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The Impacts of Restrictive Housing on Inmate Behavior, Mental Health, and Recidivism, and Prison Systems and Personnel

Daniel P. Mears, George B. Pesta, Vivian Aranda-Hughes, Jennifer M. Brown, Sonja E. Siennick, Joshua C. Cochran, and William D. Bales

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Final Summary Overview

Statement of the Problem

Restrictive housing has increased greatly in use in recent decades and it is now widely prevalent. In the early 1980s, few states relied intensively on such housing; instead, they used it in a limited manner for protective custody and disciplinary punishment. Within three decades, however, all but a handful of states created or expanded restrictive housing, with the goal of creating greater control over certain inmates and improving systemwide order and safety (Riveland 1999; Mears 2006; Shalev 2009; Frost and Monteiro 2016; Mears et al. 2019). According to a report by the Bureau of Justice Statistics, 1 in 5 prisoners has spent time in restrictive housing and 1 in 10 has spent 30 days or longer in such housing (Beck 2015).

Considerable debate exists about the appropriateness of the housing—especially solitary confinement restrictive housing—and its positive or negative impacts as well as whether potential benefits offset the social and financial costs (Ward and Werlich 2003; Smith 2006; Katel 2012; Mears 2013; McGinnis et al. 2014; Frost and Monteiro 2016; Morris 2016; Steiner and Cain 2016; Sundt 2017; Brinkley-Rubinstein et al. 2019; Labrecque and Smith 2019b; Woo et al. 2020). Proponents argue that restrictive housing improves the behavior of inmates, benefits prison systems through greater order and safety, and is an essential tool for which no comparably effective alternatives exist. Critics argue that the housing harms inmates by worsening, at great financial cost, their behavior, mental health, and recidivism, that it does little to improve system order and safety, and that alternatives exist that may be more effective and cost-efficient.

The backdrop for this situation is an era in which policymakers, practitioners, and the public have called for greater government accountability and evidence-based policy. Yet, few systematic, credible empirical assessments exist of the beneficial or harmful impacts of restrictive housing across a range of outcomes (Shalev 2009; Mears 2013; Frost and Monteiro 2016; Mears et al. 2019). Instead, studies have provided inconsistent estimates of restrictive housing, and in particular solitary confinement, impacts on inmate misconduct, mental health, or recidivism. Fewer still have examined the impacts on prison systems and personnel. What is especially lacking are studies that: (a) rely on strong methodological research designs; (b) examine different durations of time in restrictive housing and that distinguish single-cell vs. double-cell confinement; (c) assess impacts on multiple outcomes; (d) determine how, if at all, the housing differentially affects certain inmate groups; and (e) draw on the insights of prison officials, officers, and other personnel about the benefits and harms of restrictive housing, how its effectiveness can be enhanced, and effective alternatives.

Research Goals and Objectives

Debate about restrictive housing has continued amid limited and inconsistent evidence on the impacts of the housing, and continues despite policymaker calls for evidence-based policies and

practices. A pressing need thus exists for insight into restrictive housing impacts on inmates and on prisons and their personnel. Without such information, prison systems risk investing in approaches to managing inmates that may fail to protect inmates and personnel and, as importantly, to promote public safety. This study sought to address this need.

In particular, the purpose of the study by the Florida State University (FSU) research team was to inform scholarship and policy on restrictive housing, and the specific goal was to contribute to efforts to understand the impacts of restrictive housing on inmates and prison systems and their personnel. To achieve this goal and contribute to the broader mission of the National Institute of Justice (NIJ), the study's objectives were: (1) to provide policymakers, practitioners, researchers, and the public with empirical information about the impacts of long-term solitary confinement restrictive housing on inmate misconduct, mental health, and recidivism, (2) to provide these groups with information about whether restrictive housing impacts may vary by exposure (e.g., duration) and among inmate groups, and (3) to provide insight into how restrictive housing is used, how it may affect prison systems and personnel, how its effectiveness might be enhanced, and what alternatives exist that may be more effective and cost-efficient. To achieve the study's goal and objectives, we examined three sets of data, including administrative records data from the Florida Department of Corrections (FDC) and information from focus groups with and surveys of prison officials and personnel.

This study focused primarily on restrictive housing that entails extended confinement of an individual in a cell, typically for six months or more, for management reasons, what the FDC terms "close management 1" (CM1). The FDC does not use "solitary" to characterize this housing; the report employs this terminology because the CM1 housing is similar to what many published accounts characterize as long-term solitary confinement restrictive housing. The Department has multiple types of what it terms restrictive housing, including housing that allows for two inmates per cell for administrative, punishment, or management purposes, which we also examine. However, the primary focus of the study was to respond to calls for research on restrictive housing that entails long-term solitary confinement, a practice that constituted the central emphasis of the NIJ conference—Topical Working Group on the Use of Administrative Segregation in the U.S.—and the resulting edited volume on restrictive housing (Garcia 2016).

Research Design and Methods

The research design for the study consisted of a multi-method approach that drew on several data sources. The first source consisted of administrative records inmate data from the FDC. Data extracts with information from different parts of the FDC database system were merged to create four data analysis files. One was a person-level admission-and-release cohort analysis file; it consisted of inmates admitted to and released from Florida prisons from July 1, 2007 to December 31, 2015. This file consisted of 216,875 prison stays involving 184,183 unique inmates. The second was a stock population data file consisting of 102,209 inmates incarcerated in the FDC on June 30, 2011. Contrasting the two sets of data allowed for investigating whether the profile of restrictive housing inmates varies depending on how one samples cases. The third was a matching analysis data file; a subset of the first file, the analytic sample consisted of

147,859 prison stays for 132,277 unique inmates. The admission-and-release data thus provided a foundation for examining the use and effects of restrictive housing on inmate behavior in prison and on recidivism after release from prison. These data were converted into a fourth data file, termed an inmate-week file; the analytic sample consisted of 185,471 observations on 1,098 unique prison stays for individuals who experienced long-term solitary confinement.

A second source of data consisted of qualitative information gleaned from site visits to 10 prisons, including all five facilities that operated CM1 long-term solitary confinement. These occurred from 2017 through 2020, and included interviews with 2 individuals in the FDC administration. For each one, researchers conducted an interview with wardens, a focus group with junior-ranking correctional officers, and a focus group with senior-ranking officers, classification officers, and medical and mental health staff. At each visit, researchers typically toured the restrictive housing parts of the prison. A total of 144 individuals participated. Respondents consisted of correctional personnel with varying roles within the prison system to allow for a wide range of responses from various perspectives.

A third source of data consisted of a survey, conducted from November 4, 2019 - January 10, 2020, of FDC personnel at each of the state's 50 major public correctional institutions. There was a 53.3 percent completion rate relative to all eligible respondents (10,211 / 19,166) and a 90.6 percent participation rate among all individuals who accessed the survey (10,211 / 11,267). The analytic sample was 9,656 due to exclusion of one facility with reported potential irregularities in survey administration. The survey built on insights from the site visits and focus groups, as well as a literature review; its primary focus was to gauge views of how restrictive housing is used and how it may affect inmates, personnel, and the prison system.

The analyses for the study varied by data source. For analysis of the administrative records data, three approaches were taken. The first consisted of descriptive statistical analyses to provide a profile of who is placed in long-term solitary confinement restrictive housing. It provided a basis of comparison to inmates in the general population and to individuals in other forms of restrictive housing. These analyses focused on two broad categories of housing:

- (1) *Short-term restrictive housing for administrative or disciplinary purposes.* For example, when a violent incident occurs, the FDC uses administrative confinement to investigate what occurred, an inmate's contribution to the incident and risk to prison system, and what action to take. In situations where an investigation and hearing concludes that an inmate violated prison rules, placement in disciplinary confinement occurs.
- (2) *Long-term restrictive housing—termed close management 1 (CM1), 2 (CM2), and 3 (CM3)—for management purposes for when inmates have caused injury or death, been found to be threatening or violent, or to pose a risk to the safety and security of the prison system.* CM1 entails placement in a cell alone for all but an hour or two each day, typically for six months or more, with limited privileges. The FDC uses CM2 and CM3 for management purposes as well for incidents that do not rise to a level of severity deemed to warrant CM1 placement. Both CM2 and CM3 housing allow for two individuals per cell and more privileges than what those in CM1 can have.

The second approach for analyzing the administrative data relied on propensity score matching analyses to estimate the effects of long-term solitary confinement on recidivism. This regression-based approach allowed for matching inmates in this housing to individuals who appeared to be similar along a range of demographic, criminal history, and other dimensions.

The third approach used the inmate-week data to estimate treatment-only fixed effects models, which analyze within-person changes. The inmate-week data structure enables one to examine how stays in long-term solitary confinement are associated with inmate adjustment and behavior prior to, during, and after placement in the housing.

For the site visit data, the focus group and interview data were coded to identify themes relating to the impacts of the housing on inmates, the prison system, and personnel. And for the analysis of the survey data, we used descriptive and regression analyses.

Research Findings

- *Among all prison stays for all inmates admitted to and released from FDC prisons during the observation period (July 1, 2007 to December 31, 2015), almost half of the stays involved exposure to some form of restrictive housing.* However, stays in long-term non-solitary restrictive housing (CM2 or CM3) were relatively rare, consisting of 2 percent of all prison stays during the study window. Placements in long-term solitary confinement restrictive housing (CM1) were the most rare, consisting of 1 percent of all prison stays.

- *Individuals in long-term solitary confinement restrictive housing (CM1) were substantially younger and more likely to be male, to be black, and to have been identified at admission as needing mental health services.* The average age of individuals in this type of housing was 26.8 years old; by contrast, the average age of general population inmates who never experienced the housing was 36.9. Over 9 in 10 (94.5 percent) of all individuals in solitary confinement were men. Black inmates constituted 43.8 percent of the prison stays, but accounted for 63.6 percent of long-term non-solitary restrictive housing and 63.7 percent of long-term solitary confinement. Among inmates who experienced long-term solitary confinement, 39.5 percent were assessed within 90 days of admission as needing mental health services; by contrast, 15.3 percent of those who never experienced restrictive housing of any kind were assessed as needing such services.

- *The admission-and-release cohort analysis identified that 48.2 percent of inmate stays involved short-term restrictive housing, whereas among the stock population of inmates on June 30, 2011, 6.3 percent were in short-term restrictive housing.* On a given day, then, relatively few inmates experience short-term restrictive housing, but over the course of a prison term, many inmates are likely to experience it. The occurrence of long-term solitary confinement did not differ appreciably for the admission-and-release and the stock population cohorts. In addition, the inmate profile of the two groups was similar in showing that males and blacks were more likely to experience such confinement and that the need for mental health services was greater as compared to individuals who never experienced any form of restrictive housing. The stock population analysis identified that individuals in long-term solitary confinement were more likely to have a prior prison record.

- *Matching analyses showed that stays in long-term solitary confinement restrictive housing (CM1) were associated with an increased likelihood of recidivism and that this effect may vary across conditions and groups.* Shorter-term stays were associated with increased recidivism, which is likely due to individuals being released directly to society. Stays of more than one year in the housing also were associated with a greater likelihood of recidivism. Inmates released directly from solitary confinement housing to society were more likely to recidivate; those released from general population facilities or from other forms of restrictive housing after an initial stay in long-term solitary confinement were not more likely to recidivate. Adverse effects on recidivism were evident only for some groups, including males, inmates under age 25, blacks, individuals with no diagnosed mental illness, and those serving sentences of 3 years or longer. There was no evidence of a beneficial effect of the housing on recidivism. These relationships reflect reliance on a robust set of controls. Even so, they should be interpreted with caution given that omission of unobserved variables may have influenced the results.

- *The treatment-only fixed effects analyses found that the odds of a disciplinary infraction were elevated before long-term solitary confinement (CM1) stays and reduced during and after them.* By contrast, the odds of needing mental health services were lower before such stays and then elevated during and after them. These effects did not grow or decline in the 12 weeks following a stay in this housing. The analyses identified that such patterns can and do vary across groups. For example, the beneficial effect of long-term solitary confinement in reducing infractions was more prominent for a first-time experience with such housing. In addition, individuals who experienced longer stays in solitary confinement housing were more likely to need mental health services, and these needs were more likely to persist after the stays. Patterns for mentally ill inmates differed—these inmates were more likely to need services before they went to long-term solitary confinement, and less likely to need them during and after their stays. (One possible explanation is that such inmates may be more likely to receive mental health treatment while in long-term solitary confinement because their condition was identified prior to placement.) The need for mental health services was more elevated among females and older individuals who experienced such confinement. It varied as well by race and ethnicity. For example, white inmates were more likely than blacks and Hispanics to need services before, during, and after placement in long-term solitary confinement housing.

- *From the site visits, which included interviews and focus groups, a number of findings emerged.* (1) Long-term solitary confinement (CM1) was viewed as necessary for inmates who cannot be controlled any other way. Some respondents noted that some inmates who might be eligible to be in such confinement but do not really warrant placement in it nonetheless are sent to it. (2) Views about the impacts of this housing on inmates varied greatly. Some respondents viewed the housing as effective in reducing misconduct among those sent to it and among those not sent to it; others viewed the housing as ineffective. In addition, some respondents felt that mentally ill inmates have more difficulty adapting to the long-term solitary confinement, while others observed that such inmates may receive more services while in this housing and may prefer it to life in a general population facility. Some respondents felt that female and younger inmates may experience more harm from the isolation than is the case with other groups of

individuals. (3) The limited availability of rehabilitative programming was reported to be one of the biggest impediments to the effectiveness of the housing both for managing the inmates while in the housing and for assisting them after release. Many respondents called for increased programming, increased mental health training for staff, and reduced placement of mentally ill inmates in long-term solitary confinement. Many, too, called for increased long-term solitary confinement capacity to allow short-term disciplinary and administrative confinement cells to be used for their intended purposes rather than as overflow housing for inmates awaiting transfer to long-term solitary confinement units. A frequently mentioned recommendation for improving restrictive housing and prison system operations was to hire more and experienced personnel. It was recommended as well that protocols should be developed to ensure that only inmates who warrant placement in long-term solitary confinement go there. (4) Little consensus existed about whether long-term solitary housing improves prison system order or safety, but most respondents agreed that limited staffing and programming constituted critical problems.

- *From the survey, key findings included the following.* (1) Over three-fourths of personnel agreed that long-term solitary confinement (CM1) is needed because inmates appear to be more violent than in the past. (2) Four of 5 respondents said placement of inmates in the housing improves day-to-day prison operations, safety, and order. (3) Sixty percent or more felt that the need for this housing results from having too few staff, too few experienced staff, and too few work, educational, vocational, substance abuse, or mental health treatment programs for inmates. (4) Sixty-two percent felt that inmate behavior improves during stays in the housing, while the remainder felt that behavior worsens. (5) They were divided about whether inmate behavior improves upon return to general population facilities; they also were divided about whether inmate mental health deteriorates during stays in long-term solitary confinement. (6) Fifty-five percent of personnel thought that such confinement is more effective than housing with another individual, while 45 percent thought that confinement with a cellmate is more effective. (7) Views about the impacts of long-term solitary confinement varied; for example, administrators were more likely than front-line personnel to view the housing as effective in improving an individual's behavior during the stay in the housing and in improving prison system safety.

Implications for Research and Policy and Practice

Study Limitations

Implications of the study extend to areas in which further research is needed and to different policies and practices that warrant consideration. These implications, however, should be viewed in light of several limitations of the study. First, the analyses focused on one state at one point in time; the study's generalizability to this state in the past or future or to other states is unknown. Second, although the analyses using administrative records data employed a range of controls common to most studies inmates and ex-prisoners, there may be confounders whose omission could have affected the results. Studies using other measures or analyses might identify different patterns. Third, this study examined inmate behavior using measures similar to those in prior work; however, assessment of the impact of long-term solitary confinement would benefit from inclusion of additional measures, such as inmate stress, inmate perceptions of how

they are treated, suicidal ideation, and motivation to change. It is possible that estimated effects might differ with inclusion of such measures. Fourth, any identified relationships apply only “on average”; the effects of restrictive housing for a given inmate cannot be determined based on the study results. Fifth, the survey and focus group data tapped into potential impacts on inmates, personnel, and prison system operations. The data may not fully or accurately reflect personnel views. In addition, identified impacts should be confirmed independently using a combination of subjective and objective measures. For example, if some personnel view restrictive housing as entailing more risk for staff, that does not mean that it in fact does. Assessment of this possible relationship using multiple sources of data is needed. If discrepancies exist, the perceptions of personnel are not less relevant, and still would warrant identification and understanding. Finally, the study did not examine other potential impacts, such as the extent to which decisions to place inmates in long-term solitary confinement housing follow department protocols or ways in which inmate experiences in such housing, or personnel experiences working at such housing, may have economic, social, or mental health impacts on their families.

Implications for Research

Several implications for research flow from the study’s findings. *First, when seeking to understand past, current, or future research, the restrictive housing terminology can lead to confusion in interpreting the generalizability or relevance of study results.* Accounts that conflate different types of restrictive housing—such as shorter-term stays, typically for administrative or disciplinary reasons, short- or long-term stays that allow for two individuals to a cell for different purposes, or long-term stays that involve isolation for management reasons—may obscure that some are more prevalent than others. The heterogeneity of confinement conditions that can be considered “restrictive housing” complicates the creation of apples-to-apples comparisons of the use and effects of this housing (Mears et al. 2019).

A second and related implication is that studies need to be cautious in generalizing results, given that these may vary depending on the type of restrictive housing and sample, such as a release cohort or a stock population cohort. Individuals who experience a given type of housing may vary from those who experience other types. And those in such housing on a given day may vary from those who have ever experienced it prior to release from prison.

Third, further research is needed to identify which groups are most likely to be placed into various types of restrictive housing and why. Only with state-by-state comparisons, and with studies that compare inmates in the housing to those who do not experience it, will a more credible foundation exist to identify whether a common set of patterns exists in factors associated with restrictive housing placements (Mears and Bales 2010; Schlanger 2013; Beck 2015; Garcia 2016; Labrecque and Smith 2019c). In identifying these patterns, researchers will want to examine what contributes to them. For example, if males and minorities are more likely to be placed in long-term solitary confinement restrictive housing, what inmate, prison facility, or programming characteristics explain such differences? Similarly, if gang membership is associated with placements, what explains the association (Pyrooz and Mitchell 2020)? The possibilities may include variation in behaviors that can lead to solitary confinement as well as

variation in how personnel view certain groups and in the conditions in prisons. For example, do some groups enter prison with a greater likelihood of committing disciplinary infractions? Or do they enter prison with a similar likelihood to that of other groups but instead receive differential services and treatment or become targeted for greater enforcement of rules?

Fourth, studies should unpack the processes through which long-term solitary confinement housing may influence behavior after release. The analyses here echo other work in suggesting that stays in this housing may be associated with an increased likelihood of recidivism (see, e.g., Mears and Bales 2009; Clark and Duwe 2019; Zgoba et al. 2020). The analyses also suggest that this effect may be more likely for some groups, such as those released directly from such housing to society; this pattern echoes a study of Washington supermax inmates (Lovell et al. 2007). How and why such effects arise warrants attention.

Fifth, research is needed that identifies the conditions necessary for long-term solitary confinement to produce benefits (e.g., lower rates of misconduct and recidivism) and minimize harms (e.g., higher rates of mental health symptomatology, misconduct, and recidivism). It is likely that, as a form of restrictive housing, solitary confinement effects may vary depending on the types and amounts of programming in such confinement, efforts to facilitate successful reentry of individuals back into general population facilities and society, and staffing levels and experience (see, generally, Garcia 2016; Labrecque and Smith 2019b).

Sixth, the nature of inmate mental health needs prior to, during, and after stays in long-term solitary confinement warrants closer attention. The present study accords with prior work that suggests that this confinement may worsen mental health (see, generally, Kapoor and Trestman 2016; Haney 2018). This issue has been central to many debates about and critiques of restrictive housing, especially those forms that entail lengthy stays in solitary confinement (Gendreau and Labrecque 2018). Studies are needed that examine valid mental health assessments of all inmates, the relationship between mental health and behavior, placement of the mentally ill who engage in misconduct into different types of restrictive housing as compared to the placement of individuals without a mental illness, the treatment and services the mentally ill receive while in restrictive housing relative to what they would receive in general population facilities, and the effects of the housing on the mentally ill and those without a mental illness.

Seventh, studies should investigate the systemwide effects of relying on long-term solitary confinement as well as other forms of restrictive housing, with outcomes relevant to each. Estimating such effects will be difficult because of variation in restrictive housing, how it is used, and conditions in the housing and the prison system, but is needed to assess system impacts. In undertaking such an assessment, it will be important to consider impacts not only on inmates but also on personnel and the system. As the present study found, work in long-term solitary confinement restrictive housing is associated with higher levels of personnel stress. Yet, it is possible that at a systemwide level, there may be aggregate improvements in both inmate and personnel stress and safety as a result of using the housing. The relevant outcomes may vary by type of restrictive housing. For example, the effectiveness of short-term administrative confinement might be assessed in part by the extent to which it enables personnel to minimize

injury to inmates and staff. In all cases, potential adverse effects—such as harm to inmate mental health, the risk of increased misconduct, recidivism, or even death (see, e.g., Brinkley-Rubinstein et al. 2019), and risks to personnel health and safety—should be evaluated.

Finally, research should unpack the views and experiences of inmates as well as those of administrators, officers, and staff who work in prisons. Accounts from inmates provide a way of directly tapping the restrictive housing experience. Future work ideally will include surveys of inmates who have experienced the housing and compare their views with those who have not experienced it (see, e.g., Beck 2015). Personnel views and experiences may vary and should be further investigated. Consistent with prior work, for example, this study found that many personnel hold conflicting views about the appropriateness and the effectiveness of restrictive housing (Mears and Castro 2006). In addition, their views and experiences may be influenced by systemwide conditions (e.g., staffing levels or the amount of available programming and services) and by facility-specific conditions (e.g., officer culture, types of available housing, composition of the inmate population). A focus on personnel is of interest in its own right and it may shed light on the factors that influence the use and effects of restrictive housing.

Implications for Policy and Practice

In addition to implications for research, the study has several implications for policy and practice. These implications echo and further ground those identified in the U.S. Department of Justice’s (2016) report on restrictive housing and in reviews (see, e.g., Kurki and Morris 2001; Shalev 2009; Mears 2013, 2016; Frost and Monteiro 2016; Garcia 2016; Morgan et al. 2016; Sundt 2017; Gendreau and Labrecque 2018; Haney 2018; Labrecque and Smith 2019b).

First, results from the qualitative part of the study underscore recommendations in prior research that close attention be given to development of risk and need instruments for determining which individuals warrant placement in long-term solitary confinement, based on objective criteria that align with the goals of this housing (McGinnis et al. 2014; Labrecque and Mears 2019; Labrecque and Smith 2019c). Rules and procedures, and monitored adherence to them, should be implemented to ensure consistency in the use of the confinement. Doing so can also ensure that placements reduce overreliance on such confinement and improve prison safety.

Second, in developing assessment instruments, it is important to consider the role of facility conditions, such as staffing levels and experience and the availability of rehabilitative programming, that may indirectly contribute to inmate behavior and in turn placement into long-term solitary confinement. Failure to address such conditions may amount to seeking to empty water from a sinking ship rather than fixing the hole. To the extent that how prisons are run contributes to inmate behavior, then addressing this issue may reduce inmate misconduct and in turn the need for short-term restrictive housing or for long-term solitary confinement.

Third, to the extent that restrictive housing of any type will remain a fixture of contemporary correctional systems, there is a need both to ensure that conditions in the housing improve behavior and to provide reentry preparation. The absence of meaningful programming or treatment may be criminogenic and, as some respondents emphasized, constitutes a missed opportunity to intervene in ways that target risk factors for misconduct and recidivism. Efforts to

improve programming for individuals in restrictive housing necessarily will require investment in recruiting, training, and retaining more personnel. It also will require developing inmate monitoring systems that identify behavioral changes among those in solitary confinement and how conditions in the housing may influence these changes. Not least, it will require investment in programs to help individuals released from restrictive housing readjust to general population facilities and to prepare them for release to society (Shames et al. 2015; Digard et al. 2018).

Fourth, the need for mental health treatment may vary among different inmate groups, and such treatment may be needed regardless of an inmate's mental health status prior to placement in long-term solitary confinement. At least two critiques have been leveled against the use of such confinement—one is that the mentally ill should never be exposed to the housing because of the potential harmful effects of it for this population, and a second is that the housing should never be used because it may contribute to mental health problems for anyone placed in it. Debate about this issue (see, e.g., Gendreau and Labrecque 2018; Haney 2018) likely will be ongoing. However, to the extent that the housing continues to be used, there will be a need to monitor, assess, and treat mental health problems that inmates in long-term solitary confinement may have. There also is a need for correctional systems to monitor, assess, and treat inmate mental health needs prior to and after placement in such confinement.

Fifth, efforts are needed that address the challenges and experiences of personnel who work in restrictive housing or are indirectly affected by it and that improve systems operations.

Programs and training geared toward preparing officers and staff for work in restrictive housing are one solution. Such efforts likely will do little, however, without a concomitant investment in adequate staffing levels, including recruitment and retention of experienced personnel throughout the prison system. Perhaps more than in prior decades, work in correctional systems can be stressful and dangerous for officers and staff. Greater attention, then, is needed to regularly collecting information on their experiences and identifying when and where targeted interventions would improve personnel mental health and performance. Attention is needed as well to identifying ways, such as increased staffing, to improve prison system operations, which may reduce the need for restrictive housing and simultaneously improve systemwide safety.

Many stakeholder groups can take steps to reduce over-reliance on restrictive housing and to improve its appropriate use and effectiveness. Lawmakers can create oversight boards that monitor prison system restrictive housing operations. In doing so, they can draw on dimensions identified in this study and in reviews. Foundations and advocacy groups, as well as organizations like the National Institute of Corrections, can work to highlight problems in the use of restrictive housing as well as strategies for reducing over-reliance on the housing and for improving its appropriate use and impacts (see, e.g., Shames et al. 2015; Digard et al. 2018). Corrections officials can create agency workgroups devoted specifically to systematically working to adopt the recommendations here, in the U.S. Department of Justice (2016) report, and in reviews. These groups should take a broad-based approach. This includes a focus on inmates, personnel, the prison system, diverse factors that influence the use of restrictive housing, and multiple dimensions of impact (e.g., inmate behavior and mental health, personnel safety and mental health, prison system safety and order, impacts on communities).

The Impacts of Restrictive Housing on Inmate Behavior, Mental Health, and Recidivism, and Prison Systems and Personnel

1. Introduction

Restrictive housing has increased greatly in use in recent decades and it is now widely prevalent. In the early 1980s, few states relied intensively on such housing; instead, they used it in a limited manner for protective custody and disciplinary punishment. Within three decades, however, all but a handful of states created or expanded restrictive housing, with the goal of creating greater control over certain inmates and improving systemwide order and safety (Riveland 1999; Mears 2006; Shalev 2009; Frost and Monteiro 2016; Mears et al. 2019). According to a report by the Bureau of Justice Statistics, 1 in 5 prisoners has spent time in restrictive housing and 1 in 10 has spent 30 days or longer in such housing (Beck 2015).

Considerable debate exists about the appropriateness of the housing—especially solitary confinement restrictive housing—and its positive or negative impacts as well as whether potential benefits offset the social and financial costs (Ward and Werlich 2003; Smith 2006; Katel 2012; Mears 2013; McGinnis et al. 2014; Frost and Monteiro 2016; Morris 2016; Steiner and Cain 2016; Sundt 2017; Labrecque and Smith 2019b; Woo et al. 2020). Proponents argue that restrictive housing improves the behavior of inmates, benefits prison systems through greater order and safety, and is an essential tool for which no comparably effective alternatives exist. Critics argue that the housing harms inmates by worsening, at great financial cost, their behavior, mental health, and recidivism, that it does little to improve system order and safety, and that alternatives exist that may be more effective and cost-efficient.

The backdrop for this situation is an era in which policymakers, practitioners, and the public have called for greater government accountability and evidence-based policy. Yet, few systematic, credible empirical assessments exist of the beneficial or harmful impacts of restrictive housing across a range of outcomes (Shalev 2009; Mears 2013; Frost and Monteiro 2016; Mears et al. 2019). Instead, studies have provided inconsistent estimates of restrictive housing, and in particular solitary confinement, impacts on inmate misconduct, mental health, or recidivism. Fewer still have examined the impacts on prison systems and personnel. What is especially lacking are studies that: (a) rely on strong methodological research designs; (b) examine different durations of time in restrictive housing and that distinguish single-cell vs. double-cell confinement; (c) assess impacts on multiple outcomes; (d) determine how, if at all, the housing differentially affects certain inmate groups; and (e) draw on the insights of prison officials, officers, and other personnel about the benefits and harms of restrictive housing, how its effectiveness can be enhanced, and effective alternatives.

Debate about restrictive housing has continued amid limited and inconsistent evidence on the impacts of the housing, and continues despite policymaker calls for evidence-based policies and practices. A pressing need thus exists for insight into restrictive housing impacts on inmates and on prisons and their personnel. Without such information, prison systems risk investing in approaches to managing inmates that may fail to protect inmates and personnel and, as importantly, to promote public safety. The study sought to address this need.

In particular, the purpose of the study by the Florida State University (FSU) research team was to inform scholarship and policy on restrictive housing, and the specific goal was to contribute to efforts to understand the impacts of restrictive housing on inmates and prison systems and their personnel. To achieve this goal and contribute to the broader mission of the

National Institute of Justice (NIJ), the study's objectives were: (1) to provide policymakers, practitioners, researchers, and the public with empirical information about the impacts of long-term solitary confinement restrictive housing on inmate misconduct, mental health, and recidivism, (2) to provide these groups with information about whether restrictive housing impacts may vary by exposure (e.g., duration) and among inmate groups, and (3) to provide insight into how restrictive housing is used, how it may affect prison systems and personnel, how its effectiveness might be enhanced, and what alternatives exist that may be more effective and cost-efficient. To achieve the study's goal and objectives, we examined three sets of data. We analyzed administrative records data from the Florida Department of Corrections (FDC) and information from focus groups with, and surveys of, prison officials and personnel.

1.1 Restrictive Housing Overview

Restrictive housing—that is, isolating an inmate in a prison cell by himself or herself, sometimes for extended periods of time (e.g., days, weeks, months, or years), with limited privileges and few opportunities for movement—has been used throughout the course of American corrections. A shift occurred, however, in the late 1970s and early 1980s, toward greater use of the housing, not only to punish inmates or provide “protective custody” but also to achieve managerial goals, such as “controlling” inmates and promoting greater systemwide safety and order (Riveland 1999; Toch 2003; Smith 2006; Mears 2013; Frost and Monteiro 2016). Prison systems in the 1980s began to develop or expand specialized housing modeled after the federal government’s “lockdown” approach at its Marion, Illinois, facility (Ward and Werlich 2003; Reiter 2016). In the ensuing decades, “supermax” housing—the popularized term for extended restrictive housing, especially the use of such housing to hold inmates for managerial purposes—greatly expanded (National Institute of Corrections 1997; King 1999; Riveland 1999; Mears 2006; Naday et al. 2008; Baumgartel et al. 2015; Garcia 2016). Recent estimates from the Bureau of Justice Statistics suggest that approximately 90,000 inmates in the United States reside in restrictive housing on a given day and that, in the year prior to the study, approximately 200,000 inmates spent at least 30 days or longer in such housing (Beck 2015).

The rise in the use of restrictive housing has been motivated in part by correctional systems seeking ways to protect inmates and staff. Benefits of the housing, however, have been contested. For example, critics have argued that the housing is inhumane and causes harm to inmates, including a worsening of mental health and inmate behavior (Toch 2003; King, 2005, 2007; Arrigo and Bullock 2008; Shalev 2009; Baumgartel et al. 2015; Cloud et al. 2015; Kapoor and Trestman 2016; Haney 2018). At the same time, legal challenges have been raised that argue that the housing constitutes excessive punishment, that it is used in an improper and arbitrary manner, and that it has adverse effects (Collins 2004). Scholars have pointed to the need to identify and estimate the full range of possible benefits and harms, as well as costs. Doing so is necessary to arrive at a more evidence-based foundation for assessing restrictive housing, identifying ways to ensure that it is used appropriately and effectively, and determining when alternatives might be more effective (Lawrence and Mears 2004; Mears and Watson 2006; Lovell et al. 2007; Naday et al. 2008; Katel 2012; Mears 2013; Foster 2016; Frost and Monteiro 2016; Morris 2016; Kupers 2017; Labrecque and Smith 2019b; Salerno and Zgoba 2020).

For scholars, the study of restrictive housing stands of interest in its own right. It provides, for example, an opportunity to understand how an individual’s behavior may be influenced by the nature of the prison experience and how prison systems maintain, or seek to maintain, order

(Sykes 1958; DiJulio 1987; Bottoms 1999; Rhodes 2004). For policymakers and practitioners, the study of restrictive housing is of pressing relevance—the housing has engendered considerable debate, is expensive, and yet may be critical to the operation, order, and safety of prison systems. At the same time, in an era in which government accountability and evidence-based policy have been advocated, there is a need to determine the extent to which restrictive housing is being used appropriately, achieves its intended benefits, and causes harms. There is also a need for guidance about how to improve the use and effectiveness of restrictive housing, limit its use to what is minimally necessary, and identify strategies that, along with restrictive housing, can increase prison system effectiveness and cost-efficiency.

1.2 Evidence on the Impacts of Restrictive Housing

Reviews of restrictive housing research have arrived at the same general assessment—few credible, methodologically rigorous evaluations of the use or impacts of the housing exist (Kurki and Morris 2001; Smith 2006; Mears 2008, 2013; Frost and Monteiro 2016; Labrecque and Smith 2019b; Mears et al. 2019). They highlight that a central methodological challenge lies in the creation of appropriate comparison groups. Many studies focus only on inmates in restrictive housing, rely on non-random samples of these inmates, or employ few controls for factors that may bias estimates of impact. Inmates who are placed in restrictive housing, especially those placed in it for extended periods of time, are not likely to resemble general population inmates (Lovell et al. 2000; Mears and Bales 2009; O’Keefe et al. 2013; Labrecque 2015; Morris 2016; Gendreau and Labrecque 2018). For example, they may have a greater propensity to engage in misconduct, they may exhibit more mental health symptomatology, and present a greater risk of recidivism. Studies that do not rely on appropriate comparison groups therefore make it difficult to determine the extent to which restrictive housing affects inmate symptoms and behavior. An additional limitation of prior work is that impacts on inmate misconduct have gone almost entirely unstudied (Steiner and Cain 2016; see, however, Labrecque 2015; Morris 2016; Labrecque and Smith 2019a; Salerno and Zgoba 2020) and studies typically focus on one outcome rather than all relevant outcomes, including misconduct, mental health, and recidivism.

Perhaps the most attention has been given to mental health. The longstanding concern is that restrictive housing may worsen or contribute to inmate mental illness. Reviews have identified a large body of work that suggests support for this possibility (e.g., Smith 2006; Kapoor and Trestman 2016; Haney 2018). Such work collectively suggests that the concern is justified. Yet, recent studies that have employed more rigorous research methodologies indicate that the concern may not be warranted (e.g., O’Keefe et al. 2011, 2013; Morgan et al. 2016; Gendreau and Labrecque 2018). The more general conclusion, then, is that a debate exists about the extent to which extant empirical research establishes the harms, or lack thereof, of restrictive housing. Another conclusion is that variable estimates of the effect of restrictive housing on mental health may derive from the fact that studies frequently use different measures of restrictive housing, with some focused on short-term stays in the housing and others focused on longer-term stays. A final conclusion is that the housing too often may be used with mentally ill inmates when these individuals could be managed more effectively in other settings.

Few studies have examined the effects of restrictive housing on recidivism. Those that exist typically suggest that it has no effect or small effects on recidivism (see, e.g., Lovell and Johnson 2004; Lovell et al. 2007; Mears and Bales 2009; Clark and Duwe 2019; Zgoba et al. 2020; see, generally, Motiuk and Blanchette 2001; Ward and Werlich 2003; Pizarro et al. 2014; Mears et al.

2019). In addition, few studies have examined the effects of restrictive housing on in-prison behavior. Existing research, however, suggests that it also has little appreciable effect on inmate misconduct (see, e.g., Morris 2016; Labrecque 2019; Brinkley-Rubinstein et al. 2019; Labrecque and Smith 2019b; Salerno and Zgoba 2020; Woo et al. 2020).

Set against such work is the question of whether restrictive housing improves safety and order throughout prison systems. To date, only one study has addressed this issue with a methodologically rigorous design. It compared pre- and post-supermax housing misconduct rates in three states (Arizona, Illinois, and Minnesota) with those in Utah (the comparison state) and found little consistent evidence of a beneficial or harmful effect (Briggs et al. 2003). Other research has relied primarily on single-state studies or interviews with a relatively small number of prison officials or inmates about potential benefits and harms (e.g., Crouch and Marquart 1989; Rhodes 2004; Mears and Watson 2006; Reiter 2012). Little systematic evidence about the impacts of restrictive housing on prison systems or the people who work within them exist (see, generally, Mears 2005; Mears and Reisig 2006; Steiner and Cain 2016). The safety challenges for officers who work with the most violent or disruptive inmates are considerable. At the same time, job satisfaction associated with working in restrictive housing facilities may be lower because of these challenges and the working conditions in these facilities (Mears and Watson 2006). It remains, however, largely unknown to what extent restrictive housing helps or harms prison personnel—including officers and medical and program staff—especially those who supervise inmates placed in such housing (see, generally, Ferdik and McKee 2015; Mears 2016).

1.3 Research Gaps and Needs

Reviews of research on restrictive housing point to a wide range of pressing research gaps and needs. The NIJ conference on administrative segregation—Topical Working Group on the Use of Administrative Segregation in the U.S. in fall 2015—highlighted many of these gaps, as did a white paper commissioned by NIJ (Frost and Monteiro 2016). Specifically, the reviews, Working Group, and white paper identified that there was a considerable need for studies that:

- Identify the impact of restrictive housing on inmates using rigorous research methodologies, including the use of appropriate comparison groups;
- Evaluate impacts using a variety of operationalizations of such housing;
- Assess inmate impacts on diverse outcomes, including inmate misconduct, mental health, and recidivism;
- Determine if restrictive housing exerts different impacts on diverse groups, including the mentally ill, females, minorities, and younger inmates;
- Examine the potential impacts of the housing on prison system operations, safety, and order, as well as its impacts on prison administrators and personnel;
- Take stock of potential benefits and harms, respectively, of restrictive housing;
- Identify ways to improve the appropriate use, effectiveness, and cost-efficiency of restrictive housing, as part of a set of strategies for achieving prison system goals; and
- Rely on mixed methods approaches, drawing on the insights of administrators and the personnel who work directly with inmates in restrictive housing, to create a more systematic and comprehensive assessment of the uses and impacts of the housing.

To assess the impacts of restrictive housing on inmate behavior, mental health, recidivism, and prison systems and personnel, we relied on a mixed methods approach. This included reliance on quantitative and qualitative methodologies, administrative records data, insights from prison administrators and wardens, a focus on diverse inmate outcomes across different groups, a focus on prison system and prison personnel impacts, and identification of ways to improve the use, effectiveness, and cost-efficiency of restrictive housing and prison systems. Institutional Review Board approval of the study was obtained prior to collecting and analyzing data.

The main tasks for this project included the following. First, the study used FDC administrative records to describe the population of inmates going into restrictive housing; we used these data as well for matching and treatment-only multilevel modeling analyses to assess the impacts of restrictive housing on inmate misconduct, mental health, and recidivism. Second, we collected and analyzed focus group data from 10 prisons throughout Florida to examine the use and impacts of restrictive housing on inmates, personnel, and the system, as well as ways to improve restrictive housing and reduce reliance on it. Third, we collected and analyzed data from a survey of prison administrators, officers, and medical and program staff. These data were collected and analyzed to understand further the potential uses and impacts of restrictive housing as well as possibilities for making prison systems safer and less reliant on the housing.

For this study, we focused primarily on restrictive housing that entails extended confinement of an individual in a cell, typically, by policy, for six months or more, for management reasons. This focus is distinct from one that includes other forms of restrictive housing that allow for two inmates to a cell or that examine shorter durations or use of the housing for different purposes, such as discipline or protection. Our primary focus on extended “solitary” management reflected the study’s goal of responding to calls to understand the use and effects of relying on long-term isolation of inmates. This focus stemmed from debates and controversy about the need for and impacts of isolation (Garcia 2016). The report does, however, discuss other types of confinement, such as housing for management purposes that allows for two inmates per cell or that is for discipline or protection (which typically allow for two inmates per cell and entail shorter durations of confinement), all of which are sometimes, and inconsistently, described in public accounts, correctional systems, and research as “restrictive housing” (Mears et al. 2019).

Several caveats warrant emphasis in interpreting the study results and their implications. First, not everyone agrees about what counts as “solitary confinement.” For example, there can be degrees of isolation from others (e.g., how frequently an inmate sees other individuals, how many hours he or she is allowed out of cell). The general idea in extant research, however, is that an individual spends the bulk of each day, on up to 24 hours each day, in a cell by himself or herself, with little exposure to others or opportunities to participate in programming. In this report, we use the “solitary” terminology because it accords with accounts in many existing studies (see, generally, Riveland 1999; Smith 2006; Garcia 2016; Sundt 2017; Mears et al. 2019). It captures at the most general level the idea that an individual resides alone in a cell for many hours a day, a practice that constituted the central emphasis of the NIJ conference and the resulting edited volume on restrictive housing (Garcia 2016). It warrants emphasizing, however, that published accounts of “restrictive housing,” “solitary confinement,” “isolation,” “segregation,” “supermax incarceration,” and related terms can and do vary in the phenomena to which they refer. For example, some accounts treat “restrictive housing” as necessarily involving solitary confinement while others treat it as also allowing for confinement of two individuals to a cell (Beck 2015; Mears et al. 2019). We distinguish types of restrictive housing in this report, with long-term solitary confinement constituting the focal type.

Second, this study examines restrictive housing, as defined here, in Florida from 2007-2015 (when presenting results from analyses of administrative records data), from 2017 to 2020 (when presenting results from analysis of focus group and interview data), and from 2019-2020 (when presenting results from analysis of survey data). The FDC has multiple types of housing, including housing that allows for two inmates per cell for administrative or disciplinary purposes, that it calls “restrictive housing.” We examine this housing, but the study’s primary focus was on restrictive housing that the FDC terms “close management 1” (CM1). It entails what many published accounts characterize as long-term solitary confinement, with little out-of-cell time, to manage those individuals who do not seem to be manageable in any other way. It should be emphasized, however, that the FDC does not use “solitary confinement” terminology.

Third, this study is only one account and is subject to the limitations that attend to reliance on quasi-experimental designs. For example, although the study relied on a wider range of variables than many accounts use to control for potential confounding when estimating recidivism effects, it could not control for all such variables. It is therefore possible that the estimated effects might differ were additional controls used. Accordingly, the validity of the results should be viewed with caution until more studies are conducted. In addition, estimated effects, to the extent that they are valid, may extend only to the period of observation.

Finally, although this study fills several gaps in the research literature, the findings should be interpreted with caution until further studies in Florida and other states are undertaken. Although considerable advances have been made in understanding long-term solitary confinement, as well as various types of restrictive housing, much remains unknown.

2. Administrative Data—Description and Findings

2.1 Overview

This study examines restrictive housing in Florida, which has the third largest prison system, after Texas and California, in the United States (Carson 2020:4). In 2019, on a given day, over 96,000 individuals were under the jurisdiction of Florida prisons. For the study, the first set of data consists of administrative records information from the FDC. These data provide the opportunity to investigate the potential effects of restrictive housing—here, primarily operationalized as long-term solitary confinement, typically of 6 months or more—on a range of inmate outcomes. We first present descriptive analyses, using FDC administrative records data, aimed at providing a portrait or profile of inmates who are sent to restrictive housing. We then use these data to answer the following impact questions:

- To what extent does restrictive housing improve, have no effect on, or worsen inmate misconduct, mental health and self-injury, and recidivism?
- To what extent does the impact of restrictive housing on these inmate outcomes vary depending on the type of exposure? Specifically, how much, if at all, does the impact vary depending on the duration of time in or frequency of placements in the housing or whether inmates experience single-cell or double-cell confinement?
- To what extent does the housing differentially affect certain groups, such as the mentally ill, females, minorities, or younger inmates?

2.2 Administrative Records Data

Data for Descriptive Analyses in 2.3

The descriptive analyses examine two distinct sets of administrative records, which the research team built from source files provided by the FDC: an admission-and-release cohort for July 1, 2007 to December 31, 2015 and the stock or status population for June 30, 2011. The admission-and-release cohort consisted of 216,875 prison stays for 184,183 inmates during the observation period, while the stock population included 102,209 inmates. We included individuals who were repeatedly admitted and released in this period because they contribute to the profile of the “average” inmate that flowed through Florida prisons during this period. Contrasting the two sets of data allows for investigating whether the profile of restrictive housing inmates varies depending on how one samples cases. Stock populations typically have a greater percentage of more serious offenders with lengthier prison terms, and so the profile of those in restrictive housing in a stock population sample might vary.

A strength of the FDC data is the ability to distinguish between multiple forms of restrictive housing (RH). For this study, we identified four categories:

- (1) No RH confinement.
- (2) Short-term RH confinement. This typically entails privilege restrictions, limited time out of cell, and stays of up to 60 days in housing that allow for two inmates to a cell. It can include administrative confinement and disciplinary confinement. *Administrative confinement* is used when incidents arise that require a review to determine the appropriate action to take. For example, a fight may occur and the FDC needs time to determine what exactly happened, who is responsible, potential risks to the safety and

security of the prison system, and what next steps should be taken. *Disciplinary confinement* is used to punish individuals who violate prison rules.

- (3) Long-term RH confinement. The FDC terms this housing “close management 2” (CM2) or “close management 3” (CM3). It entails limited privileges and time out of cell, and also allows for two individuals per cell. This housing is used for individuals who pose a management risk, such as those who engage in injurious behavior or threaten others, and are deemed not to be manageable in general population settings.
- (4) Long-term RH solitary confinement. The FDC refers to this housing as close management 1 (CM1). It entails single-cell housing and more limitations on privileges. The purpose of the housing is to control individual inmates—such as those who cause injury or death, incite riots or violence, or cause extreme property damage—who are deemed not to be manageable in general population or CM2 or CM3 housing.

The three CM groups are similar, but important differences exist. Individuals in CM1 typically remain in their cells for all but one to two hours per day; those in CM2 or CM3 have more privileges and time out of cell, with those in CM3 having the fewest restrictions of all three CM levels. Individuals in “solitary confinement” (CM1) are housed alone each day for extended periods, usually, and by policy, for at least six months. Shorter durations may occur, such as when individuals complete their prison sentence and return directly to society. However, individuals in this housing can and do speak among themselves through cell doors and access panels. They also can and do see staff several times throughout each day. The housing thus is not “solitary” in the sense of literally no exposure to others. As noted above, however, the housing accords with what prior research characterizes as “solitary confinement.” (Extensive description of the procedures for placing individuals in each type of housing, as well as others discussed below, can be found in the Florida Administrative Code, Rule 33 and Rule 301.)

For the admission-and-release cohort, the “no RH confinement” category identified stays where the individual never spent time in any form of FDC-defined restrictive housing. The “short-term RH confinement” category identified housing in administrative confinement or disciplinary confinement, which are double-celled (i.e., they allow for two inmates to reside in a given cell). This category captured prison stays where the individual spent at least one day in either confinement status. We also examined long-term RH confinement in FDC’s CM2 and CM3 housing, which is double-celled by design as well. The “long-term RH confinement” included prison stays where the individual spent at least one day in either confinement status. We distinguished between long-term RH confinement, where two individuals are housed to a cell (CM2 and CM3), and long-term RH solitary confinement, where an individual is housed alone (CM1). This last category included stays where the individual spent at least one day in the FDC’s CM1 status. For the stock population comparison, we examined confinement in the same four restrictive housing categories for individuals in prison on June 30, 2011.

For the admission-and-release and stock cohorts, we examined demographic characteristics, including age at admission (years), gender (male, female), and race and ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and non-Hispanic other). For the stock population, we also examined age as of June 30, 2011. To identify the use of restrictive housing for individuals with mental health needs, we measured whether the individual required mental health services within the first 90 days of admission to prison. An individual’s need for services was based on their recorded psychological grade, which indicates an individual’s psychological functioning. The grade classifies an individual’s need for case management, counseling, psychotropic medication, or inpatient care. For the study, mental health services need was determined by whether an

individual's psychological grade indicated that treatment was necessary (i.e., whether the individual had a grade of "2" or higher). This measure should be valid for identifying individuals with mental health needs, but it nonetheless may miss mental health conditions and needs not captured through the FDC's assessment process. For the stock population, we also examined an alternative measure that captures whether an individual needed services according to their last mental health contact prior to or on June 30, 2011. In both descriptive analyses, we examined whether the individual had a prior prison commitment to the FDC. The number of valid observations for these variables varies across data sets due to missingness.

Several caveats should be considered when interpreting the results. First, the admission-and-release cohort includes prison stays with an admission date *and* release date between July 1, 2007 and December 31, 2015. We restricted the cohort to stays with an admission date on or after July 1, 2007 due to data availability on a core mental health indicator, psychological grade, used by the FDC. This grade captures an individual's psychological functioning in prison and indicates whether they needed mental health services. Separately, we excluded "paper" prison stays; these occur when an individual never entered an FDC facility during their sentence term. The stock population includes individuals who were housed in an FDC prison on June 30, 2011 and does not include individuals who were temporarily housed elsewhere (e.g., a local jail).

Second, individuals may occupy several different classifications at once or over the course of incarceration. For example, in one day, an inmate might transition from one status to another or be assigned a second status (e.g., disciplinary confinement) while in another (e.g., close management). When individuals in the stock population had overlapping statuses on June 30, 2011, we coded their housing based on the highest level of confinement. For example, if an inmate had a long-term solitary confinement and a short-term confinement status on this date, then the long-term status was used. We applied this same approach to the admission-and-release cohort—for any given day an individual is in prison, a single, "master" restrictive housing status was assigned based on the highest level of confinement restriction. Given that inmates may experience placements in different forms of restrictive housing while incarcerated, the restrictive housing categories for the admission-and-release cohort in table 1 are not mutually exclusive. Placement in a restrictive housing category does not mean that an individual immediately goes to the housing, only that he or she has been assigned to be placed in it.

Third, individuals who experienced placements in short-term and long-term restrictive housing confinement—both of which are double-celled by design—may have been housed alone during confinement if capacity permitted. For example, it is possible that an inmate might reside in a cell with two beds, but there might not be a second individual occupying that cell.

Fourth, the descriptive analyses for both the admission-and-release and stock population cohorts excluded two rare forms of restrictive housing placements—protective management and maximum management. Protective management is used to protect individuals from others who may seek to harm them. It applies to a small group of inmates (specifically, 324 unique individuals for the release cohort and 250 unique individuals for the stock cohort). Maximum management is a type of restrictive housing that overlaps with a long-term solitary confinement status and applies to an even smaller group of inmates (specifically, 13 unique individuals for the release cohort and 21 unique individuals for the stock population); these individuals are viewed as constituting an extreme risk to the safety and security of the prison system. Individuals in either form of confinement were excluded as well from the "no RH confinement" category.

Fifth, the need for mental health services was determined by the individual's psychological grade. Some prison stays in the admission-and-release cohort did not have this information

within the first 90 days of admission in cases where no mental health contact occurred during this time. However, there is also significant missingness on this measure for the stock population because the information was not available for 33,232 of 102,209 inmates. For example, mental health contacts were not regularly tracked in the FDC data until July 1, 2007. Thus, psychological grades were not observed within the first 90 days of admission for stock population inmates admitted prior to July 2007. The missingness on this specific measure should be borne in mind when comparing the admission-and-release and stock populations. Also, the measure of the need for services does not gauge the amount or quality of service delivery.

Originally, we hoped to include self-injury, such as cutting or self-mutilation, as an outcome, but this information either was not part of the FDC's database or was not consistently collected. In addition, to augment the use of a release cohort to examine restrictive housing use and impacts, we originally planned to include stock population data. In working with the FDC, it became clear that creating stock population data cohorts with complete inmate history information, which would be necessary to conduct impact analyses, required unreasonable time commitments from FDC research personnel. Data would be required not only for the stock populations on a selected date, but also for each inmate's history prior to and after that date. Given that the admission-and-release cohort data allowed for estimating the impact of restrictive housing during and after inmates' release from prison, we restricted the stock population analyses to a comparison of the prevalence and composition of inmates in restrictive housing. The main difference between the stock population and release cohorts is that the former are more likely to consist of serious and violent inmates. Thus, the comparison of the release and stock populations is primarily useful for ascertaining whether a greater percentage of stock population inmates are in restrictive housing as compared with the percentage of release population inmates who experienced a stay in such housing, as well as whether the respective profiles of inmates in the two groups differ. By contrast, the release population analyses provide a basis not only for identifying the prevalence of restrictive housing but also for estimating its impacts on inmate behavior during and after release and whether any identified impacts vary along such dimensions as gender, race and ethnicity, and criminal record and offense severity.

Data for Matching Analyses in 2.4

For the matching analyses, we examined the admission-and-release cohort to estimate the impacts of long-term solitary confinement, what the FDC refers to as CM1 housing, on recidivism. These analyses examined the same admission-and-release cohort (July 1, 2007 to December 31, 2015) used in the descriptive analyses, but with the following cases excluded: stays in which individuals served less than 90 days in prison; stays with known missing opportunities for recidivism due to release to another state, federal custody, immigration services, the state civil commitment facility for sex offenders, or a community mental health facility, or due to death; stays where individuals were transferred out of state since they would not have had the same opportunity to experience restrictive housing in Florida; and stays with missing information on the matching and outcome variables.

With these exclusions, the analytical sample for the matching analyses included 147,859 prison stays for 132,277 unique inmates. A strength of the data and the large number of cases is the ability to undertake more credible matching analyses than otherwise would be possible and to examine the impacts of long-term solitary confinement for different groups of inmates.

To estimate the impact of restrictive housing on recidivism, we examined long-term solitary confinement (i.e., CM1). We also examined the effect of multiple stays in such confinement. Specifically, we examined reconviction that occurred within 3 years after release and that resulted in a new supervision or prison commitment to the FDC (Maltz 1984; Villettaz et al. 2006). Recidivism timing was based on the offense date that led to a new felony conviction in Florida. The end date for data collection was November 3, 2017; thus, for some individuals in the study, we did not have a full 3 years of follow-up data after release. Individuals without 3 years of follow-up were not included in the analyses since they were missing on this outcome.

A strength of the FDC data are the measures that are useful for matching analyses to control for selection effects that, if unaddressed, might bias estimates of the impact of long-term solitary confinement. The data correspond to the matching, or control, variables recommended by and consistent with those used in prior research (e.g., Cooke 1989; Cloyes et al. 2006; Lovell 2008; Mears and Bales 2009; Morris 2016). These variables included: age at admission (years); gender (male, female); race and ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and other); prior felony convictions (count); prior felony violent convictions (count); prior Florida prison commitments (count); if the most serious conviction offense that led to imprisonment was violent (dichotomous); sentence length (months, top-coded to 600 or more); and time served (months). We also matched on a range of factors that were measured within the first 90 days after admission. These measures included: highest custody level (minimum, medium, close); need for mental health services (based on highest recorded psychological grade); mental health diagnosis (whether the inmate was diagnosed by FDC as having a mental illness); Test of Adult Basic Education (TABE) score; assignment to academic, faith-based, substance abuse, or vocational programming; violent disciplinary reports (count, top-coded to 2 or more); non-violent disciplinary reports (count, top-coded to 3 or more); and visits (count).

In addition to the main matching analyses, we also examined whether the impacts of long-term solitary confinement on recidivism may vary by characteristics of confinement and characteristics of the inmate. The analyses focused on whether the effect of solitary confinement varied by the total amount of time spent in such confinement during a given incarceration (less than 6 months, 6 to 12 months, and more than 12 months). Time in solitary confinement was based on the cumulative time between approvals for CM1 confinement until approvals for other forms of long-term confinement (CM 2 or CM3) or release from prison. We also examined whether being directly released from solitary confinement to society influenced recidivism relative to being released either from general population facilities or from long-term restrictive housing confinement (i.e., CM2 or CM3). Finally, the analyses examined whether the effect of solitary confinement on recidivism varied across the following inmate characteristics: gender (male, female); age (younger than 25 years old at admission); race and ethnicity (non-Hispanic white, non-Hispanic black, Hispanic); mental health (diagnosed with a mental illness within 90 days of admission); and sentence length (sentences equal to or longer than 36 months).

There are several caveats to consider when reviewing the matching analysis findings. First, the sample is smaller than that used in the descriptive analyses for the admission-and-release cohort due to the exclusions described above. Second, individuals who experienced long-term solitary confinement during a given incarceration may have also experienced stays in other forms of restrictive housing discussed in the descriptive analyses. Accordingly, the estimated effect of solitary confinement on reconviction may include the effects of stays in other restrictive housing. Third, time in long-term solitary confinement is based on the amount of time assigned to CM1. An individual may not be physically located in a CM1 cell for this entire period because they

may be awaiting transfer to a CM1 facility or may have temporarily transferred from a CM1 cell to a mental health or medical unit. Fourth, to facilitate matching analyses, many of the matching variables focus on measures within the first 90 days after admission.

Data for Treatment-Only Analyses in 2.5

For these analyses, the admission-and-release data were converted to a person-week data file for those individuals who experienced long-term solitary confinement restrictive housing (i.e., CM1) during their incarceration. For this reason, the number of observations differs from the prior analyses as do the measures and modeling approach. Specifically, the data file contains one row for each week of an individual's incarceration during the cohort period and captures weekly time-varying factors such as confinement, misconduct, and the need for mental health services. The data allow for examining long-term solitary confinement restrictive housing effects on misconduct and mental health needs. The data also allow for assessment of how the effects may vary across confinement conditions (e.g., duration) and demographic groups.

The treatment-only analyses capture placement in long-term solitary confinement when an individual was assigned to CM1 for the majority of a given week. The analyses excluded weeks where (1) an individual spent time in a private prison or outside of the FDC (e.g., in a local jail for a court appearance) since facility-level staffing information was not available for these weeks, and (2) there was missing information on the focal analytical variables. Analyses were limited to individuals who were observed for at least one week in prison after a stay in long-term solitary confinement (i.e., these analyses do not include individuals who were released back to the community directly from CM1). After these exclusions, the analytic sample consisted of 185,471 person-week observations across 1,098 unique prison stays.

For these analyses, we examined weekly changes in an individual's misconduct and need for mental health services before, during, and after placement in long-term solitary confinement. To measure changes in misconduct, we examined whether the individual had a reported disciplinary infraction of any kind during the week. An individual's need for mental health services was gauged based on their recorded psychological grade, which indicates one's level of psychological functioning within the prison system.

The analyses control for time-varying variables. These included the following measures: custody level (community, minimum, medium, close); work assignments (if assigned to a facility job); program assignments (if assigned to core programming); the number of visitation days during the week; the facility's total inmate population; and the facility's average correctional officer tenure. Except for visitation, these control variables were based on the individual's status or location for the majority of a given week.

We examined potential moderation by focusing on characteristics of restrictive housing confinement and characteristics of the inmate. Specifically, the analyses examined whether the order of confinement stays (i.e., first stay vs. subsequent stays) and length of confinement (i.e., stay less than 27 weeks vs. stay 27 weeks or longer) moderated the effect of restrictive housing on misconduct and mental health needs. These analyses also examined whether effects on these outcomes were moderated by such factors as mental illness (i.e., whether the individual was diagnosed with a mental illness within 90 days of admission), gender (male, female), age (younger versus older than 25 years old at admission), race (black, non-Hispanic, white/other, non-Hispanic), and ethnicity (Hispanic).

Several caveats should be considered when reviewing the treatment-only analyses. First, in the weeks before and after stays in long-term solitary confinement, an individual may have experienced other forms of restrictive housing such as short-term restrictive housing confinement or long-term non-solitary restrictive housing confinement. Thus, changes in misconduct or in mental health needs may reflect the conditions of alternative forms of restrictive housing such as increased behavioral or mental health monitoring or services. Second, the treatment-only analyses examine *changes* on the binary measures of misconduct or mental health service needs. Individuals who do not experience changes on these outcomes do not contribute to the models; thus, the analytical sample sizes differ between models. For example, the model examining the need for mental health services includes fewer person-weeks than the misconduct model because more individuals had stable psychological grades across all of their observed weeks. Third, the facility-level measures were based on semi-annual censuses that were matched to each person-week based on the census date and which facility the individual was housed at for the majority of the week. That is, the facility-level measures do not reflect weekly facility censuses.

2.3 Descriptive Analyses

Overview

Below, we present descriptive statistics for the release cohort (table 2.3.1) and separately for the stock population (table 2.3.2). The latter is useful for comparing how the profile of inmates in restrictive housing differs from released inmates. The former may differ in their characteristics because typically stock populations include more longer-term inmates (Lynch and Sabol 2000; Samuels et al. 2013; Travis et al. 2014). For the descriptive analyses—and in contrast to subsequent analyses in the report—we include multiple forms of what some accounts term “restrictive housing.” These include short-term stays for administrative or disciplinary purposes as well as long-term stays for management purposes, what the FDC terms CM2 and CM3 housing. They each allow for two inmates per cell. We include as well a focus on long-term stays in solitary confinement, what the FDC refers to as CM1 housing, which is the primary focus of this study and subsequent sections of the report. We do not present information about non-continuous or multiple stays in long-term solitary confinement because few inmates had more than one stay in this housing. The matching analyses in section 2.4 provide information about recidivism and factors associated with extended solitary confinement placement. In addition, the treatment-only analyses in section 2.5 provide further information about long-term solitary confinement and include as well a focus on in-prison behavior and inmate mental health.

Findings

We begin first with the descriptive statistics shown in table 2.3.1, which examines prison stays during the study window. (Given the use of populations, we do not present tests of statistical significance.) There were 216,875 unique stays in this window, involving 184,183 unique inmates. (Some inmates were admitted and released more than once.)

- Among all prison stays for all inmates admitted to and released from FDC prisons during the observation period (July 1, 2007 to December 31, 2015), almost half of the stays involved exposure to some form of restrictive housing. The bulk of the experiences

consisted of placement in short-term non-solitary restrictive housing confinement. Specifically, 48.2 percent of all stays resulted in at least some time in short-term restrictive housing. Stays in long-term non-solitary restrictive housing (CM2 and CM3) were relatively rare, consisting of 2.0 percent of all prison stays during the study window. Placements in long-term solitary confinement restrictive housing (CM1) were the rarest, consisting of 1.0 percent of all prison stays. Accounts that conflate these types of restrictive housing may obscure that some are more prevalent than others. Those that assume that all accounts of restrictive housing entail solitary confinement over-estimate the true prevalence of such incarceration.

- Several differences can be seen in the profile of the different inmate groups. The main differences are that individuals in long-term solitary confinement restrictive housing (CM1) were substantially younger and were more likely to be male, to be black, and to have been identified at admission as needing mental health services.
 - First, younger inmates were more likely to experience long-term restrictive housing that entails double-celling or solitary confinement. Their average age was 27.6 and 26.8 years old, respectively. By contrast, the average age of general population inmates who never experienced restrictive housing was 36.9 and that of those who experienced short-term restrictive housing was 31.5 years old.
 - Second, males were more likely to be in each of the four categories because they constituted 87.5 percent of all prison stays, but nonetheless were disproportionately more likely to experience long-term solitary confinement (94.5 percent of all inmates in this type of housing were males).
 - Third, white inmates constituted 45.6 percent of the prison stays, but accounted for 23.9 percent of long-term non-solitary restrictive housing or solitary confinement housing stays. By contrast, black inmates constituted 43.8 percent of the prison stays, but accounted for 63 percent of these two types of restrictive housing. Hispanic inmates constituted between 10.3 and 12.2 percent of each of the four categories.
 - Fourth, based on assessments done within the first 90 days after admission, the percentage of prison stays for which a need for mental health services existed was somewhat higher for those who experienced short-term restrictive housing (20.1 percent) versus those who experienced no restrictive housing (15.3 percent). A substantially greater percentage of inmates in long-term restrictive housing needed mental health services (34.2 percent). Among inmates who experienced long-term solitary confinement restrictive housing, 39.5 percent were assessed within 90 days of admission as needing mental health services.
 - Fifth, there was little difference among the four categories in prior prison admissions.

We next turn to the descriptive statistics shown in table 2.3.2, which examines a stock population of inmates on June 30, 2011. On this day, there were 102,209 inmates.

- On June 30, 2011, 6.3 percent of inmates were in short-term restrictive housing. By contrast, the admission-and-release cohort analysis above identified that approximately 48.2 percent of inmate stays involved short-term restrictive housing. On a given day, then, relatively few inmates experience short-term restrictive housing, but over the course of a prison term, many inmates are likely to experience it. The occurrence of long-term non-solitary restrictive housing or solitary confinement housing is similar in both analyses—that is, 2.0 percent and 1.0 percent, respectively, in the admission-and-release analysis, and 2.0 percent and 1.2 percent, respectively, in the stock population analysis.
- Several additional contrasts can be seen when comparing the admission-and-release descriptive profile to the stock population statistics.
 - First, a central difference from the release analysis is that there is less variation in the age at admission of stock population inmates across the four restrictive housing categories. For the stock population, the average age at admission of those not in restrictive housing was 33.7 years old, whereas the average age of those in short-term restrictive housing was 28.5, for long-term non-solitary restrictive housing was 27.0, and for long-term solitary confinement housing was 27.2. The age range at admission was 6.7 years and was narrower (5.7 years) when using age as of June 30, 2011. For the admission for the admission-and-release cohort, the age range was 10.1 years.
 - Second, almost all inmates in long-term solitary confinement were male (98.3 percent). Thus, the stock population analysis highlights that, on any given day, males were more likely to be in such confinement.
 - Third, although they constituted 48 percent of the stock population, blacks were 66.3 percent of long-term non-solitary restrictive housing and 67.9 percent of those in long-term solitary confinement housing. In both the release and stock population analyses, then, blacks were more likely than other groups to have experienced or to be in long-term non-solitary restrictive housing or solitary confinement housing. White inmates, by contrast, were less likely to have experienced or be in it. No marked differences surfaced for Hispanics.
 - Fourth, the stock population analyses echoed the release analyses in identifying that inmates in any kind of restrictive housing were more likely to have a need for mental health services. The percentage of inmates needing such services was considerably greater among inmates in long-term solitary confinement. In the stock population, 51.7 percent of inmates in such confinement needed these services, as compared to 18.8 percent of inmates who were not in any form of restrictive housing. Because there was substantial missingness in the mental health needs measure at admission for the stock population, we also present the prevalence based on the most recent mental health assessment to June 30, 2011. As shown in the table, based on that assessment, 71.4 percent of inmates in long-term solitary confinement needed mental health services, 51.0 percent of those in long-term restrictive housing needed them, and 28.6 percent of those in short-term restrictive housing needed services. By contrast, the prevalence of need for these services among inmates not in restrictive housing was

16.5 percent. (These differences could result from several factors, including selection effects, greater identification of mental health needs in long-term restrictive housing settings, or objective increases in the need for mental health services.)

- Fifth, in contrast to what was observed with the admission-and-release cohort, inmates in long-term solitary confinement restrictive housing were more likely to have a prior prison commitment (50.8 percent) as compared to inmates who never experienced any type of restrictive housing (44.6 percent). This difference likely stems from the fact that stock populations typically consist of individuals with more serious prior criminal records.

2.4 Matching Analyses

Overview

The researchers used propensity score matching (PSM) analyses to assess the impact of long-term solitary confinement restrictive housing (CM1) on inmate recidivism when such housing is operationalized in a discrete indicator, such as any placement in such housing, single stay versus multiple stays, and duration (e.g., less than 6 months or 6 to less than 12 months). Recidivism is not the only measure relevant to assessing the impact of solitary confinement. It is, however, an important one that accords with the prison system goal of improving public safety. Other relevant goals include the reduction of inmate misconduct among those released from the housing, impacts on mental health (given concerns about harms to the mental health of those who experience this housing), and improved systemwide order and efficiency (Mears 2016).

Matching analyses have been recommended in the literature for estimating the effects of program effects (Rosenbaum and Rubin 1984; Winship and Morgan 1999; Becker and Ichino 2002; Zanutto 2006; Apel and Sweeten 2010; Guo and Fraser 2010), including the effects of prison stays (Loughran et al. 2009; Snodgrass et al. 2011; Cochran et al. 2014; Ramakers et al. 2014). As with conventional regression modeling, the goal is to estimate the effect of a “treatment”—here, long-term solitary confinement restrictive housing—on outcomes net of selection effects, that is, factors that might confound or bias the bivariate association and contribute to the appearance of a spurious relationship between, say, restrictive housing and mental illness. Matching, however, presents several advantages. For example, it allows for approximation of a randomized experiment. After matching, individuals in the treatment and control groups are similar across potential confounding measures. Any observed difference in outcomes thus may be more inferred to result from the treatment, to the extent that the matching on the observable variables captures relevant differences in the groups.

For the analyses, we estimated average treatment effects for the treated (ATTs), using 5-to-1 nearest neighbor matching (which allows up to 5 matches) with replacement and with a caliper setting of .001. These analyses estimate the effect of long-term solitary confinement restrictive housing (CM1) on those who were placed in it or would likely be placed in it (Austin 2011). It would be unrealistic to estimate an effect under the assumption, as implied by an average treatment effect (ATE), that any inmate might be placed in restrictive housing. For each measure of restrictive housing, we estimated not only the effect of the housing in general but also for specific groups, including females, younger inmates, racial and ethnic minorities, and those with a mental health diagnosis. We did not compare long-term solitary confinement to restrictive

housing that allowed for double-celling because the reasons for these two types of placements can and do differ. A strength of the present study is the reliance on a robust set of control variables and use of a matching analysis approach. Even so, because the study relied on a quasi-experimental design, estimated effects may not fully or accurately reflect the actual relationship between long-term solitary confinement restrictive housing and recidivism.

Findings

Below are the findings from the matching analyses that focused on estimating the effects of long-term solitary confinement restrictive housing (CM1) on recidivism.

- The preliminary comparison in table 2.4.1 shows that individuals who experienced long-term solitary confinement differed, on average, from those who did not. For example, they were disproportionately likely to be younger (25.6 years vs. 33.7 years old), black (66.7% vs. 45.7%), and male (94.6% vs. 87.1%). This group also consisted of a higher percentage of individuals who had been incarcerated for violent crimes (54.9% vs. 27.7%), who had been assigned longer sentences (45.6 months vs. 31.6 months), who had been diagnosed with a mental illness (28.9% vs. 15.0%), and who needed mental health services (31.1% vs. 16.6%). They also had more violent disciplinary reports in the first 90 days (.37 vs. .03) and had fewer visits (.20 vs. .45).
- Matching analyses were undertaken to create equivalent groups, based on the observable covariates. As can be seen in the table, after matching, the two groups were similar. Post-matching statistics indicated that little to no substantively important differences across the covariates remained after matching on the propensity score; in addition, almost all (1,107) of the 1,168 CM1 inmates could be matched.
- As shown in table 2.4.2, ATT estimates suggest that long-term solitary confinement stays have an adverse impact on recidivism. Specifically, 46.7% of CM1 inmates recidivated compared to 41.3% of their matched, non-CM1 counterparts. This difference was statistically significant (*t*-statistic = 3.11).
- Multiple stays in CM1 may have a greater adverse effect. For example, 54.7% of individuals who experienced multiple CM1 placements recidivated as compared to 45.1% of individuals who experienced no CM1 placement. However, the difference in recidivism did not reach statistical significance (*t*-statistic = 1.66), which is likely due to the small number of inmates who experienced multiple CM1 stays (*n* = 105).

Analyses that assess whether solitary confinement effects varied across different conditions or groups next were conducted. Shown in table 2.4.2, these consisted of separate matching analyses for different confinement conditions and subgroups of inmates.

- The effect of CM1 on recidivism varied by CM1 exposure. Inmates who spent less than 6 months or those who spent more than 12 months in CM1 were more likely to recidivate than their matched counterparts who never spent time in CM1 housing. There was no statistically significant effect of a 6-to-12 month stay in CM1, when comparing

individuals who experienced such stays with those who never experienced CM1. The short-term stay effect may be due to a greater percentage of individuals who experience less than 6 months in CM1 being released directly from CM1 to society. [We explored use of generalized propensity score analyses to estimate duration effects (Hirano and Imbens 2004; Bia and Mattei 2008; Bia et al. 2013), but obtaining balance was difficult, in part because of the small numbers of cases across the duration continuum.]

- Inspection of the table shows that individuals released directly from CM1 housing were more likely to recidivate than were their non-CM1 counterparts (52.2% vs. 40.0%). By contrast, CM1 inmates who returned to the general population prior to release—as well as CM1 inmates who transitioned to and eventually were released from CM2 or CM3 housing—were not more likely to recidivate than their matched non-CM1 counterparts.
- Additional analyses identified potential subgroup differences in the effects of long-term solitary confinement. For example, as shown in the table, the analyses indicate that CM1 housing may have an adverse, statistically significant effect on the recidivism of male inmates, but not on the recidivism of females; on inmates under age 25, but not those over 25; on blacks, but not whites or Hispanics; on inmates with no diagnosed mental illness, but not those with a diagnosed mental illness; and on inmates serving longer sentences (i.e., 3 years or longer), but not shorter sentences. In some cases, such as individuals with a mental illness or those who served a shorter sentence, a CM1 stay was associated with increased recidivism, but the effect did not reach statistical significance.
- There was no evidence of a beneficial effect of CM1 stays on recidivism.

2.5 Treatment-Only Multilevel Analyses

Overview

The matching analyses are well-suited for assessing the impact of long-term solitary restrictive housing on recidivism. However, for inmate misconduct and mental health outcomes, there is no clear comparison pool given that inmates can enter into and out of restrictive housing at varying times and, by extension, may have varying follow-up observation periods. In such a context, treatment-only fixed effects analyses that focus on within-individual change can be used to estimate the effects of restrictive housing on individuals. We used this approach for the analyses of outcomes related to in-prison behavior and adjustment.

Fixed effects models capitalize on the fact that the FDC records contain weekly “pretests” and “posttests” for each inmate. The outcome is a given inmate’s misconduct (any time it occurs) or need for mental health services (which is assessed at least every 90 days) during a particular week, and the focal predictor is a time-varying indicator of whether the inmate is in, soon will be in, or recently was in restrictive housing at that time point. The estimates compare the immediate pre-restrictive housing, during-restrictive housing, and immediate post-restrictive housing misconduct rate or need for mental health services for a given individual against that same individual’s “baseline” misconduct rate or mental health services needs during weeks that did not surround a restrictive housing stay. A strength of these models is that by using inmates as their own comparison group, this technique eliminates all time-stable sources of spuriousness.

For example, although prior record might explain why some inmates are more likely to be placed in restrictive housing and to engage in misconduct, it cannot explain why the same inmate's level of misconduct changed following a restrictive housing stay. The models include additional controls (programming, visitation, etc.) to address time-varying sources of spuriousness.

Fixed effects regression analyses are a well-established methodology for incorporating repeated event information, including events of varying durations. They can readily accommodate data from inmates who were observed for varying lengths of time (i.e., unbalanced designs), and from inmates who experienced multiple spells of restrictive housing. Because they use all of an individual's pre-restrictive housing, during-restrictive housing, and post-restrictive housing observations, they also allow examinations of the timing of effects of restrictive housing (i.e., during vs. after, temporary vs. lasting). In addition, they can readily accommodate interaction terms, and thus allow tests of moderation by individual characteristics, by other time-varying factors, or by characteristics of the restrictive housing experience itself. Furthermore, these models address the statistical problem of dependence stemming from the fact that multiple observations on a given individual will tend to be positively correlated with each other, which would lead to biased standard errors under ordinary regression methods.

We examined the potential impact of long-term solitary confinement housing (CM1) as measured in different ways (e.g., first vs. subsequent stays in the housing and short-term vs. longer-term stays). We also examined the impacts on misconduct and mental health service needs for all inmates placed in this housing and, in separate analyses, for subgroups, including the mentally ill, females, minorities, and younger inmates. In addition, we examined whether impacts are apparent during or after the restrictive housing placement and persist during the weeks and months following placement. Due to the focus on post-placement adjustment, these analyses were limited to inmates who were observed for at least one week after a restrictive housing stay. Table 2.5.1 presents descriptive statistics for the variables in the analyses.

Findings

Below are the main findings from the fixed effects regression analyses of long-term solitary confinement restrictive housing (CM1) effects on behavior and need for mental health services.

- The odds of a disciplinary infraction were elevated before CM1 stays and reduced during and after CM1 stays. This result is shown in the leftmost columns of table 2.5.2. Relative to weeks that were not within 12 weeks of a CM1 stay, during the 12 weeks prior to a stay the odds of an inmate committing a disciplinary infraction were more than doubled ($\exp[0.901] = 2.46$). During and for the 12 weeks after the stay, however, the odds of an infraction were reduced by approximately 45 percent ($\exp[-0.594]$ and $\exp[-0.598] = 0.55$ for the during and post coefficients).
- The odds of needing mental health services were lower before CM1 stays but elevated during and after them. This result is shown in the rightmost columns of table 2.5.2. Relative to weeks that were not within 12 weeks of a CM1 stay, during the 12 weeks prior to a stay the odds that an inmate would need mental health services were reduced by 8 percent ($\exp[-0.080] = 0.92$). During and for the 12 weeks after the stay, however, the odds of needing services were increased by 36 percent and 24 percent respectively ($\exp[0.308] = 1.36$ and $\exp[0.219] = 1.24$ for the during and post coefficients).

- The effects of CM1 stays on disciplinary infractions and on mental health service needs were constant in size over the twelve weeks following the CM1 stay. In a supplemental model predicting infractions, the coefficient for an additional predictor representing the number of weeks since the CM1 stay was small and statistically non-significant ($b = 0.025$, $p > .05$). A similar model and coefficient predicting needing mental health services indicated that the post-CM1 effect on mental health also did not change across the post-CM1 observation period ($b = -0.001$, $p > .05$). These findings indicate that the lasting effects of CM1 did not grow or decline over the 12 weeks following the stay.

We also conducted a series of 12 moderation analyses that used interaction terms to determine whether associations between CM1 and the outcomes differed for subgroups. Only three analyses yielded non-significant interactions. Age and race and ethnicity did not significantly moderate the impact of CM1 stays on infractions, and the impact of CM1 on needing mental health services did not differ between first versus subsequent stays in CM1.

- The beneficial effect of CM1 on disciplinary infractions was more prominent for first spells in CM1. The log-odds of disciplinary infractions were reduced more during initial CM1 stays than subsequent CM1 stays, and they were reduced somewhat more after initial stays than after subsequent ones.
- When the CM1 stay was short, the beneficial effect on infractions was stronger during the CM1 stay, but a harmful effect emerged afterward. When individuals spent less than 6 months in CM1, their log-odds of infractions during CM1 were lower than those for inmates who had longer CM1 stays. However, whereas longer stays led to declines in the log-odds of infractions following the CM1 stay, shorter stays led to increases in them.
- Individuals were more likely to need mental health services during long CM1 stays. When inmates spent six months or more in CM1, they had increased log-odds of needing services during the stays, and the increase partly persisted after the stays. For shorter stays in CM1, no effect emerged during the CM1 stays, but the log-odds of needing services were increased after the stays.
- The beneficial effect of CM1 on disciplinary infractions was somewhat weaker among mentally ill inmates. These inmates were no more or less likely to commit infractions in the weeks leading up to a CM1 stay, but they experienced somewhat smaller reductions in infractions during and after those stays.
- The impact of CM1 on mental health service needs differed for mentally ill inmates. For inmates without a diagnosed mental illness, the log-odds of needing mental health services (based on psychological grade) were reduced during pre-CM1 weeks and elevated during and after CM1 stays. For inmates with mental illnesses, the pattern was the opposite: These inmates were more likely to need services before they went to CM1, and less likely to need them during and after their CM1 stays. (One explanation is that such inmates may be more likely to receive mental health treatment while in long-term solitary confinement because their condition was identified prior to admission to CM1.)

- The beneficial (misconduct-reducing) effect of CM1 on disciplinary infractions was larger and more lasting for males. The log-odds of an infraction during a CM1 stay were somewhat lower for males than for females. Also, only males continued to show reduced log-odds of infractions after the CM1 stay.
- For males, there was minimal impact of CM1 stays on the need for mental health services. Among females, the need for mental health services was reduced pre-CM1 and elevated post-CM1.
- Only older inmates had an increased need for mental health services during and after CM1 stays. CM1 had minimal effects on mental health service needs for inmates below age 25.
- The impact of CM1 on mental health service needs varied by race and ethnicity. Sparse data led to the white non-Hispanic and the other non-white race groups being combined into a single reference group for this moderation analysis. Among this combined group, the need for mental health services was elevated before CM1 stays, and it was even higher during and after the stays. Blacks had lowered log-odds of needing services before CM1 stays and slightly elevated log-odds during those stays, but the increase did not persist after the stays. CM1 status had little impact on Hispanics' log-odds of needing services.

3. Focus Group Data—Description and Findings

3.1 Overview

One of the central limitations of work on restrictive housing is, as Ward (1995) emphasized 25 years ago, the primary focus on inmates rather than prison administrators and personnel. Exceptions exist, but are rare (e.g., Wells et al. 2002; Mears and Watson 2006; Reiter 2012). This situation is problematic because these groups possess a unique vantage point from which to identify the uses and impacts of restrictive housing on inmates, prison systems, and personnel. Accordingly, to augment the estimated impact of the housing on inmates from the administrative records data, the research team also analyzed data from focus groups and interviews with FDC prison administrators and prison personnel to answer the following questions:

- How and why is restrictive housing used with inmates? That is, what goals does use of the housing achieve, or does it aim to achieve, with inmates?
- Does restrictive housing appear to improve, have no effect on, or worsen inmate misconduct, mental health, and recidivism?
- How can restrictive housing be used in ways to maximize benefits (e.g., reduced misconduct and disorder) and minimize harms (e.g., greater mental illness and disorder)?

A critical and largely unexamined dimension of restrictive housing is the benefit or harm that it may have for the prison system and for officers and medical and program staff. This study addressed this gap. Based on analysis of data from focus groups and interviews with prison administrators and personnel, the following research questions were answered:

- How is restrictive housing used to achieve prison system goals and to protect or improve the performance of prison personnel?
- In what ways does restrictive housing improve or worsen prison operations and prison personnel outcomes? If it has no effect, why?
- To the extent that restrictive housing improves or worsens outcomes for prison systems and for personnel (e.g., violence, disorder), how do such benefits or harms arise?
- How can restrictive housing be used in ways to maximize benefits for and minimize harms to prison systems and to personnel?
- What alternatives exist that may achieve the goals expected of restrictive housing and that may do so more effectively and cost-efficiently?

3.2 Focus Group Data

Focus groups provide an efficient and useful approach to gleaning insights from multiple stakeholder groups who collectively, in interaction, can identify issues, patterns, causes, and effects that individuals by themselves may be less likely to identify (Lambert et al. 2004; Rossi et al. 2004; Krueger and Casey 2009; Patton 2015). For the study of restrictive housing, such an approach was especially important given the range of perspectives involved. Wardens, for example, may be focused on management needs within a facility; officers may be focused primarily on the nuts-and-bolts safety risks involved in moving inmates to and from restrictive housing cells and in assisting or controlling inmates before, during, and after stays in the housing; and medical and program staff may be focused primarily on ensuring continuity of care or services (see, e.g., Bottoms 1999; Briggs 2003; Mears 2006; Cloud et al. 2015; Haney 2018).

Study Sites

The research team visited institutions that had designated CM1 restrictive housing and visited general population facilities as well. Unless otherwise specified, restrictive housing here will refer to CM1 solitary confinement. In 2020, the FDC was the third largest prison system in the country, housing approximately 96,000 inmates and operating facilities across four geographic regions, including 50 major correctional institutions for incarcerated felons convicted and sentenced to more than one year of incarceration (Florida Department of Corrections 2020). At the start of the study, in 2017, restrictive housing was concentrated in five of the state facilities. We toured and conducted focus groups at all five. Inmates from throughout the state's system may be transferred and housed in any of the CM1 restrictive housing facilities.

In total, the research team conducted 10 site visits from 2017 through 2020. The sites included in the study were chosen with the following criteria in mind. First, because the focus of the study is on inmate impacts and responses to restrictive housing, we included the five facilities that operated CM1 restrictive housing (solitary confinement) dorms on site during the time that we began our data collection. Personnel in these facilities spend the majority of their days working directly with inmates housed in restrictive housing. They are able to provide first-hand accounts about their experiences working in these dorms and with restrictive housing inmates.

Second, correctional staff may have different experiences managing women in CM1 restrictive housing and it is possible that the housing may be used differently for, or have different effects on, female inmates. Accordingly, we conducted a site visit and focus groups at the one CM1 restrictive housing facility for women.

Third, to understand the context surrounding inmate behavior prior to, during, and after CM1 restrictive housing—as well as the potential impacts of restrictive housing on the broader prison system—we visited four general population facilities, chosen because they were identified as referring to, and receiving a high number of inmates released from, CM1 restrictive housing. One was selected because it had a similar profile to these facilities but referred relatively few inmates to CM1 housing; a visit to this facility served to help identify what factors may contribute to limited need for or use of long-term solitary confinement. Administrative records and recommendations from the FDC administrators were used to identify these facilities.

Finally, we included a visit to a transitional step-down prison. The step-down facility is a major correctional institution that houses only inmates who had previously been housed in one of the CM1 restrictive housing facilities. The facility assists in the transition from long-term solitary confinement to general population housing. The personnel who work in this facility include mental health and medical staff, as well as security staff who have experience working directly with restrictive housing inmates. These personnel offered insights about their experiences with inmates directly released from restrictive housing, inmate adjustment to the transition step-down program, and operational challenges and effectiveness.

Participants

A total of 144 respondents, including 2 FDC system administrators, participated. Respondents consisted of personnel with varying roles to allow for a wide range of responses from various perspectives. We used a purposive sampling technique to narrow our sample. For the site visits, personnel had to work with inmates in restrictive housing or with inmates who had spent time in restrictive housing. They included junior-ranking officers (e.g., sergeants and front-line personnel) and senior-ranking officers (e.g., lieutenants and captains), classification

officers, medical and mental health officers, and wardens. We worked with the administrators and wardens to identify individuals who met these criteria. We provided all respondents with an informed consent document that described the study; they were asked to verbally agree or decline to participate in the study. Respondents did not receive payment for participation.

Twenty focus groups and nine interviews were conducted in total across the site visits. Two focus groups occurred at each site. The first typically consisted of only junior-ranking correctional officers and the second typically consisted of senior-ranking officers, classification staff, and medical and mental health personnel. This approach increased the likelihood of participation and open discussion. The focus groups typically included 5 to 10 respondents. In addition to the focus groups, we typically interviewed wardens and deputy wardens at each site. Interviews with the two system administrators were conducted separately from the site visits. Respondents' work experience in corrections ranged from a few months to more than 30 years.

Data Collection Process

Data were collected in two stages at each site visit. First, the researchers toured the prison, with a primary focus on restrictive housing wings and units but with additional time spent in the general population dorms (depending on the type of facility), recreational, and visiting areas. The tours were led either by wardens or other senior personnel.

Second, the researchers conducted the focus groups and interviews. The focus groups took place in either the administrative conference room or the staff lunch room and lasted approximately 1 to 2 hours in length. The warden interviews, which sometimes included deputy wardens, took place in the head warden's office or a conference room and lasted approximately 45 minutes. Following recommended qualitative practices, we asked open-ended questions that focused on perceptions of restrictive housing uses, impacts, and alternatives to encourage elaboration and discussion between participants (Kitzinger 1995). These dimensions guided all focus groups and interviews and were purposely general to allow discussions to be as far-ranging as possible. Questions based on the starting thematic areas thus were broad. For example, how is restrictive housing used? For what types of behaviors or inmates? How should it be used? How does it affect inmates while in the housing and after release to general population facilities or to society? How does it affect personnel who work in restrictive housing? Prison system safety and order? How can restrictive housing be improved to be more effective? What might reduce the need for it? What alternatives to it exist? As much as possible, the researchers worked to have the respondents lead the discussion. That in many instances led to questioning that arose organically to explore ideas or patterns that the researchers had not contemplated. When necessary, and dependent on the type of facility being visited, to further discussion the researchers relied on prompts, such as asking about whether there are unique types of impacts on inmates (e.g., mental health, misconduct, or recidivism) or on personnel (e.g., how working in disciplinary confinement units might differ from working in CM1 housing).

Recording devices were not allowed inside the prisons, and their use likely would have reduced personnel willingness to participate. For the focus groups and interviews, therefore, one researcher moderated and two other researchers took notes to capture the points that respondents made. After each site visit, the researchers debriefed to review the visit and discussions.

Focus Group Data Analytic Approach

A strength of qualitative methodologies, such as focus groups, is the opportunity to identify the range of possible uses, impacts, causal relationships, conditioning factors, and more that may be relevant to evaluating use and impact and to identifying ways to improve a program or policy (Rossi et al. 2004; Krueger and Casey 2009; Mears 2010; Patton 2015). Accordingly, for the report, in examining the data from the focus groups, we sought to identify different uses, impacts (on inmates, the prison system, and personnel, respectively), causal pathways, factors that might influence the use and effectiveness of restrictive housing, ways that the housing might differentially affect some inmates, facilities, or personnel, opportunities for improving the appropriate use and effectiveness of the housing, and feasible strategies to reduce the need for restrictive housing while simultaneously improving prison system order and safety.

In analyzing the information from the focus groups, we focused, per the goals of the study, on inmates, the prison system, and prison personnel, respectively. After the first visit, one of the researchers summarized the observations notes from the site visits and focus groups (e.g., different goals associated with restrictive housing, factors that influence the use of the housing). Two additional researchers separately reviewed the summary. To increase interrater reliability, the three met to discuss omissions or differences of opinion in any of the summary information. This process was repeated after each site visit. The main findings are discussed below.

3.3 Findings

Here, we present the main findings from the site visit and focus group data and arrange the findings according to each of the sets of questions discussed above. Here, again, the main emphasis was on long-term (typically 6 months or longer) solitary confinement for management purposes, what the FDC refers to as CM1 housing. As discussed above, “solitary” does not mean that inmates were completely sealed off from contact with anyone else. The cells have windows, for example, and inmates can spend an hour or more each day outside of the cells.

How and why is restrictive housing used with inmates? That is, what goals does use of the housing achieve, or does it aim to achieve, with inmates?

- The main goal of long-term solitary confinement restrictive housing (CM1) reportedly is to manage inmates who cannot be controlled in any other setting and, in turn, to create safer conditions for inmates and prison personnel.
- The housing is said to be used for a wide variety of situations. However, respondents consistently reported that long-term solitary confinement is used primarily with inmates who cannot be controlled in any other setting.
- Across many of the site visits, it was reported that CM1 restrictive housing is not always used consistently with this population. For example, over time, standards have changed for who can or must be sent to the housing. Some respondents felt that inmates who engaged in CM1-eligible infractions, but not necessarily serious infractions that warrant CM1 placement, could end up in it. Others felt that insufficient CM1 restrictive housing existed to house all inmates who should be placed in it.

Does restrictive housing appear to improve, have no effect on, or worsen inmate misconduct, mental health, and recidivism?

- Views about the impacts of the housing on inmates varied widely. Many respondents across the sites viewed solitary confinement housing (CM1) as effective in reducing misconduct among inmates sent to the housing and, through general deterrence, among those not sent to it. They also viewed it as effective in reducing recidivism and as not having any appreciable harmful or beneficial impact on inmate mental health. Many other respondents, however, expressed the opposite view. They saw the housing as either having no effect on inmate misconduct or recidivism or as possibly worsening it, and they saw as it as having a harmful effect on inmate mental health.
- Few respondents felt that there was any accurate way to identify in advance of placement in long-term solitary confinement housing which inmates would benefit and which would be harmed by such placement.
- However, many respondents viewed mentally ill inmates as having more difficulty adjusting to solitary confinement housing. Others, though, highlighted that some mentally ill inmates may receive more services while in restrictive housing and, in that sense, potentially benefit from placement there. Still others said that in their view some inmates prefer restrictive housing because of the safety and privacy it affords.
- Some of the accounts suggested that female inmates may adapt to long-term solitary confinement housing somewhat differently from male inmates. One main difference is that they are perceived to suffer more from the isolation from relationships with other inmates than is the case with male inmates in similar housing.
- In many focus groups, respondents pointed to younger inmates as being least likely to adapt well to long-term solitary confinement or to change their behavior.

How can restrictive housing be used in ways to maximize benefits (e.g., reduced misconduct and disorder) and minimize harms (e.g., greater mental illness and disorder)?

- Limited access to rehabilitative programming was one of the biggest reported impediments to the effectiveness of long-term solitary confinement housing (CM1). Accordingly, one of the major recommendations from the site visits consisted of calls for more programming. Such programming was viewed as likely to improve behavioral and recidivism outcomes, as well as some of the potential psychological harm that some respondents said can arise from extended solitary confinement.
- A recommendation for minimizing harms was to reduce placements in solitary confinement housing, especially for those who have a mental illness and those individuals who might benefit more from a short-term stay in disciplinary confinement.

- Many respondents said that the prison system needed more long-term solitary housing capacity. That would free short-term disciplinary confinement and administrative confinement to be used for their intended purposes rather than as temporary housing for inmates classified to CM1 status who await transfer to restrictive housing facilities (i.e., units dedicated to extended stays in CM1 confinement cells).
- Respondents also emphasized the importance of more staffing capacity, including both more staff and more experienced staff for addressing the challenges of fulfilling regulatory requirements and ensuring optimal safety for staff and inmates. They also called for more staff training on inmate mental health, including how to recognize and interpret symptomatology associated with different mental disorders.

How is restrictive housing used to achieve prison system goals and to protect or improve the performance of prison personnel? In what ways does restrictive housing improve or worsen prison operations and prison personnel outcomes? To the extent that restrictive housing improves or worsens outcomes for prison systems and for personnel (e.g., violence, disorder), how do such benefits or harms arise?

- Long-term solitary confinement restrictive housing (CM1) was viewed as a way to improve prison system order and safety by isolating especially violent or disruptive inmates. Most respondents viewed the logic as a straightforward one: When violent or disruptive inmates act out, they need to be separated from the inmate population, both for their own safety and that of officers and staff as well as other inmates.
- Many respondents felt that this housing did little to improve prison system order and safety while, conversely, many others felt that it did. Those who viewed it as ineffective typically pointed to several factors, such as the housing doing little to address staffing or programming shortfalls. Some pointed to the idea that, in their view, many inmates actively sought placement in the housing and so it did little to provide a specific deterrent effect. Others, however, felt it was effective in sending a deterrent message to inmates placed in restrictive housing and to inmates in general population facilities.
- Those who reported that the housing was effective typically emphasized that general population facilities are difficult to manage, especially with limited staffing. In such a context, the long-term solitary confinement housing was seen as fulfilling a critical role in enabling these facilities to function with fewer problems.
- Those who felt that the housing may worsen prison system outcomes highlighted that reliance on it in the absence of sufficient staffing and programming meant that inmates would be released to general population facilities with a reduced ability to function.
- Across the different site visits, respondents indicated that some of what determines inmate behavior stems from facility conditions and culture. Some prisons may have a culture that promotes greater safety and order and, in turn, less of a need for restrictive housing. Others may have a culture that results in more disorder and thus a greater need to send inmates to the housing to secure more order in the facility.

- In several site visits, respondents indicated that staffing shortages sometimes resulted in new or inexperienced officers or staff working in CM restrictive housing units, a situation that they viewed as potentially harmful to the inmates and to officers and staff. Inmates might view the personnel as unresponsive to their requests or as “easy targets” to manipulate, leading to what was viewed as unnecessary violence.

How can restrictive housing be used in ways to maximize benefits for and minimize harms to prison systems and to personnel?

- A near-universal recommendation for improving the use of long-term solitary restrictive housing (CM1) was to improve inmate review protocols to ensure that inmates who warrant placement in the housing actually go there and that inmates who do not warrant such placement do not end up in the housing. One specific recommendation was to revisit rules that mandated CM1 restrictive housing placements in certain situations, such as when inmates might only tangentially be participants in a violent incident.
- A second recommendation was to increase personnel at CM1 facilities to allow for greater compliance with regulations, a less intense workload and stressful experience for officers and staff, and expanded capacity to respond to inmate needs and emergencies.
- A third was to increase rehabilitative programming in the housing. Here, some dissensus existed. Some personnel, for example, felt that creating more restrictions would better motivate more of the inmates to change their behavior.
- A fourth was to institutionalize transition programming that would help inmates released from long-term solitary confinement restrictive housing adapt better to general population facilities and to society. Significant challenges exist in implementing such programming. Respondents indicated, for example, that the programming may not be embraced by all inmates and that it can be difficult to change the behavior of inmates who actively seek to stay in or return to restrictive housing. They indicated, too, that to provide such programming to scale would require substantial increases in staffing. Not least, they highlighted that general population facilities might benefit from extra assistance when receiving inmates released from restrictive housing, especially for inmates who may be particularly at risk of harm to themselves or others.
- Additional recommendations varied, and included: Reliance on risk and needs assessments for inmates prior to placement to assess better which inmates would adapt better or worse to the housing; use of calming rooms that inmates could visit where they could observe nature or other videos that could alleviate anxiety; and hiring more, and more experienced, staff and providing greater training.

What alternatives exist that may achieve the goals expected of restrictive housing and that may do so more effectively and cost-efficiently?

- Respondents consistently reported that a need for more programming existed throughout the prison system and that such programming would improve inmate behavior and reduce the need for long-term solitary confinement restrictive housing (CM1).
- In many of the focus groups and interviews, respondents pointed to increasing staffing shortfalls as a fundamental impediment to effective prison system operations, one that in turn made restrictive housing a necessity. Consequently, they emphasized that increased staffing was essential but that, absent any appreciable change to address this situation, there was a need for more restrictive housing capacity of all types, including not only long-term solitary confinement (CM1) but also CM2 and CM3 housing as well as disciplinary and administrative segregation.

4. Survey Data—Description and Findings

4.1 Overview

As a final approach to examining restrictive housing, the research team also analyzed data from a survey of FDC prison personnel. Here, we sought to answer questions that guided the analysis of the administrative records and focus groups data. These included a focus on why long-term solitary confinement restrictive housing (CM1) is used, its effects on inmates, personnel, and the prison system, and how to improve its effectiveness.

4.2 Survey Data

After completing the focus groups and analyzing the resulting data, the researchers developed a survey that zeroed in on specific dimensions identified by the focus groups. Few studies to date have used surveys to examine correctional system administrator or personnel views about long-term solitary confinement (see, e.g., Wells et al. 2002; Mears and Castro 2006). There is, then, a need for studies that tap into the views of administrators and personnel about the uses, goals, impacts, and challenges of such housing as well as alternatives to it, and that do so with a focus not only on inmates but also on prison system operations and prison personnel. To address this gap, a survey was administered to personnel across the prison system.

Sampling Frame

The FDC is the third largest state correctional agency in the United States and, at the time the survey was administered (November 4, 2019 - January 10, 2020), employed over 24,000 full-time employees, not counting contract staff. For the study, the sampling frame ($N = 19,166$) consisted of individuals who worked with inmates in the state's 50 major public correctional institutions either as FDC employees or as medical or mental health contract staff. It excluded individuals who worked at privately-run prisons, "road" prisons, forestry camps, community release and reentry centers, and those who were unavailable to participate in the survey due to military service, medical leave, or other reasons. Major correctional institutions are large "parent" facilities that oversee auxiliary units, such as annexes and work camps. Security personnel, including correctional and classification officers, work under the umbrella of the major correctional institutions, as do contracted medical and mental health staff. A head warden oversees each major institution and its attached units and staff.

Survey Instrument

The research team created a questionnaire based on a review of the literature and responses from the focus groups and interviews. The survey instrument included questions that asked about restrictive housing use, goals, impacts, challenges, and alternative strategies—with a focus on inmates, the prison system, and personnel, respectively—using closed-ended questions. No identifying information (e.g., name) was asked, though questions asking about demographic data, such as age, race, marital status, and education were included. The questions were entered into Qualtrics, with skip patterns established where appropriate. For example, if a respondent answered that they had never worked in a restrictive housing unit, the survey skipped over

questions that asked about experiences in a restrictive housing unit. To account for clustering effects across the facilities, we created separate institutional-specific survey links using coded names to refer to each facility, which, for the final data set, then were changed to random numbers. Prior to distribution, the survey was piloted with 10 correctional personnel with diverse roles and experiences. A final revision was undertaken based on their feedback.

Survey Distribution

To distribute the survey, we worked with the FDC administrators and took multiple steps to increase the likelihood of obtaining a high response rate. First, on October 31, 2019, the Secretary of Corrections, Deputy Secretary, and other lead administrators hosted a conference call with all of the head wardens and assistant wardens of operations (AWOs) from each of the 50 major correctional institutions included in the sample frame. The call served two purposes: (1) to obtain “buy-in” from all wardens, and (2) to identify an institutional contact that the research team could communicate with directly at each facility.

Institutional contacts were used to ensure that all personnel could be made aware of the survey and to ensure they had computer access to participate in the survey. This step was necessary because not all the FDC personnel across the state are issued a state email or have access to the internet as a part of their work duties. The AWOs established computer stations that staff could use to complete the survey. Instructions and, for each facility, the institution-specific survey link, were provided to each AWO.

The next step was to distribute the survey. On November 4, 2019, we sent 50 individual emails to each AWO that included instructions for distribution of the survey, a flyer to promote the survey, and a Word file with the institution-specific link to the survey. AWOs were asked to send the file with the link to executive officers at their facility and request that they complete the survey by clicking the link included in the file. They were also asked to send an email with the file to all security, classification, and medical and mental health shift supervisors with a request to create a computer station with access to the survey link and a physical copy of the flyer. Supervisors were encouraged to promote the survey to their staff and, at the same time, to emphasize that participation was not required. The research team reviewed this process during the conference call and underscored that participation had to be voluntary. January 10, 2020 was the last day in which FDC personnel could participate in the survey.

Survey Access and Completion

To access the survey, personnel opened a Word document file that included the survey link. Clicking the link directed them to a Qualtrics page with instructions on how to complete the survey. All participants who accessed the survey first had to review an FSU Institutional Review Board-approved consent form prior to accessing the survey. The consent document included information about the study and the survey. Individuals then had the option to either agree or decline to participate by click on a “Yes” or a “No” option. If they clicked “Yes,” they were directed to the beginning of the survey. If they clicked “No,” the program automatically exited the survey. Once a participant began the survey, they were not able to save partial responses or return and complete the survey at a later time. They could exit the survey by closing the web-browser at any time. However, if they did so without completing all parts, the survey would have to be restarted from the beginning for their responses to be recorded as complete.

Consistent with prior studies (e.g., Lerman and Harney 2019), the survey remained open for two months (November 4, 2019 - January 10, 2020). This window was used because most personnel used work computers stations to complete the survey. Use of a two-month window allowed sufficient time for all survey-eligible personnel to access the stations. In addition, it helped to avoid potential influences from changing events or contexts for the agency or state.

Of the 19,166 FDC eligible correctional and contract personnel included in our sample frame, 11,267 individuals (58.8 percent) either consented to participate in and complete the survey (10,211 individuals) or opted not to consent to participate in it (1,056 individuals). Accordingly, there was a 53.3 percent completion rate relative to all eligible respondents (10,211 / 19,166) and a 90.6 percent participation rate among all individuals who accessed the survey (10,211 / 11,267). The sample N for the survey was 10,211. However, because of reported potential irregularities in survey administration at one facility, the analytic sample N with this facility omitted is 9,656. Descriptive statistics for the survey are presented in table 4.3.1.

Caution is warranted when interpreting the results from these data. It is possible that some individuals may have completed the survey more than once, a problem that can arise with both paper-and-pencil and online-administered surveys. However, there was no incentive for personnel to do so and, if anything, a disincentive given prison system understaffing and the resulting need for personnel to return to duty. In addition, precautions were taken to avoid this possibility, including training of AWOs in the survey administration protocol.

Survey Data Analytic Approach

Data from the survey were examined using descriptive statistics and multivariate regression analysis. The main focus, as with the focus groups, was on identifying how prison system administrators, officers, and medical and program staff view restrictive housing.

4.3 Findings

Below, we present key descriptive findings from analysis of the survey data. Here, again, unless otherwise indicated, “restrictive housing” refers to long-term solitary confinement, what the FDC refers to as “CM1” restrictive housing.

Why is restrictive housing (CM1) used with inmates?

- Over three-fourths (79 percent) of personnel agreed or strongly agreed that CM1 restrictive housing is needed because inmates are more violent than they were in the past.
- Three-fourths (75 percent) of personnel agreed or strongly agreed that the housing is needed because there are too few experienced staff, 78 percent reported that they agreed or strongly agreed that it is needed because there are too few staff in general, 61 percent agreed or strongly agreed that it is needed because there are too few work opportunities for inmates, and 60 percent agreed or strongly agreed that it is needed because of too few educational, vocational, substance abuse, or mental health treatment programs.

Does restrictive housing (CM1) in fact appear to improve, have no effect on, or worsen

inmate misconduct and mental health?

- Sixty-two percent of personnel reported that the behavior of inmates in CM1 restrictive housing somewhat or greatly improves while residing in the housing. The other one-third of personnel stated that inmate behavior worsened.
- Over one-third (37 percent) of personnel agreed and 35 percent disagreed that inmates who have left CM1 restrictive housing and returned to general population facilities behave as well or better than other general population inmates (28 percent of personnel did not know whether there was a difference in behavior).
- Half of respondents agreed—and the other half disagreed—that inmates who have been identified as mentally ill are likely to have their mental health deteriorate while in CM1 restrictive housing. By contrast, 43 percent agreed—and 57 percent disagreed—that inmates who have not been identified as mentally ill are likely to have their mental health deteriorate while in this housing.
- Sixty-five percent of respondents reported that some inmates who leave close management housing of any kind (i.e., CM1, CM2, or CM3) have trouble adjusting to living with other inmates when they return to general population facilities, and 18 percent of respondents reported that most inmates who leave the housing have trouble adjusting.

In what ways does restrictive housing (CM1) improve or worsen prison operations and prison personnel outcomes?

- Eighty percent of personnel agreed or strongly agreed that having the option to use CM1 restrictive housing allowed them to carry out their duties more effectively.
- Approximately 4 of every 5 respondents (81 percent) reported that placing inmates in CM1 restrictive housing somewhat or greatly improved day-to-day prison operations.
- Almost half (49 percent) of personnel reported that work in general population facilities is associated with moderate to a lot of stress. Almost two-thirds (63 percent) reported that work in CM1 restrictive housing units is associated with moderate to a lot of stress. Similar responses about experiences in working in the two settings were identified for perceptions about stress associated with risk of injury, witnessing traumatic events, and adverse effects of friends or family not understanding their work.
- Eighty-four percent of personnel stated that restrictive housing somewhat or greatly increased safety and prison order, while 16 percent stated that it somewhat or greatly decreased these outcomes. As noted in the discussion of the focus group findings, some of the reasons that personnel view the housing as effective include deterrence and freeing up personnel to focus on other inmates to maintain the daily routine and offer programs. A reason that the housing might worsen outcomes is that it does little to address factors that contribute to inmate behavior or to improve staffing levels in the prison system.

How can restrictive housing (CM1) be used in ways to reduce misconduct or improve its effectiveness?

- Seventy-three percent of personnel agreed that more time in CM1 restrictive housing would improve inmate behavior while in this housing. An equal percentage agreed that more access to rehabilitative programs would improve inmate behavior during CM1 confinement. Sixty-two percent agreed that more video and audio monitoring would help; 92 percent agreed that having more staff would improve inmate behavior.
- A central question that confronts discussions of restrictive housing is whether solitary confinement is effective. When asked whether this housing is more effective when an inmate is alone or when they have a cellmate, 55 percent of personnel reported that they thought that single-cell (solitary) confinement is more effective and 45 percent reported that double-cell confinement with a cellmate is more effective.

In addition to the descriptive analyses, we examined whether there was substantive variation across groups (e.g., respondent age, gender, race, ethnicity, custody level of unit, and occupational position) in views about several dimensions, and specifically impacts and effectiveness, of restrictive housing. To do so, we conducted logistic regression analyses—using dichotomized outcomes—which are displayed in table 4.3.2.

What variation, if any, exists among corrections personnel groups in their views about inmate impacts?

- When those who had experience working in long-term solitary confinement housing (CM1) were asked whether an individual's behavior improves during their time in this housing, personnel varied in their responses, as shown in model 1. Specifically, males and administrators were more likely to view it as effective in improving an individual's behavior while in the housing, while older staff, blacks, and individuals with a bachelor's or graduate degree were less likely to view the housing as effective in doing so.
- These personnel were also asked about their perceptions of the impact of restrictive housing on the mental health of mentally ill inmates. As can be seen in the second model in the table, groups who were more likely to view the housing as having an adverse effect included personnel who were older, female, black, had a graduate degree, worked in "front-line" positions, or had less experience working in prisons.

What variation, if any, exists among corrections personnel groups in their views about prison system impacts?

- All prison personnel were asked whether long-term solitary confinement restrictive housing (CM1) helps to improve prison system safety. Inspection of model 3 shows that the main groups who most felt that it improved safety were staff who were younger, males, whites, staff with some college education (relative to those with a high school degree), administrators, or those who had more years of experience working in prisons.

- Personnel also were asked whether this housing helps to improve prison system order. Model 4 presents regression results with perceptions about whether the housing improves prison order as the dependent variable. Inspection of the model reveals a similar pattern to what surfaced when the focus was on prison system safety. That is, the groups who most felt that it improved order were, again, staff who were younger, males, whites, staff with some college education (relative to those with a high school degree), administrators, or those who had more years of experience working in prisons.

What variation, if any, exists among corrections personnel groups in their views about personnel impacts?

- All personnel were asked whether long-term solitary confinement housing (CM1) allows staff to carry out their duties more effectively. Model 5 presents regression results with this outcome as the dependent variable. In the model, we can see that those who felt that the housing better enables them to carry out their duties were more likely to be male, white, or be an administrator, while those who disagreed with this view were more likely to be younger or to have a graduate degree.
- Finally, personnel who had experience working in this housing were asked the extent to which work in this housing contributed to staff stress. Model 6 presents the results for this analysis; in this model, the perception that the housing contributes to staff stress is the outcome. As shown in the model, blacks were less likely to view it as contributing to stress while administrators and those with more years of prison work experience viewed it as more likely to contribute to stress.

5. Implications for Research and Policy and Practice

In this section, we discuss several limitations of the study. We then discuss potential implications of the study’s findings for research and for policy and practice.

5.1 Study Limitations

Implications of the study extend to areas in which further research is needed and to different policies and practices that warrant consideration. These implications, however, should be viewed in light of several limitations of the study. First, the analyses focused on one state at one point in time; the study’s generalizability to this state in the past or future or to other states is unknown. Second, although the analyses using administrative records data employed a range of controls common to most studies inmates and ex-prisoners, there may be confounders whose omission could have affected the results. Studies using other measures or analyses might identify different patterns. Third, this study examined inmate behavior using measures similar to those in prior work; however, assessment of the impact of long-term solitary confinement would benefit from inclusion of additional measures, such as inmate stress, inmate perceptions of how they are treated, suicidal ideation, and motivation to change. It is possible that estimated effects might differ with inclusion of such measures. Fourth, any identified relationships apply only “on average”; the effects of restrictive housing for a given inmate cannot be determined based on the study results. Fifth, the survey and focus group data tapped into potential impacts on inmates, personnel, and prison system operations. The data may not fully or accurately reflect personnel views. In addition, identified impacts should be confirmed independently using a combination of subjective and objective measures. For example, if some personnel view restrictive housing as entailing more risk for staff, that does not mean that it in fact does. Assessment of this possible relationship using multiple sources of data is needed. If discrepancies exist, the perceptions of personnel are not less relevant, and still would warrant identification and understanding. Finally, the study did not examine other potential impacts, such as the extent to which decisions to place inmates in long-term solitary confinement housing follow department protocols or ways in which inmate experiences in such housing, or personnel experiences working at such housing, may have economic, social, or mental health impacts on their families.

5.2 Implications for Research

Several implications for research flow from the study’s findings. *First, when seeking to understand past, current, or future research, the restrictive housing terminology can lead to confusion in interpreting the generalizability or relevance of study results.* Accounts that conflate different types of restrictive housing—such as shorter-term stays, typically for administrative or disciplinary reasons, short- or long-term stays that allow for two individuals to a cell for different purposes, or long-term stays that involve isolation for management reasons—may obscure that some are more prevalent than others. The heterogeneity of confinement conditions that can be considered “restrictive housing” complicates the creation of apples-to-apples comparisons of the use and effects of this housing (Mears et al. 2019).

A second and related implication is that studies need to be cautious in generalizing results, given that these may vary depending on the type of restrictive housing and sample, such as a release cohort or a stock population cohort. Individuals who experience a given type of housing

may vary from those who experience other types. And those in such housing on a given day may vary from those who have ever experienced it prior to release from prison.

Third, further research is needed to identify which groups are most likely to be placed into various types of restrictive housing and why. Only with state-by-state comparisons, and with studies that compare inmates in the housing to those who do not experience it, will a more credible foundation exist to identify whether a common set of patterns exists in factors associated with restrictive housing placements (Mears and Bales 2010; Schlanger 2013; Beck 2015; Garcia 2016; Labrecque and Smith 2019c). In identifying these patterns, researchers will want to examine what contributes to them. For example, if males and minorities are more likely to be placed in long-term solitary confinement restrictive housing, what inmate, prison facility, or programming characteristics explain such differences? Similarly, if gang membership is associated with placements, what explains the association (Pyrooz and Mitchell 2020)? The possibilities may include variation in behaviors that can lead to solitary confinement as well as variation in how personnel view certain groups and in the conditions in prisons. For example, do some groups enter prison with a greater likelihood of committing disciplinary infractions? Or do they enter prison with a similar likelihood to that of other groups but instead receive differential services and treatment or become targeted for greater enforcement of rules?

Fourth, studies should unpack the processes through which long-term solitary confinement housing may influence behavior after release. The analyses here echo other work in suggesting that stays in this housing may be associated with an increased likelihood of recidivism (see, e.g., Mears and Bales 2009; Clark and Duwe 2019; Zgoba et al. 2020). The analyses also suggest that this effect may be more likely for some groups, such as those released directly from such housing to society; this pattern echoes a study of Washington supermax inmates (Lovell et al. 2007). How and why such effects arise warrants attention.

Fifth, research is needed that identifies the conditions necessary for long-term solitary confinement to produce benefits (e.g., lower rates of misconduct and recidivism) and minimize harms (e.g., higher rates of mental health symptomatology, misconduct, and recidivism). It is likely that, as a form of restrictive housing, solitary confinement effects may vary depending on the types and amounts of programming in such confinement, efforts to facilitate successful reentry of individuals back into general population facilities and society, and staffing levels and experience (see, generally, Garcia 2016; Labrecque and Smith 2019b).

Sixth, the nature of inmate mental health needs prior to, during, and after stays in long-term solitary confinement warrants closer attention. The present study accords with prior work that suggests that this confinement may worsen mental health (see, generally, Kapoor and Trestman 2016; Haney 2018). This issue has been central to many debates about and critiques of restrictive housing, especially those forms that entail lengthy stays in solitary confinement (Gendreau and Labrecque 2018). Studies are needed that examine valid mental health assessments of all inmates, the relationship between mental health and behavior, placement of the mentally ill who engage in misconduct into different types of restrictive housing as compared to the placement of individuals without a mental illness, the treatment and services the mentally ill receive while in restrictive housing relative to what they would receive in general population facilities, and the effects of the housing on the mentally ill and those without a mental illness.

Seventh, studies should investigate the systemwide effects of relying on long-term solitary confinement as well as other forms of restrictive housing, with outcomes relevant to each. Estimating such effects will be difficult because of variation in restrictive housing, how it is used, and conditions in the housing and the prison system, but is needed to assess system

impacts. In undertaking such an assessment, it will be important to consider impacts not only on inmates but also on personnel and the system. As the present study found, work in long-term solitary confinement restrictive housing is associated with higher levels of personnel stress. Yet, it is possible that at a systemwide level, there may be aggregate improvements in both inmate and personnel stress and safety as a result of using the housing. The relevant outcomes may vary by type of restrictive housing. For example, the effectiveness of short-term administrative confinement might be assessed in part by the extent to which it enables personnel to minimize injury to inmates and staff. In all cases, potential adverse effects—such as harm to inmate mental health, the risk of increased misconduct, recidivism, or even death (see, e.g., Brinkley-Rubinstein et al. 2019), and risks to personnel health and safety—should be evaluated.

Finally, research should unpack the views and experiences of inmates as well as those of administrators, officers, and staff who work in prisons. Accounts from inmates provide a way of directly tapping the restrictive housing experience. Future work ideally will include surveys of inmates who have experienced the housing and compare their views with those who have not experienced it (see, e.g., Beck 2015). Personnel views and experiences may vary and should be further investigated. Consistent with prior work, for example, this study found that many personnel hold conflicting views about the appropriateness and the effectiveness of restrictive housing (Mears and Castro 2006). In addition, their views and experiences may be influenced by systemwide conditions (e.g., staffing levels or the amount of available programming and services) and by facility-specific conditions (e.g., officer culture, types of available housing, composition of the inmate population). A focus on personnel is of interest in its own right and it may shed light on the factors that influence the use and effects of restrictive housing.

5.3 Implications for Policy and Practice

In addition to implications for research, the study has several implications for policy and practice. These implications echo and further ground those identified in the U.S. Department of Justice's (2016) report on restrictive housing and in reviews (see, e.g., Kurki and Morris 2001; Shalev 2009; Mears 2013, 2016; Frost and Monteiro 2016; Garcia 2016; Morgan et al. 2016; Sundt 2017; Gendreau and Labrecque 2018; Haney 2018; Labrecque and Smith 2019b).

First, results from the qualitative part of the study underscore recommendations in prior research that close attention be given to development of risk and need instruments for determining which individuals warrant placement in long-term solitary confinement, based on objective criteria that align with the goals of this housing (McGinnis et al. 2014; Labrecque and Mears 2019; Labrecque and Smith 2019c). Rules and procedures, and monitored adherence to them, should be implemented to ensure consistency in the use of the confinement. Doing so can also ensure that placements reduce overreliance on such confinement and improve prison safety.

Second, in developing assessment instruments, it is important to consider the role of facility conditions, such as staffing levels and experience and the availability of rehabilitative programming, that may indirectly contribute to inmate behavior and in turn placement into long-term solitary confinement. Failure to address such conditions may amount to seeking to empty water from a sinking ship rather than fixing the hole. To the extent that how prisons are run contributes to inmate behavior, then addressing this issue may reduce inmate misconduct and in turn the need for short-term restrictive housing or for long-term solitary confinement.

Third, to the extent that restrictive housing of any type will remain a fixture of contemporary correctional systems, there is a need both to ensure that conditions in the housing improve

behavior and to provide reentry preparation. The absence of meaningful programming or treatment may be criminogenic and, as some respondents emphasized, constitutes a missed opportunity to intervene in ways that target risk factors for misconduct and recidivism. Efforts to improve programming for individuals in restrictive housing necessarily will require investment in recruiting, training, and retaining more personnel. It also will require developing inmate monitoring systems that identify behavioral changes among those in solitary confinement and how conditions in the housing may influence these changes. Not least, it will require investment in programs to help individuals released from restrictive housing readjust to general population facilities and to prepare them for release to society (Shames et al. 2015; Digard et al. 2018).

Fourth, the need for mental health treatment may vary among different inmate groups, and such treatment may be needed regardless of an inmate's mental health status prior to placement in long-term solitary confinement. At least two critiques have been leveled against the use of such confinement—one is that the mentally ill should never be exposed to the housing because of the potential harmful effects of it for this population, and a second is that the housing should never be used because it may contribute to mental health problems for anyone placed in it. Debate about this issue (see, e.g., Gendreau and Labrecque 2018; Haney 2018) likely will be ongoing. However, to the extent that the housing continues to be used, there will be a need to monitor, assess, and treat mental health problems that inmates in long-term solitary confinement may have. There also is a need for correctional systems to monitor, assess, and treat inmate mental health needs prior to and after placement in such confinement.

Fifth, efforts are needed that address the challenges and experiences of personnel who work in restrictive housing or are indirectly affected by it and that improve systems operations. Programs and training geared toward preparing officers and staff for work in restrictive housing are one solution. Such efforts likely will do little, however, without a concomitant investment in adequate staffing levels, including recruitment and retention of experienced personnel throughout the prison system. Perhaps more than in prior decades, work in correctional systems can be stressful and dangerous for officers and staff. Greater attention, then, is needed to regularly collecting information on their experiences and identifying when and where targeted interventions would improve personnel mental health and performance. Attention is needed as well to identifying ways, such as increased staffing, to improve prison system operations, which may reduce the need for restrictive housing and simultaneously improve systemwide safety. Many stakeholder groups can take steps to reduce over-reliance on restrictive housing and to improve its appropriate use and effectiveness. Lawmakers can create oversight boards that monitor prison system restrictive housing operations. In doing so, they can draw on dimensions identified in this study and in reviews. Foundations and advocacy groups, as well as organizations like the National Institute of Corrections, can work to highlight problems in the use of restrictive housing as well as strategies for reducing over-reliance on the housing and for improving its appropriate use and impacts (see, e.g., Shames et al. 2015; Digard et al. 2018). Corrections officials can create agency workgroups devoted specifically to systematically working to adopt the recommendations here, in the U.S. Department of Justice (2016) report, and in reviews. These groups should take a broad-based approach. This includes a focus on inmates, personnel, the prison system, diverse factors that influence the use of restrictive housing, and multiple dimensions of impact (e.g., inmate behavior and mental health, personnel safety and mental health, prison system safety and order, impacts on communities).

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7. Tables

Table 2.3.1. Descriptive Statistics, Inmates Admitted to and Released from Prison (7/1/2007 to 12/31/2015, N = 216,875 unique prison stays for 184,183 unique inmates)

	No RH Confinement ^a Mean/%	Short-term RH Confinement ^b Mean/%	Long-term RH Confinement ^c Mean/%	Long-term RH Solitary Confinement ^d Mean/%
Percent of all prison stays	51.7%	48.2%	2.0%	1.0%
Age (at admission)	36.9	31.5	27.6	26.8
Gender				
Male	84.5%	90.7%	93.9%	94.5%
Female	15.5%	9.4%	6.1%	5.6%
Race and ethnicity				
White	49.4%	41.5%	24.4%	23.9%
Black	40.1%	47.6%	63.6%	63.7%
Hispanic	10.3%	10.6%	11.7%	12.2%
Other	0.2%	0.3%	0.3%	0.3%
Needed mental health services (within 90 days of admission)	15.3%	20.1%	34.2%	39.5%
Prior Florida prison commitments	45.7%	44.1%	46.4%	44.6%
N _{prisonstays}	112,218	104,623	4,267	2,108
N _{inmates}	101,344	95,141	4,115	2,037

Notes:

^aNo RH confinement includes inmates from general population who did not experience any form of restrictive housing during their term.

^bShort-term RH confinement includes inmates who spent at least one day in administrative confinement or disciplinary confinement during their term. Both forms of short-term confinement are double-celled by design.

^cLong-term RH confinement includes inmates who spent at least one day in close management 2 or close management 3 during their term. Both forms of long-term confinement are double-celled by design.

^dLong-term RH solitary confinement includes inmates who, during their term, spent at least one day in close management 1, which is single-celled by design and typically requires a minimum of a 6-month stay.

Table 2.3.2. Descriptive Statistics, Stock Population Cohort (June 30, 2011, N = 102,209 unique inmates)

	No RH Confinement ^a Mean/%	Short-term RH Confinement ^b Mean/%	Long-term RH Confinement ^c Mean/%	Long-term RH Solitary Confinement ^d Mean/%
Percent of all inmates	90.3%	6.3%	2.0%	1.2%
Age (on June 30, 2011)	38.2	32.5	33.7	34.3
Age (at admission)	33.7	28.5	27.0	27.2
Gender				
Male	92.6%	96.3%	97.6%	98.3%
Female	7.4%	3.7%	2.4%	1.7%
Race and ethnicity				
White	41.4%	29.0%	20.9%	22.5%
Black	46.7%	58.7%	66.3%	67.9%
Hispanic	11.6%	12.1%	12.6%	9.4%
Other	0.4%	0.3%	0.2%	0.2%
Needed mental health services (within 90 days of admission)	18.8%	24.6%	35.2%	51.7%
Needed mental health services (prior to June 30, 2011)	16.5%	28.6%	51.0%	71.4%
Prior Florida prison commitments	44.6%	44.7%	48.2%	50.8%
N _{inmates}	92,286	6,419	2,011	1,243

Notes:

^aNo RH confinement includes inmates from general population who were not any form of restrictive housing on June 30, 2011.

^bShort-term RH confinement includes inmates who were in either administrative confinement or disciplinary confinement on June 30, 2011. Both forms of short-term confinement are double-celled by design.

^cLong-term RH confinement includes inmates who were in either close management 2 or close management 3 on June 30, 2011. Both forms of long-term confinement are double-celled by design.

^dLong-term RH solitary confinement includes inmates who, on June 30, 2011, were in close management 1, which is single-celled by design and typically requires a minimum of a 6-month stay.

Table 2.4.1. Descriptive Statistics for Variables in Matching Analyses ($N = 147,859$ prison stays for 132,277 unique inmates)

	Pre-matching				Post-matching			
	No CM1		CM1		No CM1		CM1	
	Mean / %	SD	Mean / %	SD	Mean / %	SD	Mean / %	SD
Focal outcomes								
Reconviction, 3 years	0.327	0.469	0.473	0.500	0.404	0.491	0.467	0.499
Matching variables								
Age at admission	33.746	10.930	25.639	9.080	26.023	9.153	25.839	9.168
Male	0.871	0.335	0.946	0.226	0.948	0.222	0.948	0.223
White (non-Hispanic)	0.458	0.498	0.226	0.418	0.219	0.414	0.230	0.421
Black (non-Hispanic)	0.457	0.498	0.667	0.472	0.670	0.470	0.661	0.473
Hispanic	0.083	0.276	0.103	0.304	0.107	0.309	0.104	0.305
Other race/ethnicity	0.002	0.048	0.004	0.065	0.004	0.061	0.005	0.067
Prior felony convictions	2.995	2.835	1.895	2.358	1.964	2.432	1.934	2.370
Prior felony violent convictions	0.649	1.094	0.682	1.118	0.709	1.147	0.684	1.118
Prior Florida prison commitments	1.020	1.613	0.797	1.378	0.836	1.587	0.807	1.368
Current offense: violent	0.277	0.447	0.549	0.498	0.539	0.499	0.542	0.498
Sentence length (months)	31.649	33.116	45.570	35.614	44.505	32.328	45.161	36.148
Time served (months)	17.590	12.711	31.870	17.096	30.179	18.505	31.254	16.846
Custody level: minimum	0.407	0.491	0.138	0.345	0.148	0.355	0.145	0.353
Custody level: medium	0.485	0.500	0.430	0.495	0.499	0.500	0.444	0.497
Custody level: close	0.108	0.310	0.432	0.496	0.353	0.478	0.411	0.492
Needed mental health services	0.166	0.372	0.311	0.463	0.269	0.444	0.290	0.454
Diagnosed mental illness	0.150	0.357	0.289	0.453	0.250	0.433	0.270	0.444
TABE score	6.853	3.416	5.230	3.363	5.444	3.125	5.308	3.367
Assigned to programming	0.228	0.419	0.328	0.470	0.344	0.475	0.329	0.470
Violent disciplinary reports	0.030	0.180	0.368	0.621	0.205	0.459	0.305	0.555
Non-violent disciplinary reports	0.172	0.479	0.872	1.049	0.658	0.910	0.798	0.997
Visits	0.450	1.561	0.196	1.133	0.221	0.890	0.207	1.163
$N_{\text{prisonstays}}$	146,691		1,168		4,497		1,107	

Table 2.4.2. ATT Estimation of CM1 Effects on Reconviction within 3 Years of Release

	Treated	Matched	Difference	S.E.	t-stat
Focal Outcomes					
Any CM1	0.467	0.413	0.054	0.017	3.11
Multiple CM1 stays	0.547	0.451	0.097	0.058	1.66
Variation by Time Served in CM1					
< 6 months in CM1	0.505	0.405	0.100	0.033	3.00
6-12 months in CM1	0.426	0.415	0.011	0.023	0.48
> 12 months in CM1	0.525	0.420	0.105	0.037	2.85
Variation by Release Type					
Release from general population	0.408	0.422	-0.015	0.036	-0.41
Release direct from CM1	0.522	0.400	0.122	0.024	5.00
Release direct from CM2 or CM3	0.420	0.428	-0.008	0.030	-0.26
Variation by Gender					
Males	0.476	0.422	0.054	0.018	3.01
Females	0.260	0.251	0.009	0.071	0.12
Variation by Age					
Inmates under 25	0.497	0.431	0.066	0.022	2.97
Inmates 25+	0.417	0.399	0.018	0.027	0.66
Variation by Race and Ethnicity					
White, non-Hispanic	0.417	0.386	0.031	0.036	0.85
Black, non-Hispanic	0.499	0.428	0.071	0.021	3.31
Latino	0.330	0.359	-0.029	0.055	-0.52
Variation by Mental Health					
Diagnosed mental illness	0.457	0.395	0.062	0.035	1.76
No diagnosed mental illness	0.466	0.417	0.048	0.020	2.39
Variation by Sentence Length					
Long sentence (≥ 36 months)	0.438	0.381	0.057	0.022	2.61
Short sentence (< 36 months)	0.503	0.457	0.046	0.028	1.61

Notes: The treated group always consists of those who experienced CM1 or a subsample of those who experienced it. The matched group is always inmates who did not experience CM1.

Table 2.5.1. Descriptive Statistics for Variables Used in Inmate-Week (Fixed Effects) Analyses (N = 185,471 observations on 1,098 unique prison stays)

Variable	Mean / %	SD	Minimum	Maximum
Focal predictors				
Before a CM1 stay	8%		0	1
During a CM1 stay	27%		0	1
After a CM1 stay	7%		0	1
Focal outcomes				
Any disciplinary infraction	5%		0	1
Needed mental health services	39%		0	1
Moderators				
First stay in CM1	35%		0	1
Short stay in CM1	6%		0	1
Diagnosed mental illness	31%		0	1
Male	96%		0	1
Young	58%		0	1
Black	63%		0	1
Hispanic	15%		0	1
Other (non-white) race/ethnicity	0.2%		0	1
Control variables				
Week	111.671	79.493	1	433
Custody level	3.770	0.532	1	4
Work assignment	32%		0	1
Assigned programming	24%		0	1
Visits	0.026	0.178	0	4
Facility's inmate population size	1252.672	317.550	59	2149
Facility's average correctional officer	7.350	1.550	2.750	17.273

Table 2.5.2. Fixed Effects Coefficients Predicting Disciplinary Infractions and Mental Health Service Needs from CM1 Stays

	Outcome			
	Committed a Disciplinary Infraction		Needed Mental Health Services	
	b	SE	b	SE
Focal predictors: Restrictive housing stays				
Not within 12 weeks of CM1 stay (ref.)	—	—	—	—
Will go to CM1 within the next 12 weeks	0.901 (0.030)	***	-0.080 (0.035)	*
Currently in CM1	-0.594 (0.032)	***	0.308 (0.026)	***
Was in CM1 within the past 12 weeks	-0.598 (0.053)	***	0.219 (0.038)	***
Control variables				
Week	-0.003 (0.000)	***	0.005 (0.000)	***
Custody level	-0.333 (0.026)	***	0.409 (0.024)	***
Had a work assignment	-0.487 (0.029)	***	-0.474 (0.025)	***
Assigned programming	-0.138 (0.032)	***	0.037 (0.027)	
Number of visits	-0.015 (0.073)		-0.264 (0.060)	***
Facility's inmate population size	-0.0002 (0.000)	***	-0.0004 (0.000)	***
Facility's average correctional officer tenure	0.021 (0.009)	*	-0.141 (0.008)	***
N _{prisonstays}	1,071		412	
N _{Observations}	183,486		78,763	

p*<.05; *p*<.001

Table 4.3.1. Descriptive Statistics, FDC Personnel Survey, 2019-2020 (N=9,656)

Variable	Mean / %	SD	Minimum	Maximum
Age (years)	38.6	11.9	18	78
Gender				
Male	59.5%	0	0	1
Female	40.5%	0	0	1
Race				
White	66.6%	0	0	1
Black	22.4%	0	0	1
Other	11.1%	0	0	1
Hispanic	12.6%	0	0	1
Education				
High school or equivalent	33.2%	0	0	1
Some college	50.7%	0	0	1
Bachelor's degree	11.4%	0	0	1
Master's, JD, or doctoral degree	4.7%	0	0	1
Work Position				
Warden, Lieutenant, Capt., Major, Colonel	9.9%	0	0	1
Sergeant or Corrections Officer	73.1%	0	0	1
Classification staff	5.3%	0	0	1
Program, medical, or mental health staff	6.2%	0	0	1
Other staff	5.5%	0	0	1
Work Position = Admin. vs. front-line ^a	15.2%	0	0	1
Work Experience				
Years of experience	9.7	6.9	< 1	≥ 20
Experience working in CM 1-3	47.6%	0	0	1

a. Administrative=warden, assistant warden, lieutenant, captain, major, colonel, classification staff; front-line=sergeants and corrections officers as well as program, medical, mental health, and other staff.

Table 4.3.2. Logistic Regression Analysis, Select Outcomes, FDC Personnel Survey, 2019-2020

	<u>Inmate Impacts</u>				<u>Prison Impacts</u>				<u>Personnel Impacts</u>			
	Model 1: Conduct Improves		Model 2: Mental Health Harmed		Model 3: Prison Safety		Model 4: Prison Order		Model 5: Staff Effective		Model 6: Staff Stress	
	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE	OR	SE
Age	.99**	.00	1.02***	.00	.99**	.00	.99*	.00	.99***	.00	1.00	.00
Male	1.16*	.08	.85*	.06	1.29***	.08	1.20**	.07	1.21**	.07	1.00	.07
Race/Ethnicity												
White	.93	.09	1.08	.11	1.73***	.15	1.64***	.15	1.54***	.13	.98	.10
Black	.70**	.08	1.26*	.15	.94	.09	.92	.09	1.12	.10	.79*	.09
Other	—	—	—	—	—	—	—	—	—	—	—	—
Education												
High school	—	—	—	—	—	—	—	—	—	—	—	—
Some college	.95	.07	.97	.07	1.19**	.08	1.28***	.08	.95	.06	1.11	.08
Bachelor's degree	.74**	.08	1.08	.11	1.17	.12	1.00	.10	.85	.08	1.18	.13
Master's, JD, doctoral	.60**	.09	1.64**	.26	1.16	.17	1.02	.14	.72*	.09	1.10	.17
Work experience												
Admin. vs. front-line ^a	1.75***	.16	.79**	.07	1.43***	.14	1.51***	.15	1.48***	.13	1.30**	.12
Years of experience	1.01	.01	.98***	.01	1.02**	.01	1.02***	.01	1.01	.01	1.05***	.01
Exp. working in RH	—	—	—	—	.95	.06	.91	.06	.92	.05	—	—
Constant	1.49	.56	.94	.36	4.25***	1.46	5.22***	1.92	2.98***	.84	.94	.36
LR Chi ²	218.84		237.53		318.77		452.02		372.02		250.74	
N	4,604		4,604		9,581		9,581		8,964		4,604	

*p < .05; **p < .01; ***p < .001 (two-tailed test)

a. Adminstrative=warden, assistant warden, lieutenant, captain, major, colonel, classification staff; front-line=sergeants and corrections officers as well as program, medical, mental health, and other staff.