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Self-injury and the embodiment of solitary confinement among adult men in Louisiana prisons

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ABSTRACT

Solitary confinement is a harrowing human rights and public health problem that is currently inflicted as a routine punishment for a litany of prison rule violations, a reactionary tactic to quell resistance to prison conditions, and as a destination of last resort for people serious mental illnesses (SMI) who are especially vulnerable to its harms. An extensive body of research has documented clusters of psychiatric symptoms—emotional distress, cognitive deficits, social withdrawal, anxiety, paranoia, sleeplessness, and hallucinations—linked to solitary confinement that often manifest in decompensating behaviors, which include self-injury and suicide. This study summarizes the historical evolution of solitary confinement, recaps its linkages to self-injury and suicidality, and offers a theoretical framework grounded in ecosocial theory, and supplemented with concepts from theories of dehumanization and carceral geography. Findings bolster extant evidence on the harms of solitary confinement by focusing on whether and how exertions of power by prison staff to deploy mechanisms of dehumanization—as a pathway between SMI and self-injury among a cross section of adult men ($n = 517$) exposed to solitary confinement in Louisiana prisons in 2017. Findings reinforce the need for structural interventions that diffuse forms of carceral power and practices that continue to subject people to isolation, dehumanization, and violence.

1. Introduction

Solitary confinement is a harrowing human rights and public health problem that epitomizes the dehumanizing conditions of carceral environments in the mass incarceration era (Cloud et al., 2015). An estimated 55,000 to 62,500 (4.5%) people in state prisons are locked in isolation inside steel and concrete cages for upwards of 22 h each day (Bertsch et al., 2020). Solitary confinement encompasses a broad bureaucratic nomenclature (e.g. “restrictive housing”, “administrative segregation”) and is informally called “the hole” (Browne et al., 2011; Cloud et al., 2015; Foster, 2016, pp. 85–116; Haney, 2018b). Regardless of terminology and acknowledging heterogeneity in conditions between and within carceral systems, people confined in these spaces are typically exposed to similarly severe conditions: caged in a small cell with a bed, toilet, sink, and perhaps a window. Access to programming and visits with loved ones is often restricted or non-existent. Physical exercise is typically offered 3–5 times weekly for 30–60 min, alone in caged

enclosures. These spaces can be monotonously predictable; but at other times, erratically noxious with aversive sights, jarring sounds, and odious smells that people are powerless to avoid (Browne et al., 2011; Cloud et al., 2015; Haney, 2018b). The amount of time people spend in solitary confinement varies widely and may extend from days to decades. (Bertsch et al., 2020; Resnik et al., 2018).

People with serious mental illnesses (SMI), such as schizophrenia, bipolar disorder, and major depression, are overrepresented in solitary confinement and especially vulnerable to its harms (Bertsch et al., 2020; Cla-Liman, 2020; Reiter & Blair, 2015; Reiter et al., 2020). In many states, Black, Indigenous, and People of Color (BIPOC) are disproportionately subjected to solitary confinement relative to their percentage of the overall prison population, while their white counterparts are underrepresented (Henry, 2022; Kaba et al., 2015; Pullen-Blasnik et al., 2021; Resnik et al., 2018).

The hyper-criminalization of Blackness in U.S. society is compounded by intersecting socio-structural forces that marginalize people

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with SMI (Muhammad, 2019; Walker et al., 2016; Ware et al., 2014). In moments of mental health emergencies, BIPOC with SMI, are more likely to be restrained, detained, and physically harmed or killed by law enforcement entities (McLeod et al., 2020; Saleh et al., 2018), while their white counterparts are more likely to receive more treatment-based responses (Heitzeg, 2015; Kaba et al., 2015; Thomas et al., 2021). Several studies have reported racial disparities in exposures to solitary confinement. Some scholars attribute these disparities to implicit and explicit racial biases in correctional officers' enforcement of disciplinary rules (Allen-Bell, 2011; Olson, 2016). Correctional officers may be more likely to perceive behaviors related to mental illness as willful acts of "deviance" or "disobedience" and respond punitively, when the person involved is BIPOC versus White (Duxbury et al., 2018; Ewing, 2016; Henry, 2022).

Despite debate among a group of non-clinical criminologists (Gendreau & Labrecque, 2018, pp. 340–366; Morgan et al., 2016), there is broad consensus among health and human rights authorities that solitary confinement diminishes the health people who endure it (Cloud et al., 2015; Haney et al., 2020), which is grounded in an extensive literature that has mostly linked the practice to deleterious mental health outcomes (Appelbaum, 2015; Haney, 2018a; Jahn et al., 2022a; Smith, 2006), though increasingly to mortality and physical health outcomes (Brinkley-Rubinstein et al., 2019; Strong et al., 2020; Williams, 2016). This study aims to bolster this body of evidence by examining relationships between solitary confinement and self-injury in a Deep South prison system. The analysis looks beyond social isolation—the hallmark feature of solitary confinement—to bring focus to structures of power that permit dehumanization by depriving people of sustenance and inflicting physical violence upon them—as a pathway between SMI and self-injury among incarcerated people.

First, as background, we provide a non-exhaustive summary of the historical evolution of solitary confinement, recap its linkages to self-injury and suicidality, and establish a theoretical framework for the current study, grounded in ecosocial theory, and supplemented with concepts from theories of dehumanization and carceral geography.

1.1. A brief history of solitary confinement

Solitary confinement began in the 1790s in the U.S. as states constructed prisons as alternatives to corporal punishments of English colonialism and to replace dilapidated jails that had erupted into chaos, violence, and uprisings after the Revolutionary War (Rubin, 2015). Early proponents were evangelicals and reformists who theorized that enforced silence and isolation would prompt an introspective process of moral repentance, spiritual reckoning, and social transformation and penologists who viewed silence and physical separation as necessary to address the problems plaguing the jails or "proto-prisons" that preceded the penitentiaries (Meskell, 1998; Rubin & Reiter, 2018; Smith, 2019). Into the 1800s, the practice of solitary confinement evolved as states "experimented" with and debated the purported merits of two competing penological models of confinement. In 1818, Pennsylvania lawmakers paved the way for the production of two state prisons, Western State Penitentiary and Eastern State Penitentiary to operate on "the principle of solitary confinement" (Rubin, 2015). Under the Pennsylvania model, people were kept separated in cells for the entirety of each day. All activities, such as reading, praying, working, and exercising occurred alone in their cells, except for occasional interactions with prison officials and silent walks to a small yard adjacent to their cell. In 1821, New York opened Auburn State Prison that was initially intended to operate a hybrid model of incarceration that relatively speaking, more closely resembles the design and operation of modern prisons. Some residents were placed in larger, open congregate living areas, while others were kept in narrow and poorly ventilated solitary confinement cells with nothing more than a Bible. However, solitary confinement practices in the first Auburn prisons produced dire results, and its propagators adapted this model to what is known as the "Silent

System" – keeping people in solitary cells at night while forcing them to work in silence in factory-like conditions, under the threat of physical brutality, during the day. The ways through which tensions between the Auburn and Pennsylvania systems of confinement shaped the evolution of carceral systems and heterogeneities in solitary confinement practices into the mass incarceration era is more thoroughly discussed elsewhere (Guenther, 2013; Rubin, 2015).

By the mid-19th century, physicians, jurists among others had condemned solitary confinement as a profoundly harmful practice (Gray, 1848; Nitsche et al., 1912). Reports of "solitary confinement psychosis" surfaced in the medical literature in the 1840s and prison reform organizations published series of harrowing reports of people experiencing muscular atrophy, psychosis, self-harm and suicide in solitary confinement cells, which played a role in many states moving away from the practice (Rubin, 2015). For example, in 1840, the North American Review summarized evidence of its harms based on prison mortality records, physician notes, and recorded cases on "insanity" across multiple state institutions:

It [solitary confinement] is inhuman[e] and unjust, enormously expensive, and pernicious to society, inasmuch as it creates each year a fearful amount of insanity [sic], the effects of which, owing to the tendency of this disease to hereditary transmission, cannot fail to be felt and deplored for many generations. We are almost afraid to estimate the amount of the evil [sic] it has already caused.

By the early twentieth century, solitary confinement had been largely abandoned in U.S. prisons. Yet, it resurfaced in the 1960s, at a time when retribution began to supersede rehabilitation as a chief penological principle; educational, vocational, and rehabilitative programs in prisons were diminished and the demographics of prison reversed from majority white to majority Black, marking the start of a multi-decade prison boom (Guenther, 2013; Sakoda & Simes, 2021; Smith, 2019). In the 1980 and 1990s, federal and state governments built or reconfigured thousands of prisons with spaces designed for prolonged isolation (Reiter, 2016; Richards, 2015).

Solitary confinement's rise is interwoven into the structural racism and violence underpinning the evolution of mass incarceration in the aftermaths of enslavement and Jim-Crow era oppression (Adamson, 1983; Armstrong, 2011; Guenther, 2013; Sakoda & Simes, 2021; Wacquant, 2002). As early as the mid-1840s, public health leaders called attention to racialized harms of solitary confinement (Bh, 1843). For example, one author observed:

Now among the blacks in prison at Philadelphia ... the chance that imprisonment on this plan [solitary confinement] will kill the black convict [sic] within one year is two and a half times as great as the chance of his dying within that year if he should remain at liberty.

Recent studies have also found racial disparities in solitary confinement (Pullen-Blasnik et al., 2021; Sakoda & Simes, 2021; Schlanger, 2012). In part, the resurgence of solitary confinement into the mass incarceration era was retaliatory to political organizing and uprisings within prisons to protest worsening conditions (Gottschalk, 2010; Guenther, 2013; Woodfox, 2019). Beginning in the mid-1960s, in contrast to the original proponents of solitary confinement, some contemporary propagators have used it as a tactic for repressing the organizing power of a rapidly growing prison population, mostly comprised of younger black men (Rubin & Reiter, 2018). Indeed, some scholars view the reemergence of solitary confinement through a historical lens, as form of racialized oppression in the lineage of convict leasing, chain gangs, and other criminal legal practices used to sustain racial capitalism and suppress political resistance to abusive prison conditions that disproportionately harm people along intersections of race, class, and disability (Armstrong, 2011; Davis, 2011; Ewing, 2016; Gilmore, 2007; Hattery & Smith, 2022; Mckittrick, 2011).

1.2. Changes in mental health policy

In the 1840s, advocates led a crusade to create a network of state psychiatric hospitals in part, by calling attention to “the present state of insane persons [sic] confined in cages, closets, cellars, stalls, pens! Chained, naked, beaten with rods, and lashed into obedience” in jails and prisons (Dix, 1904). Civil commitment to state asylums was a primary response to mental illness for the next century. However, much like the jails and prisons, conditions in state asylums were horrid. Exposures of inhumane conditions, the advent of psychotropic drugs, rise of community-based psychiatry, stronger civil protections against involuntary commitment, and creation of funding streams for community-based care via Medicaid were driving forces that led to closures of psychiatric hospitals, beginning the mid-1950s—known as deinstitutionalization (Frank & Glied, 2006).

The deinstitutionalization movement’s vision to replace asylums with community mental health centers was hampered by neoliberal economic policies that deregulated, defunded, and privatized vital components of the social safety net, the biomedicalization of public health, the criminalization of poverty and mental illness and the war on drugs (Harcourt, 2011; Kim, 2016; Prins, 2014); which culminated to abdicate core functions of public health and social service systems to an expanding and increasingly retributive criminal legal system (Lamb & Weinberger, 2005; Rotter & Compton, 2022). Some scholars refer to “*trans-institutionalization*” to convey the structural changes leading to the overrepresentation of people with SMI in jails, prisons, and long-term solitary confinement, specifically in the wake of the shortcomings of deinstitutionalization and the rise of “tough on crime” policies and mass incarceration; though, empirical support for this theory is contested (Prins, 2011).

Regardless, today, jails and prisons are among the largest providers of publicly-funded mental health services for millions of marginalized people (Rothman, 2017; Rotter & Compton, 2022). While even higher in jails, the prevalence of serious mental illnesses (SMI) is at least 2–4 times higher in prisons than community settings (Prins, 2014). Yet, prisons are mostly ill-equipped to provide levels of care and support that many of these individuals would benefit from receiving. There are shortages of counselors, nurses, psychologists, and psychiatrists to identify, prevent, and treat the complex mental health needs of incarcerated people. Instead, correctional officers who typically lack the knowledge to identify and skills to respond to people experiencing emotional distress and psychosis but are trained to enforce rules that govern nearly every aspect of survival in prison, and carry the weight of responsibilities for meeting their daily needs (Reiter & Blair, 2015). Together, the scarcity of mental health services amidst an abundance of punishment results in people with SMI being disparately disregarded in solitary confinement, either as a sanction, or because the severity of their disabilities increase their vulnerability within general population settings (Metzner & Fellner, 2013; Reiter & Blair, 2015).

In summary, the origins of solitary confinement at the dawn of the first penitentiaries and its reemergence and proliferation in the mass incarceration era have been shaped by a complex interplay of historical and structural forces. Today, solitary confinement is often inflicted as a punishment for prison rule violations, a reactionary tactic to quell unrest, resistance and uprisings in protest of prison conditions, and as and disproportionately as a destination for many marginalized people with severe psychiatric disabilities that has resulted in a public health and human rights crisis.

1.3. Self-injury and solitary confinement

An extensive body of research has documented clusters of psychiatric symptoms—emotional distress, cognitive deficits, social withdrawal, anxiety, paranoia, sleeplessness, and hallucinations—linked to solitary confinement that often manifest in decompensating behaviors, which include self-injury and suicide (Cloud et al., 2015; Haney et al., 2020;

Jahn et al., 2022b; Smith, 2006).

The prevalence of self-injury and suicide is substantially higher among incarcerated people compared to the rest of the U.S. population (Carson, 2021; Fazel et al., 2017; Larney & Farrell, 2017). Over the past two decades, suicide mortality behind prison walls has grown by 85 percent (Carson, 2021). Self-harm is a leading cause of morbidity and significant predictor of suicide among incarcerated people in the United States. The annual prevalence of self-harm in state prisons is harder to document, but is estimated at 5–6% among men and 20–24% among women, which surpasses the <1% of adults in community settings (Favril et al., 2020). Nearly 20% of incarcerated people diagnosed with a mental health condition engage in self-harm while in custody, compared to 4% in community settings (Favril et al., 2020).

Self-harm and suicides among incarcerated people frequently occur in areas of institutions where people are socially and physically isolated (Reeves & Tamburello, 2014). Having an SMI and being exposed to solitary confinement are potent predictors of self-injurious behavior among incarcerated people (Chamberlen, 2016; Lanes, 2009; Larney & Farrell, 2017). Kaba et al. (2014) found that people punished with solitary confinement in New York City’s jail system were 6.9 times more likely to self-harm than those who were not, even after controlling for length of stay in jail, SMI diagnoses and demographics. Other have produced similar findings (Brinkley-Rubinstein et al., 2019; Lanes, 2009; Larney & Farrell, 2017; Way et al., 2007).

One limitation of prior studies, however, is a need for more contextual nuance for how power structures dictating the material and social worlds within spaces used for solitary confinement shape self-injury, suicidality, and other harms. Seminal anthropological studies have provided rich and contextualized accounts of the lived-experiences of solitary confinement across and within different prison systems (Rhodes, 2004). However, in public health literature, solitary confinement is most often conceptualized as dichotomous exposure or measured in metrics of time (i.e. frequency or duration of exposure (Brinkley-Rubinstein et al., 2019; Kaba et al., 2014). Understandably, social isolation, a hallmark feature of solitary confinement, and its pathologic consequence – loneliness – is posited as a primary mechanism producing health-related harms (Haney, 2018b). Sociologists and anthropologists have more thoroughly described the myriad, intersecting conditions that can influence psychological decompensation. On one hand, focusing on time makes sense, because legislation seeks to align with the Mandela Rule, which sets a 15-day limit on solitary confinement. However, focusing on temporal properties and social isolation alone risks reinforcing incremental reforms limiting the number of days people can spend in solitary confinement and overlooks the influence of power structures that allow deprivations of other basic needs and subjections to violence to exist. Bolstering epidemiological evidence of solitary confinement’s harms can be advanced with more nuanced constructs and measures of the varying social and material conditions within and between carceral contexts.

Institutional policies and organizational cultures give frontline prison staff broad power over the lives of incarcerated people, but little accountability for how their exertions of that power affect the well-being of people in their custody. While correctional staff must follow procedural rules governing admissions, reviews, and releases from solitary confinement, several reports issued by the Vera Institute of Justice found problems in many states due process mechanisms, and inconsistencies in how staff apply them (Cloud, Kang-Brown, & Vanko, 2016; Hastings, Vanko, & Lachance, 2016; Cloud, Lachance, Smith, & Galarza, 2019). Correctional staff, whether they are on the frontlines in the unit or higher ranking officials, make decisions that influence whether a person is placed in solitary confinement, how long they stay, and what material conditions they experience. Many officers, however have little education, preparation, training, or oversight for how they use such immense power (Armstrong, 2014; Fathi, 2010). Shedding light on how prison staff’s exertions of power shape self-injury in the deepest ends of carceral systems, may help advance legal interventions focused on

uprooting policies that permit dehumanization, in addition to those focused on setting time restrictions.

This study seeks to address this knowledge gap by calling attention to punishments, beyond social isolation, that prison staff inflict upon people in solitary confinement as mediating vulnerabilities to self-injury among people diagnosed with serious mental illnesses. It aims to explore possibility that power structures of dehumanization within spaces used for solitary confinement operate as a pathway of embodiment that increases vulnerability to self-injury among people with SMI.

2. Theoretical framework

This study is guided by the ecosocial theory of disease distribution (ecosocial theory) and supplemented by concepts of embodiment within carceral geography and theories of dehumanization (Bustamante et al., 2019; Haslam & Loughnan, 2014; Krieger, 2021). Ecosocial theory is apt for studying how structural forces shape distributions of death, disease, and disability across social-ecological levels and along gradients of race/ethnicity, gender, class, and place, over time (Krieger, 2001, 2011). Few studies have turned to ecosocial theory to study self-injury or suicide (Cohen et al., 2021).

Studies have demonstrated the potent influence social exclusion, disintegration, and isolation in shaping vulnerabilities to self-injury and suicide at the individual, familial, community, and societal levels (Larney & Farrell, 2017). Conversely, strong social bonds, social cohesion and social support are protective against morbidity and mortality due to SIB (Hawton et al., 2001). From this lens, incarceration is a form of structurally-imposed social disintegration because it physically, socially, and emotionally removes or disrupts a person's connections to family and other sources of support that lessen vulnerabilities to self-injury and suicide. This aligns with literature revealing how mass incarceration is interwoven into a broader web of social disintegration (Brinkley-Rubinstein, 2013; Massoglia & Pridemore, 2015; Pettit & Western, 2004; Wildeman & Wang, 2017).

By design, solitary confinement is an extreme form of social disintegration, because it often intensifies the harms of incarceration and deprives people of their autonomy to build and nurture meaningful social interactions – a fundamental human instinct, while subjecting them to violent and dehumanizing conditions. In the following subsections, two core constructs in ecosocial theory, accountability and embodiment, are defined and tailored to the current study by integrating analogous concepts from carceral geography and dehumanization literature.

2.1. Accountabilities for self-injury

Accountability is broadly concerned with answering *who and what* account for inequalities in health as shaped by historical and current arrangements of “power, property, and the production and reproduction of social and biological life.” (Krieger, 2001). This study posits that carceral systems, and actors within them, are accountable for producing vulnerabilities to self-injury and suicidality among incarcerated people with SMI. From this view, societal-level forces such as racism, ableism, and economic inequities have intersected over time to result in an overrepresentation of people with SMI in solitary confinement nationwide, as shaped by the contemporary carceral system's evolution from enslavement, racialized violence, and criminalization of mental illness.

Through law, policy, and cultural norms, carceral systems allot immense power to correctional staff to deprive people of sustenance (food, water, electricity), freedom of movement (exercise, use of restraints) and social bonds (restricted communication and visits from loved ones) as punishments for a wide array of behaviors (e.g. disobeying an order, refusing work) with little oversight (Deitch, 2020; Fathi, 2010). In many prison systems, behavioral health issues are hyper-criminalized in institutional policies and practices that promote viewing self-injury as “manipulation” or “malingering” subject to punishment, rather than a symptom of trauma or a behavioral response to

harsh conditions of confinement (Kenning et al., 2010; Smith et al., 2019). In recent years, an increasing number of correctional agencies have adopted policies to de-escalate situations involving a person experiencing a mental health crisis. However, in many systems there are still institutional policies and structural factors that give correctional officers power and training to react to mental health crises with escalations of violence and retribution, via cell-extractions, chemical spray, tasers, restraints, and punishments that compound the harms and extend durations of isolation and the harms it causes (Abramsky & Fellner, 2003). Moreover, if with policies intended to de-escalate such situations, there is little oversight and correctional officers may arbitrarily resort to using force against people with serious mental illness, which has been the subject of litigation and focus of human rights organizations (Fellner, 2015).

2.2. Embodiment of carceral contexts

Embodiment is ecosocial theory's bedrock construct and refers to how people “literally embody, biologically ... [their] lived experiences in societal and ecological context. ”, while considering reciprocal interplays between structure and agency across and within multiple ecological levels (Krieger, 2001, 2021). This study explores how exertions of power that deprive sustenance for and inflict of violence on people in solitary confinement produce place-based vulnerabilities to self-injury among people with SMI.

As Professor Craig Haney has observed, “solitary confinement is only ever embodied in actual places, ones that exist in *any given amalgam of different conditions that vary along dimensions of harshness and resulting risk of harm*” (Haney, 2018b). This study's conception of embodiment draws on carceral geography: an abolitionist subdiscipline of human geography that explores how properties of space, place, and time influence emotion, cognition, and behavior in the contexts shaped by retributive ideologies and hyper-incarceration of marginalized groups in Western societies (Gilmore, 2007; Moran, 2016). Whereas ecosocial theory has mostly been applied to examine embodiment at community and population levels, carceral geographers look at the “experience of carceral space at an intensely personal level, tracing the ways in which the individual spaces of the prison elicit and facilitate different emotional expression, the ways in which the experience of incarceration is inscribed corporeally upon the imprisoned body, and the embodied strategies deployed by occupants of carceral space” (Moran, 2016).

According to ecosocial theory, there are multiple pathways of embodiment (economic and social deprivation, toxic substances, pathogens, hazardous conditions, discrimination and other forms of socially inflicted trauma, targeted marketing of harmful commodities, inadequate or degrading healthcare, and degradation of ecosystems) (Krieger, 2011). Though most are germane, we focus on *discrimination and socially inflicted trauma* as potential pathways of embodiment leading to self-injury among people with SMI exposed to solitary confinement.

Theories of dehumanization consider the structural, institutional, and psychological mechanisms that breed mistreatment, oppression, and denial of autonomy, dignity, and entitlements to other groups of people, frequently in contexts of extreme events, such as genocide, war crimes, and torture (Bandura, 1999; Bustamante et al., 2019; Haslam & Loughnan, 2014; Viki et al., 2013). Analogous to ecosocial theorists and carceral geographers, scholars of dehumanization have defined embodiment, as the “condition of becoming”, examining how “dehumanization travels not only vertically between individual mind and body but also horizontally across similarly positioned bodies” (Bustamante et al., 2019). Multiple state and federal courts have held solitary confinement practices to violate the 8th Amendment's prohibition of “cruel and unusual punishment” especially for people with underlying SMI. As noted, based on interpretations of the United Nations' Mandela Rules, advocates, some legal scholars, and human rights entities consider long-term solitary confinement (“the confinement of prisoners for 22 h or more a day without meaningful human contact”), when

lasting more than 15 consecutive days, as a form of “ill-treatment” and in some situations as a form of torture (Fuller, 2018; Haney et al., 2020; Méndez, 2019). While such standards have amplified calls for reform, solitary confinement, both as a short and long-term practice, remains a commonly used tactic by correctional systems in jails and prisons in the United States (and elsewhere). Accordingly, theories of dehumanization can aid in understanding the power structures perpetuating its persistence in the U.S. penal system, despite its well-known harms, and dismantling them in pursuit of health equity, social justice and state accountability.

Cumulative dehumanization is a construct for understanding how events perceived as ordinary or routine for some accumulate to cause psychological distress and harms to marginalized groups, and emerged in studies of how exposures to police stops, searches, and arrests become embodied among residents of predominantly Black communities (Bus-tamante et al., 2019). Rather than police, this study explores the influence of correctional officers’ exerted power to punish people in solitary confinement through deprivation of material sustenance (“food loaf”, shutting off water and electricity, taking away mattress) and subjection to violent force (chemical spray and tasers), in shaping vulnerabilities to self-injury among incarcerated people.

3. Methods

3.1. Study setting

Louisiana’s prison system, an epicenter of mass incarceration and solitary confinement, is the setting for this study. In 2018, Louisiana prisons held the greatest percentage of people in some form of solitary confinement—17.6 percent, which was four times the estimated national average (Cloud et al., 2019; Resnik et al., 2018). Several of Louisiana’s prisons are located on the landscapes of former cotton plantations that enslaved thousands of people of African descent until these properties were sold to the state to create prisons and a convict-leasing system after the Civil War. The “Angola 3”, Albert Woodfox, Herman Wallace, Robert King, were held in solitary confinement for decades in Louisiana prisons, in part based on their affiliation with the Black Panther Party (Woodfox, 2019). Approximately half of people sentenced to prison in Louisiana are in a state-operated prison, and the remainder are housed in parish jails.

This study only includes people who were incarcerated in Louisiana’s state-operated prisons. As stated in the Louisiana Department of Corrections and Rehabilitation’s administrative rules and described in previous literature, imprisoned people in Louisiana may be subjected to various forms of solitary confinement based on a range of factors and circumstances. For example, they may be temporarily placed in solitary confinement pending an investigation or disposition of administrative or newly filed charges or while awaiting transfer to another location (“administrative segregation”); sanctioned indeterminately to solitary confinement after being found guilty of violating one or more prison rules (“extended lockdown”); based on sentencing (“death row”); after requesting or being deemed to require protection from others in the general population (“protective custody” or “closed-cell restriction”); on a long-term basis for people who prison officials deem “unable to live in general population at any institution” based on factors such as the nature of their conviction, prior employment history (e.g. law enforcement), or other significant protection concern; and in “treatment” units designated for people with complex and chronic psychiatric disabilities who have difficulty residing in the general population and require more intensive monitoring by health and correctional staff. The conditions (e.g. visitation, double versus single-celling, and access to programming) in these units vary within and across institutions, based on factors precipitating a person’s placement in solitary confinement and the policies governing the type of unit to which they are assigned. However, a report by the Vera Institute of Justice observed that despite such differences, “living conditions in these units [solitary confinement] are

characterized by social isolation, idleness, boredom, and sensory deprivation, often for prolonged and indeterminate periods of time.”

3.2. Study sample and procedures

The study sample was obtained secondarily from a cross-sectional survey of adult men who were exposed to solitary in Louisiana prisons in 2017 (Solitary Watch & Jesuit Social Research Institute/Loyola University New Orleans, 2019). Prisons are opaque institutions that are difficult to access for purposes of public health surveillance, external oversight, and empirical research. Thus, in 2017, The American Civil Liberties Union (ACLU), MacArthur Justice Center, Solitary Watch, and Loyola University filed a request via Open Records Act. (La. R.S. 44:1 et seq) to obtain a census of all people who were currently in solitary confinement in Louisiana’s prisons. Paper surveys were sent via legal mail to 2092 people on this roster. Participants were provided written assurance of confidentiality and instructions and stamped and addressed envelopes to send responses via “Legal Mail” back to the ACLU offices. Completed surveys were received from 709 people across nine prisons, a response rate of 34% that varied considerably by prison. Previous studies have used similar approaches (Williams et al., 2006).

Researchers obtained scanned versions of the original completed surveys for each respondent, after redacting identifiable information. Only surveys from respondents who gave permission on their original survey to have their responses used for future research were shared, which reduced the final sample to 517 respondents. Survey responses were entered manually and recoded as necessary for analysis. Consistency and accuracy of data entry were checked through double-coding. Open-ended responses were recorded verbatim and used to contextualize responses to other items.

3.3. Measures

The focal outcomes were whether a person engaged in self-injurious behavior while in solitary confinement.

Self-injurious behavior (SIB) was coded as a binary variable based on combining affirmative responses to questions that asked: “Have you attempted to harm yourself since you have been in this segregation unit?” and/or “Which, if any, of the following symptoms have you experienced as a result of being in segregation? (self-harm)?”

Serious mental illness: The focal independent variable was serious mental illness (SMI) defined as a binary measure that included participants who reported being diagnosed with one or more psychotic disorders, bipolar disorder, major depression, and post-traumatic stress disorder (PTSD) before placement in solitary confinement.

3.4. Mediating variable

Cumulative dehumanization was operationalized as a continuous variable, a count of incidents where prison staff exercised their discretion to subject people to punishments that resulted in deprivations of material needs and/or physical violence. We tallied the number of incidents when people were subjected to restrictions or denied access to food (e.g. punished with nutraloaf or not receiving meals); water and/or electricity (guards turned off the water or lights in cells), clothing (guards took away their clothing), mattress (guards took left them with only a concrete slab for sleeping or resting); recreation (guards took away their ability to go outdoors for exercise and sunlight); chemical agents (guards sprayed them with pepper spray); tasered (guards tased them with a taser gun).

Cumulative dehumanization was further categorized in two dichotomous domains. *Sustenance deprivation* refers to whether or not a person reported being punished with restrictions on meals, having water or electricity turned off in their cell, and having their mattress taken away. *Violent physical force* refers to whether or not a person reported ever being sprayed with chemical agents or tased while in solitary

confinement. Importantly, cumulative dehumanization is a structural construct, and does not measure the intentions of correctional officers or provide circumstances leading to each punishment. Rather, it captures exposures to conditions that were permitted by institutional policies and experienced as punishments by respondents.

3.5. Covariates

Several co-variables were included based on prior literature and theory.

Nominal Prospect for release: We recoded multiple closed and open-ended survey items to create an indicator of nominal prospect of being released from prison, based on whether respondents reported a scheduled release date that exceeded 100 years life expectancy, sentenced to life-in-prison, sentenced to death penalty reflect the absence or low probability of release.

Demographics: Race and/or ethnicity were obtained by a survey question asking participants to check whether they identified as “African American/Black”, “Caucasian/white”, “Latinx”, or “Other”. For analytical purposes, we recoded responses into a dichotomous indicator of whether a person identified as a member of a Black, Indigenous, Person of Color (BIPOC = 1) versus White; because most respondents identified as “African American/Black” (75%) and very few identified as “Latino” (n = 4). Age was calculated in years from participants’ self-reported birthdate at the time of survey completion.

Time in Solitary confinement: Time spent in solitary confinement was estimated by totaling responses from survey items assessing frequency and duration of solitary confinement exposures. These were recoded into a variable that reflected the total number of 90-day stints that a person endured in solitary confinement, because Louisiana Department of Public Safety and Corrections policy required review of each person’s placement in solitary confinement every 90 days, and prior reports suggest this is a meaningful benchmark for how incarcerated persons in solitary confinement monitor the passage of time.

Basis for solitary confinement placement: A binary indicator was created to represent whether each person was subjected to solitary confinement for violating a prison rule based on the type of unit they were housed in at the time of survey completion (1 = Solitary confinement as punishment, 0 = classification or protective custody). Those who reported being in “Extended Lockdown” or “Working Cell-Block” as a punishment or pending disposition of a disciplinary hearing in “Administrative Segregation” were coded as 1. Those who reported being in closed-cell confinement, protective custody, or death row were coded as 0.

3.6. Statistical analysis

A descriptive analysis was conducted to compare demographics, sentencing, SMI status, and measures of dehumanization among participants who engaged in self-injury and those who did not (Table 1). Before testing hypotheses, data were assessed for missing variables (Little & Rubin, 2019). Results from Little’s test showed that data were not missing completely at random ($\chi^2 = 29.07, p < 0.01$). Accordingly, multiple imputation was adopted before re-running analysis with imputed values. For model building, unadjusted odds-ratios were calculated to assess bivariate association between self-injury, focal predictors, and co-variables.

Adjusted odds ratios (ORs) and 95% confidence intervals (CIs) were calculated from logistic regression models. ORs represent the odds of engaging in self-injury while in solitary confinement based on SMI status, quantity of 90-day stints, basis for admission, degree of dehumanization, pre-existing SMI status, and demographic attributes and sentencing.

First a logistic regression analysis was conducted to assess associations between SMI, cumulative dehumanization, and self-injury while controlling for aforementioned covariates. We then used logistic

Table 1
Descriptive statistics for total sample (n = 517).

	Totals (%) or means (std. Deviations [SD])
Reported Self-Injury	134 (25.9%)
Serious Mental Illness (1 or more)	188 (36.4%)
Age	mean = 38.4 (SD = 11.49)
BIPOC	413 (79.9%)
Nominal prospect of release	108 (20.9%)
Solitary as punishment	347 (67.1%)
90-day stints in solitary confinement	mean = 20.74 (SD = 23.49)
Sustenance deprivation (at least 1 type)	212 (41.0%)
Food loaf	86 (16.7%)
Mattress taken	168 (32.6%)
Water/Electricity shut off	36 (6.9%)
Physical violent force (at least 1 type))	179 (34.6%)
Tasered	22 (4.3%)
Mace (chemical spray)	178 (34.5%)
Cumulative dehumanization	mean = 2.8 (SD = 0.92)

Table 2 reports means and standard deviations (SD) for continuous variables (age, 90-day Stints in Solitary Confinement, and cumulative dehumanization) and frequencies and percentages for categorical variables for the total sample.

Table 2
Percentages and Mean Demographics, SMI status, Solitary Confinement, Cumulative Dehumanization, and Self-Injury for Total Sample (n = 517).

	Respondents who reported Self Injury (n = 134)	Respondents who did not report Self-injury (n = 383)
Age	mean = 36.1 (SD = 0.84)	mean = 39.3 (SD = 0.64)
BIPOC	108 (80.6%)	305 (79.6%)
Nominal prospect of release	33 (24.6%)	75 (19.6%)
Serious Mental Illness (1 or more)	85 (63.4%)	103 (26.9%)
Solitary as punishment	103 (76.9%)	244 (63.7%)
90-day stints in solitary confinement	mean = 24.50 (SD = 22.81)	mean = 19.4 (SD = 23.64)
Sustenance deprivation	77 (57.5%)	135 (35.3%)
Food loaf	29 (21.6%)	57 (14.9%)
Mattress taken	60 (44.8%)	108 (28.2%)
Water/Electricity shut off	16 (11.9%)	20 (5.2%)
Physical violent force	70 (52.2%)	109 (28.5%)
Tasered	8 (5.9%)	14 (3.7%)
Mace (chemical spray)	70 (52.2%)	108 (28.2%)
Cumulative dehumanization	mean = 3.4 (SD = 2.04)	mean = 2.6 (SD = 2.12)

Table 2 reports means and standard deviations (SD) for continuous variables (age and cumulative dehumanization) and frequencies and percentages for categorical variables. The first column includes the variables used in the analysis. The second column reports descriptive statistics for survey respondents who reported self-injury while in solitary confinement (n = 134).

regression with bootstrap replication (Shrout & Bolger, 2002) to test the hypothesis that exposure to greater degrees of cumulative dehumanization during solitary confinement mediated the observed pathway between SMI and self-injury, while controlling for demographics, time in solitary confinement, and sentencing factors. Subsequently two separate models were run that independently assessed the two categories of cumulative dehumanization (sustenance deprivation and violent physical force) as possible mediators. All analysis was conducted in STATA Version 16.

4. Results

Participant characteristics for the total sample are presented in Table 1. Sample demographics resembled those of the overall prison population, and other studies of solitary confinement in Louisiana. Most

respondents (79.9%) identified as Black Indigenous Person of Color (BIPOC). More specifically, 75.4% identified as Black/African American; 21.1% as “Caucasian or White”; 1.2% as Latino; and 0.8% as American Indian/Native American; and 1.4% as “Other”. More than a third, (36.4%) reported a medical diagnosis of one or more SMI before exposure to solitary confinement. An estimated 20.9% of respondents were imprisoned for life, sentenced to death, or had a nominal prospect of a release date based on the length of their sentence. The response rates from each prison were as follows: Louisiana State Penitentiary (43.1%); Rayburn Correctional Center (13.1%); David Wade Correctional Center (26.7%); Dixon Correctional Center (4.7%); Elayn Hunt Correctional Center (4.1%); Raymond Laborde Correctional Center (6.3%); Winn Correctional Center (1.9%).

Most participants reported being sent to solitary confinement as a disciplinary sanction (67.1%) as opposed to protective custody or other reasons. Though, 16.5% reported never being housed in the general population while incarcerated, which mostly included people on death row and those assigned to closed-cell-restriction (a type of long-term isolation). For the sample, the total time in solitary confinement varied widely from 0.44 to 35 years and averaged 5.11 years (SD ± 5.79).

Overall, participants were subjected to an average of 2.79 types of dehumanization, ranging from 0 to -9 types. Forty-one percent (n = 212) reported at least one form of sustenance deprivation, which included guards replacing meals with a food loaf (a bland blend of bread, meats, and vegetables into a compact loaf), turning off their water or electricity as punishment, or taking away their mattress for multiple days. More than one-third (34.62%, n = 179) reported that correctional officers used physical violence against them (being sprayed with chemical agents and/or tasered) (Table 1). A total of 134 participants (25.97%) reported ever engaging in self-injury while in solitary confinement. More than half of this group, 73 people (54.48%), reported that at least one of their acts of self-harm was a suicide attempt.

4.1. Logistic regression results

Table 3 reports bivariate associations between predictors, covariates, and the outcome. As anticipated, in the bivariate model people with previously diagnosed SMI had 4.64 times greater odds of self-injury than people who were not diagnosed with an SMI, especially for those with major depressive disorder. A higher percentage of people who self-injured were sent to solitary confinement for violating prison rules, and on average endured a greater quantity of total 90-day stints in solitary confinement. People who self-injured were exposed to a greater quantity of punishments, and higher frequencies of the more severe

Table 3
Bivariate and multivariable logistic regression results: Focal dependent variable = Self-Injurious behavior.

	Bivariate				MULTIPLE VARIATE					
	Odds Ratio	SE	95% CI	p-value	Odds Ratio	SE	95% CI	p-value		
Age	0.97	0.01	0.95	0.99	0.001	0.97	0.01	0.95	0.99	0.05
BIPOC	1.06	0.26	0.65	1.74	0.81	1.17	0.35	0.66	2.11	0.58
Nominal prospect for release	1.33	0.32	0.84	2.13	0.22	2.51	0.76	1.38	4.55	0.00*
SMI	4.71	1.01	3.10	7.16	0.00*	4.57	1.10	2.86	7.31	0.00*
Solitary as punishment	1.89	0.44	1.20	2.97	0.01*	1.97	0.54	1.15	3.53	0.01*
90-day stints in solitary confinement	1.01	0.01	1.00	1.02	0.04*	1.03	0.01	1.00	1.02	0.02*
Cumulative dehumanization	1.25	0.06	1.14	1.37	0.00	1.13	0.06	1.01	1.26	0.03*
Sustenance deprivation	2.48	0.51	1.66	3.70	0.00*	1.96	0.46	1.24	3.10	0.00*
Physical violent force	2.74	0.57	1.83	4.12	0.00*	2.26	0.53	1.43	3.59	0.00*

Table 3 Reports Bi-variate associations from logistic regressions of each predictor and self-reported self-injury in solitary confinement. Age is a continuous variable. BIPOC refers to Black Indigenous Person of Color. Nominal Prospect for release refers to respondents who reported having a life-sentence, a death sentence, or having a remaining sentence length in years greater than a life-expectancy of 100 years (i.e. an effective life sentence). SMI refers to self-reported diagnosis of a serious mental illness (e.g. schizophrenia, bipolar disorder, major depression) before placement in solitary confinement. 90-day stints is the number of 90-day stints that a person spent in solitary confinement, which is based on procedural rules that require correctional officials to review placements in solitary confinement every 90 days. Cumulative dehumanization is the number of additional punishments that person reported enduring while in solitary confinement. Sustenance deprivation refers to self-reported punishments as to whether a person was ever subjected to food loaf, mattress taken, and or water/electricity shut off. Physical violent force refers to whether a person was ever sprayed with a chemical agent or tased (i.e. use of force) while in solitary confinement.

types of dehumanization (sustenance deprivation and violent physical force). BIPOC was not significantly associated with increased odds of self-injury in this sample.

Table 4 reports adjusted odds-ratios (aORs) and coefficients for three logistic regression models and displays results of mediation models for cumulative dehumanization, sustenance deprivation and violent physical force. Results show minimal variation between OR and aORs for relationship between SMI and self-injury, between bivariate and multivariate models, which suggests the association was robust to confounders of age, race/ethnicity, nominal prospect for release, admission to solitary as a punishment, and total 90-day stints in solitary confinement. Several covariates were also significantly associated with increased odds of self-injury. Each additional 90-day stint in solitary confinement was significantly associated with a 1.0% increase the odds of self-injury. People placed in solitary confinement as a punishment for breaking a prison rule, were 2.02 times more likely to engage in self-injury than those placed in solitary confinement for putatively non-punitive reasons (i.e. protective custody).

4.2. Dehumanization as a mediator

Results of mediation analyses suggest that the degree and type of dehumanization endured may mediate pathways between SMI status and self-injury in solitary confinement settings. The first model suggests that each additional punishment imposed (cumulative dehumanization) was associated with a 12.6 percent increase in odds of self-injury (Table 4a). The mediation effect of sustenance deprivation was 0.134 (SE = 0.055, p = 0.01) and the mediation effect for violent physical force was 0.096 (SE = 0.056, p = 0.01), suggesting both types of dehumanization plausibly mediate pathways between SMI status and self-injury to varying degrees.

5. Discussion

From its inception in the earliest penitentiaries through its vast expansion in the mass incarceration era, solitary confinement has been shown to produce dire degrees of psychological despair, psychosis and premature death (Haney et al., 2020). Findings substantiate earlier evidence of strong associations between solitary confinement, serious mental illness, and self-injury (Kaba et al., 2014; Lanes, 2009). People who disclosed having a serious mental illness (SMI) were nearly 5 times more likely to engage in self-injury while in solitary confinement than those without SMI, after accounting for relevant confounders.

Social isolation and suboptimal healthcare are domains of solitary

Table 4
Results of mediation models with odds of self-injury as focal dependent variable.

	Cumulative dehumanization			Sustenance deprivation			Violent physical force		
	OR	[95% CI]		OR	[95% CI]		OR	[95% CI]	
SMI	4.67	2.95	7.40	4.42	2.75	7.09	4.50	2.81	7.22
Cumulative dehumanization	1.14	1.02	1.27	2.27	1.43	3.58	1.96	1.24	3.10
Age	0.98	0.95	1.00	0.97	0.95	0.99	0.97	0.95	0.99
BIPOC	1.18	0.66	2.09	1.20	0.67	2.16	1.11	0.63	1.99
Life in prison	2.30	1.28	4.15	2.67	1.46	4.89	2.37	1.11	4.32
Solitary as punishment	2.04	1.20	3.47	2.08	1.21	3.57	1.90	1.11	3.25
90-day stints in solitary confinement	1.01	1.00	1.02	1.02	1.01	1.03	1.02	1.01	1.03
Mediator	Coef.	[95% CI]		Coef.	[95% CI]		Coef.	[95% CI]	
Cumulative dehumanization	0.096*	0.011	0.234						
Sustenance deprivation				0.134*	0.019	0.248			
Violent physical force							0.126*	0.023	0.229

Table 4. Reports results from mediation analysis assessing whether cumulative dehumanization, sustenance deprivation, and violent physical force may lie on the causal pathway between SMI and self-injurious behavior in solitary confinement. It reports co-efficients for each construct as a mediator and 95% Confidence Intervals [CI]. Cumulative dehumanization is the number of additional punishments that person reported enduring while in solitary confinement. Sustenance deprivation refers to self-reported punishments as to whether a person was ever subjected to food loaf, mattress taken, and or water/electricity shut off. Physical violent force refers to whether a person was ever sprayed with a chemical agent or tased (i.e. use of force) while in solitary confinement.

confinement that health researchers have highlighted to explain vulnerabilities to self-injury and suicide (Appelbaum, 2015; Kaba et al., 2014). This analysis expanded inquiry into domains of carceral power: and found that punitive exertions of power and dehumanization, as permitted by institutional policies and likely shaped by structural forces, may mediate associations between SMI and self-injury. (Liebling et al., 2013; Marzano et al., 2012). Cumulatively, each additional type of dehumanization that prison staff inflicted was associated with nearly a 14% increase in odds of self-injury after controlling for confounders. We found a stronger association between of sustenance deprivation (e.g. food loaf, mattress taken away, water or lights turned off) and self-injury, compared to violent physical force (e.g. tasered or sprayed with mace), though both exerted a significant effect. This result aligns with an extant literature linking self-injury to dehumanization and trauma (Marzano et al., 2012; Smith, 2015). Such findings signal a need to scrutinize the policies that permit correctional staff to inflict these types of punishments and underscore the importance of finding more humane strategies for responding to disruptions and other problems that arise in carceral contexts.

In Louisiana prisons and other correctional systems, solitary confinement is rationalized through a variety of carceral logics, though most frequently as a punishment, purportedly to deter violations of prison rules. Indeed, participants sent to solitary confinement as a punishment were about twice as prone to self-injury as those segregated for other reasons (e.g. “protective custody”). This may be due to the fact that solitary confinement as a sanction is inherently punitive and involuntary, while people separated under “protective custody” may request physical separation due to fear of victimization or other harms in the general population units where between 96 and -100 adults are in an open-roomed dormitory.

These findings corroborate recent reports on solitary confinement practices in Louisiana that underscore the stark reality that thousands of people with SMI are warehoused and traumatized in the state’s prisons (Cloud et al., 2019; Solitary Watch & Jesuit Social Research Institute/Loyola University New Orleans, 2019). A coalition introduced a bill in Louisiana in 2020 to restrict the use of solitary confinement for people with SMI that failed to gain sufficient support. At the very least, we hope findings can bolster ongoing efforts in Louisiana to advance legislation and community support for abolishing the use of solitary confinement.

This approach infused conceptualizations of embodiment from ecological theory, carceral geography and dehumanization literature with the hope that more researchers will consider applying social epidemiology’s tools to address human rights issues in prisons. Given its focus on interplays between space, time, and power in prisons, carceral geography provides a critical and complementary dialectic to ecosocial theory for exploring how physical and social components of solitary

confinement units shape vulnerabilities to self-harm, while considering the meanings of these acts for directly impacted people. Scholars should also extend theories of dehumanization to better understand the psychology and behavior of frontline correctional officers who are involved in enforcing solitary confinement, which is likely important for addressing the structural and institutional level forces where their power to punish lies. Integrating these theoretical concepts can advance calls for structural solutions that go beyond incremental remediations.

5.1. Limitations and future directions

There were several limitations to address in future research. First, because this survey was cross-sectional, it is not possible to draw causal inferences about associations or make conclusions about directionality for mediation effects reported. Retrospective cohort and longitudinal studies with quasi-experimental design components are important direction for continuing to document relationships between incarceration, prison conditions, self-harm and suicide. Second, since this was a secondary analysis of self-reported experiences with solitary confinement, there are concerns about construct validity and biases to acknowledge. On one hand, based on such data, there are potential problems with aggregating individualized responses to derive a measure of cumulative dehumanization as a mediator. Extending theories of dehumanization to solitary confinement research will require development of more reliable measures to assess the various ways through dehumanization manifests among incarcerated people and correctional staff who work in these spaces. Insights into the experiences of correctional staff working in solitary confinement units may shed light onto how carceral policies governing their profession may result in harms and behaviors that do not align with their intentions as individuals (Mears et al., 2022). Our study was also unable to account for the possibility that people in the sample had endured solitary confinement in other carceral settings outside of Louisiana or in parish jails, which plausibly could bias our findings. Furthermore, was not possible to reliably determine lethal intentions of participants who reported self-injury or verify self-reported diagnoses from this self-reported data. Future studies that draw on correctional health records for obtaining such clinical information can help reduce biases that are inherent in self-reported measures.

It is important to acknowledge that women were excluded from this study because the Louisiana Correctional Institute for Women flooded and was evacuated in August of 2016, which resulted in displacement of incarcerated women across the state. As a result, there were too few women in the data we obtained for statistical analysis. More research is needed that is focused on the experiences of women in solitary confinement, generally, and specifically in relation to self-injurious behavior.

Another limitation of our analysis is that we did not account for potential clustering at the prison level. While conditions in solitary confinement units are similar, subsequent inquiries should examine more closely the potential influence of prison-specific variations in exposures and outcomes. Additionally, clinical, anthropological, and phenomenological inquiries can bring depth and nuance to understanding the social meanings of self-injury as an embodiment of carceral conditions. Such studies should contend with the idea that embodiment of dehumanization is a dynamic, “active condition of becoming” that is not only “moving under the skin,” but also “resisted, negotiated or contested” (Bustamante et al., 2019). For some, self-injury in solitary confinement may represent a “corporeal resistance to dehumanization” (Bustamante et al., 2019) rooted in historically determined power structures of oppression and marginalization. Documenting the individualized and collective meanings of different manifestations of self-injury (hunger-strikes and non-suicidal self-injury) from a non-medicalized lens is important for interventions that go beyond the status quo of clinical treatment and target societal-level power structures of the prison industrial complex (Guenther, 2013; Moran, 2016).

Finally, The response rate to the original survey (33%) was relatively low and may not be representative of the population in solitary confinement in Louisiana’s state operated prisons. However, lower response rates are more common in prison research due to a variety of factors (e.g. fear of retaliation by prison staff, higher prevalence of low literacy, or obstruction by correctional staff). The original study was administered through legal mail by organizations involved in active litigation (over solitary confinement); and therefore it is likely that such factors were at play. Though, we are encouraged by the higher response rates at two prisons with the greatest capacities for solitary confinement, the lower response rate at Elayn Hunt Correctional Center in particular is of concern, because this institution is designated for people experiencing acute and more disabling mental health issues and likely introduced bias that underestimated degrees of self-injury among people in solitary confinement.

6. Conclusion

Ending solitary confinement in carceral systems is a critical and complex imperative for public health scholars, practitioners, and activists to pursue. Together, our findings further substantiate what is known about the harms of this practice through the lens of ecosocial theory and suggest that exposures to greater degrees of cumulative dehumanization significantly increased odds of self-injury among people in solitary confinement and may mediate pathways between SMI status and self-injury. Combining ideas and principles from ecosocial theory, carceral geography, and theories of dehumanization may help advance and reinforce the need for structural interventions to diffuse forms of carceral power and practices that continue to cage thousands of people under conditions of isolation, dehumanization, and violence.

Ethical statement

The Institutional Review Board at Emory University approved this study under a protocol by authors DC and HC. Secondary data collected for this study is also protected by Federal Certificate of Confidentiality. DC and BW are steering group members for the National Unlock the Box Campaign to End Solitary Confinement.

Author statement

David H. Cloud led all aspects of this study as part of his doctoral dissertation. All other authors provided mentorship and contributed to editing and advised on analysis. Mr. Cloud’s dissertation is supported a pilot grant from the Lifespan/Brown Criminal Justice Research Training Program on Substance Use and HIV (R25DA037190) and the Livingston Foundation at Laney Graduate School at Emory University.

Data availability

The authors do not have permission to share data.

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