,

[Signature]

James L. Shurnate, Ph.D.  
Psychology Executive  
Chairperson, Research Committee

A Facility of the Mississippi Department of Mental Health
APPENDIX C

IRB APPROVAL
From: irb@research.msstate.edu
Sent Date: Friday, February 17, 2017 05:32:16 AM
To: owa1@msstate.edu, cdg28@msstate.edu, dsm10@msstate.edu, jcll11@msstate.edu, kdd5@msstate.edu, rg509@msstate.edu
Cc:
Bcc:
Subject: IRB Protocol Approved: IRB-16-639, Oya Staten
Message:
IRB has approved the protocol with the following details.

Protocol ID: IRB-16-639
Principal Investigator: Oya Staten
Department: Counsel Ed Psych & Foundation
Protocol Title: Demographic Variables as Predictors of Seclusion and Restraints for Adult Psychiatric Inpatients
Review Type: EXEMPT
Approval Date: February 17, 2017

To access your approval documents, log into myProtocol and click on the protocol number to open the approved study. Your official approval letter can be found under the Event History section. For non-exempt approved studies, all stamped documents (e.g., consent, recruitment) can be found in the Attachment section and are labeled accordingly.

If you have any questions that the HRPP can assist you in answering, please do not hesitate to contact us at irb@research.msstate.edu or 662.325.3994.
APPENDIX D

SECLUSION/RESTRAINT TRACKING FORM
Inpatient Services
Seclusion/Restraint Tracking Form

| IRS: | Case #:
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| Fluids offered per policy (every hour when awake) | |
|-----------------------------------------------------|

| Bathroom per policy (every hour when awake) | |
|---------------------------------------------|

| Circulation (every 15 minutes when in restraints) | NA |
|--------------------------------------------------|

| Range of Motion (ROM) (every 2 hours when awake) | NA |
|---------------------------------------------------|

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| Other (such as was order continued? IRS injured? Etc) | N/A |
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117