THE RELATIONSHIP OF ATTRIBUTIONS ABOUT INPATIENT VIOLENCE, ATTITUDES ABOUT COERCIVE MANAGEMENT STRATEGIES AND EXPOSURE TO VIOLENCE

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Dedication

This dissertation is dedicated to my wife Maria. I could not ask for a finer more loving person with whom to spend my life.

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ABSTRACT

THE RELATIONSHIP OF ATTRIBUTIONS ABOUT INPATIENT VIOLENCE, ATTITUDES ABOUT COERCIVE MANAGEMENT STRATEGIES AND EXPOSURE TO VIOLENCE

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The attributional theory of help-giving and aggression proposes that attributions about the causes of problematic behaviors in others, can be categorized along a continuum of internality /externality and controllability/non-controllability (Rudolph et al., 2004). Mental health staff who attribute consumers' violent behavior to internal and controllable factors, collectively known as "responsibility", have shown increased feelings of anger toward that consumer (Keenan, 2010) and exhibited fewer helping behaviors (Stanley & Standen, 2000). This study used bivariate correlations and multiple regression with data from a cross sectional survey of staff from New Jersey's three civil state psychiatric hospitals (n=232) to explore the relationships between psychiatric inpatient staff's exposure to violence, their attributions about responsibility for violence, and their attitudes about coercive interventions to manage violence. Though effect sizes were low, results showed a positive association between staff attributions of consumer responsibility for violence and their belief in the value of coercion to manage violence. Staff's optimism that patients can change mediated staff's willingness to provide extra effort to consumers who commit violence. Exposure to violence was not found to be related to either staff attributions of patient responsibility for violence or staff's beliefs about the value of coercion to manage violence. A discussion of the findings in the context of the literature, limitations of the study, and recommendations for future work are addressed.

Chapter I

INTRODUCTION

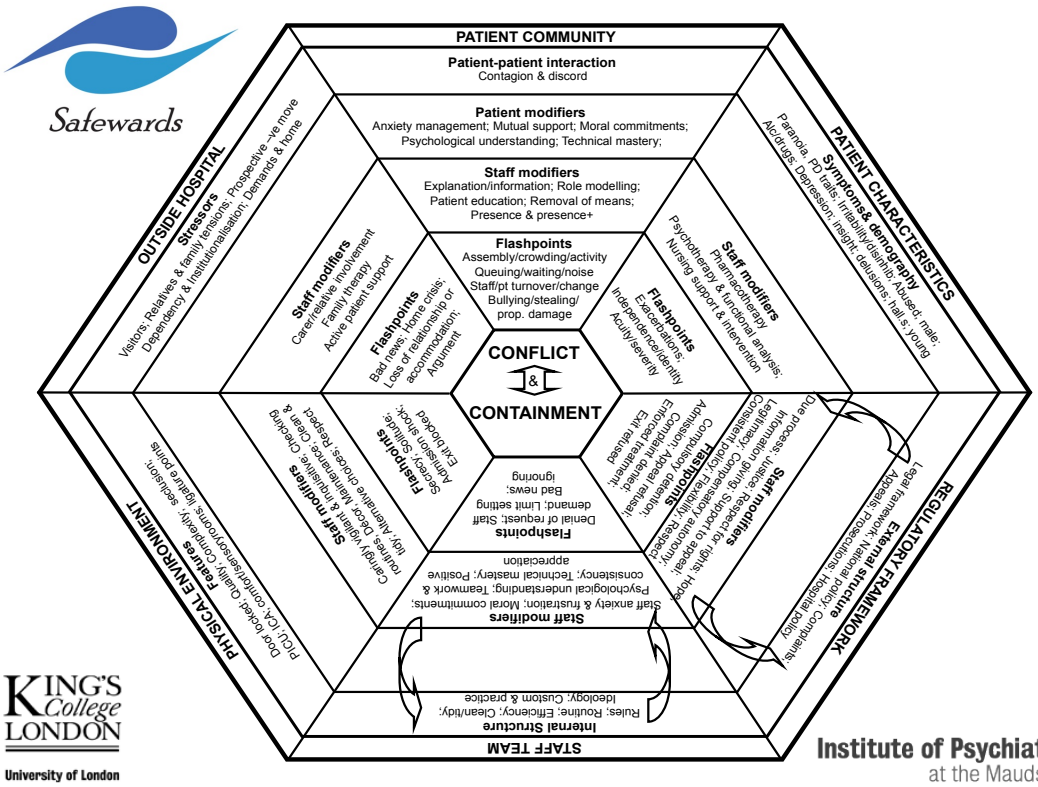
The study of psychiatric inpatient violence has been dominated by a focus on consumer characteristics and the consumer's illness as the proximate cause(s) of violence against staff (Duxbury, 2002). More recently, large reviews of the literature suggest a growing awareness of the multivariate nature of inpatient violence (Bowers et al., 2011). The Safewards model (Bowers, 2014) consolidates this literature, synthesizing a model of the drivers of inpatient violence from nearly a thousand articles (see Figure 1).

The Safewards model suggests that the interpersonal interactions between hospital staff and hospitalized consumers play a large role in violence and violence prevention (Bowers, 2014). Specifically, when staff engage in therapeutic behaviors and avoid coercive interventions, violent events can be reduced or eliminated (Bowers 2014). By contrast, there is extensive evidence that many hospital staff engage in non- therapeutic behaviors with consumers that may act as a catalyst for violence (Duxbury, 2002). These behaviors include staff:

- not managing their own emotions, including anger (Edwards and Reid, 1983; Bowers et al., 2006; Johnson and Delaney, 2006; Fingeld-Connet, 2009),

- confronting consumers and expressing verbal hostility (Whittington and Wykes, 1994),
- avoiding consumers (Arnetz & Arnetz, 2001; Katz & Kirkland, 1990; Whittington & Wykes, 1994),
- violating consumer rights (Sheridan, Henrion, Robinson & Baxter, 1990; Roper & Anderson, 1991; Lancee, Gallop, McCay & Toner, 1995),
- engaging in authoritarian behaviors (Morrison, 1998; Duxbury & Whittington, 2005; Price & Baker, 2012), and
- using poor communication behavior (Sheridan, et al., 1990; Duxbury & Whittington, 2005).

Figure 1
Safewards Model (Bowers, 2014)



Some of the most common violence-provoking staff behaviors, in the literature, involve an overly controlling, authoritarian approach, as well as a lack of empathy or willingness to listen and negotiate (Bowers et al., 2011). What is not clear is why staff so often fail to engage in therapeutic behaviors, potentially putting themselves at risk.

Staff may also adopt coercive strategies to manage violence, including seclusion, physical restraint, and chemical restraint (Duxbury, 2002). These coercive strategies are often associated with consumer and staff injuries and increased conflict (Bowers et al., 2007). Extensive evidence suggests that violence management strategies vary widely within and across settings (Bowers et al., 2007; Holzworth & Wills, 1999; Larue et. al., 2009; Legget & Sylvester, 2003; Husum, Bjorngaard, Finset & Ruud, 2010). These strategies can include various forms of physical coercion as well as non-physical interventions such as de-escalation and client-centered therapeutic communication.

This study will explore the hypothesis that the interventions preferred by staff for inpatient violence management are related to their causal attributions about a patient's responsibility for violence. Attribution theory (AT) is concerned with the effect of a consumer's beliefs about the cause of an event on that person's subsequent behaviors (Weiner,1985; Heider, 1958). The effect of staff attributions on their use of helping behaviors has been demonstrated across a variety of settings in populations of consumers with

intellectual disabilities (Stanley & Standen, 2000; Sharrock, Day, Qazi, & Brewin, 1990).

Rudolph and colleagues (2004) present an attributional theory of help-giving and aggression (See Figure 2) in which "judgments of responsibility determine the emotional reactions of anger or sympathy, and that these emotional reactions, in turn directly influence help giving or aggression" (p. 815). If, for example, staff attribute difficult consumer behaviors such as aggression to an event outside of the consumer's control, staff will be more likely to engage in helping behavior. This occurs because the staff does not hold the consumer responsible for uncontrollable behaviors (Sharrock, Day, Qazi & Brewin, 1990). If, on the other hand, staff believe that the consumer is acting with intention and exerting volitional control, staff will be more likely to experience anger and less likely to engage in helping behaviors. Similarly, staff may assess the locus of responsibility for violence as either internal or external to the consumer. Staff who attribute violence to "internal" causes believe that violence is caused by factors "internal" to consumers and that external environmental factors, such as therapeutic interventions or provocations, are not major contributors to consumer violence.

The problem with attributing responsibility for violence solely to consumers' internal factors is that it may discourage staff from examining their own contributions to violence or making important adaptations to their behavior which could lower the risk of violence. This problem was illustrated by a survey of 78 inpatient staff which found that those who scored as more

authoritarian, had higher trait anxiety, and believed that inpatient violence is driven primarily by a consumer's internal state were assaulted more often by consumers (Ray & Subich, 1998).

In a meta-analysis of 64 studies on attributions for challenging behaviors in mental health settings with over 12,000 subjects, Rudolph and colleagues (2004) found that attributions of responsibility or non-responsibility lead, respectively, to emotional reactions of anger or sympathy. These emotional reactions lead, in turn, to aggression or help-giving directed at the source of the behavior. In the specific case of aggression, there was also a strong direct effect of attributions of responsibility on aggression without a mediating role of affect (see Figure 2).

Internality and controllability were the two attributions that best predicted anger or sympathy leading to help-giving or aggression (Rudolph et al., 2004). It is for this reason that the current study will focus specifically on the attributions of internality and controllability. The results of the meta-analysis were consistent across populations, both in studies of real events and when subjects were given scenarios to rate. According to this theory, a mental health staff person who believes that a consumer's violent behavior is internal to consumers and under their control would be less likely to engage in help-giving and therapeutic interactions. This prediction could begin to explain the staff behaviors noted above that appear to catalyze consumer on staff violence. An important additional question is whether staff who attribute violence as internal to, and controllable by, consumers, prefer coercive

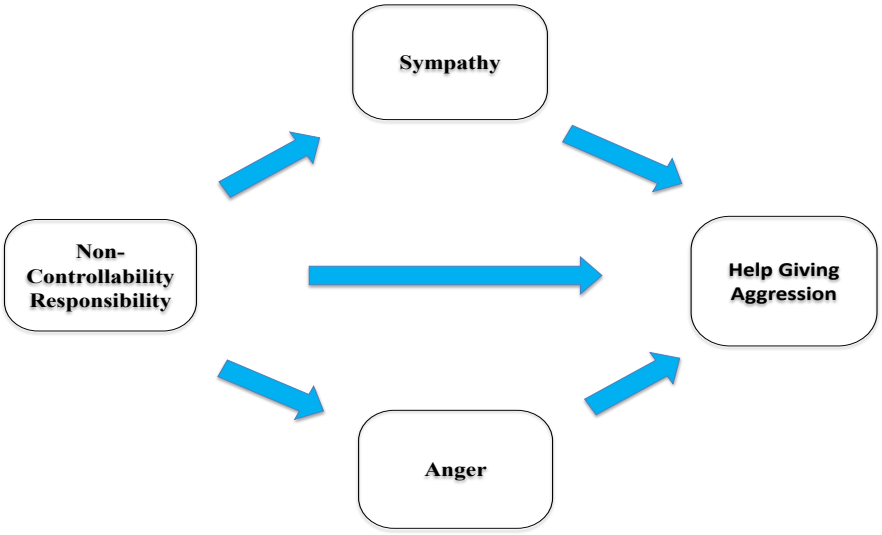
interventions (seclusion, physical restraint and chemical restraint). If staff believe that consumers are the cause of and in control of their violent behaviors, staff may feel the need to take control back from consumers by using coercive approaches.

Lastly, if staff attributions of internality and controllability lead to more favorable views of coercive management strategies, do staff holding these attributions report being exposed to more violence? Support for this relationship comes from the literature on provocative staff behaviors. As noted above certain staff behaviors are associated with more violence. What is not clear is why staff engage in provocative behaviors despite the potential risk of violence. There is evidence that staff who score high in burnout report being exposed to more violence in the following year (Magnavita, 2014) and staff scoring high in burnout have been shown to hold more attributions of patient controllability of violence (Keenan, 2010). The possibility that staff attitudes and their related behaviors contribute to inpatient violence may help explain why certain staff experience multiple assaults, while others with the same level of patient exposure, do not (Whittington & Wykes, 1994).

Inpatient staff's internal and controllable attributions about consumer behaviors may be resulting in anger toward these consumers and leading to an increase in coercive staff behaviors. Evidence suggests that coercive staff behaviors can be perceived as provocative by consumers (Duxbury, 2002; Bowers et al., 2007). If follows that these coercive / provocative staff behaviors would be associated with an increased exposure to violence.

Figure 2

Combined Theory of Help Giving or Aggression (Rudolph et al., 2004)



The relationship between staff attributions and violence may be bi-directional, with attributions leading to staff behaviors that provoke violence, as well as violence leading to staff attributions of internality and controllability. In a study of staff who were assaulted by consumers, staff were found to have nearly universal attributions of patient responsibility for the event (Cottle, Kuipers, Murphy & Oakes, 1995). The quality of care provided by assaulted staff has also been shown to be less therapeutic as well as increasingly controlling and distant (Arnetz & Arnetz, 2001). Regardless of the direction of this effect, this relationship has the potential to result in a cycle of inpatient violence. This hypothetical cycle of violence has been described in the literature, but the actual mechanism has not been adequately explained

(Whittington & Wykes, 1994; Winstanley & Whittington, 2002; Arnetz & Arnetz, 2001).

The specific questions this study will address are: What are the relationships among staff attributions of internality and controllability for consumer violence, preference for coercive management strategies, and frequency of exposure to inpatient violence?

This study will specifically test eleven hypotheses.

H1: Staff attributions of consumer violence as being **internal** to consumers are positively associated with an increased exposure to **verbal violence**.

H2: Staff attributions of consumer violence as being **controllable** by consumers are positively associated with an increase in exposure to **verbal violence.**

H3: Staff attributions of consumer violence as being **internal** to consumers are positively associated with an increased exposure to **physical threats of violence**.

H4: Staff attributions of consumer violence as being **controllable** by consumers are positively associated with an increase in exposure to **physical threats of violence.**

H5: Staff attributions of consumer violence as being **internal** to consumers are positively associated with an increased exposure to **physical assault**.

H6: Staff attributions of consumer violence as being **controllable** by consumers are positively associated with an increase in staff exposure to **physical assault.**

H7: Staff attributions of consumer violence as being **internal** to consumers are positively associated with increased confidence in the value of **coercion** to manage violence.

H8: Staff attributions of consumer violence as being **controllable** by consumers are positively associated with increased confidence in the value of **coercion** to manage violence.

H9: Staff reported exposure to **verbal violence** is positively associated with increased confidence in the value of **coercion** to manage violence.

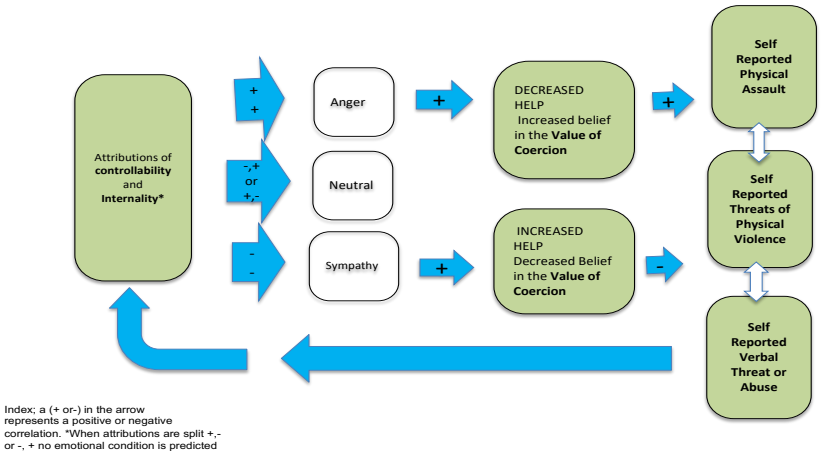
H10: Staff reported exposure to **physical threats** of violence is positively associated with increased confidence in the value of **coercion** to manage violence.

H11: Staff reported exposure to **physical assault** is positively associated with increased confidence in the value of **coercion** to manage violence

These hypothesized relationships are presented in a model (see Figure 3).

This study will be the first to explore the relationships between staff exposure to violence, their attributions about the causes of violence, and their attitudes about coercive interventions. It may help explain why staff choose to engage in coercive behaviors despite the increased risk of violence. This study builds on the assertion of the Safewards model (Bowers, 2014) that staff behavior can "modify" (increase or decrease) inpatient violence from any source. This study does this by providing a mechanism - exposure to violence and attributions of consumer internality and control - that can lead to a preference for coercion. Lastly, this analysis may begin to explain the "cycles

Figure 3
The Role of Attributions about Violence on Attitudes about Coercion and Self Reports of Violence



2

of violence" noted in the literature, in which violence leads to coercive behaviors by staff, possibly provoking more violence (Nijman, 2002; Whittington & Wikes, 1994; Winstanley & Whittington, 2002; Arnetz & Arnetz, 2001). The hypotheses, if confirmed, would suggest that staff supervision after exposure to violence may be an important violence prevention strategy. When staff are exposed to violence, they may develop attributions that violence is internal and under the consumer's control. If these attributions are related to a preference for coercive interventions, then staff supervision could focus on decoupling these relationships.

There is no universally accepted definition for what constitutes violence in an inpatient setting. This lack of an agreed upon definition has led to difficulties in understanding the breadth of the impact of violence in inpatient settings. This situation has made comparisons across studies of inpatient

violence impossible. Bowers et al., (2011) in a review of almost a thousand articles on inpatient violence identified articles which report on only certain types of violence including only physical assault, only physical assault directed at staff, only verbal aggression, only aggression toward others, only self-harm, and only sexual aggression. Eileen Morrison's (1990) offers a comprehensive definition of inpatient violence. Morrison defined inpatient violence as "any verbal, nonverbal, or physical behavior that was threatening…or actually did harm to self, others or property" (p.67). This definition allows for the inclusion of the whole range of violence, including property destruction, self-harm, verbal abuse, verbal threats, physical threats, as well as physical assault. The inclusion of verbal violence and physical threats is important because these incidents are rarely reported on and can have a large negative impact on staff and other patients (Bowers et al., 2011; Stone, McMillan, Hazelton, & Clayton, 2011). For these reasons, Morrison's comprehensive definition of inpatient violence will be used for this study.

Chapter II

REVIEW OF THE LITERATURE

Prevalence

Psychiatric inpatient violence has long been one of the most significant challenges facing mental health workers (Bjorkly, 1999). In the United States, the impact of inpatient violence on psychiatric units is dramatic; it involves physical and emotional trauma for witnesses and those assaulted, and causes morale problems for all concerned (Barlow, Grenyar, & Ilkiw-Lavalle, 2000). A US Department of Justice study found that the average rate of non-fatal workplace violence incidents across job categories, between 2005 and 2009, was 5.1 incidents per 1000 employees. For mental health workers being injured by patients (consumers), this number was 20.5 per 1000 (Harrel, 2011). According to Dinwiddei and Briska (2004), the risk of injury in public psychiatric hospitals is greater than injury rates for agriculture, mining, manufacturing, transportation and construction combined. There is also long-standing evidence that state psychiatric hospital violence is underreported (Poster, 1996; Lion, Snyder and Merril, 1981; Crowner, 2000). In a meta-analysis of the overall incidence of violence across psychiatric settings, up to 32.4% (SD= 19.6) of patients are violent at some point in their hospitalization

(Bowers et al., 2011). Inpatient violence has negative consequences for both staff and hospitalized consumers.

The impact of inpatient violence on consumers is far-reaching. A high prevalence of symptoms of trauma has been reported among all people with severe mental illness (Robins et al., 2005), and there is evidence that iatrogenic aspects of involuntary hospitalization are one of the primary causes (Beattie, Shannon, Kavanagh, & Mullholland, 2009). Robins et al., (2005) call this effect of inpatient hospitalization “Sanctuary Harm”. These negative effects include the fear of assault by other consumers (Robins et al., 2005) and actual assault (Frueh et al., 2005). In a study of the harmful experiences suffered by consumers within psychiatric hospitals, 31% of 142 ex-consumers reported being physically assaulted by other consumers, 8% reported being sexually assaulted and 63% reported having witnessed a traumatic violent event while in the hospital (Frueh et al., 2005). In a meta-analysis of almost 1000 studies on inpatient violence, about a quarter of all inpatient violent incidents are patient to patient (Bowers et al., 2011). The very large majority of the remaining incidents are recorded as patient on staff.

Staff assaults of consumers in state psychiatric hospitals have also been reported in the media (Mulford, 2017). The prevalence of these incidents is difficult to calculate, as virtually all official reporting of violence is done by the hospital staff who are involved in the incident in question. This makes these reports potentially biased accounts of what happened. Staff who witness or are the focus of inpatient violence can suffer serious and long-lasting

effects, including a host of bio-physiological, cognitive, emotional, social and PTSD symptoms (Needham et al., 2005). In two prospective studies of assaults on staff in inpatient settings, an increase in staff absenteeism was observed, as were diagnosable PTSD symptoms in 14% and 17% respectively of staff victims (Richter, 2001; Richer et al., 2006). Mental health workers exposed to violence in psychiatric settings are at high risk for a range of other co-morbid disorders (Gascon et al., 2012). They experience higher incidence of anxiety and depression, as well as other mental health symptoms (Needham et al., 2005). The quality of treatment provided by staff that have been assaulted has been shown to be less therapeutic as well as increasingly controlling and distant (Arnetz & Arnetz, 2001). Staff experiencing these sequelae of reactions to violence have benefited from the provision of staff support (Flannery, 1998; Flannery, Anderson, Marks & Uzoma, 2000). Staff who do not receive support after an incident have been reported to be at higher risk of developing symptoms of PTSD (Flannery, 1998; Flannery, Anderson, Marks & Uzoma, 2000).

Measuring inpatient violence has presented several challenges, including varying definitions of violence (Bowers et al, 2011) and intended or unintended reporting bias (Duxbury, 2002; Crowner, 2000). Two methods for measuring inpatient violence dominate the literature. The most frequent method relies on written incident reports completed by the staff involved. This method has been criticized as resulting in underreporting and for the potential of these reports to minimize the role of staff provocation in violence (Poster,

1996; Lion, Snyder & Merril, 1981). The second method used to assess inpatient violence involves some form of observation using either video tape (Crowner, 2000) or an "on ward" observer (Bowers et al., 2011). The literature on observation by uninvolved individuals raises concern about the validity of reports of violence made by staff. In a study of over 3300 hours of an inpatient unit's video footage there were more than ten times the number of assaults compared to what was reported by staff. It should be noted that this high rate of unreported assaults included incidents that did not result in injuries (Crowner, 2000). An additional issue was that verbal violence including swearing, verbal threats and the use of personally or racially disparaging remarks by consumers are almost never reported as violence. This is despite the potential harm to staff incurred by this behavior (Stone, McMillan, Hazelton, & Clayton, 2011).

Causes

The causes of inpatient violence appear complex and multivariate. Steinert and Whittington (2013) present a biopsychosocial model of inpatient violence in which a patient's biological and historical predisposition to violence is coupled with current psychological and environmental stressors. When the interactions of these factors exceed a patient's idiosyncratic threshold, violence can occur. This model does not delineate the specific conditions that lead to violence, but suggests that violence may be understood as a complex interaction of conditions. These conditions may be described as "inus" conditions. An inus condition is a necessary, non-redundant but insufficient

cause or event (Mackie, 1965). Inus conditions reflect a partial explanation for an event that is only causal in the presence of other inus conditions. For example, a forest fire has numerous necessary conditions including an abundance of dry fuel, oxygen and an ignition source. In this example, none of these conditions is sufficient in isolation, and none are redundant, as they are all necessary to cause a forest fire. There can be numerous interchangeable clusters of inus conditions (different ignition sources, types of fuel, etc.) that can lead to the same outcome. An "inus model" of inpatient violence involves conditions present on an inpatient unit that are necessary but insufficient until paired with other necessary conditions. This approach suggests that reducing the contribution of any potential inus condition could reduce the chances of inpatient violence. This also suggests that multimodal prevention strategies may be more likely to reduce the scope of inpatient violence than singular approaches (Meehan, Fjeldscoe, Stedman, & Duraiappah, 2006). From this perspective, it becomes important to develop a taxonomy of potential inus conditions. This will allow researchers to craft effective multimodal prevention strategies.

Safewards Model

Len Bowers (2016), an acknowledged expert in the study of inpatient violence, published a comprehensive model (the Safewards Model) of the drivers of inpatient violence (see Figure 3). The Safewards model is an evolution of a previous model called the City Model. The City Model was developed at Kings College in London and was based on the relationship

between conflict (violence) and containment (seclusion and chemical and physical restraint). The City Model hypothesized that staff attitude and behavior may influence both inpatient conflict and containment efforts (Bowers et al., 2011). The model identified three processes thought to be related to low conflict and containment. The first was the staff's positive appreciation of patients (kindness), the second was staff's emotional self-regulation of their anger and fear (tranquility), and the third was an effective structure of rules and routines for patients based on an ethical (non-punitive) stance including issues of procedural justice (orderliness). Two studies of the model produced conflicting results with one demonstrating significant reduction in conflict (Bowers, Brennan, Flood, LiPang, & Oladapo, 2006) and one finding a null result (Bowers, Flood, Brennan, & Allan, 2008). In an effort to identify evidence for and against the City Model, a review of 997 articles on inpatient violence was conducted (Bowers et al., 2011). Based on this effort, additional drivers of inpatient violence were identified and a model was created called the Safewards Model.

The Safewards Model identified six domains which can contribute to violence (Bowers et a., 2014). The domains are the patient community, patient characteristics, regulatory framework, staff team, physical environment, and factors outside the hospital such as problems with a patient's family. Like the City model, the Safewards model delineates that staff attitudes and behavior can affect any other driver of violence and is a critical factor in violence prevention. Interventions based on the Safewards Model have been

conducted using a clustered randomized controlled design (Bowers, James, Quirk, Simpson, Stewart, & Hodsoll, 2015) in which conflict was significantly reduced by 15% and containment by 26% compared to the control groups. The intervention in this study consisted of basic strategies to improve the relationship of staff and patients and included ten interventions. These interventions were:

(1) mutually agreed and publicized standards of behavior for patients and staff;

(2) short advisory statements (called 'soft words') on handling flashpoints, hung in the nursing office and changed every few days;

(3) a de-escalation model used by the best de-escalator on the staff (as elected by the staff on the ward) to expand the skills of the remaining ward staff

(4) a requirement to say something good about each patient at nursing shift handover;

(5) scanning for the potential bad news a patient might receive from friends, relatives or staff, and intervening promptly to talk it through;

(6) structured, shared, innocuous, personal information between staff and patients (e.g. music preferences, favorite films and sports, etc.) via a 'know each other' folder kept in the patient's day room;

(7) regular patient meeting to bolster, formalize and intensify inter-patient support;

(8) a crate of distraction and sensory modulation tools to use with agitated patients (stress toys,

mp3 players with soothing music, light displays, textured blankets, etc.);

(9) reassuring explanations to all patients following potentially frightening incidents; and

(10) a display of positive messages about the ward from discharged patients.

Given that the evidence supporting the Safewards model and its predecessor the City model point to the important role of staff attitudes and behaviors it is vital to better understand what leads to positive staff attitudes and behaviors in the prevention of inpatient violence.

Attributions

Numerous studies have noted the wide variation in staff beliefs about the appropriate response to the same negative consumer behavior(s) (Holzworth & Wills, 1999; Larue et. al., 2009; Legget & Sylvester, 2003). The strategies that mental health staff employ to manage violence are assumed to be highly related to the attributions they hold about the cause(s) of violence (Jansen, 2005; Noone, Jones & Hastings, 2004). In a Swedish study of geriatric care, staff with more favorable attitudes toward restraint used restraints while staff with less favorable attitudes toward restraint did not (Karlsson, Bucht, Eriksson & Sandman, 2001). Individuals are most likely to make attributions about events when they are threatened, surprised, or encounter novel experiences (Weiner, 1995). They may also be unlikely to change these beliefs even with the addition of new evidence (Gilbert & Osborne, 1989; Mezulis, Abramson, Hyde, Hankin, 2004). Attribution theory (Heider, 1958; Weiner, 1985, 1995) is concerned with the effect of explanations people hold about the cause(s) of events. These attributions can be focused on explaining events that happen to another person

(interpersonal) or on explaining events that happen to oneself (intrapersonal). Weiner (1985) predicted that specific interpersonal causal attributions could lead to negative affect (anger) and related changes in behavior including reductions in helping behaviors and/or aggression.

In the case of mental health staff, interpersonal attributions about the controllability, stability and internality of negative consumer behavior are correlated with negative staff feelings toward consumers (Bailey, Hare, Hatton, & Lamb, 2006). For consumers diagnosed with borderline personality disorder, staff attributions about consumer controllability were associated with less staff sympathy (Markham & Trower, 2003), more anger, and fewer helping behaviors compared to consumers diagnosed with major depression (Forsyth, 2007). The effects of interpersonal attributions of internality, stability and controllability were also demonstrated by reduced helping behaviors in staff working with consumers with intellectual disabilities (Stanley & Standen, 2000; Sharrock, Day, Qazi, & Brewin, 1990).

Staff attributions may also play a role in choosing violence management interventions. Bowers, Alexander and Simpson (2007) found that staff held more interpersonal attributions of internality, controllability and stability for patients diagnosed with borderline personality disorder compared to patients with other diagnoses. These staff experienced more anger and were more likely to approve of using seclusion and restraint with these patients. The current study expands on this finding by asking if exposure to violence and attributions of internality and controllability of consumer violence are

associated with a preference for coercive interventions regardless of diagnosis.

The measurement of staff attributions has been accomplished in numerous ways. Subjects have reported an open-ended, narrative assessment of their causal belief about a given negative event. This narrative is then coded for the presence of attributions (Noone, Jones & Hastings, 2004). This method has the advantage of not constraining the subject to choose a cause simply because it was presented by the researcher (Peterson et al., 1982). A second method is to have subjects record responses on a hypothesized theoretical dimension such as internality and externality. This method supports quantitative analysis (Sharrock, Day, Qazi & Brewin, 1990) and may be high in reliability, (Elig & Frieze, 1979) but may do so at the cost of validity by forcing subjects to identify a cause from a limited number of options provided by the researcher. Peterson et al., (1982) present a compromise in which subjects first decide for themselves what they think the cause of a given negative event is and then rate that cause across attributional measures of internality, controllability and stability on a Likert type scale.

A second consideration in measuring attributions is how the situation will be presented for rating. In the case of violence, researchers have asked subjects to record their attributions of real violent events that have occurred (Cottel et al., 1995) or to record their attributions regarding a known consumer (Willner & Smith, 2008; Baily et al., 2006; Hill & Dagan, 2002). Other approaches have used written scenarios with only the consumer's diagnosis

(Keenan, 2010; Markham & Trower , 2003; Forsyth, 2007) or consumer characteristics (Wilner & Smith, 2008) being manipulated. In a meta-analysis of help-giving or aggression studies, the use of real life or vignette-based examples equally supported the proposed attributional relationships (Rudolph et al., 2004).

One popular measure of attributions is the Attribution Style Questionnaire (ASQ) **(**Peterson, Semmel, von Baeyer, Abramson, Metalsky & Seligman 1982; Peterson, & Villanova, 1988; Cottle, Kuipers, Murphy, & Oakes, 1995). This scale, based on attribution theory (Weiner, 1985: Heider, 1958), hypothesizes that attributions for the causes of negative events run along bipolar continua and have a large bearing on subsequent behaviors. The original ASQ has subjects identify their attributions for six positive and six negative intrapersonal scenarios. The first continua on the ASQ involves intrapersonal beliefs about the cause of events from the perspective of one's own internality or externality, one's own stability or instability and whether the cause was global or specific. The scale was later expanded to 24, only negative, scenarios called the expanded ASQ or EASQ (Peterson & Villanova, 1988). The ESAQ demonstrated increased internal consistency reliability compared to the ASQ: Cronbach's alphas for the three attribution dimensions were .66 for internal/ external, .85 for stability and .88 for globality (Peterson et al.,1982). The EASQ was specifically designed to measure intrapersonal attributions (attributions about oneself). All EASQ attribution subscales correlated significantly with depression scores, suggesting construct

validity and validating the learned helplessness model of depression (Abramson et al., 1978). The EASQ was also used to rate interpersonal negative events in which the attributions are referring to others. Used this way, the EASQ was found to be reliable across staff when the scale was used to code the staff attributions of problem behavior for a known consumer (Sharrock et al., 1990). This method of assessing attributions was also used by Keenan (2010) to measure staff members' interpersonal attributions about violence for scenarios identifying consumers with borderline personality diagnoses versus other diagnosis.

Staff attributions that violence is internal to and controllable by consumers are likely to be accurate for some percentage of violent consumers and events. Quanbeck et al. (2007) identified a taxonomy of inpatient violence from 839 events in a forensic hospital; 29% were deemed to be "organized" (revenge or predatory actions), 17% were found to be driven by psychosis (delusional fear of harm), and 54% by impulsive or angry reactions to situations within the institution. Daffern, Howells and Olgoff (2007) noted that instrumental aggression - aggression intended to achieve or maintain status - may be more common in forensic settings because many of these patients have been previously acculturated in prison environments where instrumental aggression is often rewarded.

This taxonomy raises the question: Does it matter if causal attributions by staff about inpatient violence are accurate? The importance of attributions of internality or controllability for inpatient violence may be in their potential

relationship to non-therapeutic staff behaviors, and less about their validity. Any attribution about the causes of inpatient violence may lead to an ill-advised response(s) to that violence. To further explore this point, the validity and consequences of attributions of internality and controllability of inpatient violence are explored in detail below.

Internality

An attribution made by staff that violence is internal to consumers is a belief that individual patient variables are the primary cause of patient violence. This makes some intuitive sense, as violence is one of the primary reasons for psychiatric admission, and the best predictor of inpatient violence is violence committed prior to admission (Barlow et al., 2000). This means that a patient's propensity for violence often predates hospitalization. Additional consumer characteristics associated with consumer violence include intoxication, age, gender, diagnosis, history of violence, and illness severity (Duxbury & Whittington, 2005). Explaining consumer violence as caused by consumer characteristics is also appealing in its focus on static variables and patient responsibility for violence. The belief in consumer internality for violence is a common attitude in psychiatric nursing practice and is supported by the biomedical model (Hahn & Berne, 2006). This perspective may be used to justify the use of medical treatment and coercive interventions for an aggressive consumer, including forced medication, seclusion, and restraint (Hahn & Berne, 2006). The interpersonal internal attribution by staff also tends to free the individual staff from responsibility (Poster, 1996). If violence is

driven by patient characteristics and is not related to staff behavior, then therapeutic staff behaviors may have little or no effect. The danger of this attribution is that staff may ignore their own inus contribution to violent events and fail to take steps that could reduce or eliminate violence.

Bowers and colleagues (2011), in a meta-analysis of 997 studies of inpatient violence, found that 39% of the articles cited violence as being related to patient/staff interactions and not internality. In a study of 73 consecutive inpatient assaults, most assaults were judged by trained raters to be related to external events and not the patient's internal psychiatric symptoms (Sheridan et al., 1990). In a review of the role of inpatient violence management strategies, the focus on internality alone did not lead to effective violence prevention efforts and contextual factors, including staff responses, appeared to play a large role in outcomes (Irwin, 2006).

The problem with an attribution of internality is that patient pathology appears to be but one potential inus condition that, alone, is insufficient to explain why most inpatient violence occurs; this attribution may lead to simplistic and ineffective interventions. Whittington and Wykes (1996) question whether violence involving individuals with mental illness was necessarily different from violence not involving mental illness. Hunter, Wilkniss, Gardner and Silverstein (2008) also challenged the assumption that patient violence was necessarily etiologically related to a major psychiatric diagnosis. They called this assumption "diagnostic overshadowing" and suggest that violence can be driven by institutional contingencies as opposed to illness factors.

Daffern, Fergguson, Olgloff, Thompson and Howells (2007) demonstrated that being in the hospital can prompt aggressive behavior in patients with no documented history of aggression, suggesting the possibility of uniquely provocative contingencies related to inpatient hospitalization. The attribution by staff that factors beyond the patient's pathology are the primary cause of violence is called externality.

Externality

An external attribution for consumer violence is the staff's belief that factors outside of patient characteristics drive violence, including the influences of staff behavior and/or elements of the environment. External attributions for violence may differ from the actual etiological source of violence. As noted above it is the consequence of staff attributions that may be the source of violence. Various staff characteristics have been implicated in the causal chain of inpatient violence (Bowers et al., 2011). One concerning staff behavior relates to the discussion above, and includes staff inaccurately attributing all violence to factors internal to the consumer. This staff belief, which is external to the consumer, can involve the idea that patient violence is a dysfunctional internal response driven by the patient's illness (Jansen, 2005). When staff correctly or incorrectly believe that the cause of violence is solely internal to the consumer, violence can increase because staff can ignore their own inus contributions to violence.

In a longitudinal study with over 8000 survey responses (Arnetz & Arnetz, 2001), staff reports of violence were compared to patient satisfaction

scores. Staff who reported having been the subject of patient violence were later judged by patients to deliver inferior care. This finding could suggest a "cycle of violence" in which patient violence increases staff stress which leads to less empathy and more controlling behavior, which then provokes more violence (Whittington & Wikes, 1994; Winstanley & Whittington, 2002; Arnetz & Arnetz, 2001).

Exposure to violence may also increase a staff belief that violence is internal to and controllable by consumers. Attributions of internality and controllability were detected in inpatient mental health staff after they had been assaulted. In this study, staff nearly universally attributed the violence they experienced to factors internal to patients and uncontrollable by themselves (Cottle, Kuipers, Murphy, & Oakes, 1995). The possibility that staff attitudes and related behaviors contribute to inpatient violence may help explain why certain staff experience multiple assaults, while others with the same level of patient exposure, do not (Whittington & Wykes, 1994).

External influences on inpatient violence also include the negative effect of aversive noise, temperatures, over-crowding (Nijman & Rector, 1999; Ng, Kumar, Ranclaud, & Robinson, 2001), lack of structure (Bowers, Nijman, Simpson, & Jones, 2011; Nijman & Rector, 1999), overly controlling environments, organizational routines that result in a denial of services or liberties (Duxbury & Whittington, 2005), and a lack of privacy and activities (Finnema, Dassen, & Halfens, 1994). In a survey of 569 mental health staff, Chaplin and colleagues (Chaplin, McGorge, & Lelliot, 2006a) found that low

staffing levels, lack of activities, and consumer boredom were associated with inpatient violence. Taken together, the literature above suggests that an interpersonal belief that violence is driven by factors external to consumers is supported and, if acted on by staff, may lead to more sympathetic, more therapeutic interventions.

Controllability / Non-Controllability

Staff who attribute violence to consumer control believe that the consumer "knows what they are doing" and can choose to act otherwise. Staff may believe that violent behavior is an attempt at manipulation (Bensen et al., 2003). The dichotomy of whether a person knows or does not know what they are doing is addressed in the literature as "mad or bad", in which "mad" refers to illness-related behaviors which may be internal but not controllable and "bad" which refers to intentional "misbehavior" which is internal and controllable (Daffern et al., 2007). If the staff attribution is that consumer violence is controllable or "bad", then staff may conclude that challenging consumer behaviors should be met, not with empathy, but with strong limits, medication, seclusion, and restraint. (Patterson, Mcintosh, Wilkinson, Mccomish, & Smith, 2013).

The staff belief that consumer violence is volitional was positively correlated, in one study, with the staff's choice to use seclusion and restraint (Leggett & Silvester, 2003). The value of seclusion and restraint as a means of reducing violence has dubious empirical support. Two large reviews on the subject found little evidence for the efficacy of seclusion and restraint in the

long-term prevention of inpatient violence (Sailas & Fenton, 2012; Sailas & Wahlbeck 2005). Seclusion and restraint are also associated with staff and patient injuries and sometimes death (Evans, Wood, & Lambert, 2003), and may exacerbate the very behaviors that they are trying to reduce (Duxbury, 2002; Bowers et al., 2007). Staff attributions about the cause(s) of violence may help explain the differences in staff preferences for coercion.

Staff Preference for Coercion

In a review of 37 studies that examined staff perceptions about violence prevention strategies, three scales were reviewed (Hallett, Huber, & Dickens, 2014). One scale, the E13 (Bjorkdahl et al., 2012), purported to measure a violence prevention climate but offered no psychometric information about the scale or evidence of convergent validity. In addition, the E13 did not measure staff attitudes about coercion. The other two scales were the Management of Aggression Violence Attitude Scale (MAVAS; Duxbury, 2002) and the Attitude Towards Patient Physical Assault Questionnaire (ATPPAQ, Poster & Ryan, 1989). The MAVAS measures elements of staff attitudes about coercive interventions used to manage violence, but its three-factor structure demonstrates that the scale measures staff and consumer perceptions of the cause of violence and not staff attitudes about the use of coercion. The ATPPAQ measures staff attitudes about assault and not their attitude about the methods to prevent assault, such as coercion. Other attempts to measure staff attitudes toward coercion focused on a particular coercive intervention such as seclusion (Happell, 2011a; 2011b).

The Staff Attitude Toward Coercion Scale (SACS, Husum, Finset, & Ruud, 2008) measures staff beliefs about coercion more generally. Coercion is defined in this scale as seclusion of consumers, physical restraint, and/or chemical restraint. The SACS measures three staff perspectives about the use of coercion. The first is the idea that coercion is antithetical to treatment. This subscale measures how critical staff are of the practice of coercion. The second perspective measured by the SACS is the staff attitude that the use of coercion is a pragmatic reality that cannot be helped. The final attitude measured by the SACS is that the use of coercion serves an important positive role in treatment. When the first subscale is reversed, higher scores on the SACS can be used as a singular measure to assess a staff's preference for coercion.

In a study in India, practitioners with more experience had significantly lower scores on the SACS (Ravveesh et al., 2016). In this same study, practitioner scores on the SACS were found to be significantly lower than family caregivers. This suggests that professionals see less value in the use of coercion than family care givers. In one multilevel study using the SACS, variance in the attitudes of staff (n=651) within psychiatric units (n=33) was larger than the variance between units (Husum, Bjorngaard, Finset, & Ruud, 2010). Between 8 and 11% of the variance on the SACS was accounted for by ward variables. These ward level variables included staff to bed ratio, acute versus sub-acute wards, and symptom severity across wards. The remaining variation in SACS scores occurred at the level of the staff. The staff

level variables in this study were gender, age, education, professional role and shift worked. These staff level variables could only explain a small amount of the variance of staff attitudes about coercion. This suggests that important factors that may influence staff attitudes about coercion were not included in the study (Husum, Bjorngaard, Finset & Ruud, 2010). The current study will explore whether staff attributions about the cause of violence may be one of the staff level factors that influence staff attitudes about coercion.

Chapter III

METHOD

Participants

Between January 2018 and August 2018, 232 staff from three State Psychiatric Hospitals in NJ completed either an online survey (n = 212) or a paper and pencil survey (n= 20). This sample of 232 exceeds the sample size of 199 that was identified as the minimum required through power analysis capable of detecting an effect as low as *r* = .25 (see below for description of the power analysis). Ancora Psychiatric Hospital staff completed 51 surveys, Greystone Psychiatric Hospital 61, and Trenton Psychiatric Hospital 112. Seventy one percent of the sample was female. The average age of the sample was 45 years old (*sd*= 12). The average length of time worked at the hospital was 9.6 (*sd* = 7.86) years and time working in mental health was 14 years (*sd* = 8.97) years. The inclusionary criteria required having some responsibility for the clinical care of patients. Support staff such as housekeeping, maintenance and clerical staff were excluded. The goal was to collect a 10% sample from each clinical discipline by sending emails to a distribution list for each discipline (e.g., psychologists). This included the disciplines of psychiatry, medicine, psychology, social work, rehabilitation and nursing. Nursing is the largest department and includes Registered Nurses

(RNs), Licensed Professional Nurses (LPNs), and over a thousand nurses' aides who are called "direct care staff". Direct care staff are required to have a high school diploma, but no other experience working in mental health is required. Due to their small size, the disciplines of Psychiatry and Medicine were combined.

The goal was to sample 10% of the staff from each of ten clinical disciplines so as to make a strong case for generalization of the findings across staff in various hospital roles. Subject participation was uneven across disciplines with the largest group of staff, direct care staff, being under sampled. This was a result of this group not having state email addresses or access to the online survey on state computers. See Table 1 for a breakdown of the roles of staff completing the survey.

Table 1
Breakdown of Sample Size by Role

Clinical Discipline	Total Clinical Staff	Planned 10% Sample	Actual Sample
Social Workers	111	11.1	46
Nurses (LPN, RN. CNS)	564	56.4	28
Direct Care Staff	1146	114.6	13
Psychologist	75	7.5	16
Psychiatrist/ MDs	78	7.8	
Rehab	201	20.1	69
Other: (Administration, Ministry, Nutrition, Other)			58
Missing			2
Totals	2175	217.5	232

Procedure

The study was reviewed for human subject safety by the Rutgers University Institutional Review Board (Protocol# 20170001022) and by the participating state psychiatric hospital research committees, as well as the Medical Director of the New Jersey Division of Mental Health and Addiction Services Medical Director (NJ DMHAS). Two survey instruments and a list of demographic questions were administered to state hospital staff. The first survey assessed staff attributions about the causes of violence. The second survey assessed staff attitudes about the use of coercion to manage inpatient violence.

Two methods were used to administer the survey packets. The first method was via email, through a RedCAP© hyperlink to hospital staff with access to a computer. The hyperlink (https://research.njms.rutgers.edu/redcap/surveys/?s=RHLLFX3HN7) connecting the staff person to the survey was sent by the various discipline leaders to the staff within their discipline with encouragement to complete the survey. A discipline leader is the supervisor of a clinical discipline within the hospital. The primary investigator was copied on the email sent by the discipline leader that contains the distribution list for each discipline. This allowed the primary investigator to oversee the solicitation of subjects to achieve a 10% sampling of each discipline. The survey was anonymous. A reminder email was sent after one week and again after two weeks. The

online survey introduction described the survey as a study into the causes and consequences of inpatient violence.

The second method used to administer the survey involved a paper and pencil survey that was identical in content to the online survey. This survey was administered by the principal investigator and authorized research assistants to staff without access to computers or to staff who preferred this method. The surveys were administered, at the discretion of the leadership of the various hospitals, and prior to ongoing trainings occurring as part of the hospital's regular continuing education programs. Direct care staff who are employed in the nursing discipline often do not have access to computers while at work compose nearly all of the staff completing paper and pencil surveys. Direct care staff are state hospital employees who have the most consumer contact. Unlike the other disciplines, direct care staff, who are part of the nursing department, staff three shifts. Only the first two shifts were sampled. The rationale for this involves the frequency of assaults on the first and second shifts, which in 2015 in one of the study sites accounted for over 95% of consumer to staff assault reports.

Measures/Instruments

Both the online and paper and pencil surveys consisted of 37 research questions and eight demographic questions (See Appendices 1-3). The survey took an average of between 15 to 20 minutes to complete. The surveys are described below:

1. Demographic Information: (See Appendix A, Questions 1-8)

The demographic Questions (1-8) include questions about the clinical discipline, length of hospital tenure and tenure of mental health employment, gender, the shift during which the respondent works, and hospital location. Three additional questions ask about the staff's level of exposure to consumers and about staff and team morale.

2. Measuring Violence (See Appendix A, Questions 9-12)

Inpatient violence was measured by asking staff to self-report their exposure to verbal abuse by consumers, feeling physically threatened by consumers, and the number of times they have experienced physical assault over the last 12 months. A 12 month recall time period was chosen consistent with two large studies of mental health workers exposure to violence (Magnavita, 2014; Inmaculada et al., 2014). In these two studies (n=698 and n=1489) staff were asked to rate their exposure to violence over the past year. The studies found that ratings of violence over the previous year predicted current ratings of work distress and that job satisfaction served to moderate the effects of verbal violence.

The benefit of using staff self-report of inpatient violence is that it allows for a measure of verbal abuse and physical threats that are often not reported due to their high frequency and low overt harm (Bowers et al., 2011; Magnavita, 2014). Staff were also asked how many incident reports they have filed in the last year for consumer violence. The self-reported frequencies of verbal abuse and physical threats produced two continuous dependent

variables in which higher scores indicates that the staff were exposed to more violence. The response format is listed below.

6 = every day
5 = a few times a week
4 = once a week
3 = a few times a month
2 = a few times a year
1 = never

The number of self-reported physical assaults in the past 12 months served as a third dependent variable.

3. Staff Attitudes to Coercion Scale (SACS): (See Appendix B)

Staff attitudes about the use of coercion to manage inpatient violence was measured using the 15 item "Staff Attitude to Coercion Scale" (SACS) (Husum, Finset & Ruud, 2008). When used as a total score the scale has a range of 15 to 75 and each item is scored 1 to 5. Confirmatory principal component analyses with Varimax rotation produced a three-factor model. This model was then confirmed when replicated in a larger sample (n=215) with each factor demonstrating Eigen values above 1.6 and explaining 49% of the variation.

The three factors were named:

1. Coercion as offending (critical attitude) — the view of coercion as offensive towards patients (consumers).

2. Coercion as care and security (pragmatic attitude) — the view of coercion as needed for care and security.

3. Coercion as treatment (positive attitude) — the view of coercion as a treatment intervention.

In a study of the scale (n=215) the internal consistency reliability (Cronbach's Alpha) of the three subscales was found to be: "Coercion as offending" α = .70, "Coercion as care and security"
α = .73, and "Coercion as treatment" α =.69. When used as a total score the Coercion as offending scale items are reversed. The total score internal consistency reliability was .78 (Husum, Finset & Ruud, 2008). In the current study the SACS subscales of offending, care and security and treatment, demonstrated Cronbach alpha values of .76, .84, and .76 respectively with a total score alpha of .89.

In a Chinese study, the SACS "Coercion as Offending" sub-scale was found to better predict a staff's level of concern for the human rights of hospitalized individuals compared to the other two SACS sub-scales (Wu, Tang, Lin, & Chang, 2012). In a study on knowledge about informal coercion, higher scores on the SACS were negatively correlated with staff preference for interventions without coercion r = -.36, the staff's age r = -.30, and with a recovery attitude r = -.30 (Jaeger, Ketteler, Rabenschlag, & Theodoridou, 2014). The implementation of a recovery-oriented ward concept was associated with a decrease in SACS scores on ward staff compared to a control group (Rabenschlag, Konrad, Rueeggg, & Jaeger, 2013). In a validity test, a group of 18 expert clinicians, researchers, and users were asked to sort the SACS items into the three domains. The group sorted 80% of the items correctly into the three domains, suggesting construct validity of the items (Husum, Finset, & Ruud, 2008).

4. Measuring Attributions (See Appendix C)

The measurement of the subject's causal attributions about consumer violence was done using a version of the Expanded Attribution Style Questionnaire (EASQ; Peterson & Villanova, 1988). This approach was adapted by Keenan (2010) and has subjects rate three scenarios involving consumer violence that are common in an institutional psychiatric setting. Subjects were asked to write what they believe is the primary cause of the violence for each of the three scenarios. They then recorded their attributions of internality and controllability for violent consumer behavior for the cause they identified (Rudolph et al., 2004). The presentation order of the three scenarios used were randomized when sent to subjects.

This modified version of the ASQ was called the Violence Attribution Style Questionnaire (VASQ) to distinguish it from other versions of the ASQ in the literature. This study questionnaire involved the study subjects scoring their attributions of inpatient violence on a bipolar scale, from 1 to 100, with the quality being rated increasing across the response format. Subjects were then asked to rate whether this cause was internal or externa1 to the consumer, whether the cause was controllable / uncontrollable by the consumer, and whether the violence was controllable / uncontrollable by staff (see Appendix C). A total score was derived by summing scores across each of the three scenarios for attributions of internality and for controllability.

In each scenario, there was purposefully too little information provided to make an informed assessment of control or internality. Given this, staff that

make attributions of internality and controllability, are projecting onto the scenario attributions not warranted by the information provided. The three scenarios provided were:

1. Mr. X is a 45-year old man with a long history of petty crimes. He also has a long history of psychiatric hospitalizations. He was sent to the hospital for assessment from a local jail. This happened after he flushed his clothes down the toilet. Mr. X has been assaultive in the past. Mr. X often says that staff are trying to hurt him. Upon coming to the unit, Mr. X immediately assaulted a staff person.

2. Mr. Y is a 50-year-old diagnosed with schizophrenia who has been threatening staff and demanding privileges since being admitted from screening. He often states that he feels that he is unfairly denied privileges. Staff are guarded around Mr. Y. because he can be unpredictable, often striking out without warning.

3. Ms. B is a 54-year-old woman diagnosed with schizoaffective disorder who has been hospitalized many times. Ms. B has a history of physical and sexual abuse. She is often homeless. She has had previous suicide attempts. When it gets cold out she goes to screening and tells staff that she feels suicidal. On two occasions, she has assaulted staff and pulled their hair.

To determine whether the method described above would produce sufficient variability to identify differences between staff. The VASQ was piloted to a group of 35 subjects. The VASQ has a range of 0- 100 for each of the three scenarios for a total score range of 0 to 300 for both internality and controllability. The two additional scenarios below were included in the pilot along with the three scenarios described above.

4. Mr. Z. is a 19 year old male diagnosed with bipolar disorder. He has a history of physical abuse. He was admitted to the hospital after threatening to kill his girlfriend after accusing her of spying on him. Within one week in the hospital he assaulted a staff worker.

5. Mr. L was sent to the hospital from jail for an assessment of his competence to stand trial for assault. While in jail, he had said that he

> was feeling suicidal. He has a long history of criminal behavior. Once at the hospital he assaulted a staff person and another patient

The scenarios with the largest variability were chosen for the study. The scenarios chosen were the original scenarios 1-3 which produced adequate variability for use in the study.

Data Analysis

Eleven bivariate correlations were conducted. Each tested one of the studies eleven hypotheses. The first bivariate correlation tested hypothesis #1 listed below.

H1: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to verbal violence.

The second bivariate correlations tested hypothesis #2 listed below.

H2: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in exposure to verbal violence. The third bivariate correlation tested hypothesis #3 listed below.

H3: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to physical threats of violence. The fourth bivariate correlation tested hypothesis #4 listed below.

H4: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in exposure to physical threats of violence.

The fifth bivariate correlation tested hypothesis #5 listed below.

H5: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to physical assault. The sixth bivariate correlation tested hypothesis #6 listed below.

H6: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in staff exposure to physical assault. The seventh bivariate correlation tested hypothesis #7 listed below.

H7: Staff attributions of consumer violence as being internal to consumers are positively associated with increased confidence in the value of coercion to manage violence.

The eighth bivariate correlation tested hypothesis #8 listed below.

H8: Staff attributions of consumer violence as being controllable by consumers are positively associated with increased confidence in the value of coercion to manage violence. The ninth bivariate correlation tested hypothesis #9 listed below.

H9: Staff reporting exposure to verbal violence is positively associated with increased confidence in the value of coercion to manage violence.

The tenth bivariate correlation tested hypothesis #10 listed below.

H10: Staff reporting exposure to physical threats of violence is positively associated with increased confidence in the value of coercion to manage violence. The eleventh and final bivariate correlation tested hypothesis #11 listed below.

H11: Staff reporting exposure to physical assault is positively associated with increased confidence in the value of coercion to manage violence.

Analysis

The hypotheses that were tested involved whether exposure to violence and staff attributions that violence is internal to and controllable by consumers are associated with more favorable beliefs about the use of coercion to manage violence. A second set of analyses tested whether attributions of consumer internality and controllability and staff attitudes about coercion are associated with increased exposure to violence. A model depicting these relationships is presented in Figure 3.

Bivariate Correlations in SPSS (2018) were used to identify relationships between the study variables. There are four primary statistical assumptions that underlie the use of bivariate correlations. Despite this, most linear statistics including bivariate correlations are relatively robust in the face of all but extreme violations of these assumptions (Garson , 2012; Havlicek & Peterson, 1976). The assumptions are that the pair of variables are continuous, they are related linearly, the variable are normally distributed, the variables are homoscedastic (Havlicek & Peterson, 1976). The assumption of linearity is questionable because of the generally low zero order correlations

between the predictors and the dependent variables. Examining the scatter plots suggests that the poor linearity reflected in the zero order correlations is due to the variables not being related and not due to a curvilinear relationship. No evidence of heteroscedasticity was noted in examining the scatter plots of the variables. No patterns were noted in the graph of the residuals suggesting normally distributed dependent variables.

All data was entered into SPSS 24© by two researchers with one reading the data from the surveys and the other doing the data entry. The individual doing the data entry then read back the data for each subject to check the accuracy of the entries. Descriptive statistics were run on all variables to inspect for obvious data entry errors.

Missing data was handled by dropping only the specific subscale for a subject that contained the missing data. Additionally, for missing data in which a subject completed questions for only two of the scenarios the mean for the two was computed. See Table 2 for the effect on the usable sample size. This calculation had no appreciable effect on the descriptive statistics and was not used in the analysis.

Table 2.
Missing Data

Variable	Missing	Missing after using average of two scenarios	Addition to sample
Internality	34	28	+6
Controllability	32	28	+6
Optimism	31	28	+3
Extra effort	36	32	+4
How Angry	37	28	+9

Power Analysis

In order to determine the necessary sample size to statistically power this analysis a meta- analysis on a similar topic was identified and used to suggest an anticipated effect size. The meta-analysis (Rudolph et al., 2004) consisted of 64 studies with a combined sample size of over 12,000 subjects, the mean zero order correlation between measures of an interpersonal attribution of control and measures of sympathy, anger, and behavior was r = .45, p = .001. The lowest of these correlations was between an attribution of control and measures of helping, r = -.25, n= 6840. Detecting an effect as low as r =.25, using bivariate correlations would require a sample size of n =210. (Faul, Erdfelder, Buchner, & Lang, 2009). The current sample of 232 exceeded this requirement.

Chapter IV

RESULTS

Preliminary tests were conducted prior to testing the study's numerous hypotheses. The first test involved whether there was an effect on the dependent variables of the order in which subjects received the scenarios. The scenarios were initially randomized into 6 conditions to reduce potential bias from order effects. An analysis of variance was performed with the survey order (6 conditions) as the factor and the measure of internality and controllability as the dependent variables. There were no significant differences in staff attributions of internality, ($F_{(5,192)}$= 1.12, p = .351) or controllability ($F_{(5,194)}$= 1.45, p= .208) based on the order of the scenarios that subjects received.

In order to determine if there were differences in the dependent variables across subject roles, the twelve categories of staff role were collapsed into six. This was done to preserve statistical power (see Table 3). A MANOVA was performed using the six new roles as the factor with the dependent variables of "attributions of internality and controllability", "attribution of control of staff", "optimism for patient change", "willingness to provide extra effort" and "how angry the scenario would make you feel". Only one significant difference was noted in the omnibus test. Nurses reported a

greater willingness to provide extra effort to consumers who were violent, $F_{(5,182)} = 6.40$, $p < .001$ compared to the other role categories. (see Table 4).

The SACS mean and standard deviations from the current study were compared to studies in the literature that provided this information. See Table 5. The current study had the lowest total score, Lowest coercion as care and security and the highest coercion as offending score. The absence of data from the other studies makes significance testing or further comparisons impossible.

Each of the eleven hypotheses represent a univariate relationship. The eleven study hypotheses were tested using a series of eleven bivariate correlations. Descriptive statistics for the variables in the eleven hypotheses are presented in Table 6 for continuous variable and Table 7 for categorical variables. Significance was set at $p \leq .05$. The hypotheses tested by each analysis are listed below with the bivariate correlation presented.

Table 3
Collapsing Staff Roles into 6 Categories

Roles	Original n	Collapsed into
Nursing (TES, HAS, HST, RLS)	13	41
Nursing (LPN, RN)	9	
Nursing (SON, CNS)	19	
Social Work	46	46
Rehabilitation	69	69
Medical Doctors	1	16
Psychiatrists	4	
Psychologists	11	
Ministry	18	
Nutrition	0	43
Administration	25	
Other	15	15
Missing	2	2
Total	232	232

Table 4
Comparison of Nursing with Other Disciplines on Their Willingness to Provide Consumers Extra Effort

Role	n	Mean	*SD*	p
Nursing	30	77.90	20.88	
Social Workers	41	67.59	19.00	.000*
Rehab	62	72,79	15.82	.020*
Physicians	12	61.08	31.38	.014*
Ministry, Nutrition, Admin	41	66.56	21.00	.000*
Other	13	67.69	23.68	.016*

*indicates that this group is significantly different that Nursing

Table 5
Comparison of SACS Total and Sub Scores Across Studies

Study	n	SACS Total Score Mean (SD)	Coercion as Offending Mean (SD)	Coercion as Care Security Mean (SD)	Coercion as Treatment Mean (SD)
Current Study	232	3.03 (.67)	3.24 (.73)	3.56 (.82)	2.53 (.85)
Husum et al., 2008	215	3.32 (NA)	2.94 (NA)	4.16 (NA)	2.40 (NA)
	3462	3.17 (NA)	2.86 (.24)	4.21 (.16)	2.45 (.21)
Wu et al., 2012	235	3.24 (NA)	3.21 (NA)	3.88 (NA)	2.63 (NA)

SACS Range is 1-5
NA = Not Available

Table 6
Descriptive Statistics for Continuous IVs and DVs

Variable	n	Min	Max.	Mean	*SD*
SACS Total Score	208	16	72	45.39	10.06
Internal Total Score	198	0	300	117.27	58.85
Controllability Total Score	200	1	300	138.37	49.83
How Optimistic	201	0	300	210.47	52.83
Extra Effort	196	111	300	237.47	46.45
How Angry	195	5	300	173.30	72.16

The first bivariate correlation tested Hypothesis 1 which is listed below.

H1: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to verbal violence. This bivariate correlation was not significant (r (196) = .03, p = .675)**.** Hypothesis 1 is rejected. The second bivariate correlations tested hypothesis 2 listed below.

Table 7
Descriptive Statistics for Categorical IVs and DVs

Variable	n	Category	%
Verbal Abuse	230	Never	7.8
		A few times a year	22.8
		A few times a month	17.7
		Once a week	13.4
		A few times a week	22.4
		Every day	14.7
Physical Threats	230	Never	20.7
		A few times a year	44.0
		A few times a month	16.8
		Once a week	6
		A few times a week	8.2
		Every day	2.2
Physical Assault	230	Never	69.8
		Once Twice	13.4
		Three times	4.3
		Four times	1.3

H2: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in exposure to verbal violence. The bivariate correlation was not significant (r (198) = -.03, p = .715). Hypothesis 2 is rejected. The third bivariate correlation tested Hypothesis 3 listed below.

H3: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to physical threats of violence. The bivariate correlation was not significant (*r* (196) = -.01, p = .908). Hypothesis 3 is rejected. The fourth bivariate correlation tested Hypothesis 4 listed below.

H4: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in exposure to physical threats of violence.

This bivariate correlation was not significant (*r* (198) =-.11, p =.127). Hypothesis 4 is rejected. The fifth bivariate correlation tested Hypothesis 5 listed below.

H5: Staff attributions of consumer violence as being internal to consumers are positively associated with an increased exposure to physical assault. This bivariate correlation was not significant (*r* (196) = .11, p = .126). Hypothesis 5 is rejected. The sixth bivariate correlation tested Hypothesis 6 listed below.

H6: Staff attributions of consumer violence as being controllable by consumers are positively associated with an increase in staff exposure to physical assault. This bivariate correlation was not significant (*r* (198) = .03, p = .678). Hypothesis 6 is rejected. The seventh bivariate correlation tested Hypothesis 7 listed below.

H7: Staff attributions of consumer violence as being internal to consumers are positively associated with increased confidence in the

value of coercion to manage violence. This bivariate correlation was significant (*r* (184) = .20, p = .005). Hypothesis 7 is supported. The eighth bivariate correlation tested Hypothesis 8 listed below.

H8: Staff attributions of consumer violence as being controllable by consumers are positively associated with increased confidence in the value of coercion to manage violence. This bivariate correlation was significant (*r* (184) = .15, p = .040). Hypothesis 8 is supported. The ninth bivariate correlation tested hypothesis 9 listed below.

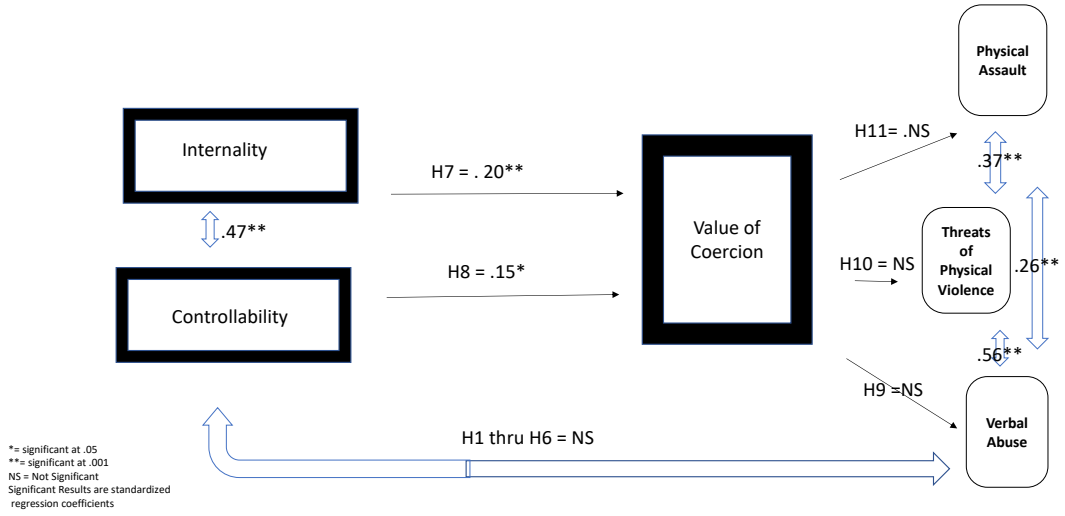
H9: Staff reporting exposure to verbal violence is positively associated with increased confidence in the value of coercion to manage violence. This bivariate correlation was not significant (*r* (205) = .08, p = .237). Hypothesis #9 is rejected. The tenth bivariate correlation tested Hypothesis 10 listed below.

H10: Staff reporting exposure to physical threats of violence is positively associated with increased confidence in the value of coercion to manage violence. This bivariate correlation was not significant (*r* (206) = .10, p = .135). Hypothesis 10 is rejected. The eleventh and final bivariate correlation tested Hypothesis 11 listed below.

H11: Staff reporting exposure to physical assault is positively associated with increased confidence in the value of coercion to manage violence. This bivariate correlation is not significant (*r* (206) = .02, p = .819). Hypothesis 11 is rejected.

In the bivariate tests of the eleven hypotheses only Hypothesis 7 and Hypothesis 8 were supported. These hypotheses refer to the positive correlations between interpersonal attributions made by staff of "internality" and "control" of consumers for inpatient violence and staff's belief in the "value of coercion" to manage violence. The results are presented in Figure 4.

Figure 4
Bivariate Correlations for Research Hypotheses H1-H11



The Spearman Rank Order correlation was also performed to test the various study hypotheses that involved ordinal data. No meaningful change to the results was noted.

In Figure 4 the two attributions of "internality" and "controllability" are correlated ($r(195) = .47$, $p = .000$). The three forms of violence are also correlated. "Verbal abuse" and "physical threats" are positively correlated, ($r(227) = .56$, $p < .001$), "verbal abuse" and "physical assault" ($r(227) = .26$, $p <$

.001) and “physical threats” and “physical assault” ($r(228) = .26$, $p < .001$) are also positively correlated.

In order to determine the combined contribution of the variables of staff attributions of “internality” and “control”, a multiple regression was performed. In this analysis the two forms of staff attributions were regressed onto staff’s attitude about coercion (SACS) total score. Results are presented in Table 8. The model explains 5% of the SACS total score variance. Only staff’s attribution of “internality” is significant within the model, ($\beta = .17$, $p = .044$), ($R^2 = .05$, $F(2, 181) = 4.28$, $p = .015$).

Table 8
Multiple Regression of Staff ‘s Attributions of Patient Internality and Control of Violence on Staff’s Attitude about Coercion (SACS Total Score)

	SD Error	β	p	Zero Order r	Part r
Internal	.028	.17	.044	.20	.15
Control	.016	.08	.341	.15	.07

A secondary analysis was performed to further explore the relationships between staff attributions of consumer “responsibility” for violence, beliefs in the value of coercive violence management techniques as well as the role of violence experienced by staff. This model attempts to adapt the Rudolph and colleagues (2004) model (Figure 2) to apply to this study of inpatient violence. The Rudolph model identifies the emotions of “anger” and “sympathy” that mediate the attribution of patient responsibility for negative behaviors on “help giving” or “aggression”. The Rudolph model, if applied to inpatient violence would predict two pathways. The first would occur when staff attribute

consumer responsibility for inpatient violence. This attribution would lead to staff anger at that consumer. Staff anger would then lead to staff aggression toward that consumer. In the second pathway staff who attribute non-responsibility for inpatient violence (it's not their fault) would lead to staff sympathy for that consumer. Staff sympathy would then lead to help giving. A direct relationship is also predicted in which a staff's attribution of responsibility would lead directly to aggression without being mediated by anger.

The Rudolph model is adapted below with the addition of the role of violence experienced by staff as a potential moderator. Verbal violence, physical threats and physical assault, the three forms of self-reported violence reported by staff, have been collapsed to preserve statistical power and to simplify the model. The new variable is called "self-reported violence". Also, the construct of sympathy is replaced with staff's "optimism for patient change". Aggression is replaced with the "coercion as treatment" subscale of the Staff Attitude Toward Coercion Scale (SACS). The rational for the use of this subscale is that it represents the most extreme view of staff about the use of coercion to manage violence. The other two SACS subscales measure, respectively, staff's belief in coercion's negative effect on the therapeutic relationship and staff's view as to whether coercion is a pragmatic necessity. It is only the third subscale that measures staff's affirmative belief in the value of coercion. The three statements composing the "coercion as treatment" sub-scale are:

#6. More coercion should be used in treatment

#10. Patients without insight require use of coercion

#12. Regressive (very ill) patients require the use of coercion

Consistent with Rudolph's model, the construct of interest is the attribution of "responsibility". Because of this, the interpersonal attributions of internality and controllability were added together to form a new variable called "responsibility". The results of a path analysis are presented in Figure 5. Three multiple regression analyses were used to assess path coefficients and mediation. In the first test (actually a bivariate correlation because there was only one predictor) staff interpersonal attributions of patient "responsibility" for violence negatively predicted "optimism for patient change", (β = -.17, p = .018), (R^2 = .03, F (1.195)= 5.65, p= .018). Results are presented in Table 9. In the second test responsibility and "optimism for patient change" were regressed against "willingness to provide extra effort".

Table 9
Regression of Staff 's Attributions of Patient Responsibility for Violence on Staff's Optimism for Patient Change

	SD Error	β	p	Zero Order r	Part r
Responsibility	.040	-.168	.018	-.17	-.17

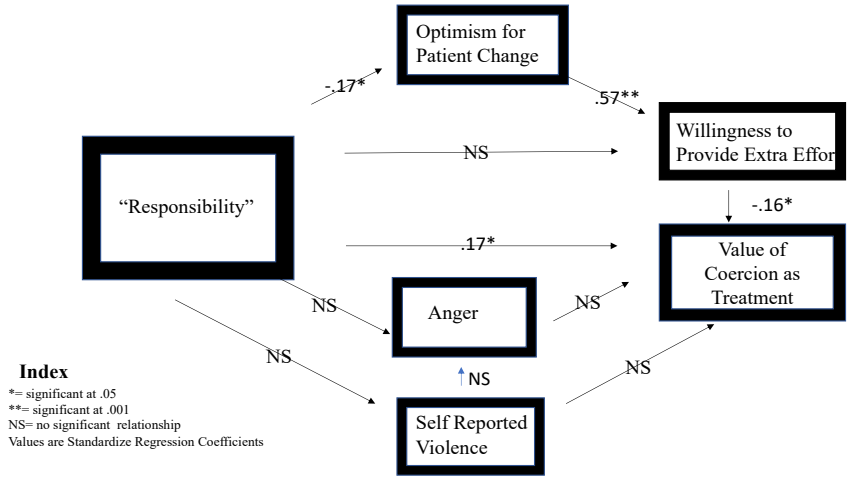
Only "optimism for patient change" was significant in the model and predicted 35.6% of the variance of "willingness to provide extra effort", (β = .57, p<.01), (R^2 = .36, F (1,199) = 5.65, p < .001). See Table 10. This demonstrates that staff "optimism for patients change" fully mediates the relationship between attributions of responsibility and staff's "willingness to provide extra effort" to consumers who commit violence.

The second pathway from "responsibility" to the "value of coercion as treatment" showed a direct relationship (β = .17, p=.017) and "willingness to provide extra effort", (β = -.16, p =.028) of staff's belief in the "value of coercion as treatment", (R^2 = .08; F (4, 184) = 4.05, p = .004) with no influence of either

Table 10
Multiple Regression of Staff 's Attributions of Patient Responsibility and Optimism for Patient Change onto Willingness to Provide Extra Effort.

	SD Error	β	p	Zero Order r	Part r
Responsibility	.030	-.018	.072	-.22	-.106
Optimism for Patient Change	.054	.571	.000	.59	.559

Figure 5
Path Diagram of the Role of Staff Attributions of Patient Responsibility for Violence, Staff Optimism on Willingness to Provide Extra Effort and the Direct Effect of Responsibility on the Value of Coercion as Treatment



"anger" (β = -.05, p .456) or staff's "self-reported violence", (β = .19, p .198).

See Table 11. This model was run as a path analysis to check the goodness

of model fit. The Chi square test was significant indicating that this model was not a good fit with the data, X^2 (9) = 29.36, p = .001.

Table 11
Multiple Regression of Staff 's Attributions of Patient Responsibility for Violence, Willingness to Provide Extra Effort, Staff Anger and Self-Reported Violence onto the Value of Coercion as Treatment

	SD Error	*β*	p	Zero Order r	Part r
Responsibility	.002	.174	.017	-.21	-.17
Willingness to provide Extra Effort	.004	-.164	.028	-.21	-.156
Staff Anger	.003	-.016	.825	-.07	-.016
Self-Reported Violence	.055	.098	.168	.10	.098

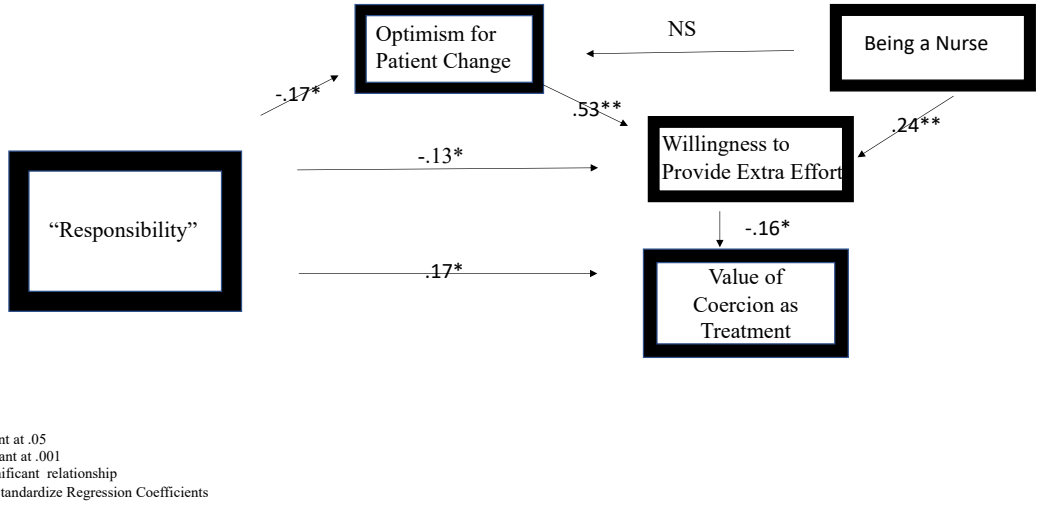
A final analysis incorporated the finding that nurses reported significantly more willing-ness to provide extra help than all other categories of professionals. To better understand this phenomenon a corrected path model was developed. This model involved the elimination of the non-significant variables found in the previous model and adding the variable "being a nurse". The "being a nurse" variable was created by dummy coding all nurses as 1 and all non-nurses as 0. The resulting variable was run in a series of multiple regressions. See figure 6 below.

In this multiple regression, the variables "being a nurse", "responsibility" and "optimism for patient change" were regressed onto "willingness to provide extra effort". This analysis explains 42% of the variance of "willingness to provide extra effort". "Being a nurse" (β = .24, p <.001), "responsibility" (β = -.13, p=.022), "optimism for patient change" (β = .53, p < .001) were all

significant in the model, (R^2 = .42; *F* (3,187), p < .001). The relationship between

"responsibility" and "optimism for patient change", (β = -.17, p = .018), (R^2 = .03, *F* (1.195)= 5.65, p= .018) remained unchanged from the previous model.

Figure 6
Path Diagram of the Role of Staff Attributions of Responsibility, Staff Optimism and Being a Nurse on Willingness to Provide Extra Effort and The Value of Coercion as Treatment



The was no relationship between "being a nurse" and "optimism for patient change", (*r* (199) = .14, p = .055). "Being a nurse" was not related to "value of coercion as treatment", (*r* (221) = -.08, p = .236, or "responsibility" (*r* (195) = .02, p = .833). See Table 12. The model was then run as a path analysis in order to test the model fit. A Chi square test was not significant indicating that the fit between the overidentified model and the data is not significantly worse

than the fit between the just-identified model and the data, X^2 (3) = .501, p = .919.

Other goodness of fit indexes also supported the model fit including the Comparative Fit Index, CFI = 1.00 and the Normed Fit Index, NFI = .996, and the Root Mean Square Error of Approximation fit index, RMSEA = .000 (Lo 90% = .000 and Hi 90% = .039).

Table 12
Multiple Regression of Staff 's Attributions of Patient Responsibility for Violence, Being a Nurse and Optimism for Patient Change onto Willingness to Provide Extra Effort

	SD Error	*β*	p	Zero Order r	Part r
Responsibility	.029	-.133	.022	-.22	-.13
Being a Nurse	7.60	.236	.000	.32	.23
Optimism for Patient Change	.053	.525	.000	.59	.51

Chapter V

DISCUSSION

This study used bivariate correlations and multiple regressions with data from a cross sectional survey of state psychiatric hospital staff (n=232) the goal was to explore the relationships between psychiatric inpatient staff's exposure to violence, their attributions about the causes of violence, and their attitudes about coercive interventions to manage violence. Staff holding an "internal" attribution of violence refers to that staff's level of belief that the cause of the violence in the three study scenarios was "Totally due to the patient" and not "Totally due to others or circumstances". Staff's level of "control" attribution refers to that staff belief that violence was "Totally under the patient's control" as opposed to "Not under the patient's control". A meta-analysis of the Attributional Theory of Help Giving and Aggression (Rudolph et al., 2004) demonstrated that attributions of responsibility can lead to feelings of anger. Attributions of non-responsibility (it's not their fault) can lead to sympathy. These feelings can then lead, respectively, to behaviors of aggression or help giving. The question for this study was whether these associations applied to inpatient psychiatric staff member's attributions about consumer's responsibility for violence and staff's beliefs about the value of coercion to manage violence. An additional question was whether the level of

violence experienced by staff in the previous year would be associated with this relationship. The mean total score and subscale scores on the SACS scale of the current study were compared to other studies that used this scale. The current study had the lowest total score and lowest coercion as treatment score and highest coercion as offending score. Of the three comparison studies, two were from Norway (Husum et al., 2008; Husum et al., 2009) and one was from China (Wu et al., 2012). The differences were not subjected to significance testing but could represent differences among the cultures where the studies were conducted. Incomplete data from the comparison studies makes conclusions about the differences impossible.

The significant bivariate correlations between staff's interpersonal attributions of internality and controllability for violence (collectively called responsibility) are positively associated with beliefs about the value of coercion to manage violence. This relationship validates two of the study's hypotheses. The path analysis detailed in Figure 5 shows that staff "optimism that patients can change" variable mediates the relationship between staff's attribution of responsibility and that staff's "willingness to provide extra effort" for consumers who commit violence. The path analysis also demonstrates a small negative relationship between a staff's "belief in the value of coercion" and staff's "willingness to offer extra effort". This relationship was not predicted and raises the question about why attributions about patient responsibility for violence would be negatively related to optimism for patient change. It could be that staff make the further attribution that these behaviors are also "stable"

meaning that responsibility for violence is a condition that is unlikely to change. This is consistent with two studies in which internality, controllability and stability were associated in reduced helping behaviors in staff working with people with intellectual disabilities (Stanley & Standen 2000; Sharrock, Day, Qazi & Brewin, 1990). Contrary to the study hypotheses, no relationship was found between the three forms of violence experience by staff (verbal abuse, physical threats and physical assaults) and any other study variable. No relationship was found between anger at consumers and any other study variable.

The analysis shown in Figure 6 dropped the "violence experience by staff" and "anger" variables and added a "being a nurse" variable. This was done because nursing was different than the other disciplines in the study in being more willing to provide extra effort for consumers. The addition of the "being a nurse" variable resulted in a model that explained 42% of the variance of "willingness to offer extra effort" to consumers who commit violence (Figure 6). The variable "being a nurse" was nearly orthogonal to the variable "optimism for patients to change". This suggests that the nurses may have some other reason for being willing to offer extra effort for consumers other than optimism. It may be that the profession of nursing sees extra effort as a part of the role of nursing. The model depicted in Figure 6 was determined to be a good fit to the data suggesting good model specification of the variables in the path model. Both models in Figures 5 and 6 show that

staff's attribution of patient responsibility for violence is negatively related that staff's "optimism in the patient's ability to change".

The relationships reported in this study are significant at $p < .05$, but the effects sizes are often small, and the multiple testing of the same dependent variable raises concerns about an increase in type one errors. These concerns are lessened somewhat by the "a priori" predictions of the relationships in Figure 4. The relationships in Figures 5 and 6 suffer from the same issue of small effect sizes and the increased danger of type one errors due to multiple testing. Here again, the threat is lessened somewhat because the path analysis in Figure 5 was theoretically driven as a replication an existing model.

The results present a compelling pattern of associations and a compelling story. The relationship between staff attributions of a consumer's responsibility for violence and the staff's belief in the value of coercion (Figure 4) was based on staff attributing causality for violence for three scenarios. These scenarios were designed to elicit staff attributions and were intended to be too vague to determine responsibility. The staff had to project their attributions onto the three scenarios. Prior to this process staff had completed the Staff Attitude about Coercion Scale (SACS). The SACS was not connected to the scenarios. A pattern emerged and was clarified in the path analysis (Figure 5) in which staff who reported stronger attributions of consumer responsibility for violence tended to have stronger beliefs in the value of coercion to manage violence and tended to have lower optimism for

consumers changing. They also tended to be less willing to provide consumers who commit violence extra effort.

These relationships could begin to explain why coercive violence management strategies vary both within and between institutions even after controlling for consumer characteristics (Bowers et al., 2007; Holzworth & Wills, 1999; Larue et. al., 2009; Legget & Sylvester, 2003; Husum, Bjorngaard, Finset & Ruud, 2010). The reason a belief in the value of coercion is concerning is that coercive violence management strategies are associated with increased staff and consumer injuries as well as increased violence (Bowers et al., 2007). Consumers also identify coercive interventions as provocative of the violent behaviors that the interventions are intended to prevent (Duxbury, 2002; Bowers et al., 2007). Belief that coercion is necessary to prevent violence has been challenged. Large reductions in coercive interventions were reported in the Pennsylvania State Psychiatric Hospital system with no increase in violence or staff injuries (Smith et al., 2005). There is also compelling evidence that therapeutic interventions can be effective and should be utilized before coercion (Gaynes, et al., 2017).

Nine of the study's eleven hypotheses involved the relationship of three forms of violence (verbal abuse, physical threats, or physical assaults) to staff attributions of the causes of inpatient violence and beliefs in the value of coercion. Hypotheses H1 through H6 stated that violence experienced by staff would be associated with the two forms of staff's attributions of patient's internality and control. The rationale for this was that after violent events staff

nearly universally demonstrate attributions of responsibility to consumers (Cottle, Kuipers, Murphy & Oakes, 1995). This was not the case in this study, none of the three forms of staff self-reported violence including the combination of the three, were significantly related to staff attributions of consumer responsibility for violence. The reason for this is unclear.

Early attribution research (Weiner, 1995) predicted that interpersonal attributions of responsibility for negative outcomes were most often generated with threatening, novel experiences in which subjects had to quickly explain another person's behavior. As the frequency and duration of negative behaviors (violence) increases, the association between interpersonal attributions of responsibility and violence may wane. Participants in this study had an average of 9.6 years tenure working in their respective hospitals. During this time the focus on consumer responsibility for violence may be replaced with more nuanced explanations for consumer behavior. These explanations may include the role of provocative factors in the environment and factors outside the hospital such as familial stressors. The high frequency of violence experienced by staff (see Table 6) may have reduced the relationship of attributions of responsibility and violence experienced by staff. High frequency may have also affected the relationship of staff attributions of responsibility and staff's anger.

Figure 5 shows no significant path from staff attributions of responsibility and staff anger toward consumers. This is inconsistent with the Rudolph et al (2004) model and suggests that the current study differs in some

fundamental way. The reason for this difference may be that the Rudolph model was created from a meta-analysis primarily addressing retaliatory anger (Rudolph et al., 2004). This anger was provoked by interpersonal attributions of responsibility for negative behaviors directed at participants in the studies. In the current study, the violence depicted in the scenarios was not framed as being directed at the study participants. It could be that the study scenarios failed to elicit retaliatory anger resulting in the failed replication of the attribution / anger pathway in the Rudolph model.

The relationship of attributions of responsibility and violence experienced by staff may not be related for another reason. For example, a staff person may respond to an emergency code for violence. Other staff might be actively provoking the consumer when the responding staff arrives on the scene to help, the responding staff is assaulted. In this way the staff may correctly attribute the assault to a provocative environment and still experience violence.

One important question is why the correlations and path coefficients in this study are so small. The results of the Rudolph et al., (2004) review of sixty-four attribution studies focused on similar constructs as the current study but reported average path coefficients with medium to large effect sizes (Rudolph et al., 2014). The low effect sizes in the current study may have to do with study limitations.

Limitations

This study has numerous limitations. The first limitation involves the failure to effectively achieve a stratified sample of staff roles. This is particularly evident by the low number of nurse's aides that participated in the study. Nurse's aides are staff that have only a high school education minimum requirement but have the most consumer contact in the hospital. These staff do not have access to institutional computers and the study survey was most frequently taken online (n= 212) compared to paper and pencil (n= 20). Despite there being over a thousand nurse's aides statewide, none of them took the survey online.

The second limitation has to do with the possibility of language barriers affecting the results of this analyses. It appeared that a large number of the nurses aides who wanted to participate in this study had a primary language that was not English. This issue became apparent when the paper and pencil survey was administered prior to ongoing continuing education trainings. The amount of time it took individuals with primary languages other than English to complete the survey was thirty minutes. When English was a person's first language, staff completed the survey in fifteen minutes. This was unforeseen and resulted in many nurse's aides not completing the survey because of insufficient time prior to the scheduled training that they were attending. Other than the difficulty in properly sampling nurse's aides, it is not clear what effect this issue had on the online data or the final results.

The next limitation has to do with the Staff Attitude about Coercion Scale (SACS). The use of the term coercion in virtually every question of the scale may have evoked negative connotations and promoted a social desirability response bias in study participants. The SACS scale also lumps three forms of coercion together, including seclusion, restraint and involuntary medications. It could be that staff feel differently about the use of involuntary medication with consumers experiencing psychosis compared to the use of restraint.

Another limitation was the exclusive use of self-reported data by subjects. While this is justifiable from a pragmatic perspective, it may have introduced a method bias into the analysis. Method bias can attenuate the relationships between latent variables thus reducing the effect sizes. An additional limitation that was addressed above was that the study's scenarios may have failed to elicit retaliatory anger from subjects.

A final and important limitation was that the study's findings were not entirely predicted a priori. Ideally, researchers define their methods and hypothesize the outcomes prior to their study. Failure to do this can lead to a capitalization on chance and un-replicable findings. In this study bivariate correlations were used to test the elven hypotheses. The other study findings were largely theoretically driven but were not formally hypothesized a priori. Because of this, the additional findings including those from the two path analyses should be met with an additional degree of skepticism.

Conclusions

This is the first study of its kind to demonstrate relationships between staff attributions of consumer responsibility for violence, their belief in coercion as an effective treatment for violence, their optimism for consumers changing and their willingness to provide consumers who commit violence extra effort. The study used multiple regression with data from a cross sectional survey of state psychiatric hospital staff. A secondary analysis found that staff "optimism for consumer change" mediated the relationship between staff attributions of consumer "responsibility" for violence and that staff members' "willingness to provide extra effort" to consumers who commit violence.

The value of this study is that it is the first to explore the relationship between staff attributions of consumer responsibility for violence, staff exposure to violence with staff's preference for the use of coercive intervention to manage violence. An attribution of consumer responsibility for violence and a preference for coercion may predispose some staff to under- estimate their role in inpatient violence prevention including the role of therapeutic interventions. This study was not focused on whether there are times when coercion is appropriate or even necessary. Instead the focus of this study was on why some staff prefer coercive violence management techniques while other staff do not. Studies suggest that the differences in the use of coercion is more related to staff attitudes than to consumer characteristics (Bowers et al., 2007; Holzworth & Wills, 1999; Larue et. al., 2009; Legget & Sylvester, 2003; Husum, Bjorngaard, Finset & Ruud, 2010). Understanding what affects

staff attitudes about coercion may allow for the development of better strategies to prevent the use of coercion and to promote better therapeutic relationships between staff and consumers.

One possible intervention based on these study results is the use of clinical supervision (CS) to shape staff attitudes, attributions and behaviors as well as to improve staff optimism for consumer change (Schoenwald, et al., 2013; Schoenwald, Sheidow, & Chapman, 2009). Theories of clinical supervision (Inskip & Protor, 1993; Kadushin & Harkness, 2014) have identified three functions of clinical supervision that balance the need for staff to experience both psychological safety and accountability. Bridget Proctor called these three functions restorative, normative and formative (Bowles & Young, 1999). It is the restorative function that forms the medium through which changes in clinical behavior can occur. The restorative function involves the validation of staff's experiences and feelings, the promotion of self-care, building reflective practice and team building. The normative function focuses on adherence to ethical and professional practice standards including the use of interventions with the best evidence of effectiveness. The formative function in clinical supervision includes best practice elements such as competency-based skills training and practice as well as the use of audit and feedback to shape clinical behavior in a desired direction (Ivers et al., 2014). Weekly CS would begin by establishing a restorative working alliance between the clinical supervisors and supervisees. Standards of practice and necessary skill competencies would be identified and practiced. Lastly, clinical

supervisors would engage in audits including direct observation of practice and feedback based on supervisee's behaviors related to the use of coercion. The audit must be based on validated treatment adherence standards including the use of therapeutic interventions to eliminate coercion. The use of audit and feedback has been successfully employed in other clinical settings that required changes in attitudes and behaviors (Ivers et al., 2014). Additional research would be required to determine if this process is effective in reducing the use of coercion.

Generalization of the findings of this study to the broader population of NJ state psychiatric hospital clinical staff is difficult because of the difficulty sampling nurses' aides. It is also not clear if the study participants from the three NJ hospitals are somehow different than staff that did not participate or staff in other psychiatric institutions within the United States. Based on this, generalization of the study results should be approached with caution. Future research in this area should seek to avoid the use of the term coercion and instead neutrally describe the staff's use of restraint, seclusion and the use of involuntary medication more directly. In addition, the staff specific beliefs about restraint, seclusion and the use of involuntary medication should be measured individually. Researchers should attempt to measure violence experienced by staff more objectively in order to eliminate the accumulation of error associated with an over reliance on self-report. Scenarios used to illicit staff attributions should be crafted so that the violence is hypothetically directed at the study participant. When surveys are used, the language level

needed to understand the survey and cultural interpretations of the instruments should be thoroughly tested to assure that the study participants can provide valid information. Lastly, future researchers should properly power their studies and attend to the family wise error rate problem associated with multiple tests of the same dependent variable.

Some unanswered questions remain including: What other factors might better predict staff preference for coercion in the new inpatient violence attribution model? How might the latent variables of "violence experienced by staff" and "staff attributions" be measured more objectively and precisely?

This study represents just a starting point for further research on the preferences of mental health staff for the use of coercion to manage inpatient violence. This topic is important to the lives of everyone associated with inpatient psychiatric treatment and deserves the attention of researchers.

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APPENDIX A

What is your age in years? _____
What is your gender? Male: _____ Female: _____

1. How long have you worked at the hospital? _____

2. How long have you worked in Mental Health? _____

3. What area of the hospital do you most often work? Check the site that you most often worked at in the previous year (Check one). ***(THIS LIST CHANGES BY HOSPITAL***)
_____Raycroft (E1,E2,W1,W2)
_____Lincoln (ITU, Kennedy, Lazarus, King)
_____Drake (E2,W1,W2)
_____Travers
_____Stratton
_____I move too often to pick one
Other: _____

4. What shift do you most often work (check one)?
____Days
____Evenings
____Nights
Other: _____

5. What discipline do you work in?
____Nursing (TES, HSA, HST, RLS)
____Nursing (LPN, RN,)
____Nursing (SON, CNS)
____Psychology (PSYCHOLOGIST)
____Social work
____Rehabilitation
____Psychiatry
____Medical staff
____Ministry
____Nutrition
____Administration
Other: _____

6. How much contact with patients do you have in a week?
_____ little to none
_____ between 1 and 4 hours
_____ between 4 and 8 hours
_____ between 8 and 12 hours
_____ between 12 and 16 hours

_____ More than 16 hours

7. I would say **my** work morale is good.
____Strongly Agree
____Agree
____Neutral
____Disagree
____Strongly Disagree

8. I would say the morale of **the staff that I work with** is good.
____Strongly Agree
____Agree
____Neutral
____Disagree
____Strongly Disagree

9. How frequently in **past 12 months** have you experienced <u>verbal aggression</u> (verbal threats swearing, yelling) from patients?
____ never
____ a few times a year
____ a few times a month
____ once a week
____ a few times a week
____ every day

10. How often in the **past 12 months** have you felt <u>physically threatened</u> by patients?
____ never
____ a few times a year
____ a few times a month
____ once a week
____ a few times a week
____ every day

11. How often in the **past 12 months** have you been <u>physically assaulted</u> by patients?
____ never
____ once
____ twice
____ three times
____ four times
____ five times or more

12. How many incident reports have you filed for consumer violence in the past year? Please write the number below. Write 0 if you have not filed any incident reports.

APPENDIX B

Staff Attitude Toward Coercion Scale (Husum, Finset & Ruud, 2008)

	Please check you level of agreement with the statements below, **Coercion** is defined as the use of **restraints and involuntary medication** to manage violence.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	Use of coercion is necessary as protection in dangerous situations					
2	For security reasons coercion must sometimes be used					
3	Use of coercion can harm the therapeutic relationship					
4	Use of coercion is a declaration of failure on the part of the mental health services					
5	Coercion may represent care and protection.					
6	More coercion should be used in treatment					
7	Coercion may prevent the development of a dangerous situation					
8	Coercion violates the patient's integrity					
9	For severely ill patient's coercion may represent safety					
10	Patients without insight require use of coercion					
11	Use of coercion is necessary towards dangerous and aggressive patients					
12	Regressive (very ill) patients require the use of coercion					
13	Too much coercion is used in treatment					
14	Scarce resources lead to more use of coercion					
15	Coercion could have been much reduced, giving more time and personal contact					

APPENDIX C

(Adapted from the Attribution Style Questionnaire, Peterson & Villanova, 1988)

INSTRUCTIONS: Please try to imagine yourself dealing with the situations that follow. Please write what you see as the *MAJOR* cause of the violence from each scenario in the space provided.
SCENERIO: (*Insert Scenario 1,2 or 3 Here)*
Please **write in the space below** your opinion about the **major cause** of this patient's behavior.
For the 6 questions below circle the number that best reflects your opinion. Example: for question 1 choose a higher number the more you think that the patient was in control of the cause you listed.
1. Is the cause you listed, due to other people or circumstances? **Totally due to Others** **Totally due to the patient** 0----------25----------50----------75----------100
2. Is the cause you listed, under the patient's control? **Not under control of the patient** **Totally under patient's control** 0----------25----------50----------75----------100
3. Is the cause you listed, under control of the staff? **Totally uncontrollable by the staff** **Totally controllable by the staff** 0----------25----------50----------75----------100
4. How optimistic are you that this patient can change? **Not optimistic** **Very optimistic** 0----------25----------50----------75----------100
5. How willing are you to provide extra effort for this patient? **Not willing at all** **Very willing** 0----------25----------50----------75----------100
6. How angry would this situation make you feel? **Extremely angry** **Not angry at all** 0----------25----------50----------75----------100