Situational Risk Factors for Inmate-on-Staff Assault

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Research Summary

This study examines whether situational characteristics of incidents involving inmates and correctional staff are related to the occurrence of inmate-on-staff assaults. The analyses compare assaultive and non-assaultive incidents at Minnesota Correctional Facility (MCF)-Oak Park Heights, an all-male, maximum security prison. The results of logistic regression models show that several situational characteristics (including time, location, behavior of inmates, and actions taken by staff) differentiate between inmate-on-staff assaults or attempted inmate-on-staff assaults and incidents in which no physically assaultive behavior occurred. The results suggest that inmate-on-staff assaults can be reduced through the use of situational crime prevention, as well as training staff on the signs indicating an assaults is likely, the effective use of protective strategies, and de-escalation techniques.

Introduction

Prison employees are exposed to greater health and safety risks than in other occupations (Konda et al., 2012), impacting work stress, job satisfaction, and turnover (Schaufeli & Peeters, 2000). One of the biggest threats to prison employee safety is inmate-on-staff assaults. In a survey of 145 jails located in Texas, 15% reported at least one serious staff assault in a one-year period (Kellar & Wang, 2005). Lahm (2009) found that 40% of inmates had assaulted staff in the past twelve months. However, relatively few studies have investigated this topic; the majority of the existing research has focused on characteristics of prisons (e.g., Kellar & Wang, 2005; McCorkle et al., 1995), with less work examining characteristics of inmates (e.g., Huebner, 2003; Lahm, 2009) or officers (e.g., Liebling, Price, & Shefer, 2011; Steiner & Wooldredge, 2017).

The broader literature on violence shows it is important to understand the situational characteristics that cause confrontations to escalate to violence, finding that factors such as time of day, location, presence of bystanders, and use of weapons predict outcomes such as victim injury and homicide. However, only a handful of studies have examined situational characteristics of inmate-on-staff assaults. These identified some common characteristics, such as locations, times of day, and circumstances (Kratcoski, 1988; Sorensen, Cunningham, Vigen, & Woods, 2011), but did not examine whether situational characteristics differentiate between violent and non-violent encounters between inmates and prison staff.

To fill these gaps in the literature and better understand threats to officers' health and safety, the current study examines situational characteristics of inmate-on-staff assaults. In addition, the study compares incidents in which inmates assaulted staff or attempted to assault staff to incidents in which no assault occurred. The results of the study will identify red flags indicating an inmate might become assaultive, potentially allowing officers to better identify threats and

respond accordingly. In addition, the results may identify protective techniques used by officers, further empowering them to prevent inmate-on-staff assaults. By identifying signs that a situation may become assaultive and strategies that effectively protect officers, the findings can provide important insights for preventing assaults and improving officer safety.

Violence toward Correctional Employees

The importation model (Irwin, 1980) suggests that inmates bring their existing personalities and cultural expectations into the prison setting, and that these characteristics influence their institutional behavior. In line with this theory, the literature has found that several individual characteristics are related to inmate-on-staff assaults. Black inmates, younger inmates, and those with less education are more likely to commit assaults against staff (Harer & Steffensmeier, 1996; Huebner, 2003; Lahm, 2009), as are gang members and inmates with more serious or violent criminal histories (Harer & Steffensmeier, 1996; Huebner, 2003) and those with personality traits such as aggression (Lahm, 2009). Inmates with determinate sentences (Harer & Steffensmeier, 1996), shorter sentences (Jiang & Fisher-Giorlando, 2002), those who have been in prison longer (Lahm, 2009), and those who receive few visits (Harer & Steffensmeier, 1996) are more likely to assault staff.

A smaller body of research has examined staff-level risk factors that explain which correctional employees are targeted. Lifestyle-routine activities theory (Cohen & Felson, 1979; Hindelang, Gottfredson, & Garofalo, 1978; Cohen, Kluegel, & Land, 1981) explains that crime is influenced by patterns of frequent behavior, and risk of victimization is dependent upon 1) exposure to offenders in terms of visibility or accessibility, 2) physical proximity to offenders, 3) suitability as targets, and 4) guardianship (i.e., use of security measures adopted to prevent victimization). An alternative, yet compatible explanation is target congruence theory (Finkelhor

& Asdigian, 1996), which argues that offenders choose targets because their characteristics 1) suggest they are less capable of preventing victimization (vulnerability), 2) antagonize others (antagonism), or 3) show qualities that offenders want to obtain or use (gratifiability). A great deal of research has supported these theories (for a review, see McNeeley, 2015). For example, officers whose job assignments expose them to inmates more often – such as those who work in housing units or segregation and those who work the day shift – have higher risk of victimization (Kratcoski, 1988; Light, 1991; Sorensen et al., 2011).

In terms of target congruence, prison officers may be more vulnerable to assaults when they are younger (Steiner & Wooldredge, 2017), have been employed for shorter time periods (Kratcoski, 1988; Lombardo, 1989; Steiner & Wooldredge, 2017), or have less training (Liebling et al., 2011; Lombardo, 1989; Sparks, Bottoms, & Hay, 1996; Steiner & Wooldredge, 2017). Female officers could be considered at greater risk of assault due to physical vulnerability (Liebling et al., 2011); however, several studies show that female officers are assaulted less frequently (Kratcoski, 1988; Sorensen et al., 2011; Steiner & Wooldredge, 2017). Correctional officers' race and job level may spark antagonism in inmates that results in greater likelihood of assaults. Because racial and ethnic minorities are disproportionately confined in prisons (Western, 2006) and many inmate-on-staff assaults are interracial (Sorensen et al., 2011), white correctional officers may be at greater risk of assault (Steiner & Wooldredge, 2017; Gordon, Moriarty, & Grant, 2003; Taxman & Gordon, 2009). Higher-ranking correctional employees are more likely to be responsible for administering discipline and making other highly visible decisions, which can generate resentment and lead to assaults (Steiner & Wooldredge, 2017; Liebling et al., 2011; Light, 1991; Lombardo, 1989; Sparks et al., 1996).

Situational Characteristics of inmate-on-Staff Assaults

Environmental criminology explains that context shapes opportunities for crime (Wortley & Mazerolle, 2008). It is argued that criminal behavior, including violence, involves the making of choices that are constrained by the physical and social environment (Cornish & Clarke, 2003). Therefore, the likelihood that a crime will occur varies according to certain situational factors. For example, according to routine activities theory (Cohen & Felson, 1979), crime is more likely at certain times of day, largely because potential offenders are more likely to encounter vulnerable targets at certain times. The occurrence and severity of violent behavior is dependent upon location, as certain types of locations contain physical features that make crime harder to carry out or include built-in guardians, while other locations are less supervised. In addition, the behavior of the potential offender, the potential target, and others present can influence violence (Goffman, 1959; Luckenbill, 1977; Wolfgang, 1957).

Only a few studies have examined situational characteristics of inmate-on-staff assaults. For example, several studies show that assaults on staff tend to occur in certain locations, such as segregation, high security or lockdown units, and dormitories, and in the morning or afternoon (Jiang & Fisher-Giordano, 2002; Kratcoski, 1988; Sorensen et al., 2011). Jiang and Fisher-Giorlando (2002) and Light (1990) found that staff assaults often took place during movement time, as opposed to an inmate's free time or work time. Many assaults take place in the presence of other staff, are preceded by a verbal threat or argument between the officer and inmate, and occurr while breaking up an inmate fight (Kratcoski, 1988; Light, 1990).

Light's study examining motivations for staff assault (1990) found that the most common type of inmate-on-staff assault (27%) was a random act of violence. Other motivations included responses to an officer's command, a protest when inmates felt they were treated unfairly by prison

staff, and searches and confiscation of prohibited items. The least common motivation noted by Light (1990) was inmate emotional instability or the influence of drugs or alcohol. Similarly, Sorensen and colleagues' examination of inmate-on-staff assaults (2011), which attempted to identify possible contributing factors to the assault, found that many assaults were preceded by an officer's command to the inmate, inmate movement within the facility. However, unlike Light (1990), Sorensen et al. (2011) found that many staff assaults included signs that the inmate was mentally or emotionally unstable.

The Current Study

Because there are few studies examining situational characteristics of inmate-on-staff assaults, and because replication is the key to developing policy implications (e.g., McNeeley & Warner, 2015), it is important to further analyze how context shapes violence within correctional facilities. Therefore, the current study serves as a replication and extension of earlier studies by examining situational characteristics that are common in inmate-on-staff assaults. Specifically, the study addresses the following research questions regarding common situational characteristics of inmate-on-staff assaults. First, do assaults occur at certain times of day or in certain locations? Second, do inmates who assault staff exhibit certain behavior or symptoms? In particular, the study examines inmate-focused situational characteristics such as signs of mental health problems; need for medical treatment; self-harm; threats of violence; and verbal aggression such as yelling, cursing, or making insults. Third, what are the common contributing factors of inmate-on-staff assaults? Following prior research (e.g., Kratcoski, 1988; Light, 1990; Sorensen et al., 2011), this study examines potential contributing factors such as inmates resisting restraints, searches of inmates or their property, movement of inmates within the facility, disciplinary actions or warnings for misbehavior, and verbal commands from staff to inmates. Fourth, are inmate-on-staff assaults

less common when protective measures – such as chemical irritant, restraints, and physical force – are used?

In addition, while previous research suggests that inmate-on-staff assaults may have similar characteristics and common contributing factors, it is unknown whether these actually increase the likelihood of an assault taking place during an incident. Therefore, this study further extends the literature by using a sample of assaultive and non-assaultive incidents to conduct multivariate models using the situational characteristics discussed above to predict inmate-on-staff assault while controlling for characteristics of inmates and staff. Finally, this study extends prior research by comparing incidents in which inmates attempted to assault staff to incidents in which inmate-on-staff assault actually occurred. By doing so, the study will help to further identify signs that incidents are more or less dangerous for staff.

Research Methods

Data and Sample

This study analyzes assaultive and non-assaultive incidents that occurred at Minnesota Correctional Facility (MCF)-Oak Park Heights between October 12, 2016 and March 31, 2018.[1] MCF-Oak Park Heights is an all-male facility and is the only maximum security prison operated by the Minnesota Department of Corrections (MnDOC). MnDOC policy defines an incident as any situation that could adversely impact facility or department operations or that requires administrative review. This can include a security breach, an escape or attempted escape, an injury or death, a violation of facility rules, the loss or damage to property, a situation in which use of force occurred, or non-routine conduct by inmates or others. Incidents were only included in the sample if they described a face-to-face interaction between at least one inmate and at least one

[1] These start and end dates were chosen because they were used in another study from which the comparison group of non-assaults were drawn.

employee. Incidents were removed if they occurred outside the facility (e.g., in hospitals).

During the study period, there were 85 discipline reports in which inmates were charged with staff assault (including attempted assault). To create a control group, 85 non-assaultive incidents were randomly selected from a sample of incidents previously compiled for another study. Because some assault incidents involved multiple inmates who each received discipline reports, the 85 discipline reports corresponded with 68 incidents of attempted or completed inmate-on-staff assault. Therefore, the sample size for the study was 153 incidents. [2]

The sample included 97 male offenders. Nearly half (45%) were Black, 30% were White, 18% were Native American, 6% were Hispanic, and 1% were Asian. Most were incarcerated for person offenses (80%), 8% were incarcerated for property offenses, 3% were incarcerated for drug offenses, and 8% were incarcerated for other offense types. Offenders ranged in age from 19 years old to 59 years old, with an average age of about 35 years.

The incidents also involved 249 correctional employees. Less than a quarter (22.5%) were female. Over three-quarters (76.7%) were White. Staff ranged in age from 19 years old to 64 years old, with an average age of about 38 years. They had been working in MnDOC for an average of about 8 years; the length of employment ranged from less than one year to about 34 years.

Dependent Variables

Two dependent variables are examined. First is a binary variable indicating whether an incident included no assault (0) or resulted in an attempted or completed assault (1). This variable includes the following behavior by inmates against one or more correctional employees: striking (such as hitting, kicking, or pushing), biting, grabbing, spitting, throwing or using another bodily

[2] Because several individuals may be involved in an incident, the dataset was structured as a long file with a separate row for each inmate-employee combination involved in an incident. The rows for the incidents were then inversely weighted by their frequency. For example, an incident involving two inmates and one employee would appear in the dataset twice, each with a weight of 0.50.

fluid such as urine or feces, throwing objects or liquid, using a weapon, and attempting to do any of these. Among assaultive incidents, the second dependent variable identifies whether the assault was attempted (0) or completed (1). An assault was considered completed if there was physical contact between the inmate (or an object or liquid used by the inmate) and an employee. Because of the small number of assaultive incidents during the time period covered by the study (n = 68), the second dependent variable is only examined at the bivariate level. [3]

Of the 68 assaultive incidents, 41 (about 60%) were completed, while 27 incidents (about 40%) were attempted only. Inmates struck or attempted to strike employees in 35% of assaults, and grabbed or attempted to grab employees in 13% of assaults. Inmates either spat or attempted to spit on an employee in 37% of assaults and used or attempted to use other bodily fluids such as urine or feces against an employee in 10%. Ten percent of assaultive incidents involved inmates throwing or trying to throw objects at employees, and 7% involved inmates throwing or trying to throw liquids at employees.[4]

Situational Characteristics

Several variables were included to examine situational characteristics of incidents. It is important to note that the variables described below are measured so that they precede any assaultive behavior against staff. Time of day is measured in shifts, with three binary variables indicating whether the incident occurred during first watch (overnight, from 10:25pm to 06:44am), second watch (6:45am to 2:34pm), or third watch (2:35pm to 10:24pm). Location is measured with three binary variables indicating whether the incident occurred in segregation, the inmate's cell,

[3] Staff injury was also measured so it could be used as a dependent variable. However, this outcome was not examined because there were very few injuries in the sample; only 12 incidents (7.8%) resulted in an injury; about 5% of cases required some type of medical attention.

[4] These categories do not total 100% because some inmates engaged in more than one type of assaultive behavior during an incident.

or another type of location.[5]

Six binary variables capturing inmates' behavior, actions, or symptoms were included. These measured whether inmates 1) experienced medical problems or received medical treatment;[6] 2) made threats of violence; 3) engaged in self-harm or reported having thoughts about self-harm or suicide; 4) engaged in verbal aggression such as yelling, cursing, or insults; 5) resisted restraints; or 6) exhibited mental health symptoms. This variable includes any of the following (see Center for Health Policy, Planning and Research, 2007): agitated or irritable, anxiety or panic, confusion, delusions, depression or sadness, disoriented, embarrassed, hearing voices or command voices, hopelessness or crying, hyperactive, impulsive, insomnia, isolating, lack of eye contact or blank stares, lack of personal hygiene, not eating, pacing, paranoia, phobia or fear, or recent loss. The study also examines four potential contributing factors identified by Sorensen et al. (2011), all measured as binary variables: 1) inmate or his property was searched, 2) the inmate was being escorted to another area, 3) the inmate was being given disciplinary action or a verbal warning about his behavior, and 4) verbal directives or commands were given to the inmate.[7]

Three potentially protective factors were included. Binary variables were created that indicate whether staff 1) used chemical irritant or gave a warning that chemical irritant might be used, 2) used restraints (including mechanical restraints such as handcuffs and pinion restraints such as restraint boards or chairs), or 3) used physical force (including pressure point techniques, strikes, and holds).

[5] "Other" locations (n = 17) included the canteen, living unit common areas, medical or mental health units, and recreation areas or gymnasiums.

[6] To reduce correlations between independent variables, this does not include medical treatment that resulted from self-harm, violence, or use of force by staff during the incident.

[7] The following were considered for inclusion but were not used because there were few cases in the sample: inmate possession of contraband (n = 12), sexual behavior such as sexual comments to staff or masturbation in the presence of staff (n = 9), destruction of property (n = 6), use or display of a weapon (n = 5), and fights between inmates (n = 4).

Inmate Characteristics

The first four inmate-level variables were continuous measures: age in years as of the incident date, number of violent convictions, number of prior discipline reports[8] between the inmate's admission date and the date of the earliest incident,[9] and length of confinement (measured as the number of months between the admission date and the incident date). Fifth, race is measured as a binary variable indicating whether the inmate is a minority. Sixth, offense type is measured as a binary variable indicating whether the inmate is incarcerated for a person offense. Seventh, security threat group (STG) status is a binary variable indicating whether the inmate was classified as an active STG member. Eighth, prison visitation is measured as a binary variable indicating whether the offender received any visits before the incident date.

Staff Characteristics

Six employee-level independent variables were examined. Gender is a binary variable with a score of 1 indicating that the employee is female. Race is measured as a binary variable with a score of 1 indicating that the employee is a minority. Age and length of employment are continuous variables measured in years. Employees' work assignment as security staff and rank as officers (including sergeants, lieutenants, and captains) are included as binary variables.

Data Analysis

First, descriptive statistics were used to identify common situational characteristics of inmate-on-staff assaults. Second, three separate logistic regression analyses that use situational, inmate, and employee characteristics to predict assaultive behavior were conducted.[10] Third, these

[8] Supplemental analyses (available upon request) were conducted using a measure of prior discipline for assault. The results were similar to those presented, with the exception of attempted versus completed assault, which is presented in Table 4.

[9] The natural log was taken (after adding 1 to the variable) to account for positive skew.

[10] While data could be structured as incidents nested within inmates or employees, a multilevel approach could not be used here because of the small sample size.

variables were simultaneously entered into a model predicting assaultive behavior in order to examine situational characteristics while controlling for characteristics of inmates and staff. Because of the small sample size, there are few events (i.e., cases with scores of 1 on the dependent variable). Scholars argue that there should be a minimum of five to ten events for each independent variable that is included in a logistic regression model (Penduzzi et al., 1996; Vittinghoff & McCulloch, 2007). Therefore, in the multivariate analyses, it is important to choose a smaller set of variables. In particular, since there are 68 assaultive incidents, there should be no more than 13 predictors. To account for this, the third step of the analyses used backward elimination stepwise regression (likelihood ratio) to select the best-fitting model with the appropriate number of independent variables. Fourth, bivariate statistics were presented to determine whether the independent variables differentiate between attempted assaults and completed assaults. Missing data were handled using listwise deletion.

Results

Descriptive Results: Situational Characteristics of Assaultive Incidents

Descriptive statistics are presented in Table 1. Over half of assaultive incidents (including attempted assaults) occurred in segregation (56%), while 29% occurred in the inmate's cell. Over half (53%) occurred during third watch. The inmate exhibited mental health symptoms in about a third of assaultive incidents (34%), experienced medical problems or underwent medical treatment in 29% of assaultive incidents, and engaged in or threatened self-harm in 16% of assaultive incidents. Inmates were often verbally abusive prior to committing or attempting assaults against staff (44%), but less frequently made threats prior to assaultive behavior (15%). Prior to or during an assaultive incident, it was common for inmates to resist restraints (35%). Inmates less frequently engaged in protests (13%), destroyed property (6%), used or displayed a weapon (3%), engaged

in sexual behavior or made sexual statements (4%), possessed contraband (4%), or fought other inmates (3%) prior to assaultive behavior against staff.

Table 1: Descriptive Statistics

	All Incidents N = 153			Assaultive Incidents N = 68		
	Mean	*SD*	*Range*	*Mean*	*SD*	*Range*
Dependent variables						
Assaultive incident	0.44	0.50	0-1	---	---	---
Completed assault	---	---	---	0.60	0.49	0-1
Situational characteristics						
First watch (reference group)	0.09	0.28	0-1	0.06	0.24	0-1
Second watch	0.60	0.49	0-1	0.53	0.50	0-1
Third watch	0.31	0.47	0-1	0.41	0.50	0-1
Segregation	0.47	0.50	0-1	0.56	0.50	0-1
Offender's cell	0.42	0.11	0-1	0.29	0.46	0-1
Other location (reference group)	0.11	0.32	0-1	0.15	0.36	0-1
Medical incident	0.25	0.43	0-1	0.29	0.46	0-1
Threats of violence	0.12	0.33	0-1	0.15	0.36	0-1
Self-harm	0.14	0.35	0-1	0.16	0.37	0-1
Verbal aggression	0.28	0.45	0-1	0.44	0.50	0-1
Resisted restraints	0.20	0.40	0-1	0.35	0.48	0-1
Mental health symptoms	0.25	0.43	0-1	0.34	0.48	0-1
Offender searched	0.16	0.37	0-1	0.12	0.33	0-1
Offender escorted	0.42	0.50	0-1	0.37	0.49	0-1
Disciplinary action	0.29	0.46	0-1	.019	0.40	0-1
Verbal directives	0.46	0.50	0-1	0.45	0.50	0-1
Chemical irritant	0.10	0.30	0-1	0.16	0.37	0-1
Restraints	0.47	0.50	0-1	0.49	0.50	0-1
Physical force	0.24	0.43	0-1	0.34	0.48	0-1
Offender characteristics						
Offender's age	35.04	8.82	19-59	34.15	8.58	19-56
Prior discipline (natural log)	2.55	1.23	0-6.02	2.42	1.18	0-6.02
Prior assaultive discipline	2.01	3.01	0-11	1.94	3.01	0-11
Length of confinement	43.82	60.39	0-326	30.32	43.53	0-247
Offender is minority	0.73	0.45	0-1	0.76	0.43	0-1
Person offender	0.78	0.42	0-1	0.82	0.38	0-1
Prior violent convictions	4.03	3.22	0-14	3.64	2.54	0-11
Offender is STG member	0.19	0.39	0-1	0.18	0.39	0-1
Offender received visits	0.59	0.49	0-1	0.54	0.50	0-1
Employee characteristics						
Employee is female	0.19	0.39	0-1	0.17	0.37	0-1
Employee is minority	0.10	0.29	0-1	0.13	0.34	0-1
Employee's age	38.43	9.36	19-64	37.80	9.87	22-64
Length of employment	8.68	7.49	0-34	7.36	6.83	0-27
Employee is officer	0.19	0.40	0-1	0.18	0.39	0-1
Employee is security staff	0.79	0.41	0-1	0.82	0.39	0-1

Over a third of assaultive incidents (37%) occurred when inmates were being moved from one area to another. Nineteen percent of assaultive incidents occurred after staff initiated the discipline process or gave a verbal warning to the inmate for another offense, while 12% occurred after or during searches. A substantial portion of attempted or completed assaults occurred after or while staff used restraints (49%), gave verbal directives to the inmate (49%), or used physical force (34%). Fewer assaultive incidents occurred after staff searched the inmate or his property (12%) or used chemical irritant or gave a warning that they would do so (16%).

Multivariate Comparison of Assaultive Incidents versus Non-Assaultive Incidents

Table 2 shows the results of the separate logistic regression models comparing assaultive incidents to non-assaultive incidents based on situational, inmate, and staff characteristics. Incidents occurring during third watch ($b = 2.30$, $p < .05$) were 9.9 times more likely to result in assault than those during first watch, while those occurring in an inmate's cell were 85% less likely to result in assault than those occurring in areas other than segregation or inmates' cells ($b = -1.90$, $p < .05$). Assaults were about 4.2 times more likely when inmates were verbally aggressive ($b = 1.44$, $p < .05$), 5.1 times more likely when inmates resisted restraints ($b = 1.63$, $p < .05$), and 14.5 times more likely when officers used physical force against inmates ($b = 2.67$, $p < .01$). In contrast, violence against staff was marginally less likely when inmates were escorted from one area to another ($b = 1.28$, $p < .10$) and when staff initiated formal or informal discipline for inmates' misbehavior ($b = -0.98$, $p < .10$).

Table 2: Logistic Regression Models Predicting Assault Based on Situational, Offender, or Staff Characteristics

	Situational Characteristics		Offender Characteristics		Staff Characteristics	
	b (SE)	*OR*	*b (SE)*	*OR*	*b (SE)*	*OR*
Constant	-1.28 (1.20)	0.28	1.34 (1.00)	3.80	-0.67 (0.92)	0.51
Situational characteristics						
Second watch	1.51 (.93)	4.53	---	---	---	---
Third watch	2.30 (.97)*	9.94	---	---	---	---
Segregation	-0.54 (.77)	0.59	---	---	---	---
Offender's cell	-1.90 (.78)*	0.15	---	---	---	---
Medical incident	0.53 (0.56)	1.70	---	---	---	---
Threats of violence	-0.62 (0.75)	0.54	---	---	---	---
Self-harm	0.20 (0.77)	1.22	---	---	---	---
Verbal aggression	1.44 (0.56)*	4.21	---	---	---	---
Resisted restraints	1.63 (0.70)*	5.12	---	---	---	---
Mental health symptoms	0.69 (0.53)	1.99	---	---	---	---
Offender searched	0.33 (0.77)	1.39	---	---	---	---
Offender escorted	-1.28 (0.68)†	0.28	---	---	---	---
Disciplinary action	-0.98 (0.58)†	0.38	---	---	---	---
Verbal directives	-0.48 (0.58)	0.62	---	---	---	---
Chemical irritant	1.12 (0.97)	3.07	---	---	---	---
Restraints	-0.86 (0.68)	0.42	---	---	---	---
Physical force	2.67 (0.88)**	14.49	---	---	---	---
Offender characteristics						
Offender's age	---	---	-0.04 (0.02)†	0.96	---	---
Prior discipline (natural log)	---	---	0.07 (0.17)	1.07	---	---
Length of confinement	---	---	-0.01 (0.004)†	0.99	---	---
Offender is minority	---	---	0.31 (0.42)	1.37	---	---
Person offender	---	---	0.46 (0.46)	1.58	---	---
Prior violent convictions	---	---	-0.09 (0.06)	0.92	---	---
Offender is STG member	---	---	0.12 (0.49)	1.13	---	---
Offender received visits	---	---	-0.48 (0.40)	0.62	---	---
Employee characteristics						
Employee is female	---	---	---	---	-0.24 (0.52)	0.79
Employee is minority	---	---	---	---	0.66 (0.60)	1.94
Employee's age	---	---	---	---	0.02 (0.02)	1.02
Length of employment	---	---	---	---	-0.07 (0.04)†	0.93
Employee is officer	---	---	---	---	0.48 (0.60)	1.61
Employee is security staff	---	---	---	---	0.24 (0.49)	1.28
-2 log likelihood	139.791		199.013		184.151	
Model X^2	70.420***		11.197*		6.452	
Nagelkerke R^2	0.49		0.09		0.06	
N	153		151		139	

***p < .001, **p < .01, *p < .05, †p < .10

Only two variables were related to inmate-on-staff assault in the model focused on inmate characteristics; inmates who had been incarcerated longer ($b = -0.01$, $p < .10$) and older inmates ($b = -0.04$, $p < .10$) were less likely to engage in assaultive behavior against staff. Similarly, in the model examining staff characteristics, one variable was marginally related to assault; incidents involving employees with longer tenures at MnDOC were less likely to escalate to violence ($b = -0.07$, $p < 0.10$). Importantly, the model fit statistics presented at the bottom of Table 2 show that inmate and staff characteristics do a worse job predicting whether an incident will result in violent behavior toward staff.

Next, Table 3 presents the final model predicting assaultive behavior during an incident. Backward elimination stepwise regression using a likelihood ratio was used to select an appropriate number of independent variables for the full model. This resulted in the following thirteen predictors: (1) shift is second watch, (2) shift is third watch, (3) location is inmate's cell, (4) location is segregation, (5) verbal aggression, (6) inmate resisted restraints, (7) inmate was escorted from one area of the facility to another, (8) staff initiated formal or informal disciplinary action during incident, (9) staff gave verbal directives during the incident, (10) staff used physical force against the inmate, (11) inmate's length of confinement, (12) inmate is incarcerated for a person offense, and (13) employee is female.

The results presented in Table 3 show that assaultive behavior was about six times more likely during second watch ($b = 1.98$, $p < .05$) and about 30 times more likely during third watch ($b = 3.44$, $p < .01$) than during first watch. Assaults were 79% less likely when incidents took place in segregation ($b = -1.54$, $p < .10$) and 94% less likely when incidents took place in inmate's cells ($b = -2.82$, $p < .01$), compared to other areas of the facility. Assaultive behavior was almost 5.5 times more likely when inmates were verbally aggressive ($b = 1.87$, $p < .01$), 7.7 times more likely

when inmates resisted restraints (b = 2.16, p < .01), and nearly 8 times more likely when staff used physical force against inmates (b = 2.19, p < .05). Assaultive behavior was 83% less likely to occur when inmates were being escorted between areas within the facility (b = -1.80, p < .01) and 63% less likely when staff initiated some sort of disciplinary action in response to offenders' behavior (b = -0.99, p < .10).

Incidents involving person offenders were about 2.5 times more likely to result in assault (b = 1.27, p < .05). Inmates with longer prison stays were less likely to engage in assaultive behavior; the odds of assault decreased by about 1% for each month increase in the inmate's length of confinement (b = -0.01, p < .05). No staff characteristics were significantly related to assaultive behavior in this model.

Table 3: Final Logistic Regression Model Predicting Inmate-on Staff Assault

	b (SE)	*OR*
Constant	-1.01 (1.40)	0.36
Situational characteristics		
Second watch	1.98 (1.01)*	7.22
Third watch	3.44 (1.09)**	31.27
Segregation	-1.54 (0.86)†	0.21
Offender's cell	-2.82 (0.92)**	0.06
Verbal aggression	1.87 (0.61)**	6.47
Resisted restraints	2.16 (0.92)**	8.68
Offender escorted	-1.80 (0.67)**	0.17
Disciplinary action	-0.99 (0.58)†	0.37
Verbal directives	-0.96 (0.61)	0.38
Physical force	2.19 (0.93)*	8.92
Offender characteristics		
Length of confinement	-0.01 (0.01)*	0.99
Person offender	1.27 (0.61)*	3.56
Employee characteristics		
Employee is female	-1.05 (0.67)	0.35
-2 log likelihood	112.529	
Model X^2	75.277***	
Nagelkerke R^2	0.567	
N	137	

***p < .001, **p < .01, *p < .05, †p < .10

Table 4: Bivariate Analyses Comparing Attempted Assaults to Completed Assaults

		Yes		No	
Binary Variables	*t*	*Proportion Completed*	*SD*	*Proportion completed*	*SD*
First watch	-0.43	0.50	0.58	0.61	0.49
Second watch	-0.35	0.58	0.50	0.63	0.49
Third watch	0.56	0.64	0.49	0.58	0.50
Segregation	0.54	0.63	0.49	0.57	0.50
Offender's cell	-2.26*	0.40	0.50	0.69	0.47
Other location	2.91*	0.90	0.32	0.55	0.50
Medical incident	-2.26*	0.40	0.50	0.69	0.47
Threats of violence	-0.02	0.60	0.52	0.60	0.49
Self-harm	-1.09	0.45	0.52	0.63	0.49
Verbal aggression	-0.54	0.57	0.50	0.63	0.49
Resisted restraints	-1.28	0.50	0.51	0.66	0.48
Mental health symptoms	-1.51	0.48	0.51	0.67	0.48
Offender searched	0.95	0.75	0.46	0.58	0.50
Offender escorted	-1.59	0.48	0.61	0.67	0.47
Disciplinary action	0.72	0.69	0.48	0.58	0.50
Verbal directives	-0.44	0.58	0.50	0.63	0.49
Chemical irritant	1.85†	0.82	0.40	0.56	0.50
Restraints	-2.49*	0.45	0.51	0.74	0.44
Physical force	-2.64*	0.39	0.50	0.71	0.46
Offender is minority	0.31	0.61	0.49	0.57	0.51
Person offender	-0.49	0.59	0.50	0.67	0.49
Offender received visits	1.34	0.68	0.48	0.52	0.51
Offender is STG member	0.51	0.66	0.49	0.58	0.50
Employee is female	-0.33	0.56	0.52	0.61	0.49
Employee is minority	0.32	0.66	0.51	0.60	0.50
Employee is officer	-0.08	0.59	0.51	0.61	0.49
Employee is security staff	1.22	0.64	0.49	0.45	0.52
Continuous Variables	*r*				
Offender's age	-0.338**				
Prior discipline (natural log)	0.053				
Prior assaultive discipline	-0.277*				
Prior violent convictions	0.076				
Length of confinement	0.290*				
Employee's age	0.023				
Length of employment	-0.055				

*p < .05, †p < .10

Bivariate Comparison of Attempted Assault versus Completed Assault

Table 4 displays bivariate analyses comparing attempted assault to completed assault. First, assaults were more likely to be completed in "other" location types (t = 2.91, p < .05), and less likely to be completed in inmates' cells (t = -2.26, p < .05). Second, attempted assaults that

occurred during medical incidents were less likely to be completed (t = -2.26, p < .05). Third, assaults were less likely to be completed when physical force was used (t = -2.64, p < .05) and when inmates were restrained (t = -2.49, p < .05), but somewhat more likely to be completed when chemical irritant was used or a warning was given (t = 1.85, p < .10). Fourth, completed assaults tended to be committed by younger inmates (r = -0.338, p < .01) and those who had been incarcerated longer (r = 0.290, p < .05), but were less likely to be committed by inmates with more prior discipline reports for assaultive behavior (r = -0.277, p < .05). This is likely because staff respond promptly to behavior by those known to have behaved violently in the past. No employee characteristics differentiated between attempted and completed assaults.

Discussion

The results presented above show that situational characteristics of incidents are important in determining whether inmate-on-staff assaults will occur. Several aspects of the incident – such as the time and location of the incident as well as behavior of inmates and staff – appeared to influence whether inmates will exhibit violent behavior and whether assaults would be completed once inmates became violent. Importantly, the results suggest that situational characteristics are more important predictors of violence than characteristics of either inmates or staff. First, employees assigned to certain shifts appear to face greater risk of victimization by inmates. Unsurprisingly, and consistent with prior research (Kratcoski, 1988; Sorensen et al., 2011), assaults were least frequent during first watch, when inmates are typically asleep or at least confined in their cells. It also appears that inmates were more likely to engage in violent behavior during the afternoon and evening than earlier in the day. This may be because inmates have more free time in the late afternoon and evening; they may be less likely to behave violently when they are participating in programming, attending classes, or working. These temporal differences in

inmate-on-staff assaults should be carefully considered when making decisions regarding staffing levels, as well as when assigning individual staff members to a shift.

Second, while many inmate-on-staff assaults occurred in segregation or in and around an offender's cell, consistent with prior research (Jiang & Fisher-Giordano, 2002; Kratcoski, 1988; Sorensen et al., 2011), the comparison of assaultive and non-assaultive incidents showed that assaults were more likely to take place in other areas. In addition, when comparing attempted assaults to completed assaults, it appeared that inmates were less likely to commit a completed assault against staff in segregation or in their cells. These locations likely create a physical separation between inmates and staff that provides a protective effect. However, it is also possible that other precautions are taken when staff respond to situations in these locations; if that is the case, then it may be beneficial to extend these precautions to other areas as well.

Third, the use of physical force by staff was strongly related to the likelihood that inmates would attempt to assault or actually assault staff. However, it also appeared that physical force reduced the likelihood that an assault would be completed. It is important to note that only physical force that preceded an assault or attempted assault was measured here. It is possible that a positive relationship between physical force and assault was observed because staff may recognize signs of an impending assault and use physical force in an attempt to thwart the assault. However, as with violent acts in the general population (Wolfgang, 1957), it may be that the use of physical force by the eventual victim (here, correctional staff) escalates tension and aggressive behavior by offenders.

Similarly, the results showed that many assaults occurred as a result of inmates resisting restraints, but that the use of restraints may be an important protective factor. In addition, the use of chemical irritant appeared to increase rather than decrease the odds that assaultive behavior

would be carried out rather than attempted. The use of protective measures such as restraints, chemical irritant, and physical force appear to have complex relationships with the occurrence of inmate-on-staff assault. On the other hand, more communicative protective measures – such as disciplinary responses to misbehavior (which included verbal warnings) – were related to lower odds of an incident becoming violent. Therefore, it is vital that correctional officers receive thorough and ongoing training that instructs on when to use or avoid these measures, how to use these measures most safely, and how and when it is possible to de-escalate situations without relying on more aggressive control methods.

Fourth, making verbal threats was not significantly related to assaultive behavior. In some cases, officers' swift responses to threatening statements may prevent an offender from behaving violently; however, the null relationship found here suggests that, at least some of the time, offenders make threats without much motivation to behave violently. On the other hand, the results show that offenders are likely to exhibit verbal aggression such as insulting, yelling, or cursing shortly before becoming assaultive. Verbal aggression seems to be a better indicator of the offender's emotional state and potential to escalate to violence, and correctional staff should consider this a red flag for violence. In addition, it is important for staff training to include how to best respond to verbal aggression so that the situation is de-escalated rather than intensified.

Fifth, two offender characteristics were related to inmate-on-staff assault when accounting for situational characteristics. Unlike prior research (Lahm, 2009), the results showed offenders with longer prison stays were less likely to engage in assaultive behavior. At the same time, the comparison between attempted and completed assault showed that those offenders with long sentences who did become assaultive were more likely to effectively assault staff. In addition, consistent with past research (Harer & Steffensmeier, 1996; Huebner, 2003; Sorensen et al., 2011),

inmates incarcerated for person offenses were more likely to assault staff.

As with all research, this study has limitations that must be acknowledged. Importantly, all the incidents in the sample occurred at a single facility, which was a maximum security prison where there is not much freedom of movement for inmates. Incidents at facilities with lower security levels may unfold differently, and this likely influences the occurrence of inmate-on-staff assaults. More importantly, because the incidents are taken from a male facility, the results are unlikely to be generalizable to assaults perpetrated by female inmates. Therefore, it is important for future research to examine assaultive incidents from multiple facilities, including facilities that contain units with lower custody levels, and among female inmates.

Second, prior research suggests that the presence of bystanders is important in shaping violent behavior, as offenders may behave more violently to maintain their reputation as masculine and tough (Goffman, 1959; Anderson, 1999), and that the effects of bystander intervention varies across situational contexts (Hart & Miethe, 2008). Unfortunately, the incident reports studied here were typically unclear as to whether other inmates were nearby during the incident or whether they reacted to the incident in any way. Therefore, it was not possible to test whether or how the presence of bystanders influences assaultive behavior in a correctional setting.

Finally, inmate-on-staff assaults within prisons are relatively rare, resulting in small sample sizes that limit our ability to fully examine all characteristics that could influence the behavior of inmates and staff. Therefore, there are still questions about factors that potentially contribute to inmate-on-staff assault. Still, the results of this study provide important information on the contexts in which inmates tend to engage in violence toward staff, showing that time of day, location, and behavior of inmates and staff influence whether inmates behave violently. The results also offer insights for reducing violence within correctional facilities and improving staff safety. Situational

crime prevention would likely be useful in reducing inmate-on-staff assault. There are many techniques of situational crime prevention that are relevant for violence within prisons (e.g., Clarke, 1997; Cornish & Clarke, 2003), but it may be especially important to consider the strategy of reducing provocations, which can be accomplished by reducing frustrations and stress, avoiding disputes, and reducing emotional arousal. In addition, the findings suggest inmate-on-staff assaults could be reduced through ongoing, intensive training on recognizing common signs of violence, de-escalating situations, and effectively using protective measures such as physical force, restraints, and chemical irritant.

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