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## Examining the Sources of Violent Victimization Among Jail Inmates

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# Examining the Sources of Violent Victimization among Jail inmates

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This study involves an examination of the individual- and jail-level predictors of violent victimization during short-term incarceration using data from the most recent Survey of Inmates in Local Jails and the corresponding National Jail Census. Findings suggest that individuals whose attributes make them appear more vulnerable or whose attributes antagonize others have a greater risk of violent victimization in jail. In addition, the findings suggest that jails with more stagnant inmate populations and older jails may have higher levels of violent victimization. Overall, the study results add validity to the opportunity frame- work as a general explanation for victimization risk regardless of the setting in which individuals are placed.

**Keywords:** inmate victimization; opportunity theory; inmates; jails; violence

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Prison and jail inmates are susceptible to violent victimization because confinement creates a context where potential victims or suitable targets meet offenders in time and limited space (Wooldredge & Steiner, 2014). Little is known about the sources of inmate victimization, however, and existing studies have often utilized prison- rather than jail- based samples (e.g., Toman, 2017; Wolff, Shi, & Siegel, 2009). Researchers have had difficulty studying jails because they are operated by a diverse network of agencies (e.g., sheriff's department, county commissioners) that manage transient populations comprised of individuals whose varied backgrounds and levels of criminal involvement complicate efforts to collect generalizable data (Bales & Garduno, 2016; Stinchcomb & Leip, 2013; Subramanian, Delaney, Roberts, Fishman, & McGarry, 2015; Tartaro, 2002; Toman, Cochran, & Cochran, 2018). Yet, examinations of the sources of victimization in jails are critical because study findings may offer unique theoretical and practical implications. Theoretically speaking, the generality of a perspective relevant to victimization risk can be evaluated in part by the degree to which measures of concepts explain victimization across individuals in different settings (e.g., prisons, schools). If theoretical concepts within a

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model apply differently among jail inmates relative to prison inmates or individuals in the general population, then refinement of the model might be needed. From a practical stand- point, identifying the individual- and jail-level predictors of victimization among jail inmates may improve the safety and welfare of the millions of individuals who cycle through these institutions each year—a figure that far eclipses the number of persons who enter prison (Clarke, 1995; glaze & Kaeble, 2014). In addition, a study of the sources of victimization among jail inmates may have implications for both prison and public safety because victims of jail violence may perpetrate violence if sent to prison (Toman et al., 2018), and have higher odds of recidivism upon their release (Listwan, Sullivan, Agnew, Cullen, & Colvin, 2013).

We apply the general opportunity framework for understanding victimization risk (Cohen & Felson, 1979; Finkelhor & Asdigian, 1996; Hindelang, Gottfredson, & Garofalo, 1978) for the purposes of identifying the individual- and facility-level correlates of violent victimization among a national sample of jail inmates. given the paucity of research on jail inmates and their environment, we draw from parallel studies of the sources of victimization risk for inmates in prison (Wooldredge & Steiner, 2012, 2013, 2014), and discuss the theoretical and practical implications of our findings for future research.

## **AN OPPORTUNITY MODEL OF JAIL INMATE VICTIMIZATION**

In 2016, roughly 10.6 million admissions were processed in jails across the United States, while state and federal prisons processed only 606,000 (Carson, 2018; Zeng, 2018). The number of individuals incarcerated in jail also remained relatively stable between 2015 and 2016; however, the number of persons confined in prison has declined in recent years (Kaeble & Cowhig, 2018). Jail inmates therefore account for a substantial and perhaps growing proportion of the adult correctional population, and yet they have received very little empirical attention since John Irwin first called for additional research on their experiences in 1985 (Simon, 2013). Notable studies published in association with the Prison Rape Elimination Act (PREA) have described the extent of sexual victimization in jails (e.g., Beck, Berzofsky, Caspar, & Krebs, 2013), but Irwin's original call for research on jail life remains largely unanswered (Bales & Garduno, 2016; Simon, 2013), and jails continue to operate on the periphery of the American criminal justice system (Irwin, 1985; Toman et al., 2018). Jails are the first stop for most arrestees whose offenses range from vagrancy to murder, and the facilities are designed to hold individuals who await trial or sentencing as well as those who have been given sentences of 1 or 2 years (i.e., most offenders pass through jail; Irwin, 1985). Thus, jails hold a unique cross-section of inmates, and likely facilitate a context where potentially violent individuals (e.g., those with a history of violent crimes) meet suitable targets (e.g., first-time nonviolent inmates) in time and space.

Jail environments might also create unique opportunities for victimization because county and city budget restraints combine with short periods of confinement (i.e., average stay in jail = 23 days) to limit the feasibility of inmate programming (Simon, 2013; Subramanian et al., 2015; Toman et al., 2018). In addition, jail classification and housing procedures are typically focused on immediate security (e.g., housing coconspirators separately) or health concerns

(e.g., injury during arrest), rather than inmates' long-term treatment needs (Gendreau, Smith, & French, 2006). With limited options for programming and needs-based placements (e.g., drug treatment units), jails may facilitate opportunities for victimization by creating an environment where potential victims are forced to spend more time near individuals with the potential to perpetrate violence (Irwin, 1985; Toman et al., 2018). Despite the importance of identifying the sources of victimization among jail inmates, studies of inmate victimization are limited to prison-based research or to a singular facility with limited generalizability (Ellison, 2017; Irwin, 1985).

Existing studies of the sources of victimization risk for inmate populations have been grounded in the general opportunity framework (Ellison, 2017; Wooldredge & Steiner, 2013; Wooldredge, 1998), which is inclusive of the concepts of lifestyles/routines, target vulnerability and antagonism, and guardianship (see Miethe & Meier, 1994, for a review). Regarding routines, some individuals may have a higher likelihood of victimization if their lifestyles expose them to high-risk situations, such as unsupervised activities or those that increase their proximity to potential offenders (Cohen & Felson, 1979; Hindelang et al., 1978). The risk of victimization may also be greater for individuals whose attributes make them appear more vulnerable (Finkelhor & Asdigian, 1996; Sparks, 1981) or provoke potential offenders (Cohen & Felson, 1979). Capable guardianship or environmental controls may reduce the opportunity for victimization by restraining or prohibiting potential offenders from perpetrating violence (Cohen & Felson, 1979). In this framework, guardianship refers to people, policies, or environmental settings that function to prevent victimization (Felson, 1986, 1995; Miethe & Meier, 1994; Sampson & Wooldredge, 1987; Tillyer, Fisher, & Wilcox, 2011; Wilcox, Hunt, & Land, 2003). Applied to the prison, researchers have found that some inmates have a greater opportunity for victimization if their routines expose them to high-risk situations, their attributes make them appear more suitable as targets, or their surroundings lack a capacity for controlling potential offenders (Steiner, Ellison, Butler, & Cain, 2017; Wooldredge & Steiner, 2014). While similarities between prison and jail permit parallel applications of the general opportunity framework for informing the prediction of victimization risk among jail inmates, it is important to detail the unique aspects of jails and their respective inmate populations that may result in distinct sources of violent victimization.

## **INMATE LIFESTYLES AND ROUTINES**

Hindelang and colleagues (1978) argued that individuals' daily activities operate indirectly on their risk of victimization to the extent that such activities increase or decrease their level of exposure to risky situations (e.g., people, places, and times conducive to victimization). Cohen and Felson (1979) made a similar argument when they posited that victimization is most likely to occur when individuals' routines reduce guardianship over potential targets, allowing motivated offenders to succeed in their endeavors.

Researchers have discovered that inmate routines in prison may coincide with differences in exposure to high-risk situations and/or situations where guardianship is less prevalent or effective (Edgar & Donnell, 1998; Listwan, Daigle, Hartman, & Guastafarro, 2014; Steiner et al., 2017; Wooldredge, 1994, 1998). Some activities or routines such as work assignments may reduce the number of inmates under officer supervision, and thereby offer fewer opportunities for violent victimization

because officers can more effectively manage and supervise smaller groups of inmates (Pérez, Gover, Tennyson, & Santos, 2010; Wooldredge, 1998). Other activities might increase the number of inmates under officer supervision and are less structured and/or monitored (e.g., recreation/leisure activities), providing inmates with greater opportunity to perpetrate violence (Jiang & Fisher-Giorlando, 2002; Wooldredge, 1998).

Inmates' routines may be associated with their risk of victimization in jail, but substantial differences in these activities may alter the relationships found by prison researchers. Work assignments and recreational activities, for example, tend to be more limited in jail than in prison (Ellison, 2017; Subramanian et al., 2015). Short periods of jail confinement necessitate individualized positions that require little training (e.g., performing janitorial duties), and a work assignment may be one of the only ways for inmates to avoid an otherwise sedentary and often dangerous existence in their housing unit (Solomon, Osborne, LoBuglio, Mellow, & Mukamal, 2008). By contrast, prison work is more varied and certain work assignments may function to raise the risk of victimization because the group-based nature of these positions place inmates in high-risk places (e.g., cafeteria) with low levels of officer supervision (Wooldredge & Steiner, 2014). Recreational activities in jail might also be associated with a greater risk of victimization relative to such activities in prison because in jail, these activities are largely unstructured or leisure-based (e.g., reading, watching television), and generally take place in housing units or attached recreation yards where officers' ability to provide supervision may be overextended (Irwin, 1985; Zupan, 1991).

## **TARGET VULNERABILITY AND ANTAGONISM**

Offenders may perceive that some individuals are more suitable targets if their attributes or behaviors raise their symbolic or economic value as victims (i.e., attractiveness), and/or suggest to offenders that resistance would be minimal (i.e., vulnerability; Cohen & Felson, 1979; Finkelhor & Asdigian, 1996). To offenders, the potential yield or gain of a predatory act is weighed against the amount of effort required for successful perpetration (Hough, 1987; Miethe & Meier, 1994), which is based in part on a target's capacity for self-defense or their ability to deter victimization (Cohen & Felson, 1979; Finkelhor & Asdigian, 1996; Sparks, 1981). Sparks (1981) and Finkelhor and Asdigian (1996) expanded on the notion of target suitability by arguing that some individuals' attributes antagonize or provoke offenders or, in other words, arouse their anger, jealousy, or destructive impulses.

Regarding the characteristics that reflect target vulnerability in jail, younger inmates or those who have spent less time in correctional environments might be less knowledgeable about avoiding physical confrontations (Kerbs & Jolley, 2007; Toman et al., 2018; Wolff et al., 2009). Likewise, smaller inmates may be less capable (or perceived as less capable) of self-defense and subsequently have a greater likelihood of victimization (Morash, Jeong, Bohmert, & Bush, 2012). Prior abuse may also be a risk factor for subsequent victimization during incarceration (Morash et al., 2012; Steiner et al., 2017; Wolff, Blitz, Shi, Siegel, & Bachman, 2007, 2009); individuals who were previously exposed to violence may exhibit symptoms of posttraumatic stress disorder (PTSD), depression, anxiety, and trauma (Buka, Stichick, Birdthistle, & Earls, 2001; Fowler, Tompsett, Braciszewski, Jacques-Tiura, & Baltes, 2009; Kilpatrick et al., 2003), which may be interpreted as evidence of vulnerability or susceptibility to would-be offenders

(Sparks, 1981). The risk of victimization might be greater for individuals with drug or alcohol problems because withdrawal symptoms could create the perception of weakness or vulnerability (Wood & Buttaro, 2013), and inmates with a mental illness might be more vulnerable because their capacity for detecting aggressive cues is more limited (Wolff et al., 2007, 2009). Individuals with substance abuse issues and those with mental health issues might both be less capable of avoiding precarious situations and/or reporting victimization (e.g., Nettelbeck & Wilson, 2002), making them more vulnerable and attractive for predatory offenders who wish to avoid detection and punishment (Kuo, Cuvelier, & Huang, 2014; Listwan et al., 2014; Wolff et al., 2009). Given the high rate of substance use problems and mental illness in jails (James & Glaze, 2006), such factors may be especially relevant to victimization in jail settings.

Jails also confine individuals who have not been sentenced, and these inmates may be more susceptible to violent victimization because they have more to lose by defending themselves. Fighting back may result in a disciplinary infraction (e.g., Wooldredge, Griffin, & Pratt, 2001), provide the judge and/or jury with reason to question the defendant's character (if applicable), and negatively impact the disposition of their case. Moreover, as inmates weigh possible options for a plea bargain or navigate trial, they may experience a great deal of stress (Irwin, 1985), outward signs of which may contribute to perceptions of their vulnerability.

Other inmates might be more vulnerable to victimization due to differences in social backgrounds (Irwin & Cressey, 1962). Researchers have found that White inmates are more likely to be assaulted than minority inmates (Wolff, Shi, & Blitz, 2008; Wolff et al., 2009; Wooldredge & Steiner, 2012). The dissimilar backgrounds and experiences of minority versus White inmates may obstruct interaction and communication between these groups (e.g., Jacobs & Kraft, 1978), leaving Whites more isolated and vulnerable; this problem may be compounded in jails because Caucasians are underrepresented relative to the general population (Glaze & Kaeble, 2014; James, 2004). Regardless of race or ethnicity, individuals with conventional attachments might be more vulnerable given their lack of confinement experience and more proximate ties to the community. Furthermore, in an environment where conventional behaviors are rare (James, 2004), jail inmates who maintain such attachments may be more vulnerable to victimization because they become social pariahs (Ellison, 2017; Irwin, 1985).

Attributes that contribute to the perception of vulnerability could also be related to behaviors that antagonize other inmates. Individuals with conventional attachments, for example, might garner animosity or disdain from other inmates because their lack of familiarity with jail routines (e.g., timing of meals, headcounts, or control over television) reduces the efficiency of the housing unit (e.g., being out of place and delaying a headcount), possibly disrupting coveted access to privileges such as recreation or visitation (Ellison, 2017; Irwin, 1985). Researchers have also found that several of the characteristics discussed in the context of vulnerability to victimization are salient correlates of engaging in rule-breaking (Toman, 2017), and these behaviors may encourage retaliation from other inmates. Individuals who were abused prior to their incarceration may come to jail with hostile attribution biases whereby they infer nefarious intent during benign interactions with others (Dodge, 1980; Dodge, Bates, & Pettit, 1990), producing violent reactions that provoke would-be offenders. Similarly, inmates with drug addiction or mental health issues might tend to conduct themselves in an

unpredictable and/or provocative manner (Irwin, 1985), increasing the odds of irksome or threatening behavior that antagonizes potential offenders (Ellison, 2017; Morash et al., 2012; Wolff et al., 2007, 2009).

Other attributes might be more directly provoking or antagonistic to would-be offenders, such as an inmate's offending history and gender (Finkelhor & Asdigian, 1996; Sparks, 1981; Steiner et al., 2017). Inmates who perpetrate violence in jail, or those who were incarcerated for violent offenses, for example, might be at greater risk of victimization because they invite retaliation (Edgar & Donnell, 1998; Steiner et al., 2017; Wooldredge & Steiner, 2014). Inmates incarcerated for sex offenses might be more likely to suffer violent victimization given the stigma that surrounds their crimes (Irwin, 2005; Steiner et al., 2017; Wolff et al., 2009). Male inmates might have higher odds of violent victimization than female inmates because men are generally socialized to be assertive or aggressive in social situations (Hindelang et al., 1978; Miethe & Meier, 1994), and are therefore more likely to participate in inflammatory behavior (e.g., threaten other inmates) that may provoke offenders; this might be especially true in a prison or jail setting where a culture of hypermasculinity and the campaign for respect enhance the male proclivity for violence (Dolovich, 2012; Irwin, 2005).

## **GUARDIAN SHIP**

Cohen and Felson (1979) argued that ecological units vary in their capacity for victimization based on the level of guardianship in those units, and that physical and social restrictions decrease victimization risk by (a) directly inhibiting potential offenders from perpetrating violence or (b) increasing potential offenders' perceived likelihood of apprehension and associated consequences. In a prison or jail, tighter control over the inmate population may lower the level of violence (Dilulio, 1987), and guardianship may be represented by direct measures of supervision as well as environmental conditions that indirectly affect opportunities for inmate victimization (Steiner et al., 2017).

Lower inmate-to-officer ratios, for instance, may deter would-be offenders because a greater officer presence increases the likelihood of detection and subsequent punishment (Cohen & Felson, 1979; Wooldredge & Steiner, 2014). Facility crowding, on the other hand, may increase the opportunity for inmate victimization because crowding restricts administrative flexibility to provide specific housing assignments (i.e., separate the nonviolent from the violent), results in fewer structured activities for inmates (e.g., work assignments, substance use classes), increases the average number of inmates under officer supervision (Klofas, Stojkovic, & Kalinich, 1992; Wooldredge & Steiner, 2009), and leaves inmates with fewer incentives to comply with institutional rules (Colvin, 1992; Huebner, 2003). Given that jails already operate with fewer programs and/or work assignments for inmates, and jails struggle to provide placements for specific types of inmates (e.g., substance abuse units), crowded jails might be more likely to place potential targets in proximity to would-be offenders in the absence of capable guardianship.

Similarly, more transient jail populations—jails with a high number of admissions and discharges—may offer greater opportunity for inmate victimization because increases in admissions may result in greater numbers of vulnerable targets, while increases in discharges could result in greater concentrations of high-risk inmates (i.e., low-risk individuals are typically released).

Researchers have found that jails with greater population turnover have higher rates of assaults (Tartaro, 2002; Tartaro & Levy, 2007), which may directly increase the number of victims and lead to more inmate–inmate victimization if individuals retaliate. Finally, facilities built in recent years (i.e., since the 1980s) have typically been designed according to the “new generation jail” philosophy, which is characterized by architectural changes that improve the breadth and quality of supervision or guardianship relative to older facilities (Zupan, 1991). One of the defining features of contemporary facilities is the constant presence of officers (i.e., direct supervision), whose improved ability to supervise inmates and detect misconduct could deter would-be offenders and decrease opportunities for victimization (Bayens, Williams, & Smykla, 1997; Senese, 1997; Tartaro & Levy, 2007; Zupan, 1991).

## **CURRENT STUDY**

This study involves an examination of the predictors of violent victimization among jail inmates. Drawing from the general opportunity perspective, we examine whether the risk of victimization is higher for inmates when their routines expose them to high-risk situations, their attributes make them appear more suitable as targets, or their surroundings lack a capacity for controlling potential offenders. Specifically, we examine the validity of the following hypotheses:

**hypothesis 1:** Jail inmates with greater involvement in lifestyles/routines that expose them to more risky situations (i.e., less time in a work assignment, more time in recreation) will have a greater risk of victimization.

**hypothesis 2:** Jail inmates with characteristics that reflect vulnerability (i.e., younger age, less jail experience, small physical stature, prior abuse, drug/alcohol dependence, mental health problems, not sentenced, White, involvement in conventional behaviors) or characteristics that antagonize other inmates (i.e., perpetrated violence in jail, incarceration for a violent offense, incarceration for a sex offense, male) will have a greater risk of victimization.

**hypothesis 3:** Jails with characteristics that reflect lower levels of guardianship (i.e., more inmates per officer) or characteristics that inhibit guardianship (i.e., crowding, fewer inmates with a work assignment, greater transiency, older construction) will have higher rates of victimization.

## **METHOD**

### **Participants**



The data used in this study were collected as a part of the most recent Survey of Inmates in Local Jails (SILJ), one of the only nationally representative samples of jail inmates that contains information on individuals' prearrest characteristics and their behavior in jail. The

U.S. Census Bureau collected the 2002 SILJ for the Bureau of Justice Statistics using a two-stage sampling design, where facilities were first selected from a sampling frame of all jails listed in the 1999 National Jail Census, followed by a systematic random sample of inmates housed within those jails. Of the 465 jails selected for participation, 39 refused participation, and nine were no longer in operation at the time of the study. From the remaining 417 jails, 7,750 inmates were selected, 6,982 of which completed interviews (participation rate = 90%). Based on information in both the SILJ and the 1999 Jail Census, we identified facilities in the sample and removed all jails with a rated capacity under 50 inmates ( $n = 37$ ) given that small jails face unique issues (i.e., levels of staffing, budget restraints, service availability; see Kerle, 1998, 2003). Inmates were then excluded from the sample if they had missing data on time served or offense of commitment ( $n = 120$ ), yielding a final study sample of 6,596 inmates incarcerated in 380 facilities. We compared the descriptive statistics for the outcome and inmates' demographic characteristics for the reduced sample with those based on the full sample (without missing data removed), and no significant differences in the distributions were observed. The Census Bureau provided a sampling weight based on the inverse of each inmate's odds of selection and a noninterview adjustment. We normalized these weights and applied them to the analyses reported below.

## Measures

Each of the measures included in the analysis are described in Table 1. The outcome measure, violent victimization, was based on inmates' responses to a survey item that inquired, "Since your admission, have you been injured in a fight, assault, or incident in which someone tried to harm you?" Self-report measures have been criticized for under/ over exaggeration as well as recall error (e.g., Hindelang, Hirschi, & Weis, 1979), but the advantages of self-report data for studying victimization risk are well documented (Cantor & Lynch, 2000). The wording of the survey item also made it difficult to rule out the possibility that inmates had been victimized by staff as an antecedent to, or as consequence of, their own assault on officers. We conducted separate analyses after removing inmates who had assaulted correctional officers ( $n = 37$ ), but we report the finding from the full sample because the results of the two analyses were substantively similar. We also included a measure of days served in the analyses to limit the effects of recall error and control for exposure time. In addition, we included a measure of whether individuals reported being written up for a physical or verbal assault on another inmate to control for actions that may have directly precipitated their victimization.

Based on the theoretical framework, the related review of the literature, and the unique aspects of jails and jail populations, we selected relevant measures of opportunity concepts from the SILJ and the National Jail Census for inclusion in our model. The inmate-level measures included in the analysis assessed inmate routines (hours spent in work assignment per week, hours spent in recreation per day), target vulnerability (age, first-time inmate, time served, body mass index,

abused as a child, abused/assaulted as adult, drug or alcohol dependence, mental health problems, awaiting arraignment, awaiting trial, awaiting sentencing, awaiting revocation hearing, White, conventional behaviors), and target antagonism (engaged in assault since admission, incarcerated for violent crime, incarcerated for sex crime, male). The facility-level indicators of guardianship or inhibitors of guardianship included inmate-to-officer ratio, crowding, proportion inmates with a work assignment, transiency, and years in operation.

While the operationalization of some measures is easily understood by viewing Table 1 (e.g., age, incarceration for a violent offense), we explain how less intuitive measures were operationalized here. Hours spent in work assignment per week reflects the amount of time inmates spent working a jail-related job, excluding work release, in the preceding week. The distribution of hours spent in a work assignment was skewed, so we top coded the distribution at 40 hr and took the natural log of the scale. Hours spent in recreation per day measured the amount of time inmates spent exercising, reading, watching television, and/or doing other recreational activities in the 24 hr prior to survey completion.<sup>1</sup> Body mass index was calculated by dividing an inmate's weight (in pounds) by their height (in inches squared) and multiplying by 703. Abused as a child and abused as an adult assessed whether (and when) inmates had been physically or sexually abused prior to their incarceration; both measures were examined because researchers have demonstrated differential effects of child versus adult victimization on prison maladjustment (Meade & Steiner, 2013). Drug or alcohol dependence captured whether inmates met the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) criteria of drug or alcohol dependence. Mental health problems was a dichotomous measure of whether inmates reported an admission to a mental hospital, received mental health counseling/services, or were prescribed psychotropic medication in the year prior to arrest (James & Glaze, 2006). Detention status was captured with four measures—awaiting arraignment, trial, sentencing, or revocation hearing—which were considered relative to a reference category of inmates who were sentenced or sentenced and awaiting transfer to another facility or jurisdiction (e.g., prison). Conventional behaviors was an additive scale comprised of three survey items that tapped whether inmates were married, had a high school diploma, or were employed before their arrest (Wooldredge et al., 2001). Minority inmates and those incarcerated for property, drug, or public order offenses were treated as reference groups for race/ethnicity and controlling offense. At the facility level, crowding was operationalized as facility average daily population divided by design capacity, while transiency was measured as the natural log of annual bookings plus annual discharges divided by design capacity. There were no multicollinearity problems when all predictor variables were included in the final model.

**Table 1: Descriptive Statistics for Study Variables (Weighted)**

Variable	<i>M</i>	<i>(SD)</i>	Range
Outcome			
Violent victimization	0.07	(0.26)	0-1
Level 1: Inmates			
Inmate routines			
No. of hours in work assignment per week (natural log)	0.69	(1.33)	0-3.71
No. of hours in recreation last 24 hr	6.42	(4.92)	0-24
Target vulnerability			
Age at survey (in years)	31.93	(10.16)	13-82
First-time inmate	0.45	(0.50)	0-1
Days served in facility (natural log)	3.93	(1.39)	0-7.00
Body mass index	26.08	(4.57)	9.63-66.17
Abused as a child	0.11	(0.31)	0-1
Abused/assaulted as adult	0.05	(0.22)	0-1
Drug or alcohol dependence	0.34	(0.48)	0-1
Mental health problems	0.30	(0.46)	0-1
Awaiting arraignment	0.09	(0.29)	0-1
Awaiting trial	0.24	(0.43)	0-1
Awaiting sentencing	0.07	(0.26)	0-1
Awaiting revocation hearing	0.07	(0.25)	0-1
White	0.37	(0.48)	0-1
Conventional behaviors	1.20	(0.82)	0-3
Target antagonism			
Engaged in assault since admission	0.06	(0.24)	0-1
Incarcerated for violent crime	0.22	(0.42)	0-1
Incarcerated for sex crime	0.03	(0.17)	0-1
Male	0.88	(0.32)	0-1
$N_1 = 6,596$			
Level 2: Jails			
Guardianship			
Inmate-to-officer ratio	5.03	(2.56)	1.33-29.19
Crowding	0.99	(0.27)	0.07-3.07
Proportion inmates with a work assignment	0.25	(0.21)	0-1
Transiency (natural log)	4.00	(0.83)	0.89-7.14
Years in operation (natural log)	2.80	(0.88)	0-5.29
$N_2 = 380$			

## ANALYTIC STRATEGY

Due to the hierarchical structure of the data (inmates nested within facilities), we utilized hierarchical Bernoulli regression to (a) base hypothesis tests at each unit of analysis on the appropriate sample size (i.e., inmate vs. jail), (b) adjust for the correlated error across inmates within the same jail, and (c) remove (through group-mean centering the Level 1 measures) between-jail variation in inmate characteristics that might correspond with differences in victimization rates across jails. Unconditional models (with no predictors) detected significant variation in victimization at Level 1 (i.e., inmate) and Level 2 (i.e., jail), justifying the use of a multilevel model. Level 1 fixed effects were then estimated given that none of the Level 1 relationships varied across facilities (i.e., effects were not stronger in some facilities vs. others). The Level 1 measures were group-mean centered to

remove between-jail variation in inmate characteristics that might contribute to variation in rates of victimization across facilities (Raudenbush & Bryk, 2002). Finally, Level 2 main effects were examined using empirical Bayes estimates of the Level 1 intercepts because the reliability of the model intercept dipped below .3.

## **RESULTS**

Prior to delving into the results of the multivariate analysis of violent victimization, it is worth noting that 7% of the inmates in the national sample were injured as a result of a fight or assault since entering jail. While there is no measure on the survey that is directly comparable in the National Crime Victimization Survey, estimates of assault victimization in the past 6 months among the general population are much lower (1.7%), as are estimates of suffering an injury as a victim of a violent crime in the past 6 months (i.e., 0.52%, Truman & Langton, 2015). Researchers have estimated a similar level of physical victimization among samples of inmates in prison (Wooldredge & Steiner, 2014), and jail (Ellison, 2017), however.

### **Inmate – level Effects on the odds of Violent Victimization**

Table 2 displays the inmate-level effects on the likelihood of violent victimization in jail. With regard to inmate routines, individuals who worked more hours in a work assignment had lower odds of violent victimization. Based on the odds ratio generated from the analysis, for every one-unit increase in the natural log of hours worked, inmates' odds of violent victimization decreased by 11%. The number of hours spent in recreation did not have a significant effect on the likelihood of victimization.

Regarding measures of target vulnerability, inmates who were younger, were first-time inmates, had served more time in jail, were abused as children or adults, had mental health problems, or were awaiting trial had higher odds of experiencing violent victimization in jail. Other measures of target vulnerability—body mass index, drug or alcohol dependence, awaiting arraignment, awaiting sentencing, awaiting revocation hearing, White, and conventional behaviors—did not exert significant effects on the odds of victimization. Based on the odds ratios generated from the analysis, some of the observed effects appear greater in magnitude versus others. For example, the odds of victimization were 37% higher for first-time inmates relative to inmates who had been incarcerated before. Compared with inmates who had not been abused, the odds of violent victimization were 60% higher for inmates who were abused as children and 105% higher for inmates who were abused as adults. Inmates with mental health problems had 94% higher odds of violent victimization than those who did not have such problems, and the odds of violent victimization were 31% higher for those who were awaiting trial relative to sentenced inmates or those awaiting transfer to prison or another facility.

**Table 2: Inmate effects on the likelihood of Violent Victimization**

Inmate-level predictor	<i>b</i>	(SE)	exp( <i>b</i> )
Intercept	-3.12	(.07)	0.04
Inmate routines			
No. of hours in work assignment per week (natural log)	-.11*	(.05)	0.89
No. of hours in recreation last 24 hr	.01	(.01)	1.01
Target vulnerability			
Age at survey (in years)	-.04**	(.01)	0.96
First-time inmate	.31*	(.12)	1.37
Days served in facility (natural log)	.42**	(.06)	1.53
Body mass index	-.005	(.01)	0.99
Abused as a child	.47**	(.16)	1.60
Abused/assaulted as adult	.72*	(.28)	2.05
Drug or alcohol dependence	-.11	(.12)	0.89
Mental health problems	.66**	(.13)	1.94
Awaiting arraignment	-.47	(.26)	0.60
Awaiting trial	.30*	(.13)	1.31
Awaiting sentencing	-.24	(.21)	0.57
Awaiting revocation hearing	.05	(.39)	1.01
White	.04	(.13)	1.04
Conventional behaviors	-.12	(.08)	0.89
Target antagonism			
Engaged in assault since admission	1.58**	(.17)	4.83
Incarcerated for violent crime	.22	(.12)	1.25
Incarcerated for sex crime	.14	(.33)	1.17
Male	.80**	(.17)	2.20
Proportion variation within jails	.92		
Proportion variation within jails explained	.28		

Note. Maximum likelihood coefficients reported with robust standard errors.

\* $p < .05$ . \*\* $p < .01$ .

In regard to measures of target antagonism, the odds of violent victimization were higher for individuals who had engaged in assault since their admission and for male inmates versus female inmates. Specifically, the odds of violent victimization were approximately 383% higher for inmates who had perpetrated an assault on another inmate relative to those who had not participated in such behavior, and 120% higher for males compared with females. Measures of inmates' commitment offenses—incarcerated for violent offense and incarcerated for a sex crime—did not significantly affect their likelihood of victimization. Together, the significant inmate-level predictors explained 28% of the within jail variation in violent victimization.

### Jail-Level Effects on Levels of Violent Victimization

Table 3 displays the jail-level effects of indicators of guardianship on the rate of violent victimization across facilities. Facilities with a greater proportion of inmates with work assignments and those with more transient populations had lower levels of violent victimization. Thus, contrary to expectations, facilities with greater population stability had more violent victimization occurring across their respective inmate populations. Facilities that were in operation for a greater number of years also had higher rates of violent victimization. Crowding and the inmate-to-officer ratio did not significantly affect levels of victimization across facilities. The significant jail-level predictors explained 40% of the variation in violent victimization between jails.

**Table 3: Level 1 empirical bayes estimates as Outcomes at Level 2**

Jail-level predictor	<i>b</i>	(SE)	$\beta$
Intercept	-3.24	(.02)	
Guardianship			
Inmate-to-officer ratio	-.004	(.01)	-.02
Crowding	.07	(.07)	.04
Proportion inmates with a work assignment	-1.11**	(.09)	-.52
Transiency (natural log)	-.22**	(.02)	-.42
Years in operation (natural log)	.06**	(.02)	.12
Proportion variation between jails	.08		
Proportion variation between jails explained	.40		

*Note.* Maximum likelihood and standardized coefficients reported with robust standard errors.

\* $p < .05$ . \*\* $p < .01$ .

## DISCUSSION

Prisons and jails facilitate a context where potential victims and offenders are forced to meet in time and space, and such conditions offer an ideal context for predatory victimization (Finkelhor & Asdigian, 1996; Hindelang et al., 1978; Miethe & Meier, 1994). Although studies of inmate victimization are rare, there is sufficient evidence to suggest that the opportunity framework is relevant for predicting victimization in prison (Wooldredge & Steiner, 2012, 2014). In this study, the general opportunity framework was relevant for predicting victimization risk among jail inmates, yet some findings were unique relative to prison-based studies. Our results indicate that inmates' routines and activities (especially work hours), characteristics that reflect vulnerability (e.g., prior abuse) or antagonism (e.g., prior assault), and facility characteristics that represent guardianship (e.g., more years in operation) impact inmates' odds of victimization in jail settings. More broadly, our study supported the notion that the general opportunity framework is a flexible and robust explanation for victimization risk regardless of the setting in which individuals are placed.

Regarding jail inmates' routines and activities (Hypothesis 1), we found that individuals who worked more hours in a facility work assignment were less likely to suffer violent victimization. From an opportunity perspective, jail work assignments may place inmates in structured settings where guardianship is more prevalent, or officers can supervise inmates more effectively (e.g., janitorial or kitchen work) relative to the riskier situations encountered in housing units (Wooldredge & Steiner, 2014). Wooldredge and Steiner (2014) found that prison inmates who worked more hours in work assignments were more likely to be physically victimized, but suggested that this finding may be unique to the prison environment, where certain work assignments increase rather than decrease exposure to risky situations (e.g., working prison industry jobs). In jail, inmates' routines are more sedentary than in prison; jail inmates spend most of their time in large housing units where supervision is more tenuous owing to the number of inmates (relative to officers) being supervised. Thus, activities outside housing units may reduce the likelihood of victimization simply by removing inmates from situations where predatory victimization is more likely to occur (e.g., housing units

and/or attached recreation yards), and by placing inmates in situations where individuals with a propensity for violence are less prevalent (i.e., well-behaved inmates are selected for work assignments) and/or supervision is more effective. This might be particularly true for jail work assignments, which tend to be more isolating compared with group-based work assignments in prison.

Consistent with the opportunity framework, we found that inmates with characteristics reflecting vulnerability had higher odds of victimization (Hypothesis 2). Younger inmates, first-time inmates, those who were abused, and inmates with mental health problems were all more likely to be victimized, which suggests that would-be aggressors may select targets by considering their symbolic or economic value (i.e., attractiveness) and/or the level of resistance they might provide (i.e., vulnerability). These inmates may be perceived as more vulnerable targets because their immaturity, lack of confinement experience, or mental deficits may limit their ability to recognize aggressive cues, exude a defensive posture in front of other inmates (i.e., be able to repel an attack), and/or possess the capacity to report victimization, should it occur. To a predatory offender, such inmates represent ideal targets because they require less effort and offer a lower risk of detection and punishment (Hough, 1987; Miethe & Meier, 1994). The observed effect of time served may be an artifact of exposure time—inmates who have served more days have more opportunity to be victimized—as well as a reflection of target attractiveness, given that jail inmates who have served more time tend to hold higher status (i.e., offer a greater potential yield; Ellison, 2017; Irwin, 1985; Wooldredge & Steiner, 2014; Wooldredge, 1998). Inmates awaiting trial were more likely to suffer victimization than those who were convicted, which may reflect their inability to fight back or greater likelihood of exhibiting signs of stress or naiveté that fellow inmates may prey on (Irwin, 1985). The remaining indicators of vulnerability—body mass index, drug or alcohol dependence, awaiting arraignment, awaiting revocation hearing, White, and conventional behaviors—did not impact inmates' odds of victimization, suggesting that not all characteristics of vulnerability are important to this outcome.

With regard to characteristics that could antagonize other inmates, individuals had greater odds of violent victimization if they had engaged in assault since their admission or if they were male. Inmates who possess such attributes may provoke victimization because they carry (or are perceived to carry) a proclivity to be involved in aggressive or violent behavior relative to their counterparts. Inmates who perpetrated violence, for example, were at a greater risk of victimization because they may have invited retaliation; such a finding comports with researchers' observations regarding the victim-offender overlap among those in prison (Edgar & O'Donnel, 1998; Toman, 2017) and in the general population (Berg, Stewart, Schreck, & Simons, 2012; Jennings, Piquero, & Reingle, 2012; Lauritsen, Sampson, & Laub, 1991). In addition, males are socialized to be more aggressive and dominant in social situations relative to females (Miethe & Meier, 1994), which may indirectly correspond with a higher risk of violent confrontations for male inmates relative to female inmates. However, incarceration for a violent offense or a sex offense did not affect the odds of violent victimization, suggesting that these characteristics are less relevant in terms of target selection in jail settings.

Facility characteristics that represent elements of guardianship or inhibitors of guardianship were also significant predictors of victimization between jails (Hypothesis 3). Facilities that had lower proportions of inmates in work

assignments, had lower rates of transiency, and were in operation for a greater number of years had more violent victimization among their inmate populations. Facilities with greater proportions of inmates in work assignments may offer fewer opportunities for inmate victimization because work assignments act as remunerative controls that lower the level of jail violence (see Colvin, 1992; Huebner, 2003, for an application of this idea to prisons) and may divide inmates into smaller groups where supervision becomes more effective. Similarly, officers in newer jails should be able to maintain more effective levels of supervision owing to design improvements (i.e., indirect to direct supervision) that reduce opportunity for victimization (e.g., blind spots; Bayens et al., 1997; Senese, 1997; Tartaro & Levy, 2007; Zupan, 1991). And, while a significant positive effect of transiency on victimization rates was expected, we found an inverse relationship—jails with more transient inmate populations had lower levels of victimization. Additional research is needed, but we speculate that because jails are designed for short-term confinement, facilities that defy their intended purpose may strain their resources and have more problems such as inmate victimization. It is also possible, given the outcome measure, that our finding may be a reflection of exposure time; a high rate of turnover suggests that inmates in these jails serve shorter periods of confinement, affording them less time (opportunity) to be victimized. We explored this possibility, in part, by conducting ancillary analyses after excluding inmates who had served less than a week in jail. The results of the analyses were not substantively different relative to those presented in Tables 2 and 3.

Other measures of the facility environment were less influential for inmates' victimization patterns. A facility's ratio of inmates to officers and level of crowding did not affect victimization rates across facilities. The physical presence of officers relative to inmates may have less to do with lowering levels of victimization than inmates' perceptions of officers and/or how they treat inmates (Wooldredge & Steiner, 2014). To a would-be aggressor, the likelihood of detection and punishment might be especially high if inmates believe officers are vigilant and will provide protection in the event of an attack (Miethe & Meier, 1994; Wooldredge & Steiner, 2014). Moreover, the lack of a crowding effect is not entirely surprising given the inconsistent findings across studies of this relationship in prison. It could be that the size of a facility (i.e., average daily population and/or design capacity), rather than its degree of crowding, may affect its level of victimization (see Steiner & Wooldredge, 2009, for a review). We examined this possibility in preliminary analyses of these data, however, and all models produced similar results. Researchers should continue to analyze how jail characteristics may affect levels of victimization across facilities.

Researchers might also seek to address some of the limitations of this study. First, we were limited by the measures of inmate routines available in the SILJ. Ideally, longitudinal data should be used to follow inmates from admission through discharge and determine time ordering of routines and victimization, which was not possible using data produced from this retrospective cross-sectional survey design. Work assignment and recreation measures should, at the very least, assess inmate activity "per week" to lessen concerns germane to cross-sectional research designs. Future research is needed to better understand the mechanisms underlying work assignments in jails (e.g., as a function of length of stay, risk, or opportunity). Second, the SILJ asked inmates about their behavior since their most current admission, and so it was not possible to account for the



effects of involvement in rule-breaking and/or exposure to victimization during prior jail or prison commitments. Third, the wording of the survey item used to create the dependent variable—injured in assault since admission—did not permit us to account for any degree of victim precipitation that may have led up to the victimization. We considered assault misconduct an antagonistic behavior, but it is important for researchers to examine the victim–offender overlap as it pertains to other types of rule-breaking as well (e.g., theft, drug/alcohol misconduct), especially under the opportunity framework.<sup>2</sup> Fourth, the data used here may contain some degree of error because they are based on self-reports, which are vulnerable to under/over exaggeration as well as recall error (Hindelang et al., 1979). However, because official data tend to underreport the prevalence of victimization, self-reported data are preferred for understanding victimization risk (Hindelang, 1976; Hindelang et al., 1978). Finally, these data were not inclusive of all factors that may be linked to victimization among jail inmates. For example, researchers of general population samples have shown that gang membership is a consistent predictor of violent victimization (Anderson, 1999; Decker & van Winkle, 1996). While studies of victimization in prison have not revealed such an effect (e.g., Wooldredge & Steiner, 2014), researchers should consider whether gang ties affect the relationships described above. In addition, researchers have suggested that gender identity may be a predictor of victimization in prison (Jenness, Maxson, Sumner, & Matsuda, 2010). Although the measures were not available in the SILJ, researchers may want to consider whether gender identity and/or sexual orientation affect inmates' propensities for victimization in jail.

Despite the limitations of this study, the findings provide some needed insight for theory

and practice by highlighting the sources of victimization within and between jail populations. Some inmates (e.g., first-time inmates) may be particularly susceptible to violent victimization, and jail administrators may want to review their intake and classification instruments to ensure that inmates receive an appropriate level of supervision and protection (e.g., placement in protective custody). Early identification of potential targets of victimization and their placement in separate housing units or environments may protect them from assault and reduce the potential for costly lawsuits associated with PREA. The Inmate Risk Assessment for Violent, Nonsexual Victimization (RVNSV), for example, could be used to identify individuals that might be most at risk of victimization during incarceration (Labrecque, Smith, & Wooldredge, 2014), though it may also be prudent to develop and validate a variant of the RVNSV for use with jail rather than prison populations. Most assessments tools are created and validated with prison- rather than jail-based samples, which may be problematic because jails hold distinct types of individuals that are at risk of victimization such as first-time inmates, individuals incarcerated for nonviolent offenses, and pretrial detainees. In addition, jail budgets are more strained (Subramanian et al., 2015), and the populations are more transient relative to prison (Tartaro, 2002), requiring jail staff to make quick yet accurate assessments of inmates' risk levels (i.e., both offending and victimization). Thus, an abbreviated version of the RVNSV might be needed, and the results of such an assessment could be useful to streamline the classification process if offenders are subsequently sent to prison. given that inmate victimization is tied to recidivism after release, and most inmates are released after an average of just 23 days in jail (Subramanian et al., 2015), identifying and protecting the individuals that might

be more susceptible to victimization in jail may prevent subsequent offending and improve public safety (Listwan et al., 2013; Toman et al., 2018).

At the facility level, study findings suggest that involving inmates in constructive activities such as work assignments may lower rates of inmate victimization across jails, and administrators may be well served by expanding constructive activities for inmates. Our findings also support the notion that jails should be used for their intended purpose—short-term confinement—because doing otherwise may strain jail capabilities and exacerbate its depriving environment. Under court order to alleviate prison overcrowding, some states have elected to sentence individuals to jail instead of prison and transfer inmates with shorter prison sentences to jails; our findings suggest that such policy initiatives may have unintended consequences for limiting violence in jails (Caudill et al., 2014).

Overall, our findings comport with studies of the sources of victimization among individuals in other settings, including the general population (e.g., Garofalo, 1986; Lauritsen et al., 1991; Mustaine & Tewksbury, 1998; Sampson & Lauritsen, 1990; Sampson & Wooldredge, 1987), and prison (e.g., Steiner et al., 2017; Toman, 2017; Wooldredge, 1998). In addition, our study makes a unique contribution to the small body of existing literature on inmate victimization. Our results show that individuals in jails, like those in other environments, have a greater opportunity to be selected as targets if they appear more vulnerable and/or antagonize potential offenders. Our results also suggest that like prisons, jails vary in their degree of guardianship, and lower levels of guardianship might provide additional opportunities for victimization. Taken together, our results show that the opportunity frame-work applies to victimization risk in similar ways for jail and prison inmates, and provide additional support for the notion that differences in opportunity may explain victimization risk regardless of the setting in which individuals are placed.

## NOTES

1. We considered examining the effects of hours in each recreation activity separately, but were unable to do so because there was insufficient variation in these activities to perform reliable analyses of individual effects. We examined dichotomous measures of whether inmates engaged in each activity; however, the results were substantively similar (i.e., all three activities were nonsignificant predictors of victimization). Finally, as opposed to prison inmates, jail inmates rarely leave their housing unit, all three activities could be completed in a cell or housing unit, and the location of these activities was not available in Survey of Inmates in Local Jails (SILJ). For these reasons, we chose to combine all three activities into a single measure of the number of hours spent in recreation.

2. Researchers have found that theft and drug/alcohol misconduct are tied to victimization risk in prison (Edgar & O'Donnel, 1998; Wooldredge & Steiner, 2013, 2014). Although the SILJ does contain items related to drug, alcohol, and theft misconduct, too few inmates reported engaging in these behaviors to generate reliable estimates of these effects. The lack of variation on these rule violations may be a unique finding for jails because inmates are less likely to be allowed property or have time to develop the network needed to acquire drugs or alcohol.

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