JAILHOUSE BLUES?

The Adverse Effects of Pretrial Detention for Prison Social Order

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Scholarship suggests that individuals' experiences in pretrial detention are especially straining. Relative to state prisons, local jails have high rates of inmate and officer turnover, more limited resources, and provide fewer services. Pretrial detention also constitutes an individual's initial period of incarceration, during which social isolation and fear are experienced acutely but with fewer services in jail. This study assesses whether time spent in pretrial detention adversely affects prison social order. Findings suggest that longer terms of pretrial detention in jails are associated with a modest increase in the likelihood of misconduct later on during a stay in prison. Interaction effects indicate that more time spent in jail prior to imprisonment may be harmful for potentially at-risk inmates—specifically, younger inmates, female inmates, and inmates with mental illness. These results have implications for theory and research on prison experiences and social order and for understanding the adverse implications of pretrial detention and strains incurred in jail.

Keywords: pretrial detention; jail; corrections; prison social order; misconduct

> I, on the other hand, was glad to be leaving the chaos and violence of the jail for the relative stability and comforting finality of prison.
>
> —Erin George, *A Woman Doing Life* (2010, p. 4)

INTRODUCTION

Prior scholarship indicates that time spent in jail constitutes a particularly strenuous experience (George, 2010; Gibbs, 1987; May, Applegate, Ruddell, & Wood, 2014). This literature suggests that the typical jail environment elicits as much, if not more strain and

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trauma than a state prison (May et al., 2014). Jails are responsible for a larger and more diverse clientele with wide-ranging physical and mental health needs (Carson, 2014; Minton & Zeng, 2015) and they typically have more limited resources, which makes them less well equipped to provide treatments and services (Center for Substance Abuse Treatment, 2005; Taxman, Perdoni, & Harrison, 2007). In addition, jails hold individuals during their initial period of incarceration—arguably the most difficult part of the incarceration experience (Harvey, 2005; Liebling, 1999). Scholarship suggests, for example, that suicide is the principal source of unnatural deaths in jails (Frank & Aguirre, 2013), that the suicide rate in jails is 16 times higher than that of the general population (Hayes, 1983), and that suicides are most likely during the first week of incarceration (Mumola, 2005).

Research has paid limited attention to the implications of time spent in jail and the strains and trauma likely experienced there. And no empirical studies exist to our knowledge that have assessed whether more time spent in pretrial detention affects inmate behavior later on in prison. This research gap is anomalous given that almost all inmates stay in jail for some period of time prior to prison incarceration. Long-standing theoretical perspectives about inmate behavior suggest warrant for anticipating that adverse jail experiences (e.g., strain, trauma) may be imported into state prisons and have a salient impact on inmate behavior (Blevins, Listwan, Cullen, & Jonson, 2010; Goffman, 1961; Irwin & Cressey, 1962; Morris, Carriaga, Diamond, Piquero, & Piquero, 2012; Sykes, 1958; Sykes & Messinger, 1960; Wright, 1991).

The goal of this study is to address this research gap by systematically assessing the effects of time spent in pretrial detention (jail) on both the likelihood and seriousness of prison misconduct. We theorize that more time spent in pretrial detention is associated with more strain and trauma, which an inmate then imports with them into the prison. In turn, longer pretrial detention stays will be linked to an increased likelihood of misbehavior in prison. We theorize, too, that longer terms of pretrial detention will be especially deleterious for "at-risk" inmates. Such inmates may have critical needs that go unaddressed during pretrial detention or may otherwise be likely to experience heightened strains in jail. We test, specifically, whether inmates who are younger, incarcerated for the first time, female, have mental health problems, or have substance dependency problems are more adversely affected by longer periods of time in jail.

Toward this goal, this article utilizes nationally representative state inmate data from the Bureau of Justice Statistics' (BJS) Survey of Inmates in State and Federal Correctional Facilities to test our hypotheses. Below we discuss the empirical literature bearing on this research, followed by an overview of the data and methods utilized in this study. We conclude with a discussion of the findings that emerge, along with their implications for theory, research, and policy.

BACKGROUND

THEORY AND RESEARCH ON THE ADVERSE CHARACTERISTICS OF JAILS

Jail problems and challenges stem from a number of unique characteristics. For example, jails, unlike prisons, are local. They are typically managed by counties or municipalities—not states—and thus are subject to more unpredictable and limited operating budgets (Ortiz, 2015; Subramanian, Delaney, Roberts, Fishman, & McGarry, 2015). The local nature of jails causes them to be diverse in form and function (Applegate & Sitren, 2008). Some small county jails hold no more than a handful of individuals, whereas larger jurisdictions can hold up to 20,000 inmates on any given day (Minton, 2011).

Jail populations are also more heterogeneous than prison populations. They include recently charged individuals, inmates awaiting trial, misdemeanor offenders, and some felony-convicted inmates. Relative diversity in jail "clientele" creates more varied inmate service and treatment needs, but jails are less well equipped to address those needs (Fiscella, Pless, Meldrum, & Fiscella, 2004; Taxman et al., 2007; Torrey et al., 2014; Wilson, 2000). Researchers also find that jail inmates have reduced access to services, treatments, and basic amenities (Kellar, 2005; Teplin, 1990; Wilson, 2000; Young, 2003). This heterogeneity, paired with the increased operational challenges jails face, raises critical questions about the adverse consequences that might stem, for individuals and the criminal justice system more broadly, from prolonged stints in pretrial detention (e.g., Banco, 2013; Caudill et al., 2014; Irwin, 1985; Klofas, 1990; Kristof, 2014; May et al., 2014). Such consequences include harms to mental health (Holman & Ziedenberg, 2006; Open Society Foundations, 2010), disparities in court sanctioning decisions (e.g., Oleson, Lowenkamp, Cadigan, VanNostrand, & Wooldredge, 2014; Rankin, 1964; Sacks & Ackerman, 2014; Williams, 2003), and recidivism (Freudenberg, Daniels, Crum, Perkins, & Richie, 2005; Subramanian et al., 2015).

Notably, prior research has not yet explored the implications of prolonged exposure to jail on individuals as they continue on with their incarceration. No studies exist examining how longer exposure to the jail environment affects inmates' abilities to adapt or behave normatively once transferred to state prison. We argue here that there are at least three unique characteristics of jails that make pretrial detention especially challenging and likely to cause behavioral problems among inmates in prison.

First—Jail Environments Are Disorderly and Unstable

Jails are tasked with managing diverse populations with diverse needs (Subramanian et al., 2015). National estimates find that 60% of jail inmates are awaiting court action (i.e., pretrial detention), while the other 40% includes mostly convicted misdemeanants (Minton & Zeng, 2015). Thus, jails are unique in that they contain individuals with highly variable offending histories and include both serious and nonserious convicted offenders. Jails, compared with prisons, also see substantially more inmates. Estimates suggest that jails admit over 11 million individuals annually, compared with 575,779 individuals admitted to state prisons (Carson, 2014; Minton & Zeng, 2015). A jail population—although smaller on any given day than that of a state prison—is in constant flux.

These challenges are likely exacerbated by the staffing problems that commonly plague local jails. Limited data exist on jail staff turnover, but known estimates suggest instability. A national survey of jail staff members indicates that nearly 40% have some intent to quit and 20% are unsatisfied with their job (Leip & Stinchcomb, 2013). Comparable studies of staff turnover in state prisons indicate intentions to quit are lower, between 15% and 20% (see, for example, Blakely & Bumphus, 2004; Lommel, 2004). Inmate and prison officer accounts confirm the adversities each respective group faces as a result of jail instability (Conover, 2000; Crewe, 2009; Reisig, 2002; Stohr, Lovrich, Menke, & Zupan, 1994; see also, Tyler, 2010). Instability is perceived to lead to inconsistent rule enforcement, reduced perceptions of legitimacy, and an unstable incarceration environment. Compared with state prison officers, jail staff also receive on average fewer hours of training, lower pay, and report higher levels of job stress (Byrd, Cochran, Silverman, & Blount, 2000; May et al., 2014; Thompson, 1986).

Jails must confront the challenges stemming from a more diverse inmate population (e.g., Mears & Cochran, 2015; Petersilia, 2003) and greater inmate and staff instability with fewer resources than a typical state-run prison (Heyward, 2015; Hutchinson, Keller, & Reid, 2009; Taxman et al., 2007). Scholarship shows that instability and turnover (among inmates and staff) is often problematic and can cause behavioral issues among inmates (e.g., Conover, 2000; McCorkle, Miethe, & Drass, 1995), exacerbate adjustment and mental health challenges (e.g., Hassine, 2009; Irwin, 1985), and can create a more traumatic incarceration experience (e.g., Blevins et al., 2010; Crisanti & Frueh, 2011). Existing studies, although limited in number, indicate that unique deficiencies and challenges of jail management have measurable consequences for inmate behavior and psychology. Jail inmates are more likely to be victimized, violent, and to engage in self-harm or suicide compared with state prisoners (Frank & Aguirre, 2013; May et al., 2014; Mumola, 2005; Noonan, 2013; see, however, Beck, Berzofsky, Caspar, & Krebs, 2013).

Limited qualitative accounts confirm the unique adversity faced in jails. For example, George (2010), a female state prisoner serving a life sentence (quoted earlier), describes her jail experience as one of the most straining and traumatic phases of her incarceration; more difficult than her time in state prison. She observed a range of typical jail dilemmas and a series of traumatic events involving her bunkmate—a low-level drug offender with profound medical issues untreated while in the jail, who was detoxing and bleeding from infected injection sites. In Irwin's (1985) book *The Jail*, he describes similar, daunting experiences jail inmates face, and the fairly consistent report from inmates that they much prefer the stable prison environment to that of local jails. Accounts from other inmates, experts, and practitioners paint a similar portrait—jails are unruly, scary, and stressful (see, for example, Attwood, 2011; Castle & Martin, 2006; Holzer-Glier, 2016; Noonan, 2012).

Second—Local Jails Are Less Well Equipped to Address Critical Inmate Needs and Challenges

Jail populations have high rates of substance abuse, mental illness, and chronic and infectious diseases. Estimates suggest that over 60% of jail inmates are substance dependent, nearly 65% have a mental illness, a quarter report serious psychological distress, and roughly half report other serious medical conditions (Bronson & Berzofsky, 2017; James & Glaze, 2006; Karberg & James, 2005; Maruschak, Berzofsky, & Unangst, 2015). Studies indicate that jails have more limited resources than prisons to address these and other inmate needs (Center for Substance Abuse Treatment, 2005; Torrey et al., 2014). For example, only 12% of jail inmates report participating in substance abuse treatment since admission (Wilson, 2000). About 44% of jail inmates with mental health problems report receiving counseling in jail (Bronson & Berzofsky, 2017). In comparison, state prison inmates report treatment rates as high as 40% for substance abuse and 63% for mental health (Bronson & Berzofsky, 2017; Mumola & Karberg, 2006).

Third—Pretrial Detention Occurs During the Initial and Most Difficult Part of Incarceration

A large body of literature suggests that the earliest period of incarceration, the initial transition from society to the cell, is the most difficult (Adams, 1992; Cornelius, 2007; Liebling, 1999). This period is marked by feelings of shock (Gibbs, 1982a; Goffman, 1961; Harvey, 2005), especially for potential at-risk inmates like those incarcerated for the first

time and those with mental illness. Gibbs (1982a) described the "street to jail" transition as one consisting of serious difficulties, including the severing of social ties, exposure to an unsafe environment, and an overall lack of activity. Where do most inmates experience this initial incarceration "shock?" In a local jail. Strains of transition may explain disproportionately high rates of suicide in local jails compared with prisons (Mumola, 2005; Noonan, 2013) and the general population (Hayes, 1983). By extension, lengthier stays in jails may increase the strain or trauma of "street-to-jail" adjustment, given that jails may be less well equipped to provide resources to address treatment and coping needs. These lengthier stays may then result in greater adjustment challenges once inmates arrive in state prisons.

STRAIN, TRAUMA, AND THE POTENTIAL IMPACTS OF TIME SPENT IN PRETRIAL DETENTION

In short, a growing body of literature describes jails as especially chaotic and disorderly and as settings where critical needs and challenges may consistently go unaddressed. Life in a state prison may elicit similar challenges, but prior studies and inmate accounts suggest that these problems are more amplified in local jails (see, generally, Gibbs, 1982b; Irwin, 1985; Klofas, 1990; May et al., 2014). Against this backdrop, the main argument of this article is that inmates who spend more time in pretrial detention prior to imprisonment will be more likely to misbehave and engage in misconduct once arriving in state prisons. It flows logically that increased time spent in a local jail increases inmates' exposure to the range of strains and traumas identified in prior jail research.

This argument aligns precisely with prominent theoretical and conceptual frameworks developed to understand individuals' behavior during incarceration. Individual- and facility-level characteristics, such as age, criminal history, socioeconomic status, prison crowding, and sentencing factors have been identified as affecting prison misconduct (Gonçalves, Gonçalves, Martins, & Dirkzwager, 2014). Importation theory is applied widely in prison scholarship to disentangle how experiences prior to imprisonment affect in-prison behavior (e.g., Irwin & Cressey, 1962). Empirical tests of the theory indicate that prior life experiences exert salient influences on in-prison behavior, including prior abuse, poverty, and a lack of social support (Crewe, 2009; Steiner, Butler, & Ellison, 2014). Studies have not included time spent in pretrial detention or jail in empirical tests of importation theory. It is plausible that time spent in jail exerts analogous effects on inmate behavior, especially considering the close proximity of pretrial detention experiences to one's actual imprisonment.

Scholars have also applied general strain theory to studies of inmate behavior (Agnew, 1992, 2006). Noxious conditions experienced during incarceration are numerous and will likely pose problems for prison social order via increased inmate deviance (Blevins et al., 2010; Listwan, Sullivan, Agnew, Cullen, & Colvin, 2013; Morris et al., 2012). General strain theory links strains and negative affective states caused by them to future crime and deviance (Agnew, 1992, 2006; see also, Mazerolle, 1998; Paternoster & Mazerolle, 1994; Piquero & Sealock, 2000). Scholars argue that as individuals experience more negative life events, or as strains accumulate, the likelihood of deviance and crime increase (Agnew, 1992; Agnew & White, 1992; Aseltine, Gore, & Gordon, 2000; see also Hoffman & Miller, 1998; Mazerolle & Maahs, 2000).

The hypothesis of this article draws on this reasoning and on recent calls from scholars to apply the strain perspective to the study of inmate experiences and their effects (Blevins

et al., 2010; Morris et al., 2012). It is plausible that jail is an especially chaotic, tumultuous, and adverse experience. As these strains accumulate during jail stays, it may increase the likelihood that inmates engage in deviance and violence during incarceration later on in state prisons.

At the same time, the fundamental hypotheses of strain theory suggest that once a strain is removed, crime and deviance that may result in response to strain should discontinue (Agnew, 1992, 2001). Moving from jail to a more stable state prison environment may, in theory, cause a cessation in strain-induced misconduct or violence. Such a cessation is possible, but may be implausible. Although prison strains may be, on average, weaker than jail strains, prison experiences will continue to expose inmates to strain. Thus, transitioning to prison is not without pain and inmates who might have accumulated more adverse experiences prior to that transition may have higher propensities for misconduct.

A trauma perspective is similarly useful for considering the impacts of pretrial detention. In its simplest form, the trauma literature suggests that when individuals experience incidents or events that are intensely distressing they can cause trauma (Ehlers & Clark, 2000; Herman, 1997). The implications of such trauma are adverse and long-lasting and include self-destructiveness, which can manifest as criminal or violent behavior (Krystal, 1978; Scott, Lurigio, Dennis, & Funk, 2016; Sims et al., 1989; van der Kolk, Perry, & Herman, 1991). Like with strain theory, mapping the implications of long periods of time spent in jail for prison adjustment and misbehavior is straightforward. To the extent that jail experiences are traumatic, inmates who spend longer periods of time in jail are more likely to bring with them to prison a history of trauma and, in turn, be predisposed to deviance and misconduct.

ADVERSE EFFECTS OF TIME SPENT IN JAIL FOR AT-RISK INMATE GROUPS

A natural extension of prior theory and scholarship entails considering not only the general effects, but also whether certain inmate subgroups may be especially affected by jail time. In this article, we will assess whether the adverse effects of detention are amplified for five potentially "at-risk" subgroups. These are groups that theoretically are more likely to have pressing needs go unaddressed during pretrial detention, or that are otherwise more likely to have painful experiences: younger inmates, inmates incarcerated for the first time ("first-timers"), females, inmates with mental health conditions, and inmates with dependency conditions. We know that these inmate subgroups are more likely to struggle with adjustment to incarceration and engage in misconduct (Adams, 1992; Houser, Belenko, & Brennan, 2012; MacKenzie, 1987; McClellan, 1994; O'Keefe & Schnell, 2007; Pogrebin & Dodge, 2001; Wood & Buttaro, 2013).

There are theoretical reasons to expect that each of these inmate subgroups faces considerable adversity in local jails. Research suggests that younger inmates—who may be experiencing incarceration for the first time and for whom pretrial detention will be their initial dose of incarceration—may face challenges navigating this initial incarceration and learning the norms and rules, both formal and informal, of life in jail (Adams, 1992; Irwin, 1985; MacKenzie, 1987). By extension, younger inmates may experience greater strains during pretrial detention, especially as they spend more time there. We would expect an interaction effect to emerge, such that the adverse impacts of pretrial detention on misconduct will be stronger in younger inmate age groups. First-time inmates should be at similar risks for the same reasons. Like younger inmates, they are experiencing the shock of incarceration for

the first time, which includes learning how to adapt to the pains of imprisonment and attendant social isolation. Prior research indicates, for example, that first-time inmates are more concerned for their safety than repeat offenders (Souza & Dhami, 2010).

We have similar expectations for other subgroups, such as females. Scholarship suggests that while females are typically less likely to violate prison rules, they experience greater pains of incarceration (Craddock, 1996; Liebling, 1994; McClellan, 1994). Female inmates are more likely than males to have been physically and sexually victimized prior to incarceration (Greenfeld & Snell, 1999; Kruttschnitt & Gartner, 2003). Rates of mental illness, depression in particular, are higher among female inmates (James & Glaze, 2006). Females also have unique physical health and rehabilitative needs (Binswanger et al., 2010; Freudenberg, 2001). And females, who are more likely than males to be the primary caretakers of minor children (Coll, Miller, Fields, & Mathews, 1998; Mumola & Karberg, 2006; Steadman, Osher, Robbins, Case, & Samuels, 2009), report greater strains due to separation from their social ties (Jiang & Winfree, 2006; Ward & Kassebaum, 1965). Female inmates, more so than males, exhibit a host of unique needs and challenges that are precisely those that jails are seemingly less well equipped to address.

Finally, we hypothesize that inmates with mental health and substance abuse problems are also more strongly affected by time spent in pretrial detention. As described above, jails typically offer fewer and worse programs and services to at-risk mentally ill or substance dependent inmates (Fiscella et al., 2004; Taxman et al., 2007). Thus, such inmates may enter into prison settings with serious needs having been insufficiently addressed in jails.

THE CURRENT STUDY

In this article, we argue that as inmates spend more time in jail (pretrial and preincarceration), the likelihood that they accumulate more adverse jail experiences increases. Any harmful impacts of jail strains and trauma will persist or follow inmates into the prison setting. In accordance with importation, strain, and trauma perspectives (Blevins et al., 2010; Crewe, 2009; DeLisi, Trulson, Marquart, Drury, & Kosloski, 2011; Krystal, 1978), longer amounts of time spent in pretrial detention should be associated with an increased likelihood of prison misconduct, or more serious misconduct. We also expect that the adverse effects of pretrial detention will be more salient for at-risk inmates, including those who are young, first-timers, female, who have mental health concerns, and who have substance dependency concerns.

From the outset, however, it is important to note that we cannot assess directly the specific experiences inmates have in jail prior to placement in a state prison. We instead focus on the amount of time inmates were held prior to transfer to state prison. To our knowledge, no prior empirical studies have assessed this hypothesis or its corollary arguments focused on different inmate subgroups. If empirical analyses provide evidence that longer amounts of time in pretrial detention increases the likelihood of future in-prison misconduct, or does so for specific types of inmates, this would provide initial support for the hypothesis that longer terms of pretrial detention lead to adverse behavioral outcomes. Few data sets exist that could identify empirically the jail experiences that are salient and that are then linked to future in-prison behavior. What happens inside jails during pretrial detention or otherwise continues to be a black box, especially compared with the growing literature on prison

experiences. As we discuss later in our conclusions, this is a critical area in need of research attention, and one we hope is spurred on by our analysis.

METHOD

DATA

Data for this study were drawn from the 2004 Survey of Inmates in State and Federal Correctional Facilities for inmates held in state prisons (Interuniversity Consortium for Political and Social Research [ICPSR], 4572). Consistent with prior studies using these data to examine in-prison behavior, we focus solely on the state inmate sample, which accounts for 80% (14,499 inmates) of survey participants (Meade & Steiner, 2013; Wood & Buttaro, 2013). Exclusion of the federal inmates in the sample is common practice because of the substantive differences between state and federal inmates (e.g., crime types, in-prison experiences) and between the state and federal systems (e.g., sentencing frameworks, use of pretrial detention; Ditton, 1999; Meade, Steiner, & Klahm, 2017; Mumola & Karberg, 2006). The representativeness of this survey and the detailed information provided by the inmates affords a unique opportunity to examine the effect of time spent in jail on prison misconduct. The final sample (n = 13,784) consists of all inmates who were incarcerated at the time of the survey, and reported information on both dependent variables, the main independent variable, and all control variables of interest. The survey provides inmate self-report data across a range of relevant covariates including current sentence, criminal and violent history, personal characteristics, mental health status, alcohol and drug dependency, and prison activity.

Table 1 provides the descriptive statistics. These measures are included to account for potential confounding influences between time spent in jail and inmate behavior following intake into a more permanent state prison facility. For example, individuals charged and convicted of more serious violent crimes may be more likely to engage in offending in prison and are likely to spend more time in jail awaiting trial (Lowenkamp, VanNostrand, & Holsinger, 2013). Similarly, individuals who commit more serious crimes or have more serious prior criminal records on average receive higher bail offers and will be more likely to spend time in jail (Cohen & Reaves, 2007). In this sample, 48% of inmates committed violent crimes, 19% committed property crimes, 21% committed drug crimes, and 12% committed public order crimes; 57% of inmates reported prior incarceration. Ancillary analyses (not shown) indicate that violent offenders served more time in jail prior to placement in state prison than did drug and property offenders (8.5 months vs. 4.9 and 5.3 months, respectively). As we describe below, we control for offense and prior record, along with a range of other dimensions, to account for these potential confounders.

Dependent Variables

We estimate the effect of jail on two types of misconduct outcome measures. The first is a dichotomous measure of self-reported misconduct (0 = *no misconduct*, 1 = *any misconduct*). For this measure, inmates were asked if, since admission to state prison, they have been written up or found guilty of any misconduct. About 51% of the sample reported misconduct.

TABLE 1: Descriptive Statistics (n = 13,784)

Measure	*M*	*SD*	Minimum	Maximum
Dependent variables				
Misconduct (1/0)	0.51	—	0	1
Misconduct variety scale	1.17	1.73	0	13
Independent variable				
Time served in jail (months)	6.84	6.37	0	24
Control variables				
Age at interview (continuous)	35.29	10.58	16	84
Male (1/0)	0.93	—	0	1
White (1/0)	0.49	—	0	1
Black (1/0)	0.43	—	0	1
Other (1/0)	0.11	—	0	1
Hispanic (1/0)	0.18	—	0	1
Married (1/0)	0.16	—	0	1
Children (1/0)	0.67	—	0	1
High school education (1/0)	0.39	—	0	1
Employed (1/0)	0.71	—	0	1
Income scale	5.48	3.78	0	12
Mental health (1/0)	0.75	—	0	1
Dependency (1/0)	0.53	—	0	1
Primary offense—violent (1/0)	0.48	—	0	1
Primary offense—property (1/0)	0.19	—	0	1
Primary offense—drug (1/0)	0.21	—	0	1
Primary offense—public (1/0)	0.12	—	0	1
Offense severity scale	23.24	11.81	1	40
Trial (1/0)	0.23	—	0	1
Prior incarceration (1/0)	0.57	—	0	1
Time served (months)	50.71	63.36	0.03	522
23+ hours in cell (1/0)	0.10	—	0	1
Work assignment (1/0)	0.66	—	0	1
Program participation (1/0)	0.58	—	0	1

The second dependent variable is a variety scale composed of 13 different misconduct types, including drug violations, alcohol violations, possession of a weapon, possession of stolen property, possession of an unauthorized substance, verbal assaults on staff, physical assaults on staff, verbal assaults on inmates, physical assaults on inmates, escape or attempted escape, being out of place, and disobeying orders. Similar to prior studies examining deviance outside of prison, we use a variety scale measure to tap into variation in misconduct seriousness among inmates (McCuddy & Vogel, 2015; Sweeten, 2012; Sweeten, Piquero, & Steinberg, 2013). Variety scales have been used as an indicator of the seriousness of an offender's record because of the high correlation of variety of offending with delinquency reports that measure seriousness (e.g., Sweeten, 2012). Prior scholarship also suggests that engaging in a larger variety of offense types (i.e., increased offending versatility) is indicative of an individual who engages in frequent, serious offending overall (Farrington, 1973; Hirschi, 1969; Moffitt, Caspi, Rutter, & Silva, 2001). Use of this measure allows us to test whether increased jail time leads to misconduct and more serious misconduct. Of the 51% of inmates with reported misconduct, about 25% reported one

unique misconduct type, about 10% reported two types, and the remaining 65% reported three or more misconduct types.[1]

Independent Variable

The independent variable for our analyses is time served in jail. State inmates reported the number of months spent in jail immediately prior to beginning their prison sentence. It is possible that some inmates may spend time in a local jail after sentencing, as they await transfer to a state prison; the data, however, are unable to disentangle holding time from pretrial detention. We use a top-coded measure of time spent in jail, with a maximum value of 24 months (only 3% of inmates served more than 24 months in jail prior to imprisonment). Our analyses include inmates who have served just several days (coded as 0) to 24 or more months (coded as 24) in jail. As described in Table 1, inmates spend on average about 6 months in jail.

Control Variables

The multivariate models include a range of control variables measuring demographics, offense information, prior record, and in-prison activity. For demographics, we include a continuous measure of age at the time of data collection, ranging from 16 to 84, an indicator of sex (0 = *female*, 1 = *male*), and four dummy variables indicating race/ethnicity (White non-Hispanic, Black non-Hispanic, Other non-Hispanic, and Hispanic). We also include measures of marital status (0 = *not married*, 1 = *married*), parental status (0 = *no children*, 1 = *one or more children*), education (0 = *less than a high school education*, 1 = *at least a high school education*), and mental health and dependency problems (see below). To measure primary offense, we include four mutually exclusive dummy variables of offense type, based on the survey data reporting each inmate's most serious offense. These categories include violent, property, drug, and public order offenses. We also utilized a measure of offense severity based on more specific offense information provided in the survey. The specific offense type information provided in the BJS data set includes only the information for the individuals' most serious convicted offense and these data were used to create a scale that ranges from 1 to 40. Offenses coded on the lower end of the scale are least serious and include convictions such as disorderly conduct and nonviolent drug offenses. Higher scores indicate more serious crimes, which include felony murder, sexual assault, and robbery. We also include a control measure of whether an inmate's conviction stemmed from a trial or plea bargaining using a dichotomous measure (0 = *plea bargaining*, 1 = *trial*), which theoretically may influence both the amount of time spent in pretrial detention and also inmates' likelihood to engage in misconduct. To account for prior record, we use a dichotomous measure of prior incarceration.

Prior scholarship indicates that bail and the ability of inmates to pay bail may influence how long individuals spend in prison (Williams, 2003). Socioeconomic status may also influence the likelihood inmates engage in misconduct while in prison (Finn, 1995; Gendreau, Goggin, & Law, 1997). Accordingly, we include two measures that tap into inmates' socioeconomic status prior to incarceration. The first is an employed indicator that codes inmates as "1" if they report having a job in the month prior to arrest. The second is an income scale that ranges from 0 to 12, where inmates are coded "0" if they have no

reported monthly income and "12" if they report a monthly income of over US$5,000 prior to arrest.

We include four additional covariates in the multivariate models. First, we include a measure of the amount of time the inmate has served in state prison up to the time the survey was administered. This measure does not include time spent in jail because the misconduct outcome accounts only for in-prison misconduct and not misconduct that might have occurred in jail. Second, we include a custody-level indicator. Inmates reported how many hours a day, on average, they spend alone in a cell. The custody-level indicator codes inmates as "1" if they report spending 23 or more hours a day in their cell, which is indicative of an inmate housed in supermax or solitary confinement. Third, we include a measure of work assignment (0 = *no work assignment*, 1 = *work assignment*). Fourth, we include a measure of participation in in-prison drug programming such as alcoholics anonymous and narcotics anonymous (0 = *no participation*, 1 = *participation*).

Risk Measures for Interaction Analyses

As described above, we use the analyses to test whether time spent in jail is associated with misconduct and whether certain types of inmates are more sensitive to longer amounts of time spent in jail. We test for five separate interaction effects with time spent in jail. First, we test whether time spent in jail exerts a stronger effect on younger inmates using the continuous measure of age. Second, we test whether first-timers are more adversely affected by longer stays in pretrial detention than inmates who have been previously incarcerated. Third, we test whether time spent in pretrial detention more strongly affects female misconduct compared with male misconduct.

Fourth, we test whether inmates with mental health problems are more strongly affected by jail time. We incorporate a measure of mental illness consistent with prior studies using these data (Houser et al., 2012; Kopak & Smith-Ruiz, 2014; Wood & Buttaro, 2013). Inmates were coded "1" if they reported any of the following: a formal diagnosis for a depressive disorder, manic depression, a psychotic disorder, posttraumatic stress disorder, anxiety disorder, personality disorder, or any other mental condition. Inmates were also coded "1" if they evinced symptoms of depression, mania, or psychosis. Table 1 shows that 75% of inmates reported having at least one of these mental health concerns.[2] These prevalence estimates align with prior BJS estimates of mental health problems among state prisoners (James & Glaze, 2006). Ancillary analyses were conducted with a more stringent mental health measure based only on whether inmates reported mental health problems in the year prior to admission and results were substantively similar to those below.

Fifth, we test whether inmates with histories of substance dependency are more adversely affected by time spent in jail. Inmates were coded "1" if they reported symptoms of drug abuse (i.e., losing a job or having job/school trouble due to drug use). Inmates were also coded "1" if they reported affirmatively on at least three of seven drug dependence questions included in the survey. These questions asked inmates to report whether they had problems with drug tolerance, withdrawal, compulsive drug use, not being able to stop, spending a significant amount of time finding/doing drugs, neglecting responsibilities, or continued use even when it caused emotional/psychological problems. This coding is consistent with prior studies utilizing these data (Houser et al., 2012). Table 1 indicates that 53% of inmates reported drug dependency problems.[3]

ANALYTIC PLAN

Below we estimate a series of logistic regression models using the dichotomous measure of inmate misconduct and negative binomial regression models using the variety scale measure of inmate misconduct. We test whether time spent in jail is associated with inmate misconduct and misconduct seriousness (i.e., variety). The analyses then test whether interaction effects emerge, such that the effect of time spent in jail differs across inmate subgroups. In each analysis, we applied the survey weights provided in the data and estimated robust standard errors (RSEs) to account for underestimated standard errors that can stem from clustering of inmates within prison facilities (Bertrand, Duflo, & Mullainathan, 2004; Rogers, 1993).

RESULTS

The goal of this study is to assess whether increased time spent in pretrial detention (we refer to it as "time spent in jail" throughout the remainder of this section) leads to a greater risk of misconduct and more serious misconduct, once inmates are placed in a state prison. In theory, jail experiences elicit strain and trauma across a number of dimensions. Inmates who spend more time in jail experience more exposure to these strains, which they then import with them into the state prison, leading to misconduct. Table 2 provides a test of this hypothesis and presents regression results where inmate misconduct is regressed on a measure of time spent in jail and covariates. Model 1 includes logistic regression results using the misconduct dummy variable. Model 2 assesses effects on misconduct seriousness using negative binomial regression and a variety score.

Inspection of Table 2 reveals limited support for our main hypothesis. That is, longer jail stays appear to increase the risk of misconduct and disorder once an inmate is placed in state prison. Model 1 yields a statistically significant effect of time spent in jail on misconduct (odds ratio [*OR*] = 1.009). The estimated effect, however, is substantively modest. Predicted likelihoods based on Model 1 suggest that an average inmate who spends less than 1 month in jail has a 0.52 predicted likelihood of misconduct, versus a likelihood of 0.57 for a similarly situated inmate who spends 24 or more months in jail; a difference of .05. Model 2 indicates a similar, positive relationship between time served in jail and the variety of misconduct (incidence rate ratio [IRR] = 1.006), suggesting that longer jail stays significantly increase the seriousness of an inmates' misconduct behavior (Sweeten, 2012). Here, too, the estimated effect is substantively small. The predicted variety of misconduct for an inmate who serves less than a month in jail is 0.84, in comparison with a similarly situated inmate who spends 24 or more months in jail and has a predicted variety score of 0.97. We also explored ancillary analyses (not shown) using dichotomous indicators of whether an inmate's infractions were assaults versus nonassaults (see, for example, Meade & Steiner, 2013). These analyses test the robustness of estimated effects on misconduct seriousness by utilizing alternative measures of seriousness. Results revealed substantively similar coefficient estimates as those currently shown in the article.

Control variable effect estimates across Models 1 and 2 are intuitive and consistent with prior theory and research on inmate misconduct. For example, younger inmates (*OR* = 0.956; IRR = 0.961), those who are not married (*OR* = 0.883; IRR = 0.901), those who do not have a high school education (*OR* = 0.892; IRR = 0.908), or those who were unemployed in the month prior to arrest (*OR* = 0.905; IRR = 0.906) are more likely to report

TABLE 2: Regression of Inmate Misconduct on Time Served in Jail and Controls

	Model 1 Logistic regression			Model 2 Negative binomial regression		
Variable	*b*	RSE	*OR*	*b*	RSE	IRR
Independent variable						
Time served in jail	.008*	0.00	1.009	.006**	0.00	1.006
Controls						
Age	–.045***	0.00	0.956	–.040***	0.00	0.961
Male	–.115	0.10	0.891	–.060	0.06	0.942
Black	.076	0.06	1.079	.068*	0.03	1.071
Other	.069	0.07	1.071	.036	0.04	1.037
Hispanic	–.264***	0.07	0.768	–.110*	0.05	0.896
Married	–.124*	0.06	0.883	–.104**	0.03	0.901
Children	–.077	0.04	0.926	–.080**	0.02	0.923
Education	–.114*	0.05	0.892	–.097***	0.03	0.908
Employed	–.100*	0.05	0.905	–.099***	0.03	0.906
Income	.013*	0.01	1.013	.017***	0.00	1.017
Mental health	.552***	0.05	1.737	.438***	0.03	1.550
Dependency	.237***	0.04	1.268	.226***	0.02	1.253
Primary offense—Property	–.132	0.09	0.877	–.148**	0.05	0.862
Primary offense—Drugs	–.286*	0.14	0.751	–.377***	0.08	0.686
Primary offense—Public	–.192	0.17	0.825	–.282**	0.09	0.754
Offense severity scale	.008	0.01	1.008	.000	0.00	1.000
Trial	.135*	0.06	1.144	.100***	0.03	1.105
Prior incarceration	.236***	0.04	1.266	.170***	0.02	1.186
Time served	.017***	0.00	1.017	.009***	0.00	1.009
23+ hours in cell	.329***	0.09	1.389	.281***	0.05	1.325
Work assignment	.130*	0.06	1.139	–.028	0.04	0.973
Program participation	.148**	0.05	1.159	.100***	0.02	1.105
Constant	.056	0.27		.399**	0.15	
Pseudo R^2	.158			.105		
Log Pseudolikelihood		–679,491.1			–1,554,637.9	

Note. White, and primary offense—Violent, serve as reference variables. RSE = robust standard error; *OR* = odds ratio; IRR = incidence rate ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

misconduct and score higher on the variety scale. Two of the strongest predictors that emerge out of both models are mental health (*OR* = 1.737; IRR = 1.550) and dependency (*OR* = 1.268; IRR = 1.253), pointing to the possibility that inmates with these problems may have an especially challenging prison experience. Albeit modest, time spent in jail's effect emerges net of these other influences.

We now test the possibility that time spent in jail effects are more salient for certain inmate subgroups. We estimate interaction terms between time spent in jail and the following measures: age, prior incarceration, sex, mental health, and substance dependency status. Results of these analyses are presented in Tables 3 and 4. Table 3 presents logistic regression results using a dichotomous misconduct measure, and Table 4 presents negative binomial regression results using the variety score. The age, prior incarceration, sex, mental health, and substance dependency interaction models are presented in the first, second, third, fourth, and fifth models, respectively, in Tables 3 and 4. Ancillary analyses explored

TABLE 3: Logistic Regression of Inmate Misconduct on Time Served in Jail and Controls, Interaction Models

	Model 1			Model 2			Model 3			Model 4			Model 5		
Variable	*b*	RSE	*OR*	*b*	RSE	*OR*	*b*	RSE	*OR*	*b*	RSE	*OR*	*b*	RSE	*OR*
Independent variable															
Time served in jail	.030*	0.01	1.030	.005	0.00	1.005	.031***	0.01	1.031	−.006	0.01	0.994	.012*	0.01	1.012
Interactions															
Jail × Age	−.001	0.00	0.999	—	—	—	—	—	—	—	—	—	—	—	—
Jail × Prior incarceration	—	—	—	.007	0.01	1.007	—	—	—	—	—	—	—	—	—
Jail × Male	—	—	—	—	—	—	−.023**	0.01	0.977	—	—	—	—	—	—
Jail × Mental health	—	—	—	—	—	—	—	—	—	.019*	0.01	1.019	—	—	—
Jail × Dependency	—	—	—	—	—	—	—	—	—	—	—	—	.006	0.01	0.994
Controls															
Age	−.041***	0.00	0.960	−.045***	0.00	0.956	−.045***	0.00	0.956	−.045***	0.00	0.956	−.045***	0.00	0.956
Male	−.115	0.10	0.891	−.114	0.10	0.892	.004	0.11	1.004	−.119	0.10	0.888	−.114	0.10	0.893
Black	.075	0.06	1.078	.076	0.06	1.079	.077	0.06	1.080	.078	0.06	1.081	.076	0.06	1.079
Other	.068	0.07	1.070	.069	0.07	1.071	.068	0.07	1.071	.070	0.07	1.072	.067	0.07	1.070
Hispanic	−.265***	0.07	0.767	−.265***	0.07	0.767	−.264***	0.07	0.768	−.265***	0.07	0.767	−.263***	0.07	0.769
Married	−.123*	0.06	0.885	−.124*	0.06	0.883	−.123*	0.06	0.884	−.120*	0.06	0.887	−.124*	0.06	0.883
Children	−.078	0.04	0.925	−.078	0.04	0.925	−.077	0.04	0.925	−.079	0.04	0.924	−.077	0.04	0.926
Education	−.113*	0.05	0.893	−.114*	0.05	0.892	−.115*	0.05	0.892	−.116*	0.05	0.891	−.114*	0.05	0.892
Employed	−.096*	0.05	0.908	−.100*	0.05	0.905	−.099*	0.05	0.906	−.100*	0.05	0.905	−.100*	0.05	0.905
Income	.013*	0.01	1.013	.013*	0.01	1.013	.013*	0.01	1.013	.013*	0.01	1.013	.013*	0.01	1.013
Mental health	.552***	0.05	1.736	.552***	0.05	1.738	.552***	0.05	1.737	.421***	0.08	1.524	.553***	0.05	1.739
Dependency	.237***	0.04	1.268	.237***	0.04	1.268	.238***	0.04	1.269	.236***	0.04	1.266	.277***	0.06	1.320
Primary offense—Property	−.130	0.09	0.878	−.129	0.09	0.879	−.133	0.09	0.876	−.130	0.09	0.878	−.132	0.09	0.876
Primary offense—Drugs	−.284*	0.14	0.752	−.283*	0.14	0.754	−.289*	0.14	0.749	−.285*	0.14	0.752	−.287*	0.14	0.751
Primary offense—Public	−.195	0.17	0.822	−.187	0.17	0.836	−.196	0.17	0.822	−.192	0.17	0.826	−.191	0.17	0.826
Offense severity	.008	0.01	1.008	.008	0.01	1.008	.008	0.01	1.008	.008	0.01	1.008	.008	0.01	1.008
Trial	.134*	0.06	1.144	.133*	0.06	1.142	.136*	0.06	1.145	.137*	0.06	1.147	.133*	0.06	1.142
Prior incarceration	.237***	0.04	1.267	.188**	0.06	1.207	.236***	0.04	1.266	.236***	0.04	1.266	.236***	0.04	1.266
Time served	.017***	0.00	1.017	.017***	0.00	1.017	.017***	0.00	1.017	.017***	0.00	1.017	.017***	0.00	1.017
23 + hours in cell	.329***	0.09	1.390	.328***	0.09	1.388	.329***	0.09	1.390	.329***	0.09	1.389	.329***	0.09	1.390
Work assignment	.129*	0.06	1.138	.130*	0.06	1.139	.130*	0.06	1.138	.130*	0.06	1.138	.130*	0.06	1.139
Program participation	.148**	0.05	1.159	.148**	0.05	1.159	.147***	0.05	1.159	.150**	0.05	1.162	.147**	0.05	1.159
Constant	−.079	0.30		.080	0.27		−.050	0.27		.156	0.27		.033	0.27	
Pseudo R^2	.158			.158			.158			.158			.158		
Log Pseudolikelihood	−679,308.11			−679,432.39			−679,362.37			−679,163.99			−679,449.56		

Note. White, and primary offense—Violent, serve as reference variables. RSE = robust standard error; *OR* = odds ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

TABLE 4: Negative Binomial Regression of Inmate Misconduct on Time Served in Jail and Controls, Interaction Models

	Model 1			Model 2			Model 3			Model 4			Model 5		
Variable	*b*	RSE	IRR	*b*	RSE	IRR	*b*	RSE	IRR	*b*	RSE	IRR	*b*	RSE	IRR
Independent variable															
Time served in jail	.024**	0.01	1.024	.007*	0.00	0.003	.017***	0.00	1.017	.006	0.00	1.006	.007*	0.00	1.007
Interactions															
Jail × Age	−.001**	0.00	0.999	—	—	—	—	—	—	—	—	—	—	—	—
Jail × Prior incarceration	—	—	—	.001	0.00	0.999	—	—	—	—	—	—	—	—	—
Jail × Male	—	—	—	—	—	—	−.011*	0.00	0.989	—	—	—	—	—	—
Jail × Mental health	—	—	—	—	—	—	—	—	—	.000	0.00	1.000	—	—	—
Jail × Dependency	—	—	—	—	—	—	—	—	—	—	—	—	.001	0.00	0.999
Controls															
Age	−.037***	0.00	0.964	−.040***	0.00	0.961	−.040***	0.00	0.961	−.040***	0.00	0.961	−.040***	0.00	0.961
Male	−.059	0.06	0.943	−.060	0.06	0.942	.006	0.08	1.006	−.060	0.06	0.942	−.059	0.06	0.942
Black	.067*	0.03	1.070	.068*	0.03	1.071	.069*	0.03	1.071	.068*	0.03	1.071	.068*	0.03	1.071
Other	.036	0.04	1.037	.036	0.04	1.037	.036	0.04	1.036	.036	0.04	1.037	.036	0.04	1.037
Hispanic	−.111*	0.05	0.895	−.109*	0.05	0.896	−.109*	0.05	0.896	−.110*	0.05	0.896	−.109*	0.05	0.896
Married	−.102**	0.03	0.903	−.104**	0.03	0.901	−.104**	0.03	0.901	−.104**	0.03	0.901	−.104**	0.03	0.901
Children	−.080**	0.02	0.923	−.080**	0.02	0.923	−.080**	0.02	0.923	−.080**	0.02	0.923	−.080**	0.02	0.923
Education	−.095**	0.03	0.909	−.097***	0.03	0.907	−.097***	0.03	0.907	−.097***	0.03	0.908	−.097***	0.03	0.908
Employed	−.097***	0.03	0.908	−.099***	0.03	0.906	−.098***	0.03	0.906	−.099***	0.03	0.906	−.099***	0.03	0.906
Income	.017***	0.00	1.018	.017***	0.00	1.017	.017***	0.00	1.017	.017***	0.00	1.017	.017***	0.00	1.017
Mental health	.438***	0.03	1.550	.438***	0.03	1.550	.438***	0.03	1.550	.438***	0.05	1.549	.438***	0.03	1.550
Dependency	.226***	0.02	1.254	.226***	0.02	1.253	.226***	0.02	1.254	.226***	0.02	1.253	.235***	0.04	1.265
Primary offense—Property	−.146**	0.05	0.864	−.148**	0.05	0.862	−.149**	0.05	0.862	−.148**	0.05	0.862	−.148**	0.05	0.862
Primary offense—Drugs	−.374***	0.08	0.688	−.377***	0.08	0.686	−.378***	0.08	0.685	−.377***	0.08	0.686	−.377***	0.08	0.686
Primary offense—Public	−.285**	0.10	0.752	−.282**	0.09	0.754	−.285**	0.09	0.752	−.282**	0.09	0.754	−.282**	0.09	0.755
Offense severity	.000	0.00	1.000	.000	0.00	1.000	.000	0.00	1.000	.000	0.00	1.000	.000	0.00	1.000
Trial	.100***	0.03	1.105	.100***	0.03	1.105	.101***	0.03	1.106	.100***	0.03	1.105	.100***	0.03	1.105
Prior incarceration	.171***	0.02	1.187	.179***	0.04	1.196	.170***	0.02	1.186	.170***	0.02	1.186	.170***	0.02	1.186
Time served	.009***	0.00	1.009	.009***	0.00	1.009	.009***	0.00	1.009	.009***	0.00	1.009	.009***	0.00	1.009
23 + hours in cell	.281***	0.05	1.325	.281***	0.05	1.325	.282***	0.05	1.326	.281***	0.05	1.325	.281***	0.05	1.325
Work assignment	−.028	0.04	0.972	−.028	0.04	0.973	−.028	0.04	0.973	−.028	0.04	0.973	−.028	0.04	0.973
Program participation	.100***	0.02	1.105	.100***	0.02	1.105	.100***	0.02	1.105	.100***	0.02	1.105	.100***	0.02	1.105
Constant	.275	0.16		.395**	0.15		.340*	0.15		.400**	0.15		.394**	0.15	
Pseudo R^2	.106			.105			.105			.105			.105		
Log Pseudolikelihood	−1,554,225.00			−1,554,633.30			−1,554,545.90			−1,554,637.90			−1,554,632.60		

Note. White, and primary offense—Violent, serve as reference variables. RSE = robust standard error; IRR = incidence rate ratio.
*$p < .05$. **$p < .01$. ***$p < .001$.

these interactions using a dichotomous indicator of assault versus nonassaults as the dependent variable and results were substantively similar to those presented below.

Across the five models presented in Table 3, we do not find significant interactions for age, prior incarceration, and substance dependency. We do find evidence of an interaction in Model 3 between time spent in jail and sex and in Model 4, between time spent in jail and mental health status. These estimates suggest that time spent in jail exerts a stronger effect on inmates who are female and who report mental health problems.

We find a different set of results in Table 4, which is focused on estimating effects on the seriousness of inmates' in-prison offending. The negative binomial models indicate no significant interactions between prior incarceration, mental health status, or substance dependency with time spent in jail. Although the effect of jail time on the overall likelihood of misconduct did not vary across age, we do find that the effect of jail does vary across age in its effect on the seriousness of misconduct. The negative coefficient indicates that the effect of time spent in jail is strongest for young inmates, and then diminishes as age increases. We also find evidence of an interaction between time spent in jail and sex. Results parallel those predicting the likelihood of misconduct, and we find that time spent in jail exerts a stronger effect on female inmates.

To ease interpretation of the interaction results from Tables 3 and 4, we present predicted plots across four panels in Figure 1. Across all panels, the predicted values were created while all covariates were held at their means. The predicted probability of misconduct across time spent in jail for male and female inmates is plotted in Panel A. Panel B presents the predicted probability of misconduct across levels of time spent in jail prior to imprisonment, for inmates with and without mental health problems. Panel C presents the predicted variety of misconduct across levels of time spent in jail, and across different inmate age groups. To create Panel C, we utilized the full sample interaction model to estimate predictive margins for decile groups according to inmate age. To ease interpretation, we present only six: two youngest age deciles, two deciles of middle-aged inmates, and two oldest inmate age deciles. Panel D similarly presents the predicted variety of misconduct across levels of time spent in jail, for male and female inmates.

Panel A shows the predicted likelihood of misconduct for both female and male inmates across time spent in jail. The plotlines reveal that females have an overall higher likelihood of engaging in misconduct. In addition, the panel shows that as time spent in jail increases, the likelihood of misconduct for females becomes greater, whereas males generally appear to be relatively unaffected by longer exposure to the jail setting, all else equal.

At least two important findings are illustrated in Panel B. First, as suggested by the significant interaction term, we see that the effect of time spent in jail differs for inmates with and without mental health problems. The predicted likelihoods of misconduct indicate that increases in time spent in jail are substantially more adverse for inmates with mental health problems. Time spent in jail appears to exert a null effect on misconduct likelihoods for inmates without mental health problems. This finding provides support for the hypothesis that mental health problems may lead to increased strain for inmates as they spend more time in jail prior to incarceration, which they will then import into prison, leading to more misconduct. We revisit this finding and its implications in more detail in the article's conclusion.

Second, and in line with prior scholarship, Panel B suggests that inmates with mental health problems have an overall higher likelihood of misconduct in prison (Houser et al.,

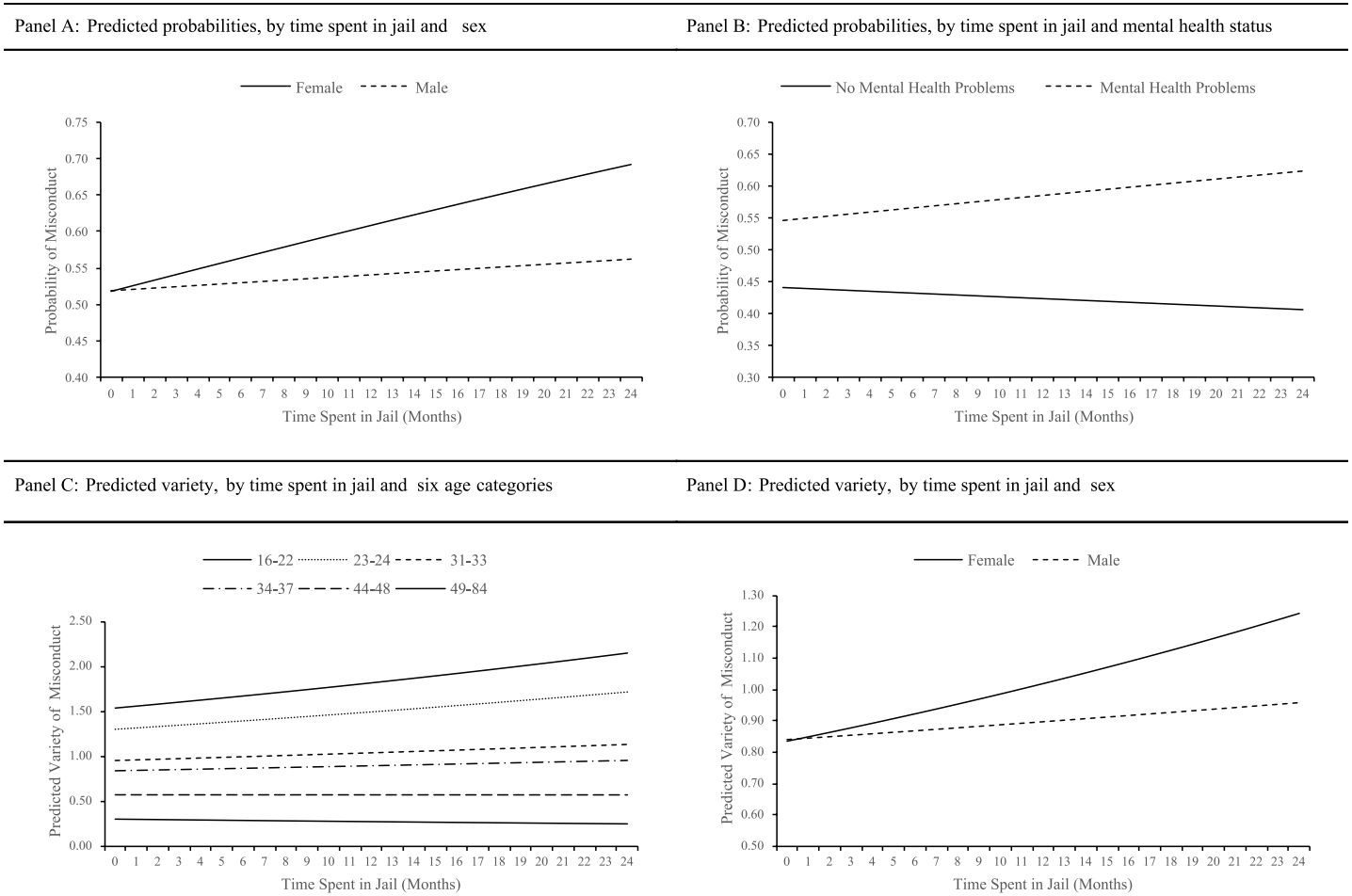

Figure 1: Predicted Probabilities and Varieties of Inmate Misconduct, by Time Spent in Jail and Three At-Risk Inmate Subgroups

2012; O'Keefe & Schnell, 2007). For example, inmates with mental health problems who spent less than 1 month in jail have a predicted probability of misconduct that is about .55. Inmates who do not report mental health problems have a probability of misconduct at about .44. This represents a 22% difference in the likelihood of misconduct between inmates with and without reported mental health problems at the lowest value of time spent in jail. At the highest value of time spent in jail, 24 months, this difference increases to 43%.

Panel C presents predicted misconduct variety score values across time spent in jail, for young (inmates 16-22 and 23-24 years old), middle-aged (inmates 31-33 and 34-37 years old), and older inmates (inmates 44-48 and 49-84 years old). The plots reveal that younger inmates typically engage in more serious offending during imprisonment—a consistent finding in prior research (MacKenzie, 1987). More specific to our hypotheses, the figure also illustrates a stronger effect of time spent in jail on younger inmates. In partial support of our earlier hypothesis, the plots suggest that increased time spent in jail leads to more serious misconduct for younger inmates, that the effect of time spent in jail diminishes for middle-aged inmates, and that the oldest inmates appear to be almost unaffected by increased amounts of time spent in jail. Last, Panel D shows the predicted variety scores of misconduct across time spent in jail for male and female inmates. Similar to Panel B, the plotlines reveal that female inmates are generally involved in a greater variety of misconduct, and that longer exposure to the jail setting increases female inmate misconduct seriousness. The panel also shows that the variety of male misconduct is relatively unaffected by time spent in jail.

DISCUSSION AND CONCLUSION

A growing body of scholarship underscores a range of challenges inherent to jails and jail incarceration (Caudill et al., 2014; Gibbs, 1987; May et al., 2014). This article suggests that increased exposure to the challenging jail environment may have implications for inmates and prison social order. This possibility aligns with literature arguing that the characteristics and experiences inmates import with them into the prison setting (Crewe, 2009; DeLisi et al., 2011; Irwin & Cressey, 1962), and the strains and trauma they experience along the way (Blevins et al., 2010; Listwan et al., 2013; Morris et al., 2012), may have significant implications for behavior.

At least two key findings emerged that deserve reiteration here. First, and in accordance with our main hypothesis, we found an association between pretrial detention length and inmate misconduct during time spent in state prison. As inmates serve longer terms in pretrial detention, their general likelihood and seriousness of offending increased. These effects were, however, substantively modest across the entire inmate population.

Second, and juxtaposed against the relatively minor general effect, we identified substantively more meaningful effects for at-risk inmate subgroups. Conditional analyses suggest that female inmates, inmates with mental health problems, and the youngest inmates are most adversely affected by increased exposure to the jail environment. Contrary to our hypotheses, the effect of time in jail was not more adverse for first-timers or those with substance dependency problems.

These results stem only from a single study, but the implications, to the extent that the findings can be replicated across other samples, are potentially wide-reaching. This national sample indicates that the vast bulk of state prison inmates will have spent at least some time in pretrial detention prior to their imprisonment and any harm incurred in jail could affect

the more than 2 million individuals housed in U.S. prisons and jails. In particular, young inmates, who are especially vulnerable to maladjustment (Valentine, Mears, & Bales, 2015), are likely to suffer adverse consequences from longer jail stays. These inmates constitute a unique subgroup that may require policies and programs that begin during pretrial detention and prior to incarceration in prison.

Estimates also suggest that a majority of inmates have some form of mental illness (James & Glaze, 2006)—a condition, based on our analyses, that appears to exacerbate the adverse effects that stem from time spent in jails. The harms of pretrial detention apply to a large subpopulation of inmates and, in turn, the implications for prison social order may be substantial. This finding is troublesome in light of the limited number of mental health treatment opportunities available to inmates, especially those incarcerated in local jails. Studies are needed that can examine the effects pretrial detention and any attendant treatment or programming opportunities have on the mental health status of inmates and whether these experiences affect behavior and adjustment once inmates enter the prison system.

In a similar vein, women in jail, who are not afforded many of the treatment and programming services provided to men and who, in prior studies, have been referred to as "forgotten inmates" (Swalova, Riley, & Subramanian, 2016), are likely to endure increased pains in pretrial detention. They likely experience unique, gender-based traumas and psychological distress. Future research is sorely needed that better disentangles the experiences of women and men in local jails and how those experiences affect transitions, such as those into a state prison.

These findings support prior theory and research that suggest that the experiences inmates have in jail, which are then imported into the prison setting, have salient implications for behavior (Irwin & Cressey, 1962; Steiner et al., 2014). The focus here on time spent in pretrial detention is unique in part because jail itself represents an incarceration experience and one that may be imported into prison. Prior studies, to our knowledge, have not included pretrial detention in empirical assessments of prison social order and inmate misconduct. The arguments and findings raised here provide warrant for incorporating jail stays in future conceptualizations and empirical tests.

Research on jail and jail experiences is limited and only a handful of scholars have systematically assessed the deleterious effects of jail confinement (see, for example, Gibbs, 1987, 1991). Thus, considerably more research is needed that examines what happens to individuals in jail and what the implications of those experiences might be. We were unable to tease out what kinds of jail experiences inmates have, whether certain experiences in jails are particularly strain- or trauma-inducing, or whether these strains and traumas can explain associations between time spent in jail and inmate misconduct. Future studies should consider data collections and observations focused on identifying a wide range of jail experiences, including not only misconduct but also adjustment patterns, victimization, visitation, program participation, treatment availability, and other incarceration experiences. Relatedly, our mental health indicator was limited in its ability to account for the timing of a mental illness diagnosis and potential treatment that occurred during pretrial detention. Scholars should examine whether mental health status changes during a stay in jail, and whether this affects future behavior during state prison incarceration.

Similarly, our analyses were unable to tap into important jail and prison facility dimensions, such as overcrowding, proximity to family, racial composition, and administration (Camp, Gaes, Langan, & Saylor, 2003; Gibbs, 1983; Huebner, 2003; Lahm, 2008). These factors may

influence strains and trauma experienced by inmates and may affect inmate behavior indirectly and directly. We were also unable to assess timing to prison misconduct, but it is plausible that the strains and trauma experienced during pretrial detention are particularly impactful during the beginning months of incarceration in a prison and subside over time. Analyses that can provide a more nuanced examination of timing would provide important insights.

Scholars should consider other theoretically relevant outcomes that may result from the significant strains and trauma inmates experience in local jail settings. There may be a range of other adverse consequences for prison systems. There may also be harmful consequences for other parts of the corrections and criminal justice systems. For example, strains and trauma incurred in jail may increase the challenges of prisoner reentry, they may undermine perceived legitimacy of the justice system, and they may exacerbate a range of challenges individuals in the corrections system already face (e.g., mental health, physical health, substance dependency).

Not least, the findings have relevant policy implications. The article's analyses point to deleterious effects of pretrial incarceration across a nationally representative sample of inmates. Policies that allow for lengthy pretrial stays without improvements to the provision of inmate needs within jails should be reconsidered. Similarly, this article suggests that corrections officials should consider examining strategies for improving transitions, especially after long pretrial stays, of inmates from jails to prisons.

Although it goes beyond the scope of the article, the results raise important questions about jails and the experiences of individuals incarcerated there (Attwood, 2011; Caudill et al., 2014; George, 2010; Gibbs, 1987), the lack of resources provided to most jails (Center for Substance Abuse Treatment, 2005; Taxman et al., 2007), and the potential adverse consequences of pretrial detention where access to treatment and services may be limited. Over the past decade, jails have come under closer scrutiny by scholars (May et al., 2014) and others (Banco, 2013; Kristof, 2014). The results of this study indirectly support such critiques, which identify jails as chaotic, violent, and disorderly, and as settings that may worsen inmate needs and undermine correctional goals. The results also suggest a different consequence of adverse jail experiences—reduced prison safety and order. The time is none too soon for scholars, practitioners, and policy makers alike to develop strategies to more systematically evaluate jail and its direct and indirect impacts.

NOTES

1. We also explored a series of ancillary analyses that utilized alternative measures of misconduct seriousness as an outcome measure. These included analyses that focused only on violent misconduct and, more specifically, in-prison assaults.

2. Specifically, the following variables were used to develop the mental health measure: formal diagnosis of disorder, manic depression, bipolar disorder, mania, schizophrenia or other psychotic disorder, posttraumatic stress disorder (PTSD), anxiety or panic disorder, personality disorder, or other mental/emotional condition; prescribed drugs due to mental problem; admittance to mental hospital; therapy; mental health symptoms including losing temper, anger, changes in sleep, racing thoughts, changes in sex drive, changes to motor functions, feelings that others could read or control mind, and paranoia.

3. It is important to note that the mental health and substance dependency variables used in the analyses stem from self-reported information and do not capture whether local jails or state prisons designated the individual as having a mental health problem or as substance dependent. However, the coding of these variables has been used extensively in the literature (see, for example, Houser, Belenko, & Brennan, 2012; Kopak & Smith-Ruiz, 2014; Wood & Buttaro, 2013).

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