

Inmate Mental Health Predicting the Likelihood of Physical and Verbal Assault on Correctional Staff

BRYCE E. STOLIKER

Western University, London, Canada

bstolike@uwo.ca

ABSTRACT

Most research on inmate prison violence examines inmate-on-inmate assaultive behaviour, whereas considerably less attention has been paid to inmate-on-staff assault and the factors underlying this relationship. The present study uses the Survey of Inmates in State and Federal Correctional Facilities 2004, which includes 18,185 respondents, to examine whether inmates who suffer from symptoms of poor mental health or clinical mental disorders are more likely to physically and verbally assault correctional staff in prison and why. Logistic regression was used to examine inmates' mental health status in predicting the likelihood of physical and verbal assault. It was found that those displaying symptoms of mental health issues related to anger and psychosis were more likely to physically assault correctional staff; inmates with symptoms of anger, psychosis, and anxiety were more likely to verbally assault staff. Inmates with clinical disorders related to schizophrenia and mood disorders were more likely to physically assault correctional staff; those with a diagnosis of personality disorder were more likely to verbally assault staff. It was also found that, when comparing types of mental health problems, inmates exhibiting certain mental health disorders/symptoms were at a greater risk of victimizing staff. Policy implications and directions for future research are discussed.

KEYWORDS: Prison violence; Inmate mental health; Correctional staff; Verbal assault; Physical assault; Inmate-on-staff assault

INTRODUCTION

In recent years, the United States has adopted a 'get tough on crime' provision, which has led to an increase in the numbers of incarcerated offenders, as well as longer prison sentences (Howse, 2003). Although correctional facilities offer a method to house and control various types of offenders, the prison environment is inherently hostile and violent (Wolff, Blitz, & Shi, 2007), making it difficult to both live and work in these institutions. One factor contributing to the harsh conditions of these environments is the prevalence of violence and risk of victimization faced by inmates and correctional staff (Lahm, 2008; 2009a; Light, 1991; Listwan, Daigle, Hartman, & Guastafarro, 2014; Paré & Logan, 2011; Patrick, 1998; Useem & Piehl, 2006; Wolff et al., 2007). In any case, inmate violence is a substantial problem for correctional institutions, as inmate altercations, irrespective of the targeted victims, aids

in the creation and perpetuation of the violent prison subculture (Patrick, 1998).

Much of the literature on prison violence has examined inmate-on-inmate assaultive behaviours, whereas significantly less research has given attention to inmate-on-staff altercations (Lahm, 2009a). Some research even fails to diverge the inmate-on-inmate and inmate-on-staff assaultive relationship, merely lumping inmate violence into one global variable (i.e., combining and analyzing inmate and staff together as victims in prisoner assaults) (Patrick, 1998; Wortley, 2002). Yet, it is posited that the nature of inmate-on-staff assaultive behaviours may differentiate from the dynamics of inmate-on-inmate violence (Lahm, 2009a; Patrick, 1998; Wortley, 2002). It can be argued that this is largely attributable to the fact that inmates and correctional staff have an adverse relationship from the beginning, as it is the primary task of the latter to exercise coercive power over the former (Wortley, 2002).

As Lahm (2008; 2009a) points out, there has been a shift in both homicide rates and inmate assaults within prisons. In particular, Mumola (2005) showed that the prevalence of homicide within state prisons has rapidly decreased from years 1980 to 2002 (54 per 100,000 to 4 per 100,000). Additionally, Useem and Piehl (2006) reported that murders involving correctional staff as the victim have declined between the years of 1973 and 2001 (from 62.7 per 100,000 to 0). In contrast, the Census of State and Federal Correctional Facilities (Stephan & Karberg, 2003) indicated that inmate-on-inmate assaults had risen by 32 percent between 1995 and 2000. Moreover, Stephan and Karberg (2003) have shown that inmate-on-staff assaults had risen by 27 percent from years 1995 to 2000. Useem and Piehl (2006) also indicated that inmate-on-staff assaults had risen from years 1995 to 2000 in state prisons (i.e., 13.2 per 1,000 to 15.3 per 1,000). It should be noted that despite the proliferation of inmate assaults on prison staff, fewer cases of inmate-on-staff assault actually resulted in death (i.e., from 14 in 1995 to 5 in 2000) over the same five-year period (Stephan & Karberg, 2003)—similar to the aforementioned findings by Useem and Piehl (2006). When taken together, it can be concluded that even though rates of homicide have declined, prisons (U.S. in particular) are still fairly violent environments, and are seemingly experiencing increases in the prevalence of violent behaviour (Light, 1991; Patrick, 1998).

LITERATURE REVIEW

Predictors of Inmate Assaultive Behaviour

Although the focus of the current study is predictors of inmate-on-staff assaultive behaviour, it is still important to consider previous research and findings relating to predictors of inmate-on-inmate and/or global variables of assaultive behaviour, especially because more research has been conducted on these domains of inmate violence. Current findings point to various factors that predict an inmate's propensity for violent misconduct and delinquent behaviour. In particular, age is reported as one of the most salient correlates of prison violence and misconduct (Flanagan, 1983; Griffin & Hepburn, 2006; Lahm, 2008; MacKenzie, 1987; Sorensen & Cunningham, 2007). Flanagan (1983) goes as far as to claim that, similar to research on rule violation in the general public, age proves to be the most "adequately established" factor in predicting the likelihood of prison misconduct and disciplinary involvement among inmates. In Griffin and Hepburn's (2006)

study on inmate gang affiliation and prison violence (e.g., assault, fighting, threat, weapon, or any violent misconduct), it was found that age was a strong factor in predicting violence. In this case, age had an inverse relationship with violence. Likewise, Sorensen and Cunningham's (2007) study on convicted murderers found that younger inmates (i.e., those under 20) were much more likely to engage in prison assaults/violence compared to their older counterparts, with a decrease in levels of violent behaviour for every incremental increase in age. Thus, younger prisoners tend to be more violent than older prisoners.

Other individual variables, such as gender and race/ethnicity, are also correlated with prison violence. Harer and Langan (2001) conducted a study to assess a risk classification instrument of prisoner violence in predicting male and female violent misconduct. They showed that males not only commit more violence altogether, but also more serious forms of violence, compared to their female counterparts. Solinas-Saunders and Stacer (2012) confirm this notion, as they established that female inmates are less likely than males to physically or verbally assault other inmates. Furthermore, research on the association between race/ethnicity and prison violence has presented mixed results. Sorensen and Cunningham (2007) found that although prisoners' race/ethnicity was consistently positively correlated with prison violence, it was not a significant predictor of this outcome variable. Griffin and Hepburn (2006) discussed similar results as they too concluded that race/ethnicity was not significant in predicting major violent misconduct. On the other hand, DeLisi, Berg, and Hochstetler (2004) "found race of inmate to be associated with prison violence, with non-White inmates displaying a significantly higher incidence" (as cited in Sorensen & Cunningham, 2007, p. 553). Thus, it is clear that race/ethnicity may share a correlation with propensity for prison violence; however, current results are inconsistent.

Previous studies have also indicated that an inmates' criminal history (i.e., type of offence, prior violence, prior incarceration, etc.) is a strong correlate of prison violence and misconduct (Lahm, 2008). Sorensen and Cunningham (2007) report that the type of murder conviction was associated with prison assaults, with more serious convictions being associated with greater incidence of prison violence. Flanagan (1983) furthers this notion, as they found evidence that those convicted of an offence other than homicide were less likely to commit a violent infraction compared to those convicted of homicide. Furthermore, Griffin and Hepburn (2006)

showed that prior incarceration and current conviction for a violent offence predicted greater likelihood of engaging in violent misconduct among inmates. Sentence length has also been identified as a predictor of inmate violence. Sorensen and Cunningham (2007) have found evidence that a longer prison sentence/time-served is associated with a higher incidence of prison assaults. However, some research has found evidence that counters this notion. In this case, studies have indicated that inmates serving shorter sentences were more violent than those serving longer sentences (Flanagan, 1983; Jiang & Fisher-Giorlando, 2002).

It has also been established that particular variables may attenuate the prevalence or risk of inmate violence. In this case, Solinas-Saunders and Stacer (2012) report that inmates who were involved in work assignments and/or engaged in contact with the outside world (i.e., phone calls) were less likely to physically/verbally assault other inmates or violate rules. Likewise, Ellis, Grasmick, and Gilman (1974) “revealed that inmates who received more visits were less likely to be aggressive while in prison” (as cited in Lahm, 2008, p. 123). Previous studies have indicated that variables, such as education and/or substance use, are also associated with inmate violence (Flanagan, 1983; Harer & Langan, 2001; Solinas-Saunders & Stacer, 2012). For instance, less educated inmates are more likely to physically and verbally assault others in prison compared to those who are more educated (Solinas-Saunders & Stacer, 2012).

Predictors of Inmate-on-Staff Assaultive Behaviour

Although research on inmate-on-staff assaultive behaviour is relatively scarce, scholars have tapped into this area of study in attempts to explain factors that predict inmate-on-staff altercations/violence at both the individual and structural levels. Light (1991) developed an exploratory qualitative study to analyze the underlying processes of inmate-on-staff assaults. In particular, Light (1991) examined motivational and contextual factors relating to inmates’ assault on an officer. Notably, it was found that assaulters were younger ($M = 27.3$) than their non-assaultive counterparts ($M = 29.4$). Interestingly, in a majority of cases of inmate-on-staff assaults it was reported that the initiation of this conduct was ‘unexplained’ (26 percent). In other words, there was no apparent motive or provocation. Officer’s command (13 percent) was reported as the second most common reason for inmate-on-staff assaults. This included orders by staff for inmates to enter or leave an

area, provide identification, among other commands. Another 11 percent of these cases were the result of what Light (1991) considers “protests,” wherein the inmate believed that they were the victims of unfair treatment by correctional staff and thus responded with violent retaliation. Other reasons for assaults include: staff searching a person or cell (10.7 percent); breaking up an inmate-on-inmate fight (10.2 percent); movement of inmates from one area to another (9.7 percent); and, seizure of contraband (7.2 percent). Interestingly, a fairly low percentage of assaults were the result of inmate emotional instability—coded as inmates having a mental illness, needing psychiatric treatment, or officers’ belief that mental health was a factor in the assault (2.0 percent).

Another study conducted by Kratcoski (1988) examined incident data on 94 inmate-on-staff assaults collected over a 3-year period in one state and one federal correctional institution. In particular, the author analyzed seven factors in relation to assault on correctional officers: location of assault, shift when it occurred, occupational experience of officer, officer sex, age of inmate, presence of other staff, and assault occurring after threatening the officer. It was found that for both the federal and state institutions, a majority of assaults (more than 70 percent) took place in the detention/high security cellblock areas during the daytime. Assaulting inmates’ age and work experience of the officer were both found to be significantly and inversely related to inmate assault on a correctional officer. Inmates who were 25 years of age and younger perpetrated the majority of assaults. Additionally, inmates were more likely to assault inexperienced corrections officers (i.e., trainees).

Gaes and McGuire (1985) provide a structural explanation for inmate-on-staff assaults in their study on rates of prison violence. In particular, these authors assessed inmate-on-staff assault rates in relation to whether or not the inmate used a weapon (i.e., club, chair, shank, etc.). It was found that prison crowding was the most significant factor in predicting inmate-on-staff assault rates. In this case, there was a positive correlation between crowding and rates of inmate-on-staff assaults for both use and non-use of a weapon in the attack. The authors also found that prisons housing a greater percentage of non-White offenders had higher rates of inmate-on-staff assaults. It was reported that age was inversely and significantly related to inmate assaultive behaviour upon correctional staff for only non-weapon assaults. Similarly, McCorkle, Miethe, and Drass (1995) examined institutional structural, manage-

rial, and environmental predictors of inmate-on-staff assaultive behaviour. These authors indicated that inmates' program involvement was negatively correlated with inmate-on-staff assault rates, whereas the white-black ratio of guards and prison security level were positively correlated with inmate-on-staff assaults. Additionally, it was concluded that poor prison management exacerbates prison violence. On the other hand, Briggs, Sundt, and Castellano (2003) found inconsistent results for prison security level in its relation to inmate-on-staff altercations.

Lahm (2009a) enriches extant research predicting the likelihood of inmate-on-staff assaults by combining both inmate-level and prison-level data into a multi-level model. There were two levels of data for this study. Level-1 data (inmate information) was obtained from self-report surveys of 1,054 inmates in 30 prisons located in Kentucky, Tennessee and Ohio. Level-2 data (prison information) was obtained from each state's Department of Correction or prison officials. All data was collected in 2001. Most importantly, it was found that, at the individual/inmate level, age and aggression were the greatest predictors of inmate-on-staff altercations. In terms of prison-level analyses, it was found that correctional facilities that experienced the highest rate of inmate-on-staff assaults were those with disproportionately higher percentages of non-White inmates, as well as higher staff-to-inmate ratios, respectively. It should be noted that a few other studies have also analyzed inmate-on-staff assault in relation to both prisoner and prison variables (Jiang & Fisher-Giorlando, 2002; Light, 1990); however, Lahm (2009a) argues that these studies and their findings have been problematic, as they solely relied on OLS/Logistic regression to explain these rather complex multilevel models.

Mental Health as a Predictor of Inmate Violence and Misconduct

These various explanations for inmate violence, and inmate-on-staff altercations in particular, are certainly valid but previous studies (including those mentioned above) neglect to consider whether or not inmates with a mental health issue are more likely to assault correctional staff—with exception to a study by Felson, Silver, and Remster (2012). Irrespective of whether the prison culture aids in the development of mental health issues or if offenders had acquired these individual issues prior to incarceration, it is evident that mental health problems pervade the prison environment/population. Over the last few decades, the rates of mental health issues among prison inmates (both men and women;

minor and severe problems) have rapidly increased (Fellner, 2006; Way, Sawyer, Lilly, Moffitt, & Stapholz, 2008). It is suggested that when it comes to institutionalized populations, correctional institutions hold the largest amount of persons with mental health problems (Way et al., 2008). Unsurprisingly, mental health issues are also significantly higher among prison populations in comparison to the general population at large (Diamond, Wang, Holzer, Thomas, & Crusier, 2001).

It goes without saying that prison is not a suitable environment for those suffering with mental illnesses. Prison conditions, such as overcrowding, violence, lack of privacy, lack of meaningful structure, and inadequate health services exacerbate mental health problems (Fellner, 2006). The impacts of these conditions are even worse for prisoners whose cognitive ability is impaired by severe disorders, such as schizophrenia, bipolar disorder, or severe depression (Fellner, 2006). Way et al. (2008) allude to the fact that despite recent findings that inmates with serious mental illnesses can be successfully treated in the general community, these 'patients' (as they refer to them) continue to be sentenced to prison terms. Thus, rather than providing appropriate rehabilitation in the hopes of reducing recidivism, offenders are integrated into a toxic environment that is conducive to further mental health issues and criminal behaviour.

The pervasiveness of mental health problems among prison populations thus requires these institutions to both emphasize inmate management/control, as well as play the role of 'care-provider.' Not only must there be the availability of proper healthcare and medication, but also a positive relationship between the inmates and correctional staff in order to alleviate issues of mental health, as well as foster positive emotions and behaviour among prison inmates (Bowen, Rogers, & Shaw, 2009; Dvoskin & Spiers, 2004). However, achieving positive inmate-staff relationships may not be a simple task. With respect to the central theme of the present study, if inmates with mental health problems are more inclined to act aggressively and assault correctional staff, it makes it difficult for staff to even provide support and assist in the attenuation of inmates' mental illnesses.

With that being said, recent studies have found that poor mental health and/or emotional disturbance is correlated with prison misconduct and violence (Adams, 1983; Felson et al., 2012; Toch & Adams, 1986; Warren et al., 2002). For instance, Warren et al. (2002) extend previous research on mental disorder and violence by analyzing the relationship between

Axis II disorders (e.g., personality disorders) and institutional/community violence among a sample of 261 females incarcerated in a maximum-security prison. It was found that personality disorders were linked to violent behaviour in prison, as well as violent crimes. In particular, Narcissistic Personality Disorder significantly predicted current incarceration for a violent crime (including and excluding homicide), and Antisocial Personality Disorder significantly predicted self-report of institutional violence (i.e., respondents indicating that they engaged in violent behaviour while incarcerated). Moreover, Toch and Adams (1986) indicated that disruptiveness and violence is more prevalent among inmates who are mentally ill compared to other inmates. For instance, those with schizophrenia or antisocial personality disorder indicated high violation rates in relation to other inmates, as well as in relation to other emotionally disturbed inmates. They also suggest that inmate misconduct varies depending on severity and chronicity of the inmates' mental health issue. Similarly, Adams (1983) found that inmates who were formerly hospitalized for mental health issues were more likely show a higher rate of disciplinary infractions compared to other inmates.

An interesting study conducted by Yoshikawa et al. (2007) used survival analysis in order to determine rates of violent recidivism among Japanese offenders who met diagnostic criteria for a range of mental disorders (i.e., schizophrenia, substance-abuse disorder, and mood disorders). The sample consisted of a cohort of 489 offenders considered to be without responsibility or of diminished responsibility for a committed crime, and thus referred for psychiatric treatment. The sample had been followed since the point of discharge from the hospital to first violent recidivism, or December 31, 1991 (end of study). It was found that approximately 10 percent of the 489 individuals in the sample cohort had been arrested or convicted of further violent offence. Most importantly, results showed that the strongest predictor of violent recidivism was substance-related disorders.

Walters and Crawford (2014) examined whether or not severe mental health problems (e.g., schizophrenia, bipolar disorder, etc.) and a history of violence (e.g., murder, rape, and robbery) interact in predicting the likelihood of institutional misconduct and recidivism in a male medium-security federal prison. The sample for this study consisted of 2 groups, one to determine main and interaction effects of mental health and violence history on institutional misconduct ($N = 2,627$), and a second group to determine the predictive power

of these variables on recidivism of inmates previously released from custody ($N = 1,163$). It was found that age (i.e., younger inmates) and the main effect of mental illness were significant factors in predicting general and aggressive institutional misconduct before the interaction term. Most importantly, when the interaction term was included (and confounding factors were controlled), it was found that mental health and violence history significantly interacted in predicting general and aggressive prison misconduct. Accordingly, these authors argue that it is inmates with a history of both mental illness and violence that are of greatest concern for aggressive/general misconduct in prison.

Theoretical Explanations of Prison Violence

Existing research on the explanation of inmate violence and misconduct has largely relied upon three seemingly competing models: the importation model, the deprivation model, and the coping model (Blevins, Listwan, Cullen, & Jonson, 2010). The central theme of the deprivation model is that prison is in many ways a depriving environment (i.e., loss of freedom, 'tough' culture, exposed to coercion), thus an inmate's violent and delinquent behaviour is a response to environmental/individual adversities of imprisonment (Blevins et al., 2010; Listwan et al., 2014; Sykes, 1958). In direct opposition to this theory, the importation model hypothesizes that an inmate's behaviour is not directly due to the detrimental conditions of the prison subculture, but rather longstanding characteristics and values that inmates had brought with them into prison (Blevins et al., 2010; Irwin & Cressey, 1962; Listwan et al., 2014). Lastly, the coping model suggests that maladjustment to incarceration and inmate misconduct/violence is related to the lack of effective resources to cope in prison (Blevins et al., 2010).

Although these theories are effective in explaining prison violence and misconduct, Blevins and colleagues (2010) posit that traditional criminological theories and models (which have been largely overlooked in relation to the research on prison violence and misconduct) can help extend our current understanding of the processes of inmate misconduct. With that being said, these authors state that the aforementioned explanations of inmate behaviour can be integrated within Agnew's General Strain Theory (hereafter GST) in order to provide for a more complete and comprehensive model that explains violence and misconduct among prison inmates (Blevins et al., 2010). Essentially, it is argued that the theoretical framework of the GST is suitable for assimilating all three models to form a singular

paradigm (Blevins et al., 2010). Accordingly, Blevins et al. (2010) contend that although prison is likely to induce stress and present various sources of strain, whether or not an inmate reacts to this adversity in a violent or maladaptive manner depends upon contextual and individual variables. Foremost, in line with the deprivation model, these authors suggest that the modified GST evaluation of prison misbehaviour acknowledges that inmates will be subjected to a variety of adversities within prison wherein they are required to adapt in either a conventional or deviant manner. In this case, prisons may present three different categories of strain, which in reality are likely not exclusive and have the potential to intersect.

First, correctional facilities may deny positively valued goals. In this case, when goals (i.e., privileges, early release, visitations, autonomy, program participation, etc.) are denied the inmate may experience strain, as they are no longer able to achieve these valued goals. The second category of strain is removal of positively valued stimuli. Once incarcerated, inmates are subjected to a coercive, controlling, and dangerous environment. Therefore, they are stripped of identity, autonomy, feelings of safety, privacy, ability to see family and friends, among other liberties provided beyond the walls (Blevins et al., 2010; Haney, Banks, & Zimbardo, 1973; Sykes, 1958; Toch, 1977). Removal of these stimuli causes strain for prisoners, which could potentially result in violence and misconduct if they are unable to appropriately adapt to the strain. Lastly, the inescapable presentation of noxious stimuli—crowding, noise, inhumane living conditions, strict rules, and threats—can lead to violence, especially if inmates are unable to attain relief from, or adapt to, these negative experiences.

As previously mentioned, whether or not an inmate reacts to these stressors in a conventional or deviant manner (i.e., violence/misconduct) depends upon inmates' individual values and behavioural characteristics (Blevins et al., 2010). Therefore, in line with the importation model, inmates who possess individual-level factors conducive to violence, misconduct, and anti-social behaviour, are more likely to react deviantly when exposed to the strains of prison. It has been found that specific personality traits (i.e., high negative emotionality, weak constraint, neuroticism, etc.) are linked to a higher propensity for deviant behaviour (Caspi et al., 1994; Listwan, Sperber, Spruance, & Van Voorhis, 2004). In addition, studies also indicate that personality traits and disorders are linked to violence and misconduct in the prison (Warren et al., 2002). Re-

actions to the various strains, especially in relation to individual factors, also depend upon coping resources and social support available to prisoners. Consistent with the coping model, it is argued that those afforded mechanisms of coping (e.g., family support, visits, treatment programs, educational programs, etc.) are less likely to engage in violence or misconduct (Blevins et al., 2010; Lahm, 2009b; Wooldredge, 1994).

THE CURRENT STUDY

As previously mentioned, much of the extant research on inmate prison violence has examined inmate-on-inmate assaultive behaviours, whereas much less has specifically analyzed inmate-on-staff assault. In addition to that, little research has considered the relevance of inmate mental health as a predictor of inmate-on-staff assaults. It seems as though much of the research on inmate prison violence also focuses solely on clinical disorders and has largely overlooked the examination of symptoms of mental health issues. This is an important issue as not every inmate may satisfy the diagnostic criteria for more severe emotional disturbance, but they could still display symptoms of poor mental health; or, inmates could have been misdiagnosed, which could lead to over- or under-reporting of mental health disorders. Although less severe than clinical disorders, mental health symptomatology could just as likely affect inmates' mental judgment and behaviour, and how they subsequently interact with correctional staff. Lastly, a larger proportion of research has specifically examined violence and physical assault in prison (especially in the inmate-on-staff assaultive pathway), whereas less focuses on other forms of assault, namely, verbal assault. It is important to capture various types of assaultive categories, as there may be some important differences in not only these variables alone, but also how variables like mental health are associated with them. Therefore, the current study examines the relationship between inmates' mental health symptomatology/clinical disorders and the likelihood of verbal and/or physical assault on correctional staff in prison using a large, nationally representative data set. Accordingly, understanding the patterns of inmate mental health and assaultive behaviours on correctional staff will help inform policy makers in order to implement appropriate treatment and intervention strategies.

The primary research question of interest is: **Are inmates with symptoms of mental health issues and/or clinical disorders more likely to verbally and physi-**

cally assault correctional staff? I propose the following hypotheses:

Hypothesis 1: Mental health symptomatology will be positively correlated with physical/verbal assault on correctional staff.

Inmates with symptoms of mental health issues will show a greater likelihood of physical and verbal assault on correctional staff compared to other inmates (i.e., those without symptoms of mental health problems). In addition, those with certain types of mental health symptoms should display a greater likelihood of verbal and/or physical assault on staff. For instance, inmates displaying symptoms relative to psychosis/schizophrenia or impulsive anger outbursts will be more likely to engage in physical and/or verbal assault on staff in comparison to those with symptoms of anxiety and/or depression. Those with anger impulsivity will also show a greater likelihood of physical and verbal assault compared to those with symptoms of psychosis.

Hypothesis 2: Mental health diagnosis will be positively correlated with physical/verbal assault on correctional staff.

Inmates who have been previously diagnosed with a clinical mental disorder will show a greater likelihood of physical and verbal assault on correctional staff compared to other inmates (i.e., those not diagnosed with a clinical mental disorder). Much like the hypothesis with symptomatology, those with particular types of mental disorders should display a higher risk of physical and/or verbal assault on correctional staff. In this case, inmates with diagnoses of personality disorder (i.e., borderline or antisocial personality disorder), schizophrenia or other psychotic disorders, or a mood disorder (i.e., bipolar, manic-depressive, or mania) will be more likely to engage in physical and/or verbal assault on staff in comparison to those with diagnoses of depressive disorders, post-traumatic stress disorder, or anxiety disorders (i.e., panic disorder).

It should be noted that Felson and colleagues' (2012) study on inmate mental health and prison misconduct shares similar features to the current study. Generally speaking, the key independent and dependent variables of the current study somewhat overlap with Felson et al.'s (2012) examination of the relationship between inmate mental health diagnoses and symptoms and general offending while incarcerated. For instance, their study also analyzed diagnoses and symptoms

pertaining to psychosis, depression/hopelessness, and anxiety. They also included physical and verbal assault against staff as outcome variables related to prison misconduct, among several other inmate offending constructs. The current study also utilizes the same prison survey as Felson et al. (2012). Lastly, the hypotheses proposed in this study overlap somewhat with their hypothesis that all mental issues/disorders will "predict all types of prison infractions" (p. 131).

Nevertheless, it is apparent that there are discernible differences between the current study and the aforementioned one—solidifying the overarching notion that this study advances our understanding of inmate-on-staff assaultive behaviour. Most importantly, Felson et al. (2012) provided a general understanding of the relationship between mental health of incarcerated persons and offending while imprisoned, whereas the current study provides a specific examination and discussion of how inmate mental health predicts the victimization of correctional staff. Additionally, Felson and colleagues inform their findings based on a social psychological theoretical context, whereas I use an innovative prison-specific paradigm in order to make inferences on inmate mental health and offences against prison staff (proposed by Blevins et al., 2010). The present studies' utilization of mental health symptoms and diagnoses variables also somewhat differs from Felson et al.'s study. For instance, I incorporate personality disorder and mood disorder (e.g., manic-depression, bipolar disorder, or mania) in my analysis of psychiatric disorders, as well as examine anxiety disorder and posttraumatic stress disorder as separate constructs. I also include anger impulsivity and a specific measure of anxiety in the analysis of mental health symptoms. Finally, despite having similar general hypotheses, I anticipate differing associations among mental health disorders/symptoms in predicting the likelihood of assault on correctional staff.

METHODOLOGY

Data and Analysis

The data set used for this study was the Survey of Inmates in State and Federal Correctional Facilities, 2004 (Bureau of Justice Statistics, 2004; U.S. Department of Justice, 2006). Data was gathered from a nationally representative sample of 18,185 inmates from 287 state and 39 federal correctional institutions in the United States, between October 2003 and May 2004. Both male and female prisons were sampled. In total, the data

comprised of 14,297 male and 3,888 female inmates. The surveys were administered based on a two-stage multi-level sampling method, wherein prisons were selected in the first stage and inmates within the prisons selected in the second stage. In the first stage, a stratified random sampling method was used in order to select the prisons, where the selection process ensured: an adequate representation of female prisons; prisons with medical or mental health functions; and, the probability of selection was relative to the size of the prison (i.e., larger prisons had a greater likelihood of selection due to the greater number of inmates housed).

In the second stage, inmates in state prisons were selected via random selection, whereas inmates in federal prisons were selected using a stratified random selection (i.e., in order to obtain an adequate sample size of non-drug offenders, drug offenders were under-sampled and non-drug offenders were oversampled). In particular, computer-assisted personal interviews with inmates were used in order to gather information on individual characteristics, criminality, and prison situation. In relevance to the current study, the survey includes questions relating to physical/verbal assault on correctional staff in prison, measures of both mental health symptomatology and clinical mental disorders, as well as extensive control variables (i.e., history of violence, time spent in prison, substance use, age, education, etc.). In terms of mental health diagnoses, this survey included a modified structured clinical interview for the DSM-IV.

I use logistic regression to examine the associations between the independent and control variables and the likelihood of physical and verbal assault on correctional staff. Four multivariate regression models were run in total. Mental health symptoms and diagnoses were analyzed in separate models. This was largely due to the fact that these constructs often overlap and refer to the same mental health issues; some of the symptoms may even be one of the criteria required to meet a diagnosis for a clinical disorder. Two models were run per mental health classification. In other words, variables of mental health symptoms were regressed on physical assault (model 1) and verbal assault (model 2). Likewise, mental health disorders were regressed on the same outcome variables in the same manner. The control variables remained constant over all four models.

Measurement

The dependent variable in this study is assault on a correctional officer or other staff member while

in prison. In particular, assault is operationalized as inmate-on-staff physical and verbal assault. Inmates were asked, "Since your admission, have you been written up or found guilty of physical assault on a correctional officer or other staff member?" and "Since your admission, have you been written up or found guilty of verbal assault on a correctional officer or other staff member?" Dummy variables were created for each variable of assault. Inmates were coded as 1 if they were found guilty/written up for physical assault, and 0 otherwise. Similarly, inmates were coded as 1 if they were found guilty/written up for verbal assault, and 0 otherwise. It would have been more appropriate to use a measure of physical/verbal assault that asks inmates if they had ever committed such acts on correctional staff, rather than if they were found guilty or written up for it. This is due to the fact that the current variables may lead to underreporting of physical/verbal assault, especially if cases did not result in an incident report. Nevertheless, this survey did not provide any other measurement of assault on a staff member.

The independent variable for this study is mental health issues (i.e., symptoms and diagnoses). As mentioned, mental health symptomatology and clinical disorders are examined in separate models. Using separate analyses of symptoms and clinical diagnosis helps overcome biases. For one, some inmates may not meet diagnostic criteria for a mental disorder, but experience symptoms that effect psychological functioning. Secondly, mental disorders may be underdiagnosed in the prison setting (Diamond et al., 2001). Diagnoses of mental disorders were measured by asking, "Have you ever been told by a mental health professional, such as a psychiatrist or psychologist, that you had . . .": a depressive disorder, mood disorder (i.e., manic-depression, bipolar disorder, or mania), schizophrenia or other psychotic disorder, post-traumatic stress disorder, anxiety disorder (i.e., panic disorder), or a personality disorder (i.e., antisocial or borderline PD)? The measures relating to symptoms are based on whether or not inmates had experienced a particular type of psychological distress during the year leading up to the survey. The measure of anger impulsivity for the current study is based on whether inmates reported that they "lost [their] temper easily, or had a short fuse more often than usual." Symptoms of psychosis are based on inmates reporting that they "felt spied on or plotted against." Anxiety was measured in terms of whether or not there were periods in which the inmate could not sit still. Lastly, the measure of depression is based on inmates report-

ing that they have “given up hope for life or the future.” Each of these variables of mental health—both symptoms and diagnoses—were coded as 1 if the inmate indicated experiencing the mental health issue, and 0 otherwise.

The control variables for this study include various sociodemographic factors, time served in prison, history of violence, substance abuse, and prison experiences (i.e., treatment for mental health, contact with people from the outside, work assignments, etc.). These particular variables were chosen as controls due to the fact that prior prison research has determined that they are significantly associated with the likelihood of inmate aggression/misconduct. Thus, including these variables control for any confounding effects, further increasing the measurement accuracy of the key relationship of interest. Violent history is measured in terms of current violent offence (i.e., the offence committed that lead to current incarceration). This variable involved a list of violent offences (including assault, mugging, battery, murder, child abuse, rape, homicide, robbery, etc.), and inmates indicated whether or not they fit any of these categories. This variable was coded as 1 if inmates committed these acts, 0 otherwise. Measures of previous violent offence not pertaining to current incarceration could have been included in the analysis, but current violent offence alone is an adequate predictor of future aggressive behaviour. A series of dummy variables were used to measure the amount of time inmates spent in prison since admission: less than 2 years (reference category), 2 to 5 years, 6 to 10 years, 11 years or more, and unknown time. Gender is a dichotomous variable coded as 1 for males and 0 for females. Treatment for mental health issues in prison is measured by two variables: taken medication or received counseling/therapy from a trained professional for a mental or emotional condition since current admission to prison (coded 1 for yes, 0 otherwise). Age is a continuous variable coded in years. Education is measured in terms of the amount of education the inmate has received (in years), and ranges from 0 to 18.

Ethnicity/race are measured using several dummy variables: Black or African American, Hispanic, other races (i.e., Asian and Native American), and white or Caucasian (the reference category). Substance abuse was measured using variables related to both alcohol and drug consumption prior to the current incarceration/offence. For instance, high alcohol use is measured based on self-reports of how often inmates drank alcohol in the year before the offence and is coded as 1 if they drank daily or almost daily and 0 otherwise.

High drug use is measured using self-reports of how often respondents used drugs during the month before arrest and is coded as 1 if the inmate used drugs once a week or more based on a list of 14 “hard drugs” (i.e., heroine/opiates, methamphetamine, methaqualone, cocaine/crack, and other chemical drugs; but not marijuana/hashish) and 0 otherwise. A measurement of drug and alcohol use while in prison would be a more accurate predictor of assault for this study, but the survey does not provide this information. Social support was measured based on two variables: whether or not inmates are allowed to make phone calls to friends/family or had any visits from someone other than a lawyer in the month prior to the survey/since admission (both coded 1 for yes, 0 otherwise). Recreational activity was measured based on whether or not inmates had a work assignment off prison grounds and is coded as 1 if yes, and 0 otherwise.

RESULTS

Descriptive statistics are presented in Table 1. Results show that about 7 percent of inmates have verbally assaulted correctional staff, whereas 2 percent physically assaulted staff. When it comes to symptoms of mental health issues, anxiety is the most common among prisoners (32 percent), followed by anger impulsivity (29 percent). Among mental disorders, depressive disorder (20 percent) and mood disorders (10.5 percent) are the most common among inmates. It is also important to consider some statistics regarding control variables as well. Twenty-six percent of inmates indicated they were currently incarcerated for a violent offence. There are a greater percentage of males (78 percent) compared to females (21 percent) in prison. There are a large proportion of both black and white inmates (42 and 49 percent, respectively). Forty-one percent of inmates have served 2 years or less, thirty-one percent have served 2 to 5, thirteen percent have served 6 to 10, and nine percent have served 11 or more years. The mean age of the sample is 36 years ($SD = 10.5$).

Results from Tables 2 and 3 show multivariate models predicting physical and verbal assault on correctional staff. Table 2 shows the associations between mental health symptoms and physical and verbal assault on staff. Model 1 indicates that inmates who experience symptoms relative to anger impulsivity and psychosis are more likely to physically assault correctional staff. No patterns are observed for inmates with symptoms of anxiety and depression. When attention

is directed towards the magnitude of the odds ratio for each of the symptoms in model 1, it is evident that inmates with symptoms of anger or psychosis are more likely to physically assault staff compared to those with symptoms of anxiety or depression. Additionally, inmates with symptoms of psychosis are more likely to physically assault staff compared to those with symptoms of anger impulsivity. Model 2 shows similar patterns for verbal assault with one exception. In this case, inmates with symptoms of anger, psychosis, as well as anxiety are more likely to verbally assault correctional staff. No patterns are observed for inmates experiencing symptoms of depression. Again, when examining the magnitude of the odds ratios in model 2, it is clear that inmates with symptoms of anger and psychosis are more likely to verbally assault staff compared to those with symptoms of anxiety and depression. Here, inmates with symptoms of anger impulsivity are more likely to verbally assault staff compared to those with symptoms of psychosis.

Diagnoses of mental disorders are also associated with physical and verbal assault on staff (Table 3). In model 1, inmates who are diagnosed with schizophrenia and mood disorder (i.e., manic-depressive, bipolar, mania) are more likely to physically assault correctional staff. No patterns are observed for inmates diagnosed with personality disorder, depressive disorder, PTSD, or anxiety/panic disorder. When attention is directed towards the magnitude of the odds ratios for diagnoses, inmates with schizophrenia and mood disorder are significantly more likely to physically assault correctional staff compared to those with depressive disorder, PTSD, and anxiety/panic disorder. Although personality disorder is not a significant predictor of physical assault in model 1, the odds ratio still indicates a greater likelihood of physical assault on staff compared to those with depression, PTSD, and anxiety. In model 2, the only significant predictor of verbal assault on correctional staff is personality disorder, indicating that inmates with personality disorder are more likely to verbally assault staff. No patterns are observed for inmates diagnosed with schizophrenia, mood disorder, depressive disorder, PTSD, or anxiety/panic disorder. When examining the odds ratio, it is clear that inmates diagnosed with a personality disorder are significantly more likely to verbally assault correctional staff compared to those with depression, PTSD, or anxiety. Similar to model 1, although schizophrenia and mood disorders are not significant predictors of verbal assault on staff, the odds ratios indicate a greater likeli-

hood of verbal assault on staff compared to those with depression, PTSD, and anxiety.

Table 1: Descriptive Statistics (N = 18,185 Inmates)

	Full Sample	
	Percentage	N
Dependent variables		
Physical Assault on Staff	2.4	442
Verbal Assault on Staff	7.1	1,291
Independent Variables		
Mental Health— <i>Symptoms</i>		
Anger Impulsivity	29.1	5,284
Psychosis	7.1	1,291
Anxiety	31.9	5,802
Depression/Hopelessness	6.7	1,223
Mental Health— <i>Diagnoses</i>		
Personality Disorder	5.9	1,078
Schizophrenia	4.3	775
Mood Disorder	10.5	1,911
Depressive Disorder	20.1	3,651
PTSD	6.3	1,153
Anxiety/Panic Disorder	8	1,449
Control Variables		
Violent History		
Current Violent Offence	26.3	4,790
Time Spent in Prison		
Less than 2 years	41.6	7,569
2 to 5 years	31.1	5,657
6 to 10 years	13.4	2,433
11 or more	9.6	1,754
Time Unknown	4.3	773
Gender		
Male	78.6	14,297
Female	21.4	3,888
Mental Health Treatment		
Medication	16.1	2,920
Counseling	13.3	2,424
Age (mean)	35.83 (10.51)	—
Education (mean)	10.95 (2.49)	—
Ethnicity		
Hispanic	18.8	3,427
Black	42.5	7,720
White	49.1	8,931
Other	9.1	1,655
Substance Use		
High Alcohol Use	23.4	4,262
High Drug Use	32.8	5,961
Social Support/Recreation		
Phone call	84.5	15,368
Visits	29.7	5,397
Work assignment	6.4	1,159

Table 2: Logistic Regression Predicting the Likelihood of Physical and Verbal Assault on Correctional Staff, Inmate Mental Health Symptoms Models (with Standard Errors, and Odds Ratio; N= 18,185)

	Model 1			Model 2		
	Physical Assault			Verbal Assault		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Mental Health—Symptoms						
Anger Impulsivity	.476***	0.114	1.61	.720***	0.068	2.055
Psychosis	.554***	0.143	1.741	.284**	0.096	1.329
Anxiety	0.074	0.117	1.077	.194**	0.07	1.214
Depression/Hopelessness	-0.006	0.172	0.994	0.045	0.109	1.046
Violent History						
Current Violent Offence	0.203	0.106	1.226	.258***	0.065	1.294
Time Spent in Prison						
2 to 5 years	.864***	0.158	2.373	.937***	0.084	2.552
6 to 10 years	1.884***	0.165	6.582	1.544***	0.097	4.682
11 or more	2.777***	0.176	16.071	2.223***	0.106	9.235
Gender						
Male	.419**	0.156	1.521	.553***	0.094	1.739
Mental Health Treatment						
Medication	.762***	0.151	2.143	.306**	0.097	1.358
Counseling	.407**	0.151	1.503	.399***	0.097	1.49
Age	-.057***	0.007	0.945	-.047***	0.004	0.955
Education	-.058*	0.023	0.944	-0.023	0.014	0.977
Ethnicity						
Hispanic	0.046	0.162	1.047	-.265**	0.102	0.768
Black	.588***	0.119	1.8	.378***	0.069	1.46
Other	0.242	0.205	1.274	0.119	0.126	1.127
Substance Use						
High Alcohol Use	-0.089	0.118	0.915	.159*	0.069	1.172
High Drug Use	0.024	0.115	1.025	.227**	0.067	1.255
Social Support/Recreation						
Phone call	-.903***	0.118	0.405	-.311***	0.083	0.732
Visits	-0.016	0.116	0.984	-.211**	0.071	0.81
Work assignment	-0.169	0.265	0.845	-.703***	0.179	0.495
Intercept	-2.833***	0.392	0.059	-2.620***	0.236	0.073

*p < .05. **p < .01. ***p < .001

DISCUSSION

The goal of this study was to examine whether inmates who suffer from symptoms of poor mental health or mental disorders are more likely to physically or verbally assault correctional staff in prison and why. It was found that inmates with symptoms of impulsive anger and psychosis are more likely to both physically and verbally assault correctional staff, and those with symptoms of anxiety are more likely to only verbally assault staff. Inmates who have been diagnosed with schizophrenia or a mood disorder are more likely to physically assault staff, whereas those

diagnosed with a personality disorder are more likely to verbally assault staff. Accordingly, inmate-on-staff physical and verbal assaultive behaviours are thus explained by the mental health status of the inmate. Nevertheless, the relationship between mental health symptomatology/disorders and prison assaultive behaviour that was observed in the current study must be understood in the larger context of the prison culture. One important theme in understanding this relationship, especially with regards to prison violence and misconduct, is the integrative General Strain Theory posited by Blevins et al. (2010).

Table 3: Logistic Regression Predicting the Likelihood of Physical and Verbal Assault on Correctional Staff, Inmate Mental Health Disorder Models (with Standard Errors, and Odds Ratio; N= 18,185)

	Model 1			Model 2		
	Physical Assault			Verbal Assault		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Mental Health— <i>Diagnoses</i>						
Personality Disorder	0.056	0.188	1.057	.483***	0.114	1.621
Schizophrenia	.576**	0.19	1.78	0.225	0.133	1.252
Mood Disorder	.397*	0.173	1.488	0.159	0.111	1.172
Depressive Disorder	-0.165	0.167	0.848	0.009	0.102	1.009
PTSD	-0.058	0.201	0.943	-0.062	0.128	0.94
Anxiety/Panic Disorder	-0.28	0.196	0.756	-0.079	0.12	0.924
Violent History						
Current Violent Offence	.212*	0.107	1.236	.278***	0.065	1.32
Time Spent in Prison						
2 to 5 years	.915***	0.158	2.497	.981***	0.084	2.668
6 to 10 years	1.893***	0.166	6.64	1.546***	0.097	4.694
11 or more	2.801***	0.177	16.458	2.235***	0.106	9.351
Gender						
Male	.370*	0.158	1.448	.483***	0.095	1.621
Mental Health Treatment						
Medication	.788***	0.173	2.198	.336**	0.109	1.399
Counseling	.462**	0.158	1.586	.420***	0.1	1.522
Age	-.063***	0.007	0.939	-.054***	0.004	0.947
Education	-.062**	0.023	0.94	-0.022	0.014	0.979
Ethnicity						
Hispanic	-0.033	0.164	0.968	-.299**	0.102	0.741
Black	.594***	0.119	1.811	.401***	0.069	1.493
Other	0.294	0.205	1.342	0.135	0.126	1.144
Substance Use						
High Alcohol Use	-0.061	0.119	0.941	.199**	0.069	1.22
High Drug Use	0.062	0.115	1.064	.296***	0.067	1.344
Social Support/Recreation						
Phone call	-.994***	0.116	0.37	-.375***	0.082	0.687
Visits	-0.045	0.116	0.956	-.230**	0.07	0.794
Work assignment	-0.176	0.264	0.839	-.707***	0.179	0.493
Intercept	-2.282***	0.386	0.102	-2.010***	0.229	0.134

*p < .05. **p < .01. ***p < .001

As previously mentioned, this integrative GST paradigm incorporates three classic models that have been used to explain inmate violence and misconduct (i.e., importation, deprivation, and coping models). Based on the integrative GST paradigm, prison is an environment that presents various strains and induces stress, and the violent or maladaptive reaction to such strains is a result of contextual and individual variables that are relative to the inmate's experiences. With regards to the current study, this paradigm is pertinent to understanding the relationship between inmate mental health and the likelihood of physical and verbal

assault on staff. In line with the deprivation model, it is suggested that the prison environment presents inmates with adversities relating to: denial of positively valued goals, removal of positive stimuli, and exposure to noxious stimuli. On the one hand, inmates may be denied autonomy/safety, visitations, and privacy. On the other hand, inmates are exposed to crowding, noise, inhumane conditions, etc. These depriving and toxic qualities of the prison milieu can thus result in inmate violence or misbehaviour (Blevins et al., 2010).

However, whether or not an inmate responds to these stressors or deprivations in a deviant or violent

manner is dependent upon individual characteristics (Blevins et al., 2010). In line with the importation model, those who possess individual-level factors that are conducive to violent demeanor or delinquent behaviour are thus more likely to respond to stressful stimuli in a maladaptive manner (i.e., verbal and/or physical assault). In this case, it has been previously indicated that those who possess mental disorders or symptoms of emotional disturbance are more likely to engage in violent behaviour and misconduct within the prison (Adams, 1983; Felson et al., 2012; Toch & Adams, 1986; Walters & Crawford, 2014; Warren et al., 2002). The current study furthers this notion of inmate mental health issues and the propensity for violent behaviour/misconduct within the prison; specifically, regarding the inmate-on-staff assaultive pathway. Therefore, when adverse prison experience and the possession of poor mental health status coalesce, they result in incidents of assaultive behaviours perpetrated by prison inmates. In opposition to the importation section of this model, not all inmates enter prison with a mental health problem which is then influenced by the deprivations of prison. It is possible, however, for deprivations to actually lead to mental health issues, and subsequently to misconduct/violent behaviour by inmates. In this case, deprivations may trigger mental health issues or disorders, and experience of compounding deprivations/strains could result in misconduct/violence in these inmates. Moreover, it is contended that inmates' violent and delinquent reactions to stress are potentially mitigated by available coping resources and social support afforded to prisoners (Blevins et al., 2010). In terms of the current study, when inmates are provided the opportunity to contact friends and family, interact with others via visitation, and work in prison programs (i.e., work programs off prison grounds), there is a lesser likelihood of physical and verbal assaultive behaviours.

Hypothesis 1: Mental health symptomatology will be positively correlated with physical/verbal assault. It was hypothesized that inmates with symptoms of mental health issues would show a greater likelihood of physical and verbal assault on correctional staff compared to those without symptoms of mental health issues. Support is found for this hypothesis. Of the four measures of mental health symptomatology, three measures support this claim. For instance, symptoms of anger and psychosis are significant predictors of inmate-on-staff physical assault, whereas anxiety and depression make no contribution. Additionally, anger, psychosis, and anxiety significantly predicted inmate-

on-staff verbal assault; however, depression did not. It was further hypothesized that inmates who possessed symptoms relative to psychosis/schizophrenia or impulsive anger outbursts would be more likely to physically/verbally assault staff compared to those with symptoms of anxiety or depression. Although not all symptoms significantly predicted physical or verbal assault on staff, this hypothesis was supported. The results indicated that those with symptoms of psychosis and anger were significantly more likely to physically and verbally assault staff compared to those with symptoms of anxiety or depression. It was further suggested that those with symptoms of impulsive anger outbursts would show greater likelihood of verbal and physical assault compared to those with symptoms of psychosis. This is partially supported. For inmate-on-staff physical assault those with symptoms of psychosis were actually more likely to assault staff compared to those with anger impulsivity. When it comes to inmate-on-staff verbal assault, however, it was found that those with symptoms of anger impulsivity were more likely to assault staff compared to those with symptoms of psychosis.

Hypothesis 2: Mental health diagnosis will be positively correlated with physical/verbal assault. It was hypothesized that inmates who have been diagnosed with a mental disorder would be more likely to physically and verbally assault correctional staff compared to inmates not diagnosed with a clinical disorder. Some support is found for this hypothesis. Of the six measures of mental disorder diagnoses, only three measures support this claim. For instance, schizophrenia and mood disorders significantly predicted inmate-on-staff physical assault, whereas other disorders made no contribution. Additionally, only personality disorder significantly predicted inmate-on-staff verbal assault, whereas the rest made no contribution. It should also be noted that these findings with personality disorder are contrary to the findings in previous studies (Warren et al., 2002), which have indicated that inmates with personality disorders are more likely to be physically violent. Here, inmates with this disorder are only more likely to be verbally abusive. It was further hypothesized that inmates who were diagnosed with a personality disorder, schizophrenia/other psychotic disorders, or a mood disorder, would be more likely to physically and verbally assault staff compared to those diagnosed with depression, post-traumatic stress disorder, or anxiety/panic disorder. Although not all disorders significantly predicted physical and verbal assault on staff, this hypothesis is supported. The results

indicated that those with diagnoses of schizophrenia and mood disorders are significantly more likely to engage in physical assault on staff, whereas those diagnosed with personality disorder are significantly more likely to verbally assault staff, when compared to those with depression, PTSD, or anxiety disorder.

This study has some limitations. Foremost, the dependent variables of physical and verbal assault probably include some measurement error, as questions relating to these constructs only ask whether or not inmates were found guilty or written up for the incident. Thus, there may be some bias in the responses, especially if an incident did not result in a formal report or if offenders withheld information on this variable. Nevertheless, this bias should not have a significant impact on the main relationships of interest. Some standard errors may be increased, but the patterns between mental health and physical/verbal assault are assuredly not false. Another issue is the reporting of mental disorders. For instance, inmates might be misdiagnosed or fail to report a mental disorder. With that being said, this study also uses measures of mental health symptoms, and it was found that there were statistically significant patterns for both mental health symptoms and disorders—suggesting validity of the measurement of these mental health classifications. Another limitation to this study is that this was an individual-level analysis. In this case, the focus was largely on the inmate and neglected the context of the prison culture/environment. Therefore, future researchers should consider combining both inmate- and prison-level data into a multilevel analysis in predicting the likelihood of inmate-on-staff assault, especially in the context of mental health issues and disorders. The current research also reflects an American prison context. Similar research with Canadian prison data might be beneficial. Finally, future research may benefit from understanding whether or not inmate mental health and assault on prison staff is in part explained by provocation. It is hoped that expressing these limitations will provide ideas and hypotheses for future studies of inmate-on-staff assault in prisons.

In conclusion, this study points toward several implications. Foremost, there is a need to consider the safety of correctional officers and staff when in the presence of inmates who possess a mental disorder or display signs of psychological distress. Furthermore, it could be argued that over time the deprivations of the prison environment could ultimately take their toll on inmates, leading to higher rates of mental health issues, or amplifying current mental health problems, among

inmates. Therefore, it is important to consider more consistent screening processes in order to both evaluate prisoners' mental health throughout their sentence and provide appropriate treatment and intervention relative to the mental health issue. With that being said, it is suggested that a positive relationship between inmates and correctional staff is necessary in order to reduce the negative effects of mental illness, as well as foster positive emotions/behaviour among inmates (Dvoskin & Spiers, 2004). This may be a difficult feat, especially if inmates have more serious disorders and are thus further removed from reality and act in highly irrational ways. Nevertheless, the effects of prison on mental health and subsequent assaultive behaviours by inmates could be attenuated if this provision is implemented earlier in the prisoners "institutional career" and maintained throughout, as the results of this study have also indicated that those who have spent more time in prison are at higher odds of verbally/physically assaulting staff. Finally, some may argue that those with mental health problems do not belong in prisons, but rather in a mental health facility. This is a 'double-edged sword' as it may provide for better recovery from mental health problems and reduce recidivism, but it may also put some healthcare personnel at risk for assault by these individuals. In short, it is apparent that prison inmates displaying poor mental health may be an indicator for risk of assaultive behaviour on correctional staff. Thus, it is imperative that correctional staff are properly trained to manage these inmates, as well as practice target-hardening techniques, especially with respect to physical assault. However, target hardening may be more difficult in the case of verbal assault. Here, staff can be trained on how to cope with, as well as manage, verbal attacks by inmates.

REFERENCES

- Adams, K. (1983). Former mental patients in a prison and parole system: A study of socially disruptive behavior. *Criminal Justice and Behavior*, 10(3), 358-384.
- Blevins, K.R., Listwan, S.J., Cullen, F.T., & Jonson, C.L. (2010). A general strain theory of prison violence and misconduct: An integrated model of inmate behavior. *Journal of Contemporary Criminal Justice*, 26(2), 148-166.
- Bowen, R.A., Rogers, A., & Shaw, J. (2009). Medication management and practices in prison for people with mental health problems: A qualitative study. *International Journal of Mental Health Systems*, 3(24).

- Briggs, C.S., Sundt, J.L., & Castellano, T.C. (2003). The effect of supermaximum security prisons on aggregate levels of institutional violence. *Criminology*, 41(4), 1341-1376.
- Bureau of Justice Statistics. (2004). *Survey of inmates in state and federal correctional facilities 2004: Codebook*. USA: United States Department of Justice.
- Caspi, A., Moffitt, T.E., Silva, P.A., Krueger, R.F., & Schmutte, P.S. (1994). Are some people crime-prone? Replications of the personality-crime relationship across countries, genders, races, and methods. *Criminology*, 32(2), 163-196.
- DeLisi, M., Berg, M.T., & Hochstetler, A. (2004). Gang members, career criminals and prison violence: Further specification of the importation model of inmate behavior. *Criminal Justice Studies*, 17, 369-383.
- Diamond, P.M., Wang, E.W., Holzer III, C.E., Thomas, C., & Crusier, d.A. (2001). The prevalence of mental illness in prison. *Administration and Policy in Mental Health*, 29(1), 21-40.
- Dvoskin, J.A., & Spiers, E.M. (2004). On the role of correctional officers in prison mental health. *Psychiatric Quarterly*, 75(1), 41-59.
- Ellis, D., Grasmick, H., & Gilman, H. (1974). Violence in prison: A sociological analysis. *American Journal of Sociology*, 80, 16-43.
- Fellner, J. (2006). A corrections quandary: Mental illness and prison rules. *Harvard Civil Rights — Civil Liberties Law Review*, 41(2), 391-412.
- Felson, R.B., Silver, E., & Remster, B. (2012). Mental disorder and offending in prison. *Criminal Justice and Behavior*, 39(2), 125-143.
- Flanagan, T.J. (1983). Correlates of institutional misconduct among state prisoners. *Criminology: An Interdisciplinary Journal*, 21(1), 29-39.
- Gaes, G.G., & McGuire, W.J. (1985). Prison violence: The contribution of crowding versus other determinants of prison assault rates. *The Journal of Research in Crime and Delinquency*, 22(1), 41-65.
- Griffin, M.L., & Hepburn, J.R. (2006). The effect of gang affiliation on violent misconduct among inmates during the early years of confinement. *Criminal Justice and Behavior*, 33(4), 419-448.
- Haney, C., Banks, C., & Zimbardo, P. (1973). Interpersonal dynamics in a simulated prison. *International Journal of Criminology & Penology*, 1(1), 69-97.
- Harer, M., & Langan, N.P. (2001). Gender differences in predictors of prison violence: Assessing the predictive validity of a risk classification system. *Crime and Delinquency*, 47, 513-536.
- Howse, K. (2003). *Growing old in prison: A scoping study on older prisoners*. London: Centre for Policy on Ageing and Prison Reform Trust.
- Irwin, J., & Cressey, D.R. (1962). Thieves, convicts, and the inmate culture. *Social Problems*, 10(2), 142-155.
- Jiang, S., & Fisher-Giorlando, M. (2002). Inmate misconduct: A test of the deprivation, importation, and situational models. *The Prison Journal*, 82(3), 335-358.
- Kratcoski, P.C. (1988). The implications of research explaining prison violence and disruption. *Federal Probation*, 52(1), 27-37.
- Lahm, K.F. (2008). Inmate-on-inmate assault: A multilevel examination of prison violence. *Criminal Justice and Behavior*, 35(1), 120-137.
- Lahm, K.F. (2009a). Inmate assaults on prison staff: A multilevel examination of an overlooked form of prison violence. *The Prison Journal*, 89(2), 131-150.
- Lahm, K.F. (2009b). Educational participation and inmate misconduct. *Journal of Offender Rehabilitation*, 48(1), 37-52.
- Light, S.C. (1990). The severity of assaults on prison officers: A contextual study. *Social Science Quarterly*, 71(2), 267-284.
- Light, S.C. (1991). Assaults on prison officers: Interactional themes. *Justice Quarterly: JQ*, 8(2), 243-261.
- Listwan, S.J., Daigle, L.E., Hartman, J.L., & Guastaferrro, W.P. (2014). Poly-victimization risk in prison: The influence of individual and institutional factors. *Journal of Interpersonal Violence*, 29(13) 2458-2481.
- Listwan, S.J., Sperber, K.G., Spruance, L.M., & Van Voorhis, P. (2004). High anxiety offenders in correctional settings: It's time for another look. *Federal Probation*, 68(1), 43-50.
- MacKenzie, D.L. (1987). Age and adjustment to prison: Interactions with attitudes and anxiety. *Criminal Justice and Behavior*, 14(4), 427-447.
- McCorkle, R.C., Miethe, T.D., & Drass, K.A. (1995). The roots of prison violence: A test of the deprivation, management, and "not-so-total" institution models. *Crime and Delinquency*, 41(3), 317-331.
- Mumola, C.J. (2005). *Suicide and homicide in state prisons and local jails: Bureau of Justice Statistics special report*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Paré, P., & Logan, M.W. (2011). Risks of minor and serious violent victimization in prison: The impact of inmates' mental disorders, physical disabilities, and physical size. *Society and Mental Health*, 1(2), 106-123.

- Patrick, S. (1998). Differences in inmate-inmate and inmate-staff altercations: Examples from a medium security prison. *Social Science Journal*, 35(2), 253-263.
- Solinas-Saunders, M., & Stacer, M.J. (2012). Prison resources and physical/verbal assault in prison: A comparison of male and female inmates. *Victims & Offenders*, 7(3), 279-311.
- Sorensen, J.R., & Cunningham, M.D. (2007). Operationalizing risk: The influence of measurement choice on the prevalence and correlates of prison violence among incarcerated murderers. *Journal of Criminal Justice*, 35(5), 546-555.
- Stephan, J.J., & Karberg, J. (2003). *Census of state and federal correctional facilities, 2000*. Washington, DC: U.S. Department of Justice, Office of Justice Programs.
- Sykes, G.M. (1958). *Society of captives: A study of a maximum security prison*. Princeton, NJ: Princeton University Press.
- Toch, H., & Adams, K. (1986). Pathology and disruptiveness among prison inmates. *The Journal of Research in Crime and Delinquency*, 23(1), 7-21.
- Toch, H. (1977). *Living in prison: The ecology of survival*. New York: Free Press.
- Useem, B., & Piehl, A.M. (2006). Prison buildup and disorder. *Punishment and Society*, 8, 87-115.
- U.S. Department of Justice, Bureau of Justice Statistics, & Federal Bureau of Prisons. (2006). *Mental Health Problems of Prison and Jail Inmates*. Washington, DC: Author.
- Walters, G.D., & Crawford, G. (2014). Major mental illness and violence history as predictors of institutional misconduct and recidivism: Main and interaction effects. *Law and Human Behavior*, 38(3), 238-247.
- Warren, J.I., Burnette, M., South, S.C., Chauhan, P., Bale, R., & Friend, R. (2002). Personality disorders and violence among female prison inmates. *Journal of the American Academy of Psychiatry and the Law*, 30(4), 502-509.
- Way, B.B., Sawyer, D.A., Lilly, S.N., Moffitt, C., & Stapholz, B.J. (2008). Characteristics of inmates who received a diagnosis of serious mental illness upon entry to New York state prison. *Psychiatric Services*, 59(11), 1335-1337.
- Wolff, N.L., Blitz, C.L., & Shi, J. (2007). Rates of sexual victimization in prison for inmates with and without mental disorders. *Psychiatric Services*, 58(8), 1087-1094.
- Wooldredge, J.D. (1994). Inmate crime and victimization in a southwestern correctional facility. *Journal of Criminal Justice*, 22(4), 367-381.
- Wortley, R. (2002). *Situational prison control: Crime prevention in correctional institutions*. Cambridge, UK: Cambridge University Press.
- Yoshikawa, K., Taylor, P.J., Yamagami, A., Okado, T., Ando, K., Taruya, T., . . . Kikuchi, A. (2007). Violent recidivism among mentally disordered offenders in Japan. *Criminal Behaviour and Mental Health*, 17(3), 137-151.

ACKNOWLEDGMENTS

The author would like to thank Professor Paul Paré, Sociology, Western University, for providing constructive feedback and guidance on this paper.