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Solitary Confinement as Punishment: Examining In-Prison Sanctioning Disparities

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Solitary Confinement as Punishment: Examining In-Prison Sanctioning Disparities

ABSTRACT

Drawing on prior sentencing and prison scholarship, this study examines the use of solitary confinement as a form of punishment. Specifically, it assesses whether, given a prison infraction, minority inmates—and young, male, minority inmates in particular—are more likely to be placed in solitary and to be placed in it for longer durations. Multilevel regression analyses of state prison data suggest little support for the hypothesis that minority males, or young minority, males, are sanctioned more harshly than other inmates. The analyses identify, however, that males are more likely than females to be placed in solitary as a form of disciplinary punishment and that younger females are more likely to be placed in it than older females. The findings highlight that age and sex may interact to influence punishment decisions and raise questions about the precise roles of race and ethnicity in affecting punishment decisions. Implications of the findings for theory, research, and policy are discussed.

INTRODUCTION

Scholarship on the exercise of formal social control, punishment in particular, consistently finds evidence of racial, ethnic, and gender disparities in criminal sanctioning decisions (e.g., Baumer, 2013; Spohn, 2015). Studies typically find, for example, that young minority males are more likely to receive harsh punishments from the courts (e.g., Brennan, 2006; Jordan and Freiburger, 2015; Vogel and Porter, 2015; Wang et al., 2013; Warren et al., 2012). Prior scholarship has drawn on focal concerns theory and research on attributional stereotyping to argue that implicit biases in court actors' perceptions of offenders influence sanctioning decisions. This line of work suggests that racial and ethnic minorities—especially those who are young and male—are more likely to be perceived as a threatening and culpable group, giving rise in turn to more severe sentencing (see, e.g., Brennan, 2006; Demuth, 2003; Feldmeyer et al., 2015; Frenzel and Ball, 2008; Harris, 2009; Zatz, 2000).

Limited research exists, however, that examines punishment decisions, such as the use of solitary confinement¹, that occur after court sentencing. As Butler and Steiner (2016) and others

¹ For the purposes of this paper, “solitary confinement” refers to what sometimes is referred to as “disciplinary confinement,” which is confinement in response to inmates’ disciplinary infractions. Other terms—such as “isolation,” “supermax,” “segregation,” “administrative segregation,” and “restrictive housing,”—can be and are interchangeably used with “solitary confinement” (Mears, 2016). In each instance, the confinement of focus typically centers on (1) an inmate spending entire days, such as 20 hours or more, by themselves, (2) doing so for varying periods of time, and (3) for different goals, such as punishment, protection, or some general managerial purpose. There is, at present, no consistent terminological usage (Mears, 2016). For example, some scholarship may use “supermax” to refer to long-term stays whereas others may view “supermax” housing to encompass short- or long-term stays. We recognize this inconsistency and have opted here to refer to “solitary confinement” because the term has been in use for many decades and has been the term used in prominent presidential and legislative discussions. We use it instead of “disciplinary confinement” because this latter term does not clearly capture the fact that inmates may be alone during such confinement. Ultimately,

(e.g., Morris, 2016; Frost and Monteiro, 2016) have argued, this gap is conspicuous for several reasons. Solitary confinement arguably constitutes the harshest mechanism of formal social control that prisons can employ. Policymakers, practitioners, and human rights groups have expressed concerns that it is used capriciously and that its harms outweigh its putative benefits (American Civil Liberties Union, 2014; Amnesty International, 2012; Haney, 2003; Mears and Castro, 2006; Metzner and Fellner, 2010; Obama, 2016). Concerns exist, too, that solitary confinement may be used disproportionately with some groups, such as minorities (Mears and Bales, 2010). Few empirical studies, however, have examined the factors that contribute to the use of solitary confinement as punishment (see Crouch, 1985; Beck, 2015; Butler and Steiner, 2016; see also Morris, 2016). Little is known, for example, about potential disparities that may exist in solitary confinement placement decisions (Frost and Monteiro, 2016).

The goal of this paper, then, is to address these research gaps and to advance scholarship on incarceration and the exercise of formal social control by examining in-prison punishment disparities. Specifically, and drawing on focal concerns perspective, this study seeks to test the hypothesis that solitary confinement, as a form of punishment, is used more for minorities and, in particular, for young minority males. To test this hypothesis, we use seven years of infraction event data for all state prison inmates incarcerated in the state of Florida from 2005 to 2011. The data provide an opportunity to examine the use of solitary confinement as punishment and whether its use serves, as some research intimates, to create racial and ethnic inequalities. We begin with a discussion of prior literature on disparities in criminal justice decision making. Next, we turn to research on sentencing and prison misconduct to guide analyses on the use of

regardless of terminology, our focus on the use of placing inmates in a cell, alone, typically for 20 hours or more for one or more days, as a punishment for infractions.

solitary confinement as punishment, and then discuss the data, methods, and findings.

BACKGROUND

Focal Concerns and Disparities in Punishment Decisions

Prior empirical research identifies racial and ethnic disparities at almost every decision point in the criminal justice process. Blacks and, in many instances, Hispanics are, for example, more likely to be contacted by police, searched upon contact, arrested, held in jail pretrial, convicted, receive a prison sentence, and serve a lengthy term of incarceration (Baumer, 2013; Kutateladze et al., 2014; Schlesinger, 2005; Tonry and Melewski, 2008; Ulmer, 2012; Wang et al., 2013; Western, 2006; Wooldredge, 2012; Wooldredge et al., 2015). A large body of research has centered, in particular, on explaining incarceration sentencing decisions and has focused on the ways that race, ethnicity, sex, and age intersect to create a higher risk of more severe sanctioning. For example, sentencing studies consistently find that young black and Hispanic males are at a particularly heightened risk for tougher sentences as compared to their older, white, male or female counterparts (Brennan, 2006; Demuth, 2003; Feldmeyer and Ulmer, 2011; Frenzel and Ball, 2008; Harris, 2009; Jordan and Freiburger, 2015; Vogel and Porter, 2016).

Focal concerns theory provides insight for anticipating and understanding such decisions and the mechanisms that lead to racial and ethnic disparities in sentencing (Steffensmeier, 1980). Building on broader attributions research (e.g., Albonetti, 1997; Kautt and Spohn, 2002; Kramer and Ulmer, 2009; Levinson, 2007), it argues that court actors, such as judges and prosecutors, make sanctioning decisions based on cognitive heuristics, or what might be viewed as perceptual

shorthands (Steffensmeier et al., 1998). Specifically, the theory proposes that court actors consider three key dimensions that motivate or otherwise influence punishment decisions: (1) a convicted individual's blameworthiness or perceived culpability, (2) the risk or danger that a given individual is perceived to pose to a community, and (3) the organization and practical constraints of a given court or jurisdiction.

From a focal concerns perspective, these three dimensions—blameworthiness, dangerousness, and practical constraints—are central to the decisionmaking processes of prosecutors and judges. In the context of a typical state court with a high volume of cases and where court actors must make rapid sanctioning determinations, court actors' judgments will be based on both conscious and unconscious cues about individuals (Spohn and Holleran, 2000; Steffensmeier and Demuth, 2000; see also, Kahneman, 2011). Court actors rely on these cues to guide their sentencing decisions. When these cues are in error, they lead courts to sanction some groups in a more severe manner than others, which in turn can lead to disparities in sentencing.

Scholarship to date suggests that court actors are more likely to associate danger with minority defendants due to underlying perceptions of racial threat (e.g., Crawford et al., 1998; Demuth and Steffensmeier, 2004; Feldmeyer and Ulmer, 2011; Feldmeyer et al., 2015; Hagan, 1974; Harris, 2009; Wang and Mears, 2010; Warren et al., 2012). Focal concerns then are channeled through a racial threat lens. Specifically, members of the majority group are prone to feel threatened by members of outgroups (i.e., racial and ethnic minorities) and then rely on race or ethnicity—or certain groups, such as young, minority males—to guide their interpretation of culpability and risk and, in turn, their view about the need for or appropriateness of punishment.

Focal concerns and perceived racial threat then can lead court actors to apply more formal control towards minority defendants or particular sub-groups, such as young blacks or young

black males. Importantly, the perceived concerns and threats may vary. For example, in a given jurisdiction, court actors may perceive that drug offenders represent a greater threat to community safety than do low-level violent or property offenders. In turn, sanctioning of drug offenders may be consistently more severe in that jurisdiction. A similar outcome can arise if court actors hold similar views about younger defendants versus older ones, males versus females, or, again, sub-groups, such as young black males or young Hispanic males.

Prior research has not typically measured perceived focal concerns or threat directly (see, however, Albonetti and Hepburn, 1996; Bridges and Steen, 1998; Harris, 2009). Yet, findings from studies of court sentencing lend support to the argument that minorities—young minority males in particular—are perceived to be more threatening and deserving of severe punishment (Baumer, 2013; Brennan, 2006; Mitchell, 2005; Vogel and Porter, 2015; Warren et al., 2012).

Focal Concerns and Disparities in In-Prison Sanctioning

Do similar punishment disparities emerge inside prisons? Although considerable research has focused on inmate misconduct and its causes, as well as on prison social disorder (Goncalves et al., 2014; Useem and Piehl 2008), limited attention has been paid to how prisons respond to, or sanction, misconduct. The small number of studies that do exist identify little racial variation in in-prison punishment decisions (e.g., Crouch, 1985; Butler and Steiner, 2016). It is, however, theoretically plausible that bias in in-prison sanctioning decisions exist and parallel those that occur throughout earlier criminal justice decisionmaking points. Indeed, in-prison sanctioning processes may be viewed as analogous to court sentencing. In a typical prison, inmates are charged, or “written up,” for a formal infraction. As with a law violation, the disciplinary

infraction represents a formal violation of rules and a “write up” in prison is akin to being arrested and charged. In some instances, prison rule violations address behaviors that are also illegal and could be viewed as criminal. Once charged, the infraction is investigated, evidence and testimony are provided, and a disciplinary team hands down a verdict. If a guilty verdict is rendered, the team issues a sanction.

In addition, just as criminal caseloads have increased and many state courts have become overburdened in recent decades (e.g., Ulmer and Johnson, 2004), state prison populations have expanded (Spohn 2015; Useem and Piehl 2008; Western 2006). The resulting prison growth creates the potential for more infractions and caseload pressures that, as with court decisionmaking (Steffensmeier, et al., 1998; Ulmer and Johnson, 2004), cause prison staff to rely more heavily on perceptual shorthands to efficiently process “cases.”

To the extent that in-prison sanctioning entails a decisionmaking process that parallels court sentencing processes, it provides grounds for anticipating similar patterns in punishment. For example, prison officers assigned to disciplinary teams may be influenced by racial cues or stereotypes when making sanctioning determinations. The premise is that racial bias or perceptions of threat extend from society to the prison environment (Irwin, 1980, 2005; Marquart, 1986; Steiner and Wooldredge, 2009; Trulson and Marquart, 2002). More generally, corrections officers may perceive, much as court actors might, racial or ethnic status, as well as age and gender, as markers of increased culpability and dangerousness. The result then would be tougher, more severe sanctions for minorities, younger inmates, males, and young minority males in particular.

It is, of course, possible that the prison context negates the types of focal concerns cues that occur in society. For example, racial threats that exist in society may not transfer into prisons.

From the perception of officers, most inmates, once admitted to prison, may be viewed simply as “cons.” Unlike court sentencing actors, prison officers are removed from the deliberations about individuals’ guilt or innocence related to their original crime. Instead, inmates arrive at the prison predesignated as convicted felons. Crouch (1985) suggests, for example, that in the eyes of prison officers, those who are incarcerated are perceived primarily as “convicts;” all other designations, such as racial or ethnic characteristics, are secondary. As a result, officers may in practice simply view all inmates the same or as similarly threatening and culpable. In such a context, if all inmates are viewed equally as criminals, “extralegal” characteristics that otherwise might serve as cues for perceptual shorthands that guide determinations of guilt may become irrelevant. By contrast, in society, focal concerns processes—such as the application of racial attributions—may be more likely to occur precisely because of the uncertainty that court actors have about an individual’s potential guilt or criminality.

THIS STUDY

This study seeks to contribute to scholarship on incarceration and formal social control by examining whether minority inmates, and whether young, minority, males in particular are more likely to be placed in solitary confinement in response to inmate disciplinary infractions (i.e., disciplinary confinement), net of “legal” factors, such as prior record and type of infraction committed. We focus here on disciplinary confinement because it is a frequently used in-prison sanction (Beck, 2015) and it is analogous to being assigned a prison sentence in court.

Despite a growing body of literature on solitary confinement and its potential impacts, existing studies have paid limited attention to in-prison sanctioning decisions and the role of race

and ethnicity in them. Of these studies, all but one (Butler and Steiner, 2016) focus on relatively small samples that limit their generalizability. In each instance, no evidence of racial or ethnic disparities are found. For example, Flanagan (1982), examining an inmate sample from a northeastern state, used bivariate analyses to test associations between in-prison punishments and inmate characteristics and found no significant correlation between race and in-prison punishment variation. Later, Crouch (1985) examined 121 inmates in a single Texas prison facility and found no impact of race or ethnicity on the severity of in-prison punishments. Similarly, Howard et al. (1994) examined 390 disciplinary events in federal prison and, again, found no association between race/ethnicity and sanction decisions.²

Only two other relevant, prior studies exist—they both examined a recent, large sample of inmates who committed infractions. Specifically, Butler and Steiner (2016) used inmate self-report data from the Bureau of Justice Statistics 2004 Survey of Inmates in State and Federal Correctional Facilities to identify predictors of self-reported placement in disciplinary segregation among inmates who reported being found guilty of a rule violation. Their analyses estimated the impact of demographic characteristics and found no statistically significant association between race and ethnicity with the likelihood of placement in solitary confinement. A study by Olson (2016) used the same BJS dataset but found that black inmates in fact were more likely to report having spent time in disciplinary segregation. Olson’s analysis differed substantially, however, in that it did not account for self-reported in-prison misconduct. Thus, the model estimation did not account for a key confounding influence—whether or not an inmate

² One other study by McClellan (1994) examined over 500 infraction sentencing events in two Texas state prison facilities and examined gender differences in sanctions, but did not examine the impact of race or ethnicity on sanctioning. In addition, Houser and Belenko (2015) examined in prison sanctioning outcomes for 211 female prison inmates in Pennsylvania prisons but did not separate use of solitary confinement from other more serious in-prison sanctions.

was reported or written up for an in-prison infraction by officers—that has been linked to racial disparities in prior research (e.g., Poole and Regoli, 1980; for review, see Goncalves et al., 2014).

This discrepancy between the two analyses highlights that, for prison misconduct and any attendant responses, there are at least three points of discretion and, in turn, opportunities for disparities: (1) the decision made by prison officers to write an infraction report when they observe inmate behavior, (2) the decision, or determination, about whether an inmate is found to be guilty of the alleged infraction, and (3) the decision to sanction (e.g., to place an inmate in solitary confinement or not) given a finding of guilt. Our analysis, like Butler and Steiner (2016), focuses on the latter, or third, decision. In the conclusion, we return to these distinctions and emphasize the need for research on disparities that may arise at each decision point.

Other studies of solitary confinement exist, but have focused primarily on describing inmates placed in some form of segregation, regardless of whether it was for punishment, protection, or managerial reasons. For example, Mears and Bales (2010) explored factors associated with placement in supermax prisons, but they did not limit their analysis to inmates who committed an infraction (see also Beck, 2015; Mears, 2013; Schlanger, 2013).

In short, to our knowledge, apart from Butler and Steiner's (2016) work, no research has been undertaken that utilizes recent national or statewide samples and employs rigorous analytical designs to examine predictors of in-prison punishment decisions (see, however, Steiner and Cain, 2017). Butler and Steiner (2016) called for work that builds on their analysis by examining prison systems' administrative sanctioning records, as opposed to self-report data, to understand patterns and potential disparities that emerge in prison system responses to rule violations. This study seeks to respond to that call and, more broadly, to advance efforts to

understand the exercise of formal social control and, in particular, the use of disciplinary confinement.

DATA AND METHODS

Data. This study uses prison administrative records data from the Florida Department of Corrections. The sample includes all inmates admitted to all state prison facilities in Florida between January 1, 2005 and December 30, 2011 who recorded a disciplinary misconduct between those dates. Thus, we focus our analyses on sanctioning events linked to all members of this sample for all formal disciplinary infraction (DI) events and subsequent formal sanctions assigned by prison officer disciplinary teams in Florida state prisons during this seven-year time period. The data provide detailed DI information as well as information about the inmates, including their demographic characteristics and prior criminal records. In instances when a given inmate contributed more than one DI event, we focused on the first event and removed subsequent infractions from the data file so that no individual appeared more than once in the data. The total sample used in these analyses consists of 89,133 inmate DI events. These events occurred—are nested—within 167 prison facilities. To account for this clustering, we utilize multilevel modeling across all of our analyses. Facilities are the level 2 unit of analysis and inmates are the level 1 unit of analysis.

Dependent variables. The focus of our analysis is on inmate placement in solitary confinement in response to a formal DI being assigned to an inmate. In Florida, if an inmate is written up for a DI by an officer, the infraction report is passed onto a prison disciplinary team. The disciplinary team typically consists of several officers and is led by a hearing officer.

Together, the team of officers weigh the evidence and related testimony surrounding a given incident. If an inmate is found guilty, the disciplinary report stays on the inmate's record and the disciplinary team determines appropriate actions, which includes a range of sanctioning options. The most severe sanction is solitary confinement. Alternative sanctions can include a range of other punishments of lesser severity, including extra work duty during leisure hours, restricted labor squad, payment for damages, suspension of work release, visitation restriction, and loss of privileges. [For further details of Florida's prison sanctioning processes, along with information on the maximum restrictions state administrative codes set on how solitary confinement is used in response to infractions, see FL Administrative Code rules, including 33.601.307 and 33.601.314 (<http://www.dc.state.fl.us/secretary/legal/Ch33/index.html>).]

The primary dependent variable for our analysis is a dichotomous measure of placement in solitary confinement for inmates found guilty of a DI (1 = placement in solitary confinement, and 0 = an alternative, non-solitary confinement sanction). All DI events included in the data file and our analyses were those that resulted in a guilty charge.

Our second dependent variable is a dichotomous measure of length of time in solitary confinement for inmates who received placement in such confinement as their in-prison sanction. Florida state administrative code provides guidelines for in-prison sanctioning decisions in the form of maximum limits on the length of solitary confinement (see FL 33.601.307). These maximums vary across infraction types and, for the most part, range in value from 15 to 90 days, thus providing opportunities for variation to emerge in sentence lengths within and across infraction types. Preliminary analyses identified that when inmates in Florida receive solitary confinement, disciplinary teams regularly assign sentences of set values. For example, 19 percent of solitary sentence lengths were exactly 15 days, 57 percent were exactly 30 days, and

14 percent were exactly 60 days. Our primary goal for these analyses was to examine whether disparities emerge in the use of longer versus shorter lengths of confinement. Thus, to simplify the analysis, we created a dichotomous indicator of “longer” versus “shorter” sentence lengths, where 0 = 30 days or less and 1 = greater than a 30-day sentence. Views about what constitutes a “short” versus a “long” stay in confinement vary, but 30 days is a commonly used threshold (see, e.g., Liman Program & Association of State Correctional Administrators, 2015). We undertook a series of ancillary analyses using alternative outcome measurements and modeling procedures, including continuous measures of sentence length and various categorical measures of sentence length as outcome variables. Findings across these analyses were consistent and substantively the same as those shown below.

Focal independent variables. The focus of our analysis is on inmate demographic measures and their potential influence on the likelihood of placement and length of time in solitary confinement. Our analyses include three dichotomous measures of race and ethnicity using the following dichotomous measures: inmate is *white* (1 = yes, 0 = no), *black* (1 = yes, 0 = no), or *Hispanic* (1 = yes, 0 = no). *Black* is the reference category. More recent sentencing work has highlighted the importance of considering not only race but also ethnicity (Warren et al., 2012; Feldmeyer and Ulmer, 2011; Feldmeyer et al., 2015). Florida provides an ideal context in this regard because it contains a large enough Hispanic population to consider ethnicity in analyses. We also include a dichotomous measure of *sex* (1 = male, 0 = female) and a continuous measure of *age*. To examine potential interaction effects, we created multiplicative terms of race/ethnicity x age, race/ethnicity x sex, and race/ethnicity x age x sex.

Other covariates. We are able to incorporate a diverse range of covariates useful for accounting for potential confounding influences on the association between demographic

characteristics and the likelihood of receiving a solitary confinement placement in response to a DI. The models include several measures of inmates' prior criminal record. Offense information for each inmates' primary offense that led to their prison sentence is measured with the following dichotomous variables where 1 = yes and 0 = no: *primary offense—violent*, *primary offense—drug*, *primary offense—sex*, and *primary offense—other*. *Primary offense—property* is used as the reference category. We also include a count measure of the number of *prior prison commitments* for each inmate, the number of months for each inmate's *prison sentence length*, and the number of months of each inmates' *time served* prior to their first DI.

Not least, we include DI measures for each event. First, we include a count of *DI total charges*, which is a count of the number of specific infractions associated with each infraction event. This approach mirrors the creation of multiple criminal charge measures for arrest events in sentencing studies. Second, we include detailed indicators of the type of infraction each inmate received. Our measures of DI type stem directly from the infraction designations utilized by the Florida prison system. Prior studies of inmate misconduct typically differentiate only between violent and non-violent infractions or use other limited sets of categories (e.g., violent, property, drug, other; see Goncalves et al., 2014). These data include detailed infraction information including, for some infraction types, a differentiation between more (“major”) or less (“minor”) severe infractions. Each infraction was designated as one of the following types: *DI Violent (major)*, *DI Violent (minor)*, *DI Property (major)*, *DI Property (minor)*, *DI Contraband (major)*, *DI Contraband (minor)*, *DI Defiance (major)*, *DI Drug*, *DI Sex*, *DI Disorder*, and *DI Regulation Violation*. *DI Defiance (minor)* serves as the reference category.

Analyses. We conduct a series of analyses that examine the potential role of race, ethnicity, age, and gender on the likelihood and length of time in solitary. The analyses proceed in the

following stages. First, we begin with multilevel regression models that examine the main effects of race, ethnicity, age, and sex, as well as other potentially relevant covariates, on the likelihood of placement in solitary confinement as a punishment for engaging in misconduct.

Second, consistent with prior sentencing research, we conduct a stepwise series of multilevel regression analyses aimed at examining the influence of membership in specific demographic subgroups. We employ a series of two-way and three-way interactions between race/ethnicity, sex, and age, which assess whether there is a youth penalty among males and females and then whether there is a young, minority penalty among males and females.

Third, we conduct infraction-specific analyses. For these analyses, we run separate models for each infraction type that include only those inmates who committed that type of infraction. The goal of these analyses is to determine if race and ethnicity, and membership in specific demographic subgroups, exert a different effect depending on the type of infraction that inmates committed. Prior sentencing research suggests, for example, that court actors have greater discretion in how to charge less severe offense types than they do more severe offenses, such as violent and sexual offenses. In turn, greater room for bias may emerge in sentencing individuals convicted of less severe offenses (e.g., Unnever and Hembroff, 1988). We anticipate that a similar process may occur in prison sanctioning decisions.

Fourth, we assess whether disparities emerge in the sentence length of inmates placed in solitary confinement. For these analyses, we employed a similar set of models to those described above, but examined only those inmates who were sentenced to solitary confinement. We also conducted additional analyses using two-stage tobit regression analysis (Bushway et al., 2007; Johnson and Kurlychek, 2012). The findings were the same as those shown below.

FINDINGS

Descriptive statistics for the sample and measures are included in table 1. Across the 89,133 sanctioning events included in the analysis, 68 percent resulted in a solitary confinement sentence. Of those who received solitary confinement, 15 percent of placements had sentences of more than 30 days. The fact that 68 percent of first-time infractions result in solitary placement is somewhat surprising. Notably, however, there are no national estimates of how frequently solitary placements are used in response to inmate infractions (see, however, Butler and Steiner, 2016; Morris, 2016). Many accounts of solitary confinement, however, highlight that it is used frequently in prison and that it serves many purposes, including not only punishment but also managerial goals and the protection of certain inmates (Beck, 2015; Browne et al., 2011; Frost and Monteiro, 2016; Pizarro and Narag, 2008).

Insert table 1 about here

The data and sample consist only of inmates who were found guilty for formal prison rule violations, but the composition of the inmates is largely similar in composition to most state prison populations (Petersilia 2003; Travis et al. 2014). It is, for example, primarily male (91 percent) and majority black (51 percent). Thirty-nine percent of the sample is white and 10 percent are Hispanic. The average age at the time of infraction was 30 years old. Most inmates were incarcerated for a violent (28 percent), property (29 percent), or drug crime (24 percent) and the average sentence length for this population was 71 months. The average DI's in the sample included a single charge (1.10). The most common DI types were defiance minor (23 percent), regulation violation (18 percent), defiance major (15 percent), disorder (12 percent), violent minor (9 percent), and contraband minor (9 percent).

We now turn to a series of multivariate, multilevel logistic regression models. These models account for clustering of inmate infraction events within prison facilities and predict the likelihood of placement in solitary confinement as a result of a DI. Table 2 presents three models. Model 1 focuses solely on inmate demographic characteristics. In line with predictions of focal concerns theory, we find that black inmates are significantly more likely than white inmates to be sanctioned to solitary confinement; no difference surfaced between Hispanic and black inmates in the likelihood of placement. Similarly, we find that male inmates are substantially more likely than female inmates to be punished through placement in solitary. And younger inmates were more likely than older inmates to be sentenced to solitary confinement.

Insert table 2 about here

These demographic effects could be explained, however, by variation in other characteristics, such as prior record and variation in the type of misconduct in which inmates engage (or, for which they are written up). Models 2 and 3 add measures to account for these possibilities. In model 2, we account for inmates' prior record and the total charges associated with a given infraction event. Here we find that the race, age, and sex effects hold. In addition, inmates incarcerated for violent offenses, inmates who have been incarcerated before, and inmates who have multiple charges associated with their infraction events are significantly more likely to receive solitary confinement placement.

Turning to model 3 in table 2, we now include the full model specification and account for variation in the type of DI in addition to the other covariates. In model 3, we find that each infraction type has a statistically significant association with placement in solitary. Variation in the effect sizes suggests that substantial heterogeneity exists in the likelihood of solitary confinement placement across infraction types. For example, inmates charged with a violent

major DI are 45 times more likely to be placed in solitary confinement than those charged with defiance minor. Inmates charged with violent minor infractions are approximately 16 times more likely to be placed in solitary confinement as compared to such inmates. Commission of other infraction types results in a lower likelihood of being sentenced to solitary confinement, as compared to commission of acts characterized as “defiance minor.” These infractions include property infraction charges, engaging in minor contraband, and violating regulations.

These coefficient estimates align with a bivariate analysis of the percent of inmates placed in solitary confinement across DI categories (not shown). For example, at the bivariate level, 98 percent of inmates charged with violent major infractions were placed in solitary compared to 66 percent of inmates charged with defiance minor. Regulation violation, on the other hand, is the most leniently treated infraction. Only 30 percent of those charged with a regulation violation are placed in solitary confinement as a result.

Our main focus, however, is on the effects of race, ethnicity, sex, and age. Notably, the coefficient for race, which is statistically significant in models 1 and 2, is no longer significant once DI categories are included in the model. It appears, then, that variation in DI charges explains the statistically significant racial variation in the likelihood of solitary confinement placement. This finding parallels that of Mears and Bales (2010), though their analysis focused on placement in segregation in general, not placement in it as a punishment for committing an infraction. Statistically significant effects for sex and age persist in model 3, although the effect of one-year increases in inmate age is substantively small (O.R. = 0.995). The effect of gender, however, remains substantively large—males are roughly three times more likely than females to be placed in solitary confinement for a DI. A statistically significant estimated effect of Hispanic status emerges in model 3, but the magnitude of effect is small (O.R. = 1.087).

Taken together, and contrary to what was hypothesized, the findings suggest that race does not directly affect prison system decisions to place inmates in solitary in response to violations; Hispanics are, though, somewhat more likely than whites to be sentenced to solitary. Prior research highlights the importance, however, of investigating the intersection of race and ethnicity with sex and age to assess whether racial effects may be conditional on the specific demographic subgroup to which an individual belongs and to assess whether young, minority males are particularly more likely to receive placement in solitary confinement.

Table 3 explores these possibilities by adding two- and three-way interactions between race/ethnicity, sex, and age to the fully specified model from above. Inspection of model 1 in table 3 reveals no evidence to support the three-way interaction or the hypothesis that younger black males or younger Hispanic males are more likely to be placed in solitary. However, a two-way interaction between sex and age was statistically significant. Model 2 removes the insignificant two- and three-way interactions to assess whether the sex-age interaction remains. Inspection of the model reveals that it does.

Insert table 3 about here

To this point, then, the analyses suggest that race and ethnicity have limited to no effect on prison system decisions to sanction inmates to solitary confinement in response to rule violations. Similarly, we find no evidence of a young minority male penalty—that is, we do not find that young black males or that young Hispanic males are more likely to be placed in solitary confinement than other demographic subgroups. This finding runs counter to court sentencing research that consistently finds that race and ethnicity, together with sex and age, appreciably influence sanctioning decisions. That sex and age interact, however, points to the possibility that perceptual shorthands, or cues, may still guide sanctioning decisions.

Figure 1 provides two panels that illustrate the limited impact of race and ethnicity on in-prison sanctioning and, at the same time, they highlight the salience of sex (males are sanctioned more severely than females) and of the sex-age interaction that emerges in the models. Panel A is based on estimates from model 1 in table 3. It provides the separate estimated probabilities of placement in solitary confinement, by age, for black, white, and Hispanic males and females, respectively, holding all other covariates at their means. The plot lines illustrate the limited variation across race and ethnicity for both males and females. At the same time, inspection of panel A underscores the substantively large differences between males and females in the likelihood of solitary confinement, by age, and also a modest effect of age that is specific to females. Panel B focuses on this two-way interaction (sex x age) more closely and provides estimated probabilities based on estimates from model 2 in table 3. Here again we see evidence of the gap between males and females and the sex-specific influence of age. For example, all else equal, at the average age of confinement (age 30), males have an 84 percent probability of placement in solitary as a punishment for committing an infraction; for females, this probability is 63 percent. In addition, among females, age exerts a non-trivial effect on in-prison punishment. Younger female inmates are more likely than older females to be placed in solitary confinement.

Insert figure 1 about here

Table 4 provides an additional test of potential race and ethnic influences on in-prison sanctioning decisions by examining the influence of demographic subgroup membership across disciplinary infraction types. Ancillary analyses (described above) indicated that substantial variation exists across infraction types in the percentage of infractions that lead to solitary confinement. For this reason, we use the same models from the earlier tables, but repeat them

for each infraction type. (Accordingly, infraction types are not included as controls.) Sample sizes are noted for each model. Not all infraction types could be examined due to sample size limitations, which led to exclusion of violent major, contraband major, defiance major, drug, and sex violations. Across the remaining eight infraction types for which sample sizes permitted the interactional analyses, we find limited to no evidence of a statistically or substantively significant effect of race or ethnicity on prison punishment decisions or of an effect of the interaction of specific race, ethnicity, sex, and age subgroups. In two instances (violent minor and disorder), there is a statistically significant coefficient estimate for a Hispanic x sex x age interaction. Plots of these interactions indicated, however, that these effects were substantively trivial.

Insert table 4 about here

We turn now to our final analysis, which examines variation in the sentence length—the amount of time—inmates were sanctioned to solitary confinement. We conducted two sets of analyses. First, we created a sample of only those inmates who received a solitary confinement placement (N = 60,540) and examined a similar progression of models to those above and that focused on the dichotomous measure of longer versus shorter sentence lengths. Results from these analyses are shown in table 5 and largely parallel the findings above. The analyses indicate that males and younger inmates sentenced to solitary confinement are more likely to receive lengthy placements. In addition, and somewhat surprisingly, white and Hispanic inmates were more likely to receive lengthy placements than black inmates. The substantive differences in sentence lengths between racial and ethnic groups are, however, modest. Similar to the previous sets of models focused on whether inmates received solitary confinement, no statistically

significant two- or three-way interactions emerged.³

Insert table 5 about here

Second, we conducted a second set of analyses using two-stage tobit regression analysis (not shown), which is sometimes used in sentencing studies to model simultaneously the decision to incarcerate and the assignment of sentence length. Substantively similar results as those shown in the previous sets of analyses emerged.

Finally, we conducted a range of ancillary analyses to test the robustness of these findings. For example, we explored polynomial specifications of age and used different infraction categories, including the aggregation of major and minor categories of infraction types. In addition, we explored a series of analyses examining subsequent infractions, as opposed to the first infraction. (Doing so requires accounting for the nesting of infraction sentencing events within individuals and for the prior sanctions associated with earlier infractions.) We found that variation in whether an individual receives solitary confinement is reduced with each subsequent infraction because the likelihood of receiving solitary confinement increases with each subsequent infraction. Across all of these ancillary analyses, the pattern of results were substantively similar to those identified in the tables.

CONCLUSION

Prior formal social control and sentencing theories, along with a large body of empirical

³ Our analyses focus on lengths of sentence, which may differ from the amount of time individuals actually stayed in solitary confinement. The data did not allow for examining differences between sentence length and time served in solitary. Such differences constitute an additional potential disparity that may arise and that warrants attention in future research.

research on criminal court decisionmaking, underscores the salience of race and ethnicity in punishment. This paper sought to apply prior punishment research to understand sanctioning that occurs inside prisons and, at the same time, to contribute to efforts to understand better the use of solitary confinement. The main findings can be summarized briefly.

Contrary to what focal concerns and related research on sentencing would anticipate, we found no consistent evidence of a racial or ethnic penalty in prison sanctioning decisions. Initial models revealed that black inmates were more likely to be placed in solitary confinement. However, this effect was eliminated after controlling for variation in reported commission of infractions. This finding thus supports the limited body of prior empirical work (Crouch, 1985; Butler and Steiner, 2016) that indicates that, unlike punishment decisionmaking that occurs outside of prison, race and ethnicity may have little impact at this particular decision point.

At the same time, consistent evidence of gender disparities surfaced. All else equal, females were less likely than males to receive solitary confinement as a disciplinary punishment. This finding aligns with prior punishment research that identifies patterns of leniency in the sanctioning of females. When viewed through the lens of focal concerns theory, for example, the findings accord with the view that males may be perceived by criminal justice actors as more dangerous or threatening and thus as warranting harsher sanctions (see, e.g., Steffensmeier et al., 1998). There is little research that directly examines this issue as it relates to in-prison sanctioning, but some accounts suggest some warrant for its salience (for a recent review, see Goncalves et al., 2014). It is possible, too, that facility bed space in solitary confinement units—a practical constraint—might explain the gender gap. Female prison facilities, for example, tend to operate with less solitary confinement capacity.

Age exerted a consistent, but modest influence on in-prison sanctioning decisions for females

but not males. The probability of placement in solitary confinement for young females was greater than for older females and approached, but still remained lower than, the probability of such placement among younger males. Although we were not able to test empirically the causes of the age effect for females or the differences in the effect of age between males and females, a focal concerns perspective can shed light on a possible cause. For example, in female prisons, younger inmates may be perceived as posing a greater threat to social order and thus may be sanctioned more harshly. In male prisons, however, age may not be viewed in such a way.

The study findings run counter to what some studies of sentencing have found. In particular, for example, no consistent or strong evidence of a three-way interaction between race and ethnicity, age, and sex emerged. That is, there was little indication that race or ethnicity exerted a strong direct or interactive effect, as would be anticipated from some focal concerns or threat perspectives, on prison punishment decisions.

Not least, the analyses revealed that considerable variation exists in the use of solitary confinement in response to different types of infractions. For example, although 68 percent of infraction events resulted in a placement in solitary confinement, more than 90 percent of violent major, violent minor, and contraband major infractions resulted in solitary. By contrast, only 30 percent of regulation violations resulted in solitary confinement. This finding—that infraction type is perhaps the primary contributor to in-prison sanctioning decisions—aligns with earlier empirical work by Crouch (1985) and others (e.g., Flanagan, 1982), which underscored relative uniformity in sanctioning decisions across race and ethnic status, but substantial variation based on the severity of misconduct for which an individual was reported.

Several implications flow from this study. First, the findings do not support the hypothesis that race or ethnicity feature prominently in prison sanctioning. Minority inmates in this study

appeared to receive substantively similar punishments as whites. What might explain the seemingly reduced salience of race and ethnicity in the prison context? Although it goes beyond our analysis, one possibility is that race and ethnicity provide limited impact on officers' perceptions of who is most dangerous or guilty because all prison inmates are convicted felons and thus, in the eyes of prison officers, already culpable. Crouch (1985), in an earlier study of in-prison sanctioning, referred to this possibility as "universalism" in prison officers' perceptions of prison inmates, and suggested that inmates' convict status may supersede any stigma stemming from minority status. More research is needed, then, that measures how prison officers view different groups of inmates and what characteristics or actions among these inmates may most affect officers' perceptions. Such research would provide direct measurements of the mechanisms theorized by focal concerns and other attributions perspectives (Albonetti and Hepburn, 1996; Bridges and Steen, 1998), and in doing so, provide further insight into whether focal concerns can be applied to in-prison sanctioning, and if it can, test further whether race operates differently across sentencing contexts.

Second, the findings here should not be construed to suggest that racial and ethnic disparities do not exist in prisons. There is, for example, a large literature that suggests that important inequalities exist in prisons (see, e.g., Case and Fassenfest, 2004; Cochran et al., 2016; Goodman, 2008; Massoglia, 2008; Patterson, 2015). It may well be that the disparities surface, for example, prior to sanctioning and in ways that administrative records data do not reveal. To illustrate, prison conditions may disadvantage black inmates in ways that contribute to misconduct: Officers may discriminate against them, the programs and services available to them may be minimal, their prison placements may be farther from their home communities, and so on (Mears and Bales, 2010).

In the context of prison misconduct and prison administrative responses to it, the punishment decision, which was the focus of this paper, is one of at least three decisions, or opportunities, where race, ethnicity, gender, and age may have impacts and thus lead to disparate experiences. Research is needed that can also focus on actions that occur prior to in-prison sentencing decisions, including research on disparities in officers' decision to record an infraction for any given inmate as well as disparities in whether inmates are found guilty after being written up for infractions. In addition, there is a need for research that parallels policing research (see, e.g., Visher, 1983; Reisig et al., 2004; Lytle, 2014) in examining how inmate characteristics shape prisons' and prison officers' decisions. Officers may, for example, discriminate against minorities by recording certain behaviors as infractions that would not be recorded, or may be less likely to be recorded, as such for white inmates (e.g., Poole and Regoli, 1980). Here, inequalities exist and are masked by seemingly race-neutral sanctioning that occurs *given an infraction* (Mears and Bales, 2010). The fact of a prior sanction to solitary then may create a record that is used to justify subsequent punishment decisions. In so doing, cumulative disadvantages may arise that are concentrated among minority inmates (see, e.g., Frase, 2009; Kutateladze et al., 2014; Tonry and Melewski, 2008; Wooldredge et al., 2015).

Third, this study identifies that there may not only be variation in the use of solitary confinement in general (Beck, 2015; Frost and Monteiro, 2016), there also may be variation in the use of solitary confinement as a form of punishment. Solitary, or segregation, has been used for many purposes, such as the protection of inmates or as a management strategy for creating greater order in prisons (Mears, 2013). Studies are needed that identify whether the factors that contribute to placement in solitary for these other reasons vary from those associated with placement in it for punishment.

Fourth, future research should assess the extent to which different contexts influence in-prison punishment. Recent sentencing research has highlighted the potential importance of contextual factors on sentencing (e.g., Ulmer and Johnson, 2004; Johnson 2006) and prison studies have emphasized the potential impact of prison facility characteristics on individuals' experiences in prison (e.g., Wooldredge et al., 2001; Steiner and Wooldredge, 2008). Going forward, studies are needed that integrate these two areas of research. That is, research is needed that can assess whether variation in facility characteristics, such as security level, racial composition, solitary confinement bed space or capacity, and inmate-to-officer ratio influence prisons' usage of solitary confinement in response to infractions. In our analyses, for example, we used multilevel modeling to account statistically for nesting of inmates in different prison facilities, but we could not measure specific characteristics of each facility. Estimates of contextual influences might, for example, reveal circumstances under which racial and ethnic disparities in sanctioning do emerge and they might also help to explain the gender and age differences identified in this study.

Finally, although this study did not examine whether solitary confinement exerts a beneficial or harmful impact on inmates, additional research is needed that can better identify any such impacts. Such research is needed to assess whether solitary confinement for purposes of punishment is effective. It also is needed because, to the extent that solitary confinement helps or harms, such effects will systematically occur more among those groups for whom confinement-as-punishment disproportionately occurs.

Potential benefits include reduced misconduct and recidivism (see, for example, Lovell et al., 2007; Mears and Bales, 2009; Medrano, et al., 2017; Morris, 2016; Pizarro et al., 2014; see, generally, Garcia, 2016). Solitary confinement for purposes of punishment would appear

unlikely to improve inmate mental health. However, debate exists about whether it harms, and this debate in part has made the use of solitary confinement a lightning rod for controversy. On the one hand, a large literature exists that suggests that such confinement may adversely affect inmates' mental health (see, e.g., Andersen et al., 2000; Arrigo and Bullock, 2008; Cloyes et al., 2006; Grassian, 1983; Haney, 1993, 2003; Kaba et al., 2014; Romano, 1996; Singer, 1971). On the other hand, recent reviews and studies raise questions about the methodological rigor of much of the prior work and, at the same time, suggest that solitary confinement may not harm the mental health of inmates (see, e.g., Gendreau and Labrecque, 2017; Morgan et al., 2016).

Although not the focus of this study, it bears emphasizing that uncertainty about the effects of solitary confinement for punishment is paralleled by uncertainty about the potential effects of solitary confinement for purposes of protecting inmates or of achieving any of a range of other managerial goals, such as promoting systemwide safety and order or reducing the influence of gangs (Mears, 2016). There is, in short, a considerable need for more research aimed at identifying disparities in the use of solitary confinement for any of a range of purposes and in determining the effects of such confinement. There is, too, a need for policies and oversight that can ensure that prison punishments are fair, warranted, and effective and that, at the same time, solitary confinement in general occurs in a way that also is fair, warranted, and effective.

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Table 1. Descriptive Statistics (N = 89,133)

	Mean	S.D.	Min.	Max.
<i>Dependent Variable</i>				
Solitary (disciplinary) confinement	0.68	0.47	0	1
Solitary sentence length (“longer”=1, “shorter”=0)	0.15	0.36	0	1
<i>Demographic Characteristics</i>				
Black	0.51	0.50	0	1
White	0.39	0.49	0	1
Hispanic	0.10	0.30	0	1
Sex (1 = male, 0 = female)	0.91	0.29	0	1
Age (continuous)	30.27	10.26	13	87
<i>Prior Record</i>				
Primary offense — violent	0.28	0.45	0	1
Primary offense — property	0.29	0.46	0	1
Primary offense — drug	0.24	0.43	0	1
Primary offense — sex	0.05	0.22	0	1
Primary offense — other	0.13	0.33	0	1
Prior prison commitment	0.84	1.46	0	16
Sentence length (months)	71.12	106.36	0	600
Time served	7.03	7.59	0	75.28
<i>Disciplinary Infraction</i>				
DI Total charges	1.10	0.41	1	16
DI Violent (major)	0.01	0.10	0	1
DI Violent (minor)	0.09	0.29	0	1
DI Property (major)	0.02	0.13	0	1
DI Property (minor)	0.03	0.17	0	1
DI Contraband (major)	0.03	0.16	0	1
DI Contraband (minor)	0.09	0.29	0	1
DI Defiance (major)	0.15	0.36	0	1
DI Defiance (minor)	0.23	0.42	0	1
DI Drug	0.05	0.21	0	1
DI Sex	0.01	0.08	0	1
DI Disorder	0.12	0.33	0	1
DI Regulation Violation	0.18	0.38	0	1

Table 2. Mixed Effects Logistic Regression of Disciplinary Confinement on Measures of Inmate Characteristics, Prior Record, and Disciplinary Infractions (N = 89,133 inmates, 167 facilities)

	Model 1			Model 2			Model 3		
	b	S.E.	O.R.	b	S.E.	O.R.	b	S.E.	O.R.
White	-0.211***	0.02	0.810	-0.191***	0.02	0.827	-0.012	0.02	0.989
Hispanic	-0.025	0.03	0.975	0.000	0.03	0.999	0.084*	0.03	1.087
Sex	0.965***	0.24	2.643	0.981***	0.24	2.713	1.110***	0.28	3.051
Age	-0.004***	0.00	0.996	-0.003***	0.00	0.997	-0.005***	0.00	0.995
Primary offense — violent	-	-	-	0.072***	0.02	1.076	0.031	0.03	1.033
Primary offense — drug	-	-	-	-0.060***	0.02	0.943	-0.043	0.03	0.958
Primary offense — sex	-	-	-	-0.021	0.04	0.978	-0.072	0.05	0.930
Primary offense — other	-	-	-	0.041	0.03	1.040	0.035	0.03	1.034
Prior prison comm.	-	-	-	0.021***	0.01	1.021	0.013	0.01	1.012
Sentence length	-	-	-	0.0004***	0.00	1.000	0.001***	0.00	1.001
Time served	-	-	-	-0.008***	0.00	0.992	-0.009***	0.00	0.991
DI Total charges	-	-	-	1.404***	0.04	4.070	1.297***	0.04	3.654
DI Violent (major)	-	-	-	-	-	-	3.812***	0.23	45.215
DI Violent (minor)	-	-	-	-	-	-	2.794***	0.06	16.350
DI Property (major)	-	-	-	-	-	-	-0.444***	0.06	0.642
DI Property (minor)	-	-	-	-	-	-	-0.387***	0.05	0.680
DI Contraband (major)	-	-	-	-	-	-	2.100***	0.08	8.166
DI Contraband (minor)	-	-	-	-	-	-	-0.657***	0.03	0.518
DI Defiance (major)	-	-	-	-	-	-	1.469***	0.03	4.344
DI Drug	-	-	-	-	-	-	3.004***	0.10	20.169
DI Sex	-	-	-	-	-	-	1.339***	0.12	3.815
DI Disorder	-	-	-	-	-	-	1.230***	0.03	3.420
DI Regulation violation	-	-	-	-	-	-	-1.577***	0.03	0.207
Constant	0.433	0.23	-	-1.068***	0.24	-	-1.239	0.27	-
Log likelihood	-49530.960			-48388.851			-37454.997		

Notes: Black, primary offense — property, DI defiance (minor), serve as reference variables. *** p<.001, ** p<.01, * p < .05

Table 3. Interaction Models, Logistic Regression of Disciplinary Confinement on Demographics, Prior Record, and Disciplinary Infractions Covariates (N = 89,133 inmates, 167 facilities)

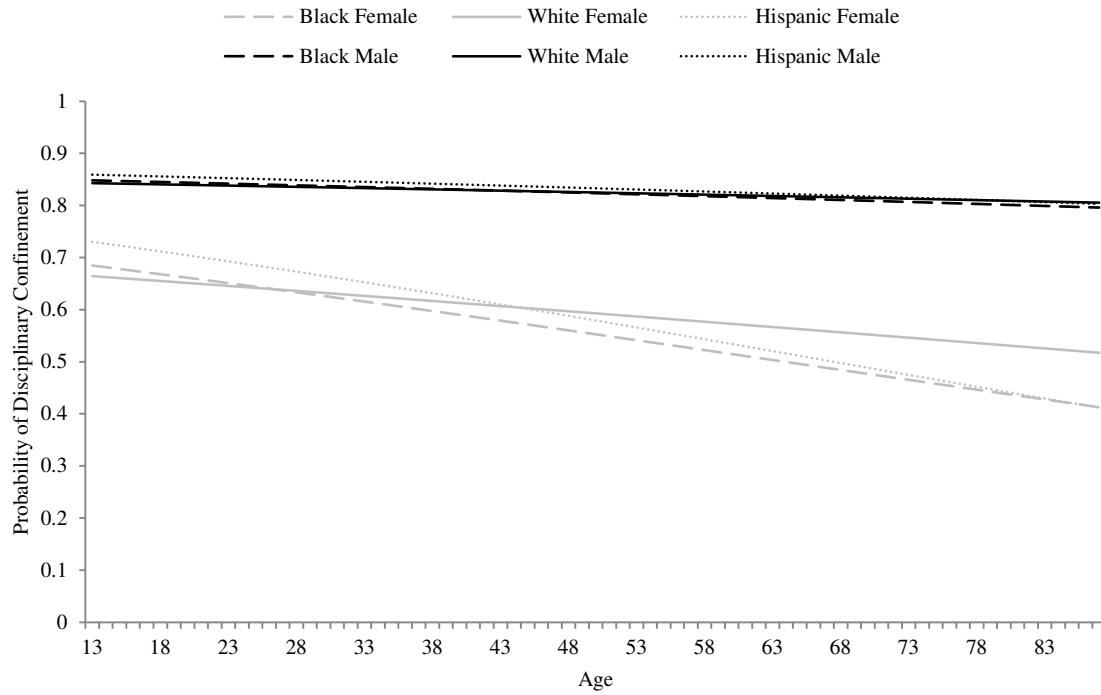
	Model 1			Model 2		
	b	S.E.	O.R.	b	S.E.	O.R.
<i>Interactions</i>						
Sex x Age	0.010*	0.01	1.010	0.007*	0.00	1.007
Sex x White	0.124	0.22	1.132	-	-	-
Sex x Hispanic	-0.165	0.44	0.848	-	-	-
White x Age	0.007	0.01	1.007	-	-	-
Hispanic x Age	-0.003	0.01	0.997	-	-	-
White x Sex x Age	-0.006	0.00	0.994	-	-	-
Hispanic x Sex x Age	0.002	0.01	1.002	-	-	-
<i>Covariates</i>						
White	-0.183	0.21	0.834	-0.012	0.02	0.988
Hispanic	0.260	0.43	1.295	0.082*	0.03	1.086
Sex	0.810*	0.32	2.256	0.882**	0.30	2.415
Age	-0.015**	0.01	0.985	-0.011***	0.00	0.989
Primary offense — violent	0.029	0.03	1.031	0.032	0.03	1.032
Primary offense — drug	-0.044	0.03	0.958	-0.042	0.03	0.959
Primary offense — sex	-0.074	0.05	0.928	-0.074	0.05	0.928
Primary offense — other	0.033	0.03	1.032	0.034	0.03	1.035
Prior prison comm.	0.013	0.01	1.012	0.011	0.01	1.011
Sentence length	0.001***	0.00	1.001	0.001***	0.00	1.001
Time served	-0.009***	0.00	0.991	-0.009***	0.00	0.991
DI Total charges	1.295***	0.04	3.649	1.295***	0.04	3.651
DI Violent (major)	3.812***	0.23	45.232	3.811***	0.23	45.190
DI Violent (minor)	2.795***	0.06	16.364	2.793***	0.06	16.335
DI Property (major)	-0.442***	0.06	0.643	-0.443***	0.06	0.642
DI Property (minor)	-0.386***	0.05	0.680	-0.387***	0.05	0.679
DI Contraband (major)	2.101***	0.08	8.176	2.101***	0.08	8.176
DI Contraband (minor)	-0.655***	0.03	0.519	-0.657***	0.03	0.518
DI Defiance (major)	1.467***	0.03	4.337	1.467***	0.03	4.338
DI Drug	3.006***	0.10	20.213	3.005***	0.10	20.185
DI Sex	1.327***	0.12	3.769	1.328***	0.12	3.772
DI Disorder	1.230***	0.03	3.422	1.230***	0.03	3.421
DI Regulation Violation	-1.578***	0.03	0.206	-1.577***	0.03	0.207
Constant	-0.941**	0.31		-1.033***	0.29	
Log likelihood	-37451.268			-37453.053		

Notes: Black, primary offense — property, DI defiance (minor), serve as reference variables.

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

Figure 1. Predicted probabilities of disciplinary confinement

Panel A: Predicted probabilities of disciplinary confinement, by race/ethnicity, sex, and age (model 1)



Panel B: Predicted probabilities of disciplinary confinement, by gender, and age (model 2)

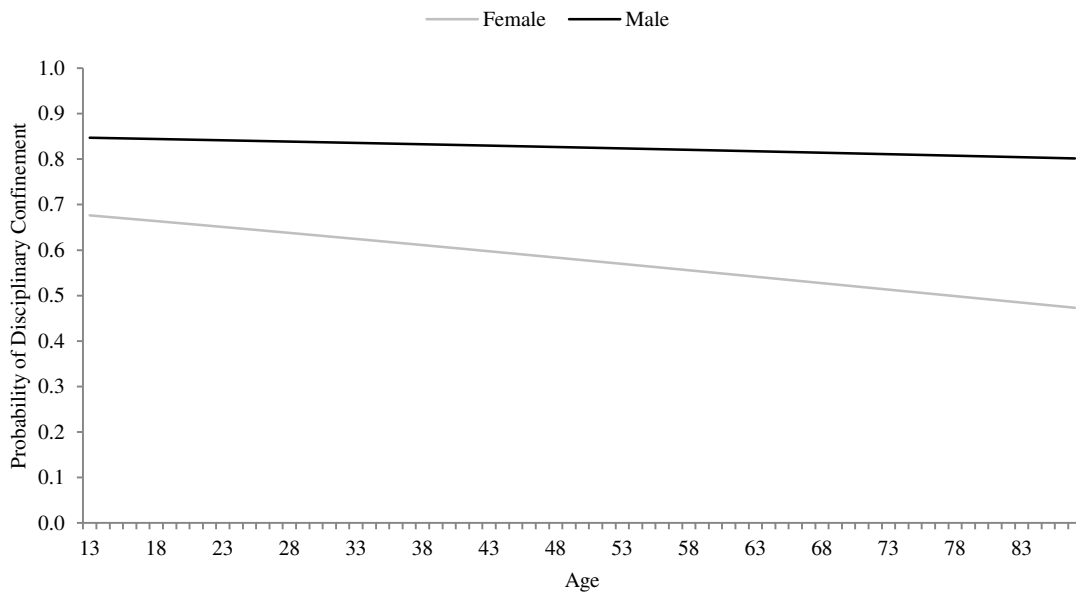


Table 4. Assessment of race/ethnicity, sex, and age interactions within infraction types

	Violent (Minor)			Property (Major)			Property (Minor)			Contraband (Minor)		
	b	S.E.	O.R.	b	S.E.	O.R.	b	S.E.	O.R.	b	S.E.	O.R.
<i>Interactions</i>												
Sex x White	-1.545	1.01	0.213	1.571	2.80	4.813	-1.911	1.78	0.148	0.966	0.69	2.627
Sex x Hispanic	-4.593	2.57	0.010	5.191	4.72	179.732	-0.080	3.42	0.923	-0.079	1.28	0.924
Sex x Age	-0.046	0.02	0.955	-0.024	0.06	0.976	-0.038	0.04	0.963	0.008	0.02	1.008
White x Age	-0.037	0.03	0.963	0.051	0.08	1.053	-0.041	0.05	0.960	0.017	0.02	1.017
Hispanic x Age	-0.122	0.08	0.885	0.147	0.14	1.159	0.037	0.10	1.037	0.013	0.04	1.013
White x Sex x Age	0.063	0.03	1.065	-0.042	0.09	0.959	0.070	0.05	1.073	-0.021	0.02	0.979
Hispanic x Sex x Age	0.163*	0.08	1.178	-0.164	0.14	0.848	0.004	0.10	1.004	-0.013	0.04	0.987
<i>Covariates</i>												
White	0.645	0.95	1.905	-1.711	2.78	0.181	0.982	1.75	2.670	-0.619	0.66	0.538
Hispanic	3.411	2.51	30.288	-4.652	4.68	0.010	-0.888	3.37	0.412	0.407	1.25	1.502
Sex	3.196**	1.01	24.437	1.853	2.17	6.381	1.711	1.49	5.535	0.937	0.67	2.552
Age	0.021	0.02	1.021	0.031	0.06	1.031	0.025	0.04	1.025	-0.020	0.02	0.980
Primary off — violent	0.011	0.13	1.011	-0.146	0.16	0.864	-0.077	0.12	0.926	-0.041	0.07	0.960
Primary off — drug	0.159	0.15	1.172	-0.349	0.20	0.705	-0.087	0.13	0.917	0.005	0.07	1.005
Primary off — sex	-0.144	0.29	0.866	0.116	0.31	1.123	0.032	0.21	1.032	-0.161	0.12	0.851
Primary off — other	-0.320	0.17	0.726	0.094	0.23	1.099	0.064	0.16	1.066	0.079	0.09	1.082
Prior prison commits	0.001	0.05	1.001	0.042	0.07	1.043	0.020	0.03	1.020	0.050*	0.02	1.051
Sentence length	0.003**	0.00	1.003	0.002*	0.00	1.002	0.000	0.00	1.000	0.001**	0.00	1.001
Time served	-0.001	0.01	0.999	-0.009	0.01	0.991	-0.017**	0.01	0.984	-0.005	0.00	0.995
DI Total charges	0.941***	0.20	2.564	1.998***	0.18	7.373	1.432***	0.17	4.188	1.851***	0.10	6.366
Constant	1.003	0.96		-3.570	2.16		-2.049	1.49		-2.358***	0.66	
N (inmates)	8,238			1,545			2,681			8,291		
N (facilities)	151			133			150			159		
Log likelihood	-1492.825			-825.091			-1561.095			-4735.029		

Notes: Black and primary offense — property serve as reference variables. *** p<.001, ** p<.01, * p < .05

Table 4. (Continued.) Assessment of race/ethnicity, sex, and age interactions within infraction types

	Defiance (Major)			Defiance (Minor)			Disorder			Regulation Violation		
	b	S.E.	O.R.	b	S.E.	O.R.	b	S.E.	O.R.	b	S.E.	O.R.
<i>Interactions</i>												
Sex x White	0.955	0.58	2.599	0.367	0.43	1.443	-1.016	0.56	0.362	0.179	0.52	1.196
Sex x Hispanic	-0.450	1.30	0.638	0.276	0.75	1.317	-1.998	1.08	0.136	1.415	1.14	4.116
Sex x Age	0.033*	0.01	1.034	-0.012	0.01	1.010	0.003	0.01	1.003	0.015	0.01	1.015
White x Age	0.026	0.02	1.026	0.010	0.01	1.010	-0.020	0.02	0.980	0.011	0.02	1.012
Hispanic x Age	-0.009	0.04	0.991	0.007	0.02	1.007	-0.048	0.03	0.953	0.036	0.03	1.037
White x Sex x Age	-0.031	0.02	0.970	0.010	0.01	0.986	0.022	0.02	1.022	-0.003	0.02	0.997
Hispanic x Sex x Age	0.009	0.04	1.009	0.007	0.02	0.988	0.073*	0.03	1.076	-0.034	0.03	0.966
<i>Covariates</i>												
White	-0.703	0.54	0.495	-0.393	0.41	0.675	0.907	0.52	2.478	-0.407	0.50	0.666
Hispanic	0.447	1.25	1.563	-0.135	0.73	0.874	1.325	1.01	3.764	-1.372	1.11	0.254
Sex	0.501	0.59	1.651	0.621	0.47	1.861	1.489*	0.56	4.433	0.129	0.57	1.138
Age	-0.030*	0.01	0.971	-0.012	0.01	0.988	-0.003	0.01	0.997	-0.021	0.01	0.979
Primary off — violent	0.207*	0.08	1.230	0.000	0.05	1.000	0.063	0.08	1.065	0.020	0.06	1.020
Primary off — drug	0.025	0.08	1.025	-0.077	0.05	0.926	0.069	0.08	1.071	-0.093	0.06	0.911
Primary off — sex	0.063	0.15	1.065	-0.112	0.08	0.894	-0.124	0.15	0.883	-0.123	0.10	0.884
Primary off — other	0.273**	0.10	1.314	0.023	0.06	1.023	-0.048	0.10	0.953	-0.014	0.07	0.986
Prior prison commits	-0.016	0.03	0.984	0.020	0.01	1.020	0.029	0.02	1.029	-0.008	0.02	0.992
Sentence length	0.001	0.00	1.001	0.000*	0.00	1.000	0.001	0.00	1.001	0.000*	0.00	1.000
Time served	-0.023***	0.00	0.977	-0.014***	0.00	0.987	-0.017***	0.00	0.983	0.007*	0.00	1.007
DI Total charges	1.073***	0.16	2.923	0.957***	0.09	2.604	1.361***	0.12	3.899	1.090***	0.11	2.973
Constant	1.096	0.58		-0.366	0.46		-0.476	0.55		-1.709**	0.56	
N (inmates)	13,464			20,209			10,855			15,990		
N (facilities)	165			164			158			162		
Log likelihood	-4112.487			-10964.148			-3848.128			-7799.960		

Notes: Black and primary offense — property serve as reference variables. *** p<.001, ** p<.01, * p < .05

Table 5. Mixed Effects Logistic Regression of Sentence Length (1 = “Longer,” 0 = “Shorter”) on Inmate Characteristics (N = 60,540 inmates, 166 facilities)

	Model 1			Model 2		
	b	S.E.	O.R.	b	S.E.	O.R.
<i>Interactions</i>						
Sex x Age	-	-	-	0.010	0.02	1.010
Sex x White	-	-	-	0.002	0.62	1.003
Sex x Hispanic	-	-	-	0.764	1.26	2.141
White x Age	-	-	-	0.019	0.02	1.019
Hispanic x Age	-	-	-	0.013	0.04	1.013
White x Sex x Age	-	-	-	-0.012	0.02	0.988
Hispanic x Sex x Age	-	-	-	-0.009	0.04	0.991
<i>Covariates</i>						
White	0.259***	0.03	1.295	0.039	0.61	1.039
Hispanic	0.342***	0.05	1.408	-0.529	1.25	0.589
Sex	0.894***	0.21	2.445	0.804	0.54	2.237
Age	0.005**	0.00	1.005	-0.009	0.02	0.991
Primary offense — violent	-0.030	0.04	0.971	-0.034	0.04	0.968
Primary offense — drug	0.041	0.04	1.042	0.036	0.04	1.036
Primary offense — sex	0.070	0.07	1.073	0.068	0.07	1.072
Primary offense — other	-0.033	0.05	0.967	-0.042	0.05	0.955
Prior prison commitment	-0.041**	0.01	0.960	-0.034**	0.01	0.966
Sentence length	0.000	0.00	1.000	0.000	0.00	1.000
Time served	-0.001	0.00	0.999	-0.001	0.00	0.999
DI Total charges	0.578***	0.03	1.783	0.577***	0.03	1.783
DI Violent (major)	3.796***	0.09	44.534	3.803***	0.09	44.832
DI Violent (minor)	-1.667***	0.09	0.189	-1.664***	0.09	0.189
DI Property (major)	1.450***	0.08	4.262	1.459***	0.08	4.299
DI Property (minor)	-2.522***	0.26	0.080	-2.518***	0.26	0.081
DI Contraband (major)	-2.095***	0.13	0.123	-2.089***	0.13	0.124
DI Contraband (minor)	3.765***	0.05	43.147	3.766***	0.05	43.217
DI Defiance (major)	0.475***	0.04	1.607	0.476***	0.04	1.609
DI Drug	3.796***	0.09	44.534	3.803***	0.09	44.832
DI Sex	-1.224***	0.30	0.294	-1.225***	0.30	0.294
DI Disorder	-3.012***	0.15	0.049	-3.010***	0.15	0.049
DI Regulation Violation	2.965***	0.06	19.401	2.970***	0.06	19.486
Constant	-3.988***	0.21		-3.780***	0.54	
Log likelihood						
				-15354.82		

Notes: Black, primary offense — property, DI defiance (minor), serve as reference variables.
 *** p<.001, ** p<.01, * p < .05