

ABSTRACT

Title of Thesis: EXAMINING THE ASSOCIATION
BETWEEN MENTAL ILLNESS AND
VICTIMIZATION RISK IN COMMUNITY
AND PRISON SETTINGS

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Research suggests that persons with mental illness are at risk for physical and sexual victimization both in the community and while incarcerated. However, there is less understanding of the risk factors that explain these relationships. Using data from the Survey of Inmates in State Correctional Facilities (2004), the current study tests the relationship between mental illness and victimization and explores possible risk factors that may contribute to victimization across groups and environments. Findings suggest that inmates with mental illness are more likely to be victimized than their counterparts without mental illness in community and prison settings. Results from stepwise regression models suggest that the mental health-victimization relationship is partially attributable to setting-specific risk factors such as homelessness or prison program involvement. Future research interested in better understanding the vulnerability of persons with mental illness should consider the salience of environmentally-specific risk factors in explaining victimization risk.

EXAMINING THE ASSOCIATION BETWEEN MENTAL ILLNESS AND
VICTIMIZATION RISK IN COMMUNITY AND PRISON SETTINGS

by

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Chapter 1: Introduction

Correctional institutions in the United States house a disproportionate number of persons with mental illness (PwMI). The incarceration rate for PwMI is four times that of the general population (Cole and Smith, 2011) and according to a Bureau of Justice Statistics Special Report, more than half of all state prisoners (56%) and jail inmates (64%) have a mental health problem (James & Glaze, 2006). A general overrepresentation in the criminal justice system (e.g. police contacts, arrests, incarceration) has led to a focus on PwMI as perpetrators of violence (as described by Teplin et al., 2005 and Maniglio, 2008). However, understanding the experiences of PwMI as victims of violence is of utmost importance.

Violence has long been identified as an inevitable feature of the prison experience. Extant studies explain the epidemic of violence as a primary bi-product of confining individuals with antisocial tendencies and behaviors in close quarters within facilities that, especially during the era of mass incarceration, are often over-crowded (Wolff et al., 2007b). Empirical estimates indicate that physical and sexual assault victimization are prevalent in prison settings. For example, Wooldredge (1994) reports that in a three-month period, approximately 14 percent of inmates were victims of a personal crime. In a follow-up study, Wooldredge (1998) establishes that, depending on facility type, between 8 and 12 percent of inmates were victims of physical assault in a six-month period. Wolff et al. (2007b) find a similar pattern in their sample of inmates from a Mid-Atlantic prison system with rates of inmate-on-inmate physical victimization between approximately 13 and 35 percent during a six-month period, depending on the facility.

Research suggests that PwMI are at higher risk for physical and sexual victimization in correctional (Wolff et al., 2007a; Wolff et al., 2009; Wood and Buttaro, 2013; Blitz et al., 2008) and community settings (Hiday et al., 1999; Maniglio, 2008; Goodman et al., 2001; Teplin et al.,

2005). Studies have established that PwMI are at higher risk of victimization than their counterparts without mental illness. However, extant literature lacks inquiry into the correlates and risk factors linking mental illness to victimization risk in these different settings. Specifically, research shows that mental health and victimization are related in both prison and community settings, however the driving forces underlying these relationships are still widely unknown. While it is likely that the mental health-victimization relationship will be evident in each setting, the current study explores the potential reasons for those relationships.

Using a sample of first-time prisoners from the 2004 Survey of Inmates in State Correctional Facilities (SISCF), I investigate the relationship between mental illness and pre-prison victimization (i.e., community victimization) and victimization since admission to prison (i.e., prison victimization). Specifically, I explore the ways in which prisoners with and without mental illness(es) differ on key setting-specific risk factors that may contribute to differences in victimization risk in the community and in prison. Additionally, I conduct subgroup analyses to describe the differences between eight inmate subgroups, including prisoners with and without mental illness who: report only community victimization, who report only prison victimization, who report victimization in both settings and who report no victimization.

Chapter 2: Literature Review

Mental Illness and Community Victimization

The deinstitutionalization movement of the twentieth century resulted in a 90% decline in psychiatric hospital populations between the years of 1956 and 1996, with populations dropping from 550,000 to 61,700 respectively (Adams & Ferrandino, 2008). Although this reform initiative advocated for community-based mental health care over confinement in psychiatric institutions, thousands of former patients were released into the community without adequate support services

(Adams & Ferrandino, 2008). As a result, PwMI living in the community continue to experience disproportionate levels of homelessness, substance abuse, and criminal justice involvement when compared to individuals without mental illnesses. Moreover, PwMI are typically of lower socioeconomic status and reside in neighborhoods with high crime rates. Therefore, these individuals are likely to experience victimization both because of their mental illness(es) and because of the social and structural conditions in which they live (Hiday et al., 1999; Maniglio, 2008).

Routine activities theory is one of the most common perspectives used to understand criminal victimization. Cohen and Felson (1979) theorize that opportunities for victimization are created when a suitable target and motivated offender converge in time and space, in the absence of a capable guardian. At the macro-level, certain environments (e.g. a transportation hub like a subway station) can increase the likelihood of crime (and therefore, victimization) because they bring together more motivated offenders with more suitable targets without capable guardianship. At the micro-level, individuals' routine activities (i.e. daily routine) affect where this intersection will occur, therefore increasing or decreasing their personal likelihood of victimization. There are several connections between the increased likelihood of victimization for PwMI and the three elements of routine activities theory. First, PwMI frequently experience difficulties with homelessness or live in impoverished neighborhoods where motivated offenders also reside (Hiday et al, 1999).¹ Second, PwMI experience impairments related to reality testing, judgment, social functioning, planning and problem solving (Maniglio, 2009), which may make them attractive (i.e. suitable) targets for offenders. Finkelhor and Asdigian (1996) assert that one dimension of target

¹ It is worth noting that this may be less relevant for the current sample which is comprised entirely of prison inmates (i.e. motivated offenders) who, regardless of mental health status, may have been more likely to live in similarly risky neighborhoods.

attractiveness is target vulnerability, defined as a potential victim's capacity to resist or avoid victimization. Characteristics linked to target vulnerability include small physical size, physical weakness, and emotional or psychological problems (Finkelhor and Asdigian, 1996:6).² Lastly, guardianship over a target (or in this case, victim) is usually self-enforced or enforced by a close friend or family member (Felson, 2001). The impairments listed above may diminish PwMIs capabilities to serve as a self-enforcing guardian. Additionally, PwMI may be socially isolated due to a combination of poor social functioning and negative stereotyping. Therefore, they may be less likely to have close personal relationships with peers who can provide guardianship.

Empirical estimates confirm that PwMI are at increased risk for victimization compared to individuals without mental illnesses. Hiday et al. (1999) find a violent victimization (assault, rape, or mugging) rate of 8.2% in their sample of psychiatric patients, compared to a violent victimization rate of 3.1% in the U.S. general population. Goodman et al. (2001) report that, compared to 1.9% of women and 3.4% of men in the general population, approximately 26% of women and 34% of men in their multi-state sample of PwMI were victims of physical assault in a 12-month period. Consistent with Hiday et al. (1999) and Goodman et al.'s findings (2001) Teplin and colleagues (2005) find that rates of violent victimization for PwMI are 13.5 times higher than rates reported by the general population in the National Crime Victimization Survey (NCVS). They also find that incidence rates for violent crimes were 4 times higher in the sample of PwMI than in the NCVS sample, suggesting that PwMI are more likely to report victimization and are also more likely to experience recurrent victimizations. Because prevalence ratios were higher than incidence ratios, they argue that the comparatively high rates of victimization for persons with

² Finkelhor and Asdigian (1996) defined target vulnerability to explain youth victimization, however given that persons with mental illness make up another vulnerable population, this concept can be applied in the current discussion.

serious mental illness are not simply the result of a few persons being repeatedly victimized (Teplin et al., 2005).

In one of the few studies to investigate the factors linking mental illness to increases in victimization, Silver (2002) examines the role of conflicted social relationships. Comparing a (discharged) psychiatric patient sample and matched community sample from the same neighborhoods, Silver (2002) finds that PwMI were more likely than persons without mental illness to report violent victimization. Importantly, Silver identifies that involvement in conflicted social relationships mediates the relationship between mental illness and violent victimization, suggesting that one important reason that PwMI are more likely to report victimization is that their relationships with others are more likely to involve conflict (Silver, 2002).³

In a related study, Silver et al. (2005) examine the association between mental illness and violent victimization in New Zealand. They find that the overall odds of experiencing at least one type of violent victimization (i.e., threatened physical assault, attempted physical assault, completed physical assault and sexual assault) were 2.19 times higher for PwMI compared to those without a disorder. The authors also observe differences between those with specific psychiatric disorders (e.g., schizophreniform disorder) and those with no mental health diagnosis. For example, individuals with schizophreniform disorder and those with alcohol dependence disorder were more likely to be physically assaulted than those without a diagnosis. Lastly, they find that those who were male, had higher family socioeconomic status, had a school certificate or sixth form certificate, attended college, were in a serious relationship or cohabitating, and who were perpetrators of violence were more likely to be physically assaulted, while those who were

³ Silver (2002) measures conflicted social relationships as the number of individuals that subjects identified from their social networks, “with whom [they] really don’t get along, don’t like, or who really upset [them]” and “who really doesn’t seem to like [them] or who [they] seem to upset.”

unemployed were less likely to be physically assaulted. Overall, Silver et al. (2005) argue that although psychiatric comorbidity (i.e., diagnostic differences) and demographic characteristics contribute to the mental health-victimization relationship, there is still a direct association between any mental illness and violent victimization.

Mental Illness and Victimization Risk in Prison

The current study aims to explore how risk factors for victimization differ between community and prison settings for inmates with and without mental illness. Although those with mental illnesses may be more vulnerable in each setting, the reasons why this is the case may be somewhat different in prison. This section reviews traditional explanations of prison violence and applications of opportunity theories to prison settings. I also describe how PwMI fit within these frameworks and discuss the relevance of these theories for explaining the mental health-victimization relationship.

Traditional explanations of prison violence center on the ways in which prisoners (effectively or ineffectively) adapt to prison culture and the inmate code. Clemmer first defined the process of prisonization as “the taking on... of the folkways, mores, customs, and general culture of the penitentiary” (Clemmer, 1940: 299). According to Clemmer (1940), although all inmates experience prisonization, personal and conscious conflict may occur as individuals with different values and attitudes attempt to assimilate to the same prison culture. Some resulting conflicts are non-violent (e.g., a strike organized by inmates in a work unit). Other conflicts may take the form of physical altercations (e.g., fights) between inmates with opposing attitudes or beliefs (Clemmer, 1940).

Social scientists propose competing perspectives to explain the mechanisms that connect prisonization and conflict. Deprivation scholars argue that these conflicts (i.e., violence) occur

because incarceration is a degrading experience that strips prisoners of their liberty and autonomy, resulting in “pains of imprisonment” (Sykes, 1958; Sykes & Messinger, 1960; Rocheleau, 2013). Prisoners then react to these psychological “pains of imprisonment” by lashing out or breaking rules to fulfill various needs (Sykes, 1958; Rocheleau, 2013). Alternatively, importation scholars contend that prisoners transport normative systems (e.g. the importance of toughness and street smarts) and experiences from the outside world into prison. Those who import beliefs consistent with prison culture gain status and security, while those who cannot adapt or who import beliefs that are inconsistent with prison culture emerge as targets of violence (Irwin and Cressey, 1962; Poole and Regoli, 1980). In the empirical literature on prison violence, there is support for both the deprivation and importation perspectives separately, however additional research suggests that a combination of deprivation and importation provides a more comprehensive explanation of prison violence (Thomas, 1977; Thomas et al., 1978). Irwin (1970) identified that upon entering prison, new inmates adapt using one of the following role orientations: doing time; gleaning; jailing; or functioning as a “disorganized criminal”. Inmates categorized as “doing time” view their incarceration as a break in their criminal careers, avoid trouble by adhering to the inmate code and otherwise do as they feel necessary to survive and to return to society as quickly as possible. Inmates who engage in “gleaning” take advantage of prison programs and resources in attempts to better themselves and improve their post-release circumstances. Inmates who adapt by “jailing” construct a life within prison, seek power and become key figures in prison politics and economics while cutting themselves off from the outside world. Most relevant to the current discussion is the fourth role orientation. “Disorganized criminals” are so defined because they cannot develop any of the other three orientations (Irwin, 1970). These inmates may be of low intelligence or may be afflicted with psychological or physical disabilities (Cole and Smith, 2011:359). Inmates who fall

into this category find it difficult to function in the prison society and other inmates may easily manipulate them.

Other works have applied opportunity theories to explain the epidemic of prison violence. Wooldredge (1994) extends routine activities theory from its original application in community settings to explain differences in victimization likelihoods among inmates in correctional facilities. As defined earlier, routine activities theory indicates that opportunities for victimization occur when a motivated offender and a suitable target come together in an environment that lacks suitable guardianship (Cohen and Felson, 1979; Felson, 2001). Wooldredge (1994) suggests that, within prison settings, an inmate's likelihood of victimization is influenced by the degree to which his or her institutional activities increase or decrease exposure and proximity to potential offenders and reduce levels of guardianship. Unstructured institutional routines, like watching television, are more likely to increase exposure to institutional offenders and simultaneously decrease levels of capable guardianship. Inmates engaged in these types of activities are therefore more likely to become targets of physical victimization. Inmates engaged in structured activities, such as education classes or religious study groups, are less likely to become targets of violence (Wooldredge, 1994). Inmates who are less integrated into social groups are also at risk for becoming targets of victimization due to lack of peer guardianship. Wooldredge (1994) finds that, in a sample of medium-security inmates, inmates who spent fewer hours in recreational activities and those with fewer friends had higher likelihoods of victimization, providing preliminary support for these hypotheses.

Wortley (1997) expands upon Clarke's (1992) situational crime prevention framework by positing a two-stage model in which situational forces influence offending motivations and behavior. He suggests that precipitators (e.g., behavioral triggers) influence an individual's

motivation to offend and regulating factors (e.g., the architecture of the prison) influence whether or not the offending behavior actually takes place (Cornish & Clarke, 2003; Wortley, 1997). He then applies these concepts to institutional offending in his model of Situational Prison Control (Wortley, 2002). Precipitators of prisoner-prisoner violence may include provocations such as lack of control over the environment (e.g., no choice in television programs, waiting in line for meals). The architecture of prisons regulate opportunities for and frequency of institutional offending through factors such as the extent of surveillance over inmates in particular areas of the facility. Therefore, prisoner-prisoner violence is least likely to occur when facilities combine both adequate supervision and structured activities for prisoners. Wortley's discussion echoes that of deprivation scholars in that, in addition to specific provocations and behavioral triggers, precipitation of offending can occur through built-up tension and frustrations generated by incarceration (i.e. the pains of imprisonment). Additionally, the regulating factors typical in prisons (e.g., architecture and surveillance) are tied to the concept of guardianship in a routine activities framework.

Traditional "adaptation-related" theories and opportunity theories of prison violence both have foreseeable implications for prisoners with mental illness. Extant literature documents that inmates with mental illnesses face institutional and behavioral barriers to adaptation that result in difficulties adhering to prison rules, culture, and the inmate code (O'Keef & Schnell, 2007; Wolff et al., 2009; Wood and Buttarro, 2013). It's possible that, faced with the double-stigma of being both a person with mental illness and a prisoner, that the "pains of imprisonment" are compounded for PwMI. Therefore, PwMI would have more difficulties adapting to prison life and forming social connections. Because of these limited social connections and diminished ability to navigate the complex prison environment, inmates with mental illness may find themselves in risky situations that could lead to victimization. For example, staff may easily intimidate inmates with

mental illness into snitching or other inmates may manipulate them into engaging in behavior that will get them into trouble (Human Rights Watch, 2003). Having a mental illness may also impact an inmate's daily activities, therefore influencing their likelihood of victimization. For example, PwMI may have less access to structured activities such as work assignment programs and education classes (Human Rights Watch, 2003; Wooldredge, 1994) that are shown to be protective factors against victimization risk. Alternatively, it is possible that prisoners with mental illness may actually have increased access to specialized housing and programming that provide structure and increase guardianship, therefore lessening the risk of victimization.

Empirical evidence suggests that PwMI are not only more vulnerable to physical and sexual victimization in the community, but also within prisons and jails (Blitz et al., 2008; James & Glaze, 2006; Wolff et al., 2007a; Wolff et al., 2009; Wood & Buttaro, 2013). Studies that examine victimization of inmates with and without mental health disorders in correctional settings tend to focus primarily on differences in victimization between these two groups. Generally, results confirm that inmates with mental illnesses are at higher risk for victimization in prison than their counterparts without mental illness. In their sample of general-population inmates, Blitz, Wolff and Shi (2008) find that both male and female inmates with mental health treatment histories, reported higher rates of inmate-on-inmate physical victimization than inmates without treatment histories. The Bureau of Justice Statistics (BJS) reports that, inmates with a mental health problem were more likely to be injured in a fight since admission to state prison (20% PwMI compared with 10% of others), federal prison (11% compared to 6%) and local jails (9% compared to 3%) (James & Glaze, 2006). Wolff, Blitz, and Shi (2007a) report that 1 in 12 inmates with a mental health disorder reported at least one incident of sexual victimization by another inmate in a 6-month period, compared to 1 in 33 inmates without a mental health disorder.

The literature surrounding the risk factors and correlates linking mental illness and victimization in prison settings is similarly as limited as the literature base for community settings. Wolff et al. (2009) find that individuals who had a non-serious mental disorder (depression, anxiety, or PTSD) were among those most likely to report that they had been physically assaulted by another inmate in the previous six months. However, inmates with more serious mental health disorders (schizophrenia or bipolar disorder) that typically affect behaviors and cognitive orientations, did not have a higher risk of physical victimization. They propose that although individuals with these diagnoses are expected to be at particular risk for victimization inside prison, it is possible that symptoms of psychosis result in placement into separate residential units, therefore reducing exposure to institutional offenders (Wolff et al., 2009).

Using a sub-sample from the SISCF (2004) (the same survey data used in the current project), Wood and Buttaro (2013) investigate the relationship between dual diagnosis, prison victimization and institutional offending. They find that inmates who met the criteria for having both a serious mental illness and substance abuse issues in the 12 months preceding arrest (i.e. dually diagnosed inmates) were more likely to be victims and perpetrators of institutional assault. Interestingly, inmates with substance abuse problems (and no co-occurring mental illness) had lower odds of assault victimization, but inmates with mental illness (and no co-occurring substance abuse problem) only had a greater or lesser risk of being assaulted. The authors explain this finding by suggesting that mental illness alone drives the increase in risk of assault victimization in prison.

Gaps in the Literature

Prior work investigating the risk factors for victimization tends to be among persons with mental illness or among the general population only, rather than providing a comparison of those

with and without mental illness(es). The few prior studies that do compare estimates, rely on official records to gain information about non-psychiatric samples (e.g., comparing victimization rates in a sample of outpatient PwMI to prevalence rates reported by the general public in the NCVS). The use of such records for comparison is problematic because these data are collected in different ways and for different purposes than the studies to which they are compared.

An additional limitation of prior work is the exclusion of less severe mental illnesses (i.e. depression, anxiety) from analyses. This is especially problematic for victimization research in prisons, as a 2004 American Psychiatric Association report indicates that depression is one of the most common mental illnesses in the inmate population (as cited by Adams and Ferrandino, 2008). As mentioned above, Wolff et al. (2009) find that there is a positive relationship between non-serious mental illness and prison victimization and no relationship between serious mental illness and prison victimization. This finding further highlights the problem of restricting samples of PwMI to include only those individuals with more serious mental illnesses. Relatedly, samples in extant studies frequently consist of individuals drawn from in-patient or outpatient psychiatric clinics or hospitals. Therefore, this sampling strategy only captures PwMI who are actively receiving treatment and who may be fundamentally different from individuals who are diagnosed with a mental illness but do not receive regular treatment.

Further, most extant literature on the relationship between mental illness and victimization focuses on estimating differences between these two groups in a single setting (i.e. in prison or in the community). Some research compares rates of victimization in prison and community settings however, these comparisons suffer from some methodological limitations (such as the sampling issue discussed above). In one example, Blitz et al. (2008) compare the rates of physical victimization for PwMI in a state-prison sample to community victimization rates estimated by

Teplin et al. (2005). Blitz et al. (2008) conclude that because their estimated rates of assault victimization for PwMI in prison are lower than the estimated rates shown in Teplin et al.'s community sample (2005), the risk of physical victimization for PwMI is greater in the community than it is behind bars. These types of conclusions skip a key step in the process of comparing settings of victimization for persons with and without mental illness. It is important to understand how and why persons with mental illness experience higher rates of victimization compared to persons without mental illness, and extant work does little to illustrate these processes.

The current study builds on earlier efforts first by analyzing a sample that includes both persons with and without mental illness, drawn from the same sampling frame (state correctional facilities in the United States) and who were surveyed using the same instrument and interview protocol. Additionally, the current sample surveys a wider geographic scope than previous single-site studies, and has a comparatively low non-response rate (10.23%). I employ an operationalization of mental illness that includes six diagnosis types and therefore capture a wider range of disorders than previous studies. Additionally, I examine two separate victimization settings (community and prison) and go beyond a comparison of prevalence to investigate the setting specific risk factors that likely influence the relationship between mental illness and victimization.

Chapter 3: Hypotheses

Using a sample of first-time prison inmates from the *Survey of Inmates in State Correctional Facilities* (2004), I examine how setting-specific risk factors influence the relationship between mental illness and physical victimization in the community and in prison. First, I conduct a descriptive subgroup analysis comparing persons with and without mental illness

in each of the following victimization categories: (1) those victimized in prison only, (2) those victimized in the community only, (3) those victimized in both prison and community settings, and (4) those not victimized in either setting. Second, I model the relationship between mental illness and victimization in each setting using a series of logistic regression models. In each set of models, I investigate specific risk factors suggested by prior research which may be pertinent to each setting. Sensitivity analyses provide insight into the differences between different types of mental illness (i.e., all mental illness versus psychotic disorders). Findings provide knowledge about the extent and correlates of victimization for a high-risk population (i.e. criminal justice-involved individuals with and without mental illness). This knowledge can help to identify at-risk groups, initiate assessment, improve monitoring, and establish appropriate treatment to prevent victimization in these populations.

Hypotheses

I hypothesize that having a mental illness will be positively related to victimization in community settings (prior to incarceration). Additionally, the association between mental illness and victimization will be partly attributable to lifestyle risk factors that are likely to vary across groups. Specifically, PwMI experience disproportionate levels of homelessness and problems with substance use or abuse, risk factors that are also related to higher levels of victimization risk (Hiday et al., 1999; Lee & Sheck, 2005; Maniglio, 2008). Along with increased incidence, it's possible that risk-factors such as homelessness and problems with substance use or abuse also have a differential impact on PwMI compared to others. For example, substance use may have more negative impacts on PwMI because the side effects of drugs can interact with psychotropic medications or can amplify symptoms of an individual's illness, and therefore may be even more likely to lead to victimization than substance use by others without a mental health disorder.

The relationship between mental health and victimization in prison settings is likely even more complex. Therefore, I propose competing hypotheses for the mental health-victimization relationship in prison settings. I hypothesize that having a mental illness may be positively associated with prison victimization (i.e., during a prisoner's current incarceration). In this case, the positive association between mental illness and victimization will be partially attributable to aspects that are more specific to prison life, such as work assignment, program involvement, and time spent in cell. Research suggests that PwMI have less access to activities such as work assignment or education programs and may also spend more time in their cell/ block (either by choice or administrative decision) (Human Rights Watch, 2003; Wooldredge, 1994). In Wooldredge's (1994) application of routine activities theory, restricted access to or lack of involvement in structured activities such as work assignment and programs paired with unstructured activities (e.g., spending time in cell) would predict increased vulnerability to assault victimization in prison.

Alternatively, mental illness may be negatively related to victimization in prison settings. Research suggests that prison may serve as a protective environment for individuals most at risk for negative health outcomes including mortality (Ruback and Innes, 1988; Patterson, 2010). For example, multiple studies have suggested that mortality rates of certain groups are lower in prison than outside of prison, especially those of young black men (Mumola, 2007; Patterson, 2010; Ruback & Innes, 1988; Salieve et al., 1990). Several explanations exist for this phenomenon, including improved access and utilization of healthcare services, as well as lifestyle adjustments and constraints. For example, if an individual is incarcerated, it is less likely that s/he will die from a car accident, drug overdose, or act of gun violence, simply because lifestyles behind bars essentially eliminates access to motor vehicles, guns, and drugs. Drawing on these explanations,

it is possible that marginalized individuals are not only protected from death, but also protected from non-fatal victimization while incarcerated. While it is possible that PwMI have decreased access to programs compared to others (as suggested by Human Rights Watch, 2003 and Wooldredge, 1994), it is also possible that PwMI may experience increased protections in prison such as increased access to mental health treatment and medication, specialized housing and programming (e.g., group therapy), and increased guardianship (i.e., surveillance).

Chapter 4: Data and Methods

Data Source

I use data from the 2004 *Survey of Inmates in State Correctional Facilities* (SISCF) to examine the risk factors related to community and prison victimization for inmates with and without mental health disorders. The SISCF is collected by the Bureau of the Census on behalf of the Bureau of Justice Statistics (BJS) and offers cross-sectional, nationally representative data on inmates held in state prisons in the United States. Data for the 2004 iteration were collected through computer-assisted personal interviews (CAPI) with individual inmates between October 2003 and May 2004. The full sample for the SISCF (N=14,449) was collected using a two-stage sampling design where prisons were selected in the first stage and inmates within these prisons were selected in the second stage. All data from the SISCF are self-reported and do not contain administrative or facility-level statistics.

Sample

The sample is restricted to first-time inmates who were 18 years or older when admitted to prison. By restricting the sample to first-timers, I ensure that instances of community victimization are solely capturing victimization in non-prison settings and do not include victimizations that may

have occurred during a previously served incarceration sentence. Considering these restrictions, results from the analyses I present in this paper are only generalizable to state prisoners in the United States who were incarcerated for the first time after the age of 18.

The SISCf data are well suited for studying the relationship between mental illness and victimization risk in community and prison settings. Prison experience, victimization, and mental health are all sensitive topics for which, in many cases, data is either limited or unavailable. The SISCf data offers opportunities for analysis as it includes information about community/pre-prison victimization, current-sentence victimization, and mental health history in one nationally representative survey. Previous examinations of the mental health-victimization relationship have focused on singular settings (prison or community, but not both) and comparisons between settings have come from samples drawn from different distributions. Because the SISCf contains information about pre-prison and current sentence victimization experiences, I can analyze risk factors linking mental illness and victimization in each setting using individuals drawn from the same sample, who were interviewed using the same instrument and protocol, for the same purpose.

Additionally, the SISCf contains data that are nationally representative of all census regions in the United States. Although the current analytic sample is not nationally representative due to sample restrictions, it will provide evidence from a geographically diverse, multi-site sample which is advantageous over samples drawn from correctional jurisdictions within single cities or states that may limit generalizability. Studies of single sites typically have non-response rates of fifty percent or more which obscures the true rates of victimization in prison (Wolff et al., 2008). The SISCf (full sample) has a comparatively low non-response rate of 10.23%.

Lastly, the SISCf contains self-reported victimization data rather than official statistics. Instances of physical victimization are under-reported in community and prison settings, however,

prior work suggests that self-report data provides a more complete picture of victimization incidents. For example, Fuller, Orsagh and Raber (1977) find that prisoners report the instance of assault against inmates to be eleven times higher than the level reported by prison officials. In short, the SISCF holds many advantages over data used in prior work.

Measures

Dependent Variables

The main dependent variable in the current study is victimization. Victimization encompasses both physical assault or abuse and sexual assault. Both pre-prison victimization (*Community Victimization*) and current-sentence victimization (*Prison Victimization*) are included as dependent variables.⁴ Victimization is measured dichotomously, with “1” representing inmates who reported physical victimization and “0” representing inmates who did not.

Community victimization is a binary indicator of whether an individual was a victim of physical abuse or assault or sexual assault prior to their admission to prison. Constructed from several items in Section 7 of the SISCF survey, inmates who self-reported that someone had ever “pushed, grabbed, slapped, kicked, bit, or shoved; hit with a fist; beat up; choked; or used a weapon against” them and reported that the incident resulted in injury were coded as “1”. Individuals who reported that they were ever “pressured or forced into sexual contact” were also coded as “1”. Individuals who reported that they had never experienced these indicators of physical or sexual abuse (i.e., those who said “no” to both of these items) were coded as “0”.

⁴ Pre-prison victimization is identified to be representative of community victimization. However, it is impossible (given the current data) to be certain that all reported pre-prison victimizations occurred in community settings. Restricting the sample to first-time prisoners ensures that prior victimization did not occur in prison specifically, but it is possible that prior victimizations could have taken place in another institutional setting (i.e. jail or psychiatric hospital).

The measure of *prison victimization* is a binary indicator of whether an individual was injured in a fight, assault, or incident in which someone tried to physically harm them, since their admission to prison (Item S9Q5A). Inmates who reported such injuries were coded as “1” and those who reported no such injuries were coded as “0”.

Although the derived measures of community and prison victimization come from different survey measures, both capture self-reported victimization. One potential difference between community and prison measures is that items pertaining to prison victimization were defined using a single survey item with no prior screening questions. Alternatively, the community victimization measure is a product of survey items that were preceded by screening questions regarding specific types of physical abuse and assault, which may have led to improved recall for these measures.

Independent Variables

The main independent variable for the current study, *mental illness*, is a binary indicator (1=presence of a mental health diagnosis) of whether an individual has ever been diagnosed by a mental health professional as having (at least) one of the following mental health disorders: depressive disorder; manic-depression, mania, or bipolar disorder (one item); schizophrenia or other psychotic disorder (one item); post-traumatic stress disorder; an anxiety disorder; a personality disorder. Inmates who did not report a diagnosis or who only reported a diagnosis of “other mental or emotional problem” were coded as “0”. By using formal diagnosis as a threshold, the current measure of mental illness is conservative, as it does not include individuals who temporarily or intermittently experience symptoms related to poor mental health (e.g. suicidal ideation, depressed mood, etc.).

Controls

Demographic variables pertaining to an inmate's age, race, and biological sex are included in both the community and prison models of victimization. Age is a continuous variable that represents an inmate's age (in years) at the time that they were admitted to prison. Age and victimization have been found to have an inverse relationship in both community and prison samples (Perez et al., 2010). That is, younger individuals are more likely to be victimized than older individuals. However, it is likely that at a certain age, an individual may become more vulnerable to victimization (i.e., an 80 year old person is likely more vulnerable than a 45 year old person, even if the 45 year old is more vulnerable than say, an 18 year old). Therefore, I include a measure of age squared (*age2*) in both models.

Male is a dichotomous measure coded as "1" if an inmate is male and "0" if an inmate is female. Findings generally suggest that the relationship between gender and victimization is dependent on the type of victimization. That is, women are at higher risk for sexual victimization than men and men are at higher risk for physical (non-sexual) victimization than women (Perez et al., 2010).

Inmate race and ethnicity are measured using a series of binary variables: *non-Hispanic white*, *non-Hispanic black*, *Hispanic*, *non-Hispanic other race*.⁵ Each variable is coded as "1" if an inmate identifies as that race/ethnicity and "0" else. All racial ethnic variables are mutually exclusive. *Non-Hispanic white* is the reference category in all analyses. Research shows that non-whites are victimized at higher rates than whites in the general population. However, findings regarding the relationship between race and victimization in prison have been mixed. Some work identifies that white inmates are victimized at higher rates than non-white inmates are, but other

⁵ Non-Hispanic Other race includes inmates who identified as American Indian, Alaskan Native, Asian, Pacific Islander, Native Hawaiian, and those who identified as multiple races (non-Hispanic).

work has found the opposite relationship, or no relationship between race and prison victimization (Perez et al., 2010).

Two additional controls, *time served* and *community victimization* are included only in the prison models. *Time served* is a continuous variable that indicates the amount of time, in months, that elapsed between an inmate's admission to prison and the survey date. I include *time served* to account for exposure to victimization in prison. Measures of time served have primarily been used in the study of prison violence to explain the behavior of institutional offenders. However, time served is less commonly used to explain victimization risk. Some findings suggest that there is an inverse relationship between time served and victimization, namely that individuals are targeted for victimization in the earlier stages of their incarceration. Other works find no relationship between the likelihood of victimization and time served (Perez et al., 2010).

Prior research suggests that those who have been victims of physical or sexual assault (especially in childhood) are more likely to be repeat victims (Hiday et al., 2001; Wolff et al., 2009; Wood & Buttaro, 2013). In other words, prior victimization increases the risk of victimization in the future. While the survey data does not allow for me to determine whether an individual experienced multiple victimizations while incarcerated, I can measure if individuals were victimized at least one since incarceration and at least one prior to their admission to prison. All inmates in the current sample are first-time inmates and any victimization reported in community settings comes temporally prior to incarceration (and prison victimization). Therefore, my operationalization of community victimization serves as a proxy for prior victimization (with prison victimization representing "future" victimization in this sense). For these reasons, a binary indicator of community victimization (i.e., history of victimization) is included in the prison model.

Risk Factors

In addition to the demographic variables described above, the community and prison victimization models each contain a set of setting-specific variables that measure individual-level risk-factors that are related to victimization and that could vary between persons with and without mental illness. Some of these risk factors measure similar but setting-specific mechanisms (e.g. employment in the community model and work assignment in the prison model), however others are more unique to each context (i.e. homelessness in the community or program participation in prison). All risk factor variables are measured at the individual level.

Community Victimization Risk Factors

When measuring the relationship between mental illness and victimization in the community, the following risk-factor variables are included for analysis: *employment*, *homelessness*, *alcohol use* and *drug use*. One of the activities typically measured in victimization research is employment. Cohen and Felson (1979) suggest that working outside of the home may increase exposure to opportunities for victimization as individuals are exposed to more motivated offenders than they would be in their homes. For the current study *employment* is measured as a binary variable indicating whether an inmate had stable employment (a full or part time job) in the month before arrest (*employed* = 1). Individuals who reported having no job, having occasional work, or who responded “don’t know” when asked about the specifics of their employment were coded as “0”, as these types of work are considered less structured.

Extant research has identified transient living conditions as a primary contributor to victimization risk, especially for PwMI (Hiday et al., 1999). Individuals who experience transient living conditions are typically at higher risk for victimization than those with more stable living arrangements. In the current study, *homeless* is a dichotomous measure of whether an inmate was

living on the streets or in a homeless shelter (1=yes) for some period of time in the 12 months prior to the arrest that lead to their current incarceration.

In addition to transient living conditions, studies have identified substance use as a contributor to victimization risk in the community. Individuals who use substances (drugs or alcohol) have higher likelihoods of victimization than individuals who do not use substances (Hiday et al., 1999; Teplin, 2005). I measure substance use through two dichotomous variables representing drug use and alcohol use. *Drugs* is a dichotomous variable indicating whether an inmate reported using at least one of sixteen drugs “at least once per week” or “daily or almost daily” (1=yes) in the month before the arrest that lead to their current incarceration (Items S8Q8C1_1-15). *Alcohol* is a dichotomous variable indicating whether an inmate “usually” drank alcohol “daily or almost daily” (1=yes) in the year before the arrest that led to their current incarceration (Item S8Q2B).

Prison Victimization Risk Factors

When measuring the relationship between mental illness and victimization in prison, work assignment and participation in prison programs are included as institution-specific risk factors in the analysis. *Work assignment* is measured dichotomously with inmates who reported work assignment on or off prison grounds coded as “1” and inmates who reported no work assignment on or off prison grounds coded as “0”. Prior work indicates that involvement in structured activities in prison, such as a work assignment, is associated with lower risk of physical victimization (Wooldredge, 1994). Although prison life is generally routinized for all inmates, those inmates given prison work assignments likely experience even more structure in their daily activities.

Another potential source of structured activities in prison are non-work-related prison programs such as educational or religious programs. Program participation is measured as a count

variable (*programs*), indicating the number of prison programs in which an inmate reportedly participated. Program types reflected in this measure include the following: vocational or job training; other education programs; religious study groups; ethnic/ racial organizations; inmate assistance groups; inmate self-help groups; employment counseling; parenting or child-rearing classes; life skills and community adjustment programs; and other pre-release programs. The SISCF captures individual dichotomous items pertaining to inmate involvement in each of the previously listed program types. To create the count variable (*program*), all “1”s from these items were added together, with a range from 0 to 10. In addition to increasing structured activity time, involvement in prison programs may increase integration into inmate social groups, which is associated with lower victimization risk (Wooldredge, 1994).

Cell time is a continuous measure of time, indicating the number of hours that an inmate spent in his or her cell during the 24 hours prior to survey administration (Item S10Q1).⁶ Cell time may be negatively related to prison victimization because if an inmate is spending time in their cell, they are likely exposed to fewer institutional offenders than they would be if engaged in activities that required movement throughout the facility. Alternatively, activities that inmates might engage in while in their cell (i.e. sleeping, reading, watching television) are unstructured activities and prison literature suggests that engagement in unstructured routines is associated with increased likelihoods for victimization due to decreased levels of guardianship (Wooldredge, 1994). Therefore, cell time may be positively related to prison victimization.

Methods

⁶ Custody level (e.g. minimum, medium, maximum) and housing type (e.g. dorm, single-cell, segregation) likely influence the amount of time an inmate spends in his or her cell, however these measures are not available in the SISCF data.

I employ two stepwise logistic regression models to estimate the relationship between mental illness and victimization in the community and in prison. I utilize logistic regression models because both dependent variables used for analysis are binary. The stepwise procedure is as follows for each setting: First, community and prison victimization are modeled at the bivariate level to identify the association between mental illness and victimization in each setting. Next, demographic variables are added to each model. Third, setting specific risk factors are added to each model separately (i.e., one by one) and then as a collective group. The intent for steps two and three is to identify how demographic and lifestyle variables alter the relationship between mental illness and community or prison victimization and to compare whether these variables have different impacts in each setting. I interpret the results of each logistic regression in the form of both odds ratios and predicted probabilities. Additionally, I examine the percent change in logit coefficients between models to see which risk factors are related to changes in the relationship between mental illness and victimization. Other studies using similar methodologies report results as suggestive or substantial if the inclusion of an intervening variable results in a percentage change of at least 10-15% (Baron & Kenney, 1986; Cene et al., 2014; Dunn et al, 2012; Lu & Nicholson-Crotty, 2010; Shields et al., 2016; Simons, Groffen & Bosma, 2013). Therefore, I consider percent changes between 1-10% to have modest impacts and percentages above 10% to be substantial.

Robust standard errors are used in all analyses. Standard errors are clustered on state of residence to address potential spatial correlation in the data. State of residence serves as a proxy for state of incarceration as individuals are most likely incarcerated in the same state where they reside. It is important to cluster on state because inmates housed in one state department of

corrections may be more similar to each other than to inmates in a different state in another region of the United States.

Chapter 5: Results

Descriptive Statistics

Table 1 (below) presents descriptive statistics for the analytic sample (n=5,740) of first-time prisoners who became incarcerated after the age of 18 and had complete data for all analysis variables in both the prison and community models.⁷ Examining the outcome variables of interest, 46.6% of inmates reported experiencing physical or sexual victimization in the community prior to their current incarceration and 12.5% of inmates reported experiencing physical or sexual victimization since admission to prison. Just over one-quarter, 26.7% of inmates reported a diagnosed mental health disorder. Of inmates with a mental health diagnosis (n=1,528), 76.6% reported depressive disorder, 38.2% reported manic-depression, bipolar disorder or mania; 15.0% reported schizophrenia or other psychotic disorder; 25.9% reported post-traumatic stress disorder; 30.7% reported an anxiety disorder; and 18.7% reported a personality disorder.⁸

Demographically, inmates in the sample had an average age of 30.9 years ($\sigma=10.2$) with a range from 18 to 79.9 years at admission to prison.⁹ The sample is majority male (73.6%), 39.1% non-Hispanic white, 37.2% non-Hispanic black, 17.8% Hispanic, and 5.9% other non-Hispanic race. The average time served was approximately 54 months ($\sigma=62.9$) with a range from 0 months (inmates who served less than 30 days at time of interview) to 523 months. Just under three-

⁷ Of the 6,427 first-time inmates eligible for inclusion in these samples, there were 153 inmates were included in the community model but not the prison model and 546 inmates who were not included in either model. All inmates included in prison models (n=5,740) were also included in the community models.

⁸ The percentages presented here do not sum to 100% because inmates could have reported multiple disorders.

⁹ Age at admission was calculated by subtracting an inmate's years served from the inmate's age at the time of interview. Therefore, some inmate ages include decimal values.

quarters of the sample (71.6%) had a full or part time job in the month before arrest, 7.9% were homeless during the 12 months prior to arrest, 45% used drugs at least once per week in the month before arrest and 21.1% drank alcohol daily or almost daily in the year before arrest. The majority (69.9%) of inmates reported having a work assignment on or off prison grounds. Inmates in the sample participated in an average of 1.6 programs ($\sigma=1.7$). Inmate participation in programs ranged from 0 to 10 programs, with 68.5% of prisoners participating in at least one program. Lastly, inmates in the sample reported spending an average of 12.6 ($\sigma=5.7$) hours per day in their cells.

Subgroup Comparisons

Overall rates of victimization differed for persons with and without mental illness. Most persons without a mental illness (55.3%) reported that they had never been a victim of physical or sexual abuse or assault. Alternatively, the majority of PwMI reported that they had been a victim of physical or sexual abuse or assault (69.6%) Table 2 displays the frequency distribution of victimization by setting and mental health status. Differences in community-only and both-setting groups mirrored that of the overall victimization trend, with 52.8% of PwMI reporting victimization in the community relative to 33.5% of those without mental illness and 11.9% of PwMI reporting dual-setting (i.e., victimization in both settings) victimization relative to 6.7% for others. Interestingly, the frequencies of prison-only victimization was similar for persons with and without mental illness (4.3% for PwMI and 4.6% for others).

Table 1. Descriptive Statistics

Variable	Mean	St. Dev.	Min	Max
Dependent Variables				
<i>Community Victimization</i>	0.466	4.99	0	1
<i>Prison Victimization</i>	0.125	0.331	0	1
Independent Variable				

<i>Mental Illness</i>	0.267	0.443	0	1
Controls				
<i>Age at Admission</i>	30.911	10.172	18	79.917
<i>Age at Admission Squared</i>	1058.96	736.95	324	6386.673
<i>Non-Hispanic Black</i>	0.372	0.484	0	1
<i>Hispanic</i>	0.178	0.383	0	1
<i>Other Non-Hispanic</i>	0.059	0.235	0	1
<i>Non-Hispanic White</i>	0.391	0.488	0	1
<i>Male</i>	0.736	0.441	0	1
<i>Months Served</i>	54.058	62.877	0	523
Community Risk Factors				
<i>Employed</i>	0.716	0.451	0	1
<i>Homeless</i>	0.079	0.270	0	1
<i>Drugs</i>	0.450	0.498	0	1
<i>Alcohol</i>	0.211	0.408	0	1
Prison Risk Factors				
<i>Work Assignment</i>	0.699	0.457	0	1
<i>Programs</i>	1.632	1.725	0	10
<i>Hours in Cell</i>	12.573	5.703	0	24

Table 2. Frequency of Victimization by Setting and Mental Health Status

	PwMI (<i>mental</i>=1)	PwoMI (<i>mental</i>=0)
Victimization Setting		
Community Only	806 (52.8%)	1,409 (33.5%)
Prison Only	65 (4.3%)	194 (4.6%)
Both	181 (11.9%)	280 (6.7%)
Neither	476 (31.2%)	2,329 (55.3%)
Total N	1,528	4,212

As shown in Table 3, there are interesting differences across these subgroups on key setting-specific risk factors. For example, those without a mental illness who reported no victimization (PwoMI-None) were the most likely to be employed. Those with a mental health diagnosis who were victimized in the community only (PwMI-Community Only), were the least likely to be employed. These findings are inconsistent with Cohen & Felson's (1979) prediction that working outside of the home increases the probability that individuals will be exposed to the convergence of motivated offenders in the absence of a capable guardian, therefore increasing victimization risk. Their argument would suggest that higher frequencies of employment should

equate to higher levels of victimization, so we would expect that one of the “Community-Only” or “Both” victimization groups would have higher levels of employment while the “None” groups would have lower levels of employment. Contrary to the arguments of Cohen and Felson (1979), some extant literature also suggests that unemployment is related to victimization in community settings (Sampson and Lauritsen, 1994) and that PwMI may have difficulties finding and maintaining stable employment (Baron and Slazer, 2002) which may explain the contradictory results found here.

Prisoners with a mental health diagnosis who reported only community victimization (PwMI-Community Only) were most likely to be homeless, while prisoners without a mental illness who reported prison-only victimization (PwoMI-Prison Only) or no victimization (PwoMI-None) showed the lowest percentages of homelessness. Prior work has shown that PwMI are much more likely to experience homelessness (Sullivan, Burnam & Koegel, 2000) and homelessness has been identified as a salient predictor of community victimization in the general population, but especially among those with mental illness (Hiday et al., 1999). Therefore, it is within expectation that the PwoMI who reported no victimization would have the lowest likelihood of homelessness among the subgroups.

Prisoners with mental health diagnoses who reported community-only victimization (PwMI-Comm. Only) were the most likely to use drugs and those who reported dual victimization (PwMI-Both) were most likely to use alcohol. Prisoners without mental illness who reported no victimization (PwoMI-Neither) were the least likely to use drugs and to use alcohol. Consistent with extant research, these findings suggest that PwMI are more likely to use substances and that both of these factors are related to victimization.

Table 3 also displays differences in prison risk factors including work assignment, program involvement and cell time. Inmates with mental health diagnoses that reported prison victimization only (PwMI-Prison Only) were the least likely to hold a prison work assignment. This finding is consistent with extant literature that suggests PwMI may have less access to jobs and classes (Human Rights Watch, 2003; Wooldredge, 1994) and that those individuals not engaged in structured activities (i.e. work) are most likely to be victimized (Wooldredge, 1994). Prisoners without mental health diagnoses who reported only community victimization (PwoMI-Community Only) were the most likely to hold a work assignment. Because work assignment is a structured activity, the fact that one of the “Community Only” groups is most likely to hold a work assignment further supports Wooldredge’s (1994) claims about the protective effect of engagement in structured activities as individuals in these groups do not experience any victimization (and therefore are not victimized in prison).

Although the eight subgroups had similar values for mean hours spent in their cells (between 11.9 hours for PwoMI-Neither and 14.2 hours for PwMI-Prison Only), PwMI as a whole, spent more time in their cells on average (13.2 hours) compared to those without a mental health diagnosis (12.3 hours). Findings show support for the extant literature in which Wooldredge (1994) suggested that engagement in unstructured activities (e.g. time spent alone in a cell) is associated with higher likelihoods of prison victimization.

The mean number of programs that inmates participated in ranged from 1.3 for PwoMI-None to 2.4 for PwMI-Both. This finding is inconsistent with Wooldredge’s (1994) work as it suggests that those who participate in more programs (i.e. structured activities) are actually more likely to be victimized relative to persons who participate in fewer programs. It is possible that this contradictory finding is a result of the reciprocal nature of association between victimization

and mental health. For example, there are no temporal indicators relative to prison victimization in the SISCF data, therefore it's possible that PwMI are involved in more programs because they have higher likelihoods of victimization and not that they are victimized more because they are involved in programs. It's also possible, that involvement in programs results in inmate's moving about the prison where they may encounter more institutional offenders, not necessarily while participating in these programs themselves, but while commuting to and from their cell to the program.

Logistic Regression Results: Community Models

Table 4 displays results for community models 1 through 3. The first column for each model shows the odds ratios and the second column displays robust standard errors. Robust standard errors were used in all models to account for heteroscedasticity and standard errors were clustered to account for spatial correlation within states.

Table 4, Model 1 shows estimates of the bivariate relationship between mental illness and victimization in community settings. Results are aligned with expectations and show that inmates with a mental health disorder are significantly more likely to report community victimization compared to those without a mental health diagnosis. Specifically, having a mental illness increases the odds of community victimization by 187% (odds ratio=2.866, $p<0.001$). Expressed as predicted probabilities, 65.3 percent of PwMI are predicted to experience community victimization compared to 39.6 percent of individuals without a mental illness.

Model 2 (Table 4) displays the association between mental illness and victimization after the inclusion of demographic predictors (*age at admission, age at admission squared, race, and sex*). After controlling for these factors, there was a 24.1% reduction in the magnitude of the logit coefficient for mental illness. However, the association between mental illness and community

victimization remained positive and statistically significant.¹⁰ Findings from Model 2 show that having a mental health disorder increases the odds of community victimization by 122% (odds ratio=2.22, $p<0.001$) relative to those without a mental illness. Estimated as predicted probabilities, 61.0 percent of PwMI are predicted to experience community victimization compared to 41.2 percent of those without a mental illness holding all demographic predictors at their means. Except for the other non-Hispanic race variable, all demographic predictors are related to community victimization. Compared to non-Hispanic white inmates, those who identified as non-Hispanic black and those who identified as Hispanic had lower likelihoods of community victimization. Male inmates had lower likelihoods of community victimization relative to female inmates. Also, age was positively associated with community victimization.

The final community model (Table 4, Model 3) tests the relationship between mental illness and victimization after controlling for demographic characteristics and including relevant lifestyle risk factors (*employment, homelessness, drug use, and alcohol use*). In addition to the controls from Model 2 (Table 4), all risk factors were included together in Model 3. Results demonstrate that prisoners with a mental health disorder were more likely to report community victimization than those without a mental health disorder. Specifically, having a mental health disorder increases the odds of community victimization by 108% (odds ratio=2.08, $p<0.001$). Additionally, 59.8 percent of PwMI were predicted to experience community victimization compared with 41.6 percent of those without a mental illness, holding all demographic characteristics and risk factors at their means. While the relationship between mental illness and

¹⁰ Percentage change in coefficients were calculated as follows: $((\beta_{\text{model2}} - \beta_{\text{model1}}) / \beta_{\text{model1}}) * 100$.

Table 3. Risk Factors by Mental Health-Victimization Subgroup

	Persons with Mental Illness (PwMI)				Persons without Mental Illness (PwoMI)			
	Prison Only	Comm. Only	Both	None	Prison Only	Comm. Only	Both	None
<i>N</i>	65	806	181	476	194	1,005	209	2,329
<i>Community Risk Factors</i>								
Employed	69.2%	63.7%	74.0%	66.8%	69.1%	71.3%	74.6%	75.3%
Homeless	13.9%	16.1%	11.6%	12.0%	3.6%	7.7%	9.3%	4.1%
Drugs	44.6%	56.3%	52.5%	44.1%	40.2%	50.8%	52.9%	36.8%
Alcohol	18.5%	26.4%	29.3%	20.0%	20.6%	24.2%	25.7%	16.6%
<i>Prison Risk Factors</i>								
Work Assignment	58.5%	70.2%	68.5%	67.7%	61.3%	71.9%	69.3%	70.3%
Cell Hours	14.2 (6.3)	13.2 (5.8)	13.2 (6.16)	12.97 (6.0)	13.1 (6.0)	12.8 (5.6)	13.7 (6.0)	11.9 (5.4)
Programs	1.7 (1.9)	1.9 (1.9)	2.4 (2.0)	1.5 (1.6)	1.7 (1.9)	1.7 (1.7)	2.3 (2.1)	1.3 (1.5)
<i>For cell hours and programs, Mean (Standard Deviation)</i>								

community victimization remained positive and significant, the collective addition of lifestyle risk factors reduced the magnitude of the main effect by 8.12%.¹¹

To examine the impact of risk factors on the mental health-victimization relationship, I also added each of these variables into the regression separately.¹² The relationship between mental illness and community victimization remained positive and statistically significant after inclusion of each individual predictor variable, however the magnitude of the main effect was reduced in each case. The addition of *employment* reduced the magnitude of the main effect by less than one percent (0.3%). The inclusion of the binary predictor for homelessness reduced the main effect by 4.2 percent. When drug use was included in the model, the relationship between mental illness and victimization was reduced by 3.8 percent. Lastly, the inclusion of alcohol use resulted in a 1.6 percent decrease in the magnitude of the relationship between mental illness and community victimization. These percent changes suggest that homelessness, drug use, and alcohol use contribute modestly to the association between mental illness and community victimization.

Overall, results suggest that the relationship between mental illness and victimization in community settings remains positive and statistically significant after controlling for demographic characteristics and lifestyle risk factors. In each model, findings support that prisoners with a mental health disorder are more likely to experience community victimization compared to prisoners without a mental health disorder. Specifically, prisoners with a mental illness are between 2.0 (Model 1) and 2.9 (Model 1) times more likely to be victimized in the community than prisoners without mental illness depending on inclusion of model predictors. The magnitude of coefficients decreased overall from Model 1 to Model 2 and from Model 2 to Model 3, with an

¹¹ Percent changes from individual variable additions do not sum to the collective percent change because of the correlation between risk factors.

¹² Results of these analyses are not presented here but are available upon request.

overall decrease of 30.2% from Model 1 to Model 3. This suggests that demographic characteristics and lifestyle risk factors contribute to the mental health-victimization relationship, however a direct association remains after controlling for these factors. Results from the individual examination of lifestyle predictors suggest that, aside from employment, each risk factor contributes modestly to the relationship between mental illness and victimization.

Table 4. Logistic Regression Results: Community Models 1-3

Independent Variable	Model 1 (n=6,351)		Model 2 (n=5,882)		Model 3 (n=5,881)	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Mental Illness	2.866***	0.173	2.224***	0.141	2.084***	0.134
Controls						
Age at Admission	--		1.037**	0.017	1.035**	0.017
Age at Admission Squared	--		0.999***	0.000	0.999***	0.001
Non-Hispanic Black	--		0.697***	0.049	0.704***	0.049
Hispanic	--		0.628***	0.530	0.669***	0.061
Other Non-Hispanic Race	--		1.111	0.133	1.158	0.133
Male	--		0.499***	0.029	0.488***	0.031
Comm.-Specific Predictors						
Employed	--		--	--	1.042	0.045
Homeless	--		--	--	1.455***	0.162
Drug Use	--		--	--	1.503***	0.081
Alcohol Use	--		--	--	1.483***	0.099
Constant	0.656***	0.036	1.131	0.357	0.800	0.257
		Wald chi(1)=301.51	Wald chi(7)=634.61	Wald chi2(11)=1172.68		
		Prob>chi2=0.000	Prob>chi2=0.000	Prob>chi2=0.000		

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Logistic Regression Results: Prison Models

Table 5 displays results for prison Models 1 through 3. Again, odds ratios are presented in the first column and robust standard errors are presented in the second column. The stepwise progression of the prison models is similar to that of the community models with Model 1 representing the bivariate mental health-victimization relationship, Model 2 introducing controls, and Model 3 including relevant, prison-specific lifestyle risk factors.

Model 1 of Table 5 shows estimates of the bivariate relationship between mental illness and victimization in prison settings. Results show that, as predicted, inmates with a mental health disorder are more likely to be victimized in prison, relative to those without a disorder. Specifically, having a mental health disorder increases the odds of prison victimization by 55.3% (odds ratio=1.55, $p<0.001$). Estimated as predicted probabilities, 16.9 percent of PwMI were predicted to experience prison victimization compared to 11.6 percent of those without a mental illness.

Results from Model 2 (Table 5) demonstrate that the mental health-victimization relationship remains positive and statistically significant after the inclusion of demographic and background characteristics. From Model 1 to Model 2 (Table 5) the magnitude of the relationship between mental illness and victimization increased by 7.9%. Model 2 finds that having a mental illness is associated with a 60.8% increase in the odds of prison victimization (odds ratio=1.608, $p<0.001$). Additionally, 13.2 percent of PwMI were predicted to experience prison victimization compared with 8.6 percent of those without a mental illness.

Except for Hispanic ethnicity and age squared, all demographic controls were significantly related to prison victimization. Non-Hispanic black inmates had a lower likelihood of prison victimization compared to whites. Those who identified as an “other” Non-Hispanic race (e.g. American Indian, Alaskan Native, Asian, Pacific Islander, Native Hawaiian, and those who identified as multiple races) had higher likelihoods of prison victimization compared to white inmates. Male prisoners had a higher likelihood of prison victimization relative to female prisoners. Age at admission was negatively related to prison victimization suggesting that those inmates who were younger at admission to prison are more likely to be victimized. Time served is positively related to victimization suggesting that individuals who have served more time are more

likely to be victimized. This finding is likely capturing the fact that increases in time served result in prolonged exposure to opportunities for victimization.

Model 3 (Table 5) includes the demographic controls introduced in Model 2 as well as a vector of prison-specific risk factors. These risk factors are unique to the prison environment (*work assignment, program participation* and *time spent in cell*). The final prison model (Model 3, Table 5) tests the relationship between mental illness and victimization after the inclusion of controls and prison-specific risk factors. After the collective inclusion of prison-specific risk factors the main effect was reduced by 6.1%. Again, results show that PwMI are more likely to report prison victimization than those without a mental health disorder. Having a mental health disorder increases the odds of prison victimization by 56.2% (odds ratio=1.562, $p<0.001$). Estimated as predicted probabilities, 12.7 percent of PwMI were predicted to experience prison victimization relative to 8.5 percent of prisoners without mental illness.

As in the community models, I also added each risk factor into the previous model (Model 2, Table 5) separately to examine the impact on the main effect. The relationship between mental illness and prison victimization remained positive and statistically significant after inclusion of each individual predictor variable, however the magnitude of the main effect was reduced in each case. The inclusion of *work assignment* resulted in a 1.2% reduction in the magnitude of the main effect. When *programs* was included in the model, the relationship between mental illness and victimization decreased by 1.4%. After adding *cell time* to the model, the magnitude of the main effect was reduced by 3.1%. These results suggest that all four prison-specific risk factors influence the relationship between mental illness and victimization, but the influence of each is modest.

Results (Model 3, Table 5) also show that inmates who hold a work assignment are less likely to be victimized than those who do not hold a work assignment and inmates who report

victimization prior to their admission to prison are more likely to report prison victimization than those who did not report prior victimization. Interestingly, program participation and time spent in cell are both positively associated with victimization. Drawing on a routine activities framework, participation in prison programming may be positively related to victimization because prisoners who are involved in more programs also engage in more movement about the facility, where they may encounter more potential offenders in areas of the prison that are less supervised. So, it is not the programs themselves that expose prisoners to victimization but rather a consequence of traveling to and from these programs. Similarly, the positive relationship between cell time and victimization is likely explained by the lack of guardianship that accompanies unstructured activities that inmates might engage in while in their cell (e.g., sleeping, reading, watching television). Therefore the positive associations between cell time and victimization and programs and victimization can both be attributed to an increase in the absence of capable guardianship (i.e., a decrease in supervision over movements/ activities).

Table 5. Logistic Regression Results: Prison Models 1-3

Independent Variable	Model 1 (n=6,346)		Model 2 (n=5,836)		Model 3 (n=5,740)	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Mental Illness	1.553***	0.161	1.608***	0.148	1.562***	0.152
Controls						
Age at Admission	--	--	0.899***	0.023	0.909***	0.023
Age at Admission Squared	--	--	1.000***	0.000	1.000**	0.000
Non-Hispanic Black	--	--	0.698***	0.000	0.749***	0.068
Hispanic	--	--	1.079	0.161	1.058	0.158
Other Non-Hispanic Race	--	--	1.334**	0.182	1.257*	0.164
Male	--	--	1.997**	0.379	2.042***	0.341
Months Served	--	--	1.008***	0.001	1.007***	0.001
Community Victimization	--	--	2.261***	0.186	2.172***	0.171
Prison-Specific Predictors						
Work Assignment	--	--	--	--	0.749***	0.078
Programs	--	--	--	--	1.059**	0.030
Hours Spent in Cell	--	--	--	--	1.016*	0.009

Constant	0.131***	0.015	0.275***	0.124	0.205***	0.089
	Wald chi(1)=16.29		Wald chi(9)=631.72		Wald chi(12)=911.95	
	Prob>chi2=0.001		Prob>chi2=0.000		Prob>chi2=0.000	

*** p<0.01, ** p<0.05, *p<0.10

Overall results suggest that the mental health-victimization relationship remains positive and statistically significant after controlling for demographic characteristics and prison-specific risk factors. In each model, findings support that prisoners with a mental health disorder are more likely to experience prison victimization than those without a mental health disorder. Prisoners with mental illness are between 1.55 (Table 5, Model 1) and 1.61 (Table 5, Model 2) times more likely to be victimized in prison than prisoners without mental illness. The magnitude of the mental health-victimization relationship increased by 1.4% overall, despite decreasing from Model 2 to Model 3. The percent increase in magnitude after inclusion of control variables suggests that the relationship between mental illness and victimization varies depending on these demographic and background characteristics (e.g. race, age, sex, time served, prior victimization) and contributes to the overall percentage increase in the magnitude of the coefficient from Model 1 to Model 3.¹³

Sensitivity Analysis

One limitation of the current study is the cross-sectional nature of the data used for analysis. Specifically, measures of mental health diagnosis and victimization (both community and prison) ask whether an inmate was “ever” diagnosed or “ever” victimized. Therefore, it is difficult to

¹³ I also analyzed a stepwise linear probability model (LPM) for each victimization setting. These interpretations are more intuitive because LPM coefficients can be expressed as a change in the probability of being victimized for persons with mental illness compared to those without, rather than an estimate of the latent variable *victimization** (as in the logit models). In the community LPM models, the addition of demographic variables resulted in a 26.9% decrease in the main effect and the addition of lifestyle risk factors resulted in a 9.7% decrease in the main effect, with an overall decrease (from Model 1 to Model 3) of approximately 34%. LPM prison models showed an overall decrease of 16.9% from Model 1 to Model 3. Addition of demographic variables accounted for a decrease of 9.6% and inclusion of prison risk factors resulted in an 8.1% decrease in the effect.

discern when a prisoner was diagnosed with a mental illness, relative to his or her victimization and to his or her admission to prison. The following sensitivity analysis attempts to disentangle the issue of temporal ordering using a restricted definition of mental illness that includes a temporal element. In the following additional analyses, inmates were coded as having a mental health disorder only if they reported that they were diagnosed 2 or more years prior to the SISCF interview and had been incarcerated for one year or less. This restriction ensures that prisoners coded as having a mental illness 1) were diagnosed and spent some amount of time in the community after receiving their diagnosis and 2) were diagnosed before their admission to prison. This corrects for the issue of temporal ordering in the prison models because all inmates coded as having a mental illness were diagnosed prior to prison admission, and all prison victimization occurred after admission. However, while this restriction does ensure that an inmate had some exposure in the community after being diagnosed with a mental illness, there is no way to further discern when community victimization occurred in relation to this diagnosis. I conducted stepwise logistic regression models for community and prison victimization using the new definition of mental illness as the main independent variable.

Table 6 displays the results from the sensitivity analysis for community models 1-3. Results from these analyses were substantively similar to the results obtained in the original community models. In all three models, mental illness was significantly positively associated with community victimization. In the fully specified model (Table 6, Model 3), having a mental health disorder increased the odds of victimization by 81.1% (odds ratio=1.811, $p<0.05$). Overall, from Model 1 to Model 3 (i.e. when including both demographic controls and risk factors in the model) the main association between mental illness and community victimization decreased by 41.9 percent.

Table 6. Sensitivity Analysis: Logistic Regression Results, Community Models 1-3

Independent Variable	Model 1 (n=5,887)		Model 2 (n=5,882)		Model 3 (n=5,881)	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Mental Illness	2.779***	0.614	1.873**	0.432	1.811**	0.436
Controls						
Age at Admission	--		1.041**	0.016	1.039**	0.016
Age at Admission Squared	--		0.999***	0.000	0.999***	0.000
Non-Hispanic Black	--		0.615***	0.041	0.628***	0.041
Hispanic	--		0.550***	0.044	0.594***	0.050
Other Non-Hispanic Race	--		1.091	0.132	1.137	0.131
Male	--		0.437***	0.028	0.434***	0.030
Comm.-Specific Predictors						
Employed	--		--	--	1.027	0.043
Homeless	--		--	--	1.626***	0.172
Drug Use	--		--	--	1.530***	0.085
Alcohol Use	--		--	--	1.522***	0.105
Constant	0.853***	0.047	1.537	0.446	1.031	0.310
	Wald chi(1)=21.42		Wald chi(7)=353.08		Wald chi2(11)=816.72	
	Prob>chi2=0.000		Prob>chi2=0.000		Prob>chi2=0.000	

*** p<0.01, ** p<0.05, * p<0.10

Contrastingly, results from the original prison models and sensitivity analyses were somewhat different. Table 7 displays the results from sensitivity analyses for prison models 1-3. In these analyses, mental illness and victimization remained significantly related, but in the opposite direction. Specifically, prisoners with mental health diagnoses were between 17.6% (odds ratio=0.176, p<0.01) and 30.4% (odds ratio=0.304, p<0.05) less likely to be victimized in prison, relative to prisoners without mental health disorders. There was a 1.4% increase in the overall magnitude of the mental health-victimization relationship in the original prison models (Table 5). However, in the sensitivity analysis models, there was an overall percentage decrease of 31.3% in the main effect.

Table 7. Sensitivity Analysis: Logistic Regression Results, Prison Models 1-3

Independent Variable	Model 1 (n=5,880)		Model 2 (n=5,836)		Model 3 (n=5,740)	
	Odds Ratio	SE	Odds Ratio	SE	Odds Ratio	SE
Mental Illness	0.176 ***	0.105	0.297 **	0.170	0.304**	0.179
Controls						
Age at Admission	--	--	0.902***	0.024	0.913***	0.024
Age at Admission Squared	--	--	1.001**	0.000	1.000**	0.000
Non-Hispanic Black	--	--	0.655***	0.062	0.650***	0.065
Hispanic	--	--	0.971	0.144	0.954	0.145
Other Non-Hispanic Race	--	--	1.307*	0.184	1.229	0.166
Male	--	--	1.744**	0.363	1.794***	0.335
Months Served	--	--	1.008***	0.001	1.007***	0.001
Community Victimization	--	--	2.407***	0.193	2.292***	0.176
Prison-Specific Predictors						
Work Assignment	--	--	--	--	0.734**	0.074
Programs	--	--	--	--	1.063**	0.030
Hours Spent in Cell	--	--	--	--	1.018**	0.009
Constant	0.148***	0.014	0.350**	0.156	0.251***	0.110
	Wald chi(1)=8.37		Wald chi(9)=652.31		Wald chi(12)=821.07	
	Prob>chi2=0.004		Prob>chi2=0.000		Prob>chi2=0.000	

*** p<0.01, ** p<0.05, *p<0.10

Results from the original prison models and sensitivity prison models together give merit to the competing hypothesis that those with mental illness may be more or less likely to be victimized in prison. One potential explanation for these differences in the association (positive versus negative) between mental illness and prison victimization is that the types of mental illness captured in each set of analyses may be different. The directional change in relationship suggests that, although PwMI are more likely to be victimized when compared to those without a diagnosis, there may also be unique differences within persons with mental illness. The measure of mental illness used in the sensitivity analyses relies on the duration of one's illness (i.e., it requires that the individual has had the diagnosis for at least 2 years). Therefore, this definition may be capturing different (e.g., maybe more chronic or severe disorders) diagnoses than the original measure of

mental illness. To investigate this possibility, I compared the prevalence of specific mental health diagnoses captured in the original mental health measure to those captured by the mental health measure used in the sensitivity analyses. Within PwMI in the fully specified original and sensitivity prison models, there were variations in prevalence of all six disorders but the most notable differences appeared in depressive disorders, bipolar disorder (mania, or manic-depression), and schizophrenia (or other psychotic disorder).¹⁴ For example, in the original models approximately 15.0% of PwMI reported a diagnosis of schizophrenia, compared to just 8.6% of PwMI in the sensitivity analysis sample. Given the variability in the types of diagnoses reported, it's possible that the association between mental illness and victimization is attributable to specific diagnoses or the symptoms associated with them. Future research should work to disentangle these characteristics beyond a collective binary measure of mental illness. I further explore this possibility and provide suggestions for future directions in the following discussion section.

Chapter 6: Discussion and Conclusions

The present study investigates the relationship between mental health and victimization in two settings and examines how setting-specific risk factors influence these relationships. Comparisons across groups showed that prisoners who had a mental health diagnosis had higher rates of victimization prior to prison and during their current incarceration. Additionally, rates of dual-setting victimization (i.e., victimization in both settings) were higher for prisoners with mental illness than for those without mental illness. When examining community risk factors, PwMI were more likely than those without a disorder to experience unemployment, homelessness, and drug and/or alcohol use. Exploration of prison risk factors reveals that PwMI are less likely to

¹⁴ The six diagnosis categories included the following disorders: depressive disorders; bipolar disorder, mania, or manic-depression; PTSD; schizophrenia or other psychotic disorder; anxiety disorders; and personality disorders.

hold work assignments and spend more time in their cells. In contrast, prisoners with mental illness are involved in more prison programs than those without mental health diagnoses.

In concurrence with extant literature, the findings from this thesis provide support for my main hypotheses. Inmates with mental illness are more likely to be victimized than their counterparts without mental illness after controlling for demographic and background characteristics and accounting for setting-specific risk factors. This is true in both community and prison settings. After considering time since diagnosis, sensitivity analyses reveal support for the competing hypothesis that prisoners with mental illness may have lower likelihoods of victimization. Results from stepwise logistic regression models suggest that the mental health-victimization relationship is partly attributable to differences in setting-specific risk factors between prisoners with and without mental illness.

Specifically, drug use and homelessness were associated with the largest reductions in the magnitude of the relationship between mental illness and community victimization. These findings suggest that mental illness is associated with victimization partly due to differences in drug use and homelessness between prisoners with and without mental illness or because of the differential impact of substance use and homelessness between the two groups. One explanation for increased substance use among persons with mental illness is the concept of self-medicating, which suggests that PwMI attempt to treat or lessen the symptoms of their illness by using drugs (or alcohol) either in place of or in addition to psychotropic medications (Brooks, 2017). Regardless of mental health status, substance use causes impairments in judgement and functioning that may make individuals more vulnerable to victimization. However, drugs may have negative interactions with psychotropic medications or amplify symptom manifestations in PwMI therefore making substance use riskier for this group. The present data suggests that PwMI are more likely to be

homeless than those without a mental health diagnosis. Lee and Schreck (2005) suggest that individuals who experience more frequent or longer durations of homelessness are especially vulnerable to crime. Many risk factors associated with mental illness are also associated with homelessness, such as unemployment and substance use, therefore it is not unreasonable to predict that PwMI might experience homelessness more frequently and for longer periods of time than persons without mental illness. One study that found a lower incidence of victimization among long-term homeless persons suggested that those individuals learn how to avoid dangerous situations and persons (Anderson, 1996). If this is the case, it is possible that PwMI who experience extended periods of homelessness do not have the same capacity to identify which places and associates may put them at risk.

The number of hours an inmate spent in his or her cell were associated with the largest reductions in magnitude (6.24% and 3.94%, respectively) of the main effect between mental illness and victimization in the prison models. The mean number of hours that inmates with mental illness spend in their cell is 13.2 hours, compared to an average of 12.3 hours for inmates without mental health diagnoses. It is possible that this variable captures social isolation and shows that those with mental illness are less integrated and potentially more vulnerable. It is also possible that isolation both contributes to and is exacerbated by prison victimization. Specifically, inmates with mental illness may choose to isolate themselves or may be administratively isolated because they were victims of prison violence.

While reductions in the magnitude of coefficients show some support for my hypotheses that setting-specific risk factors partially explain the relationship between mental illness and victimization, the percent changes in coefficients were modest at best (the largest change was a reduction of ~4% when drug use was included in community models). These findings suggest that,

after controlling for known demographic and setting-specific correlates of victimization, there is a direct, positive and statistically significant association between mental illness and victimization for both community and prison settings. The direct association likely persists because behavioral manifestations of mental health symptoms are affecting the likelihood of victimization for those with mental illness. Research finds that PwMI have cognitive deficits in reality-testing, judgment, social functioning, planning and problem solving (Maniglio, 2009). These impairments sometimes result in behaviors that others find “inappropriate” or “provocative” (Silver, 2002) and therefore may influence offender motivations and target selections. Therefore, PwMI may have higher likelihoods of victimization because these behavioral manifestations elicit anger, jealousy, or other aggressive responses from others “as a form of informal social control or retaliation” (Silver, 2002: 206). Silver (2002) finds support for this concept, target antagonism (defined by Finkelhor & Asdigian, 1996), by suggesting that the psychological, emotional, and behavioral manifestations of mental illness lead to conflicted relationships with others which in turn increase victimization. Therefore, the direct relationship I observe between mental illness and victimization in community and prison settings may be capturing differences in social relationships between persons with and without mental illness. Future analyses should examine the differences in social networks, offender perceptions of PwMI and victim-offender relationships for those with and without mental illness to evaluate the impact of these additional factors on the mental health-victimization relationship.

Results from the sensitivity analysis, especially those from the additional prison models, also merit discussion. In the sensitivity analyses, I find that having a mental illness (that was diagnosed within the last 2 years) is negatively associated with prison victimization. The significant negative relationship suggests that some persons with mental illness are less likely to experience prison victimization than those without a disorder. The divergent results from original

and sensitivity analysis models suggest that differences in the type, severity or chronicity of disorders may be influential on the relationship between mental illness and victimization. Descriptive analyses show that the original and sensitivity measures of mental illness capture different prevalence of diagnosis types within the binary measures of mental illness. Wolf, Shi and Siegel (2009) find that individuals with non-serious mental illnesses were more likely to be assaulted by another inmate, but that inmates with more serious mental health disorders did not have a higher risk for victimization. They suggest that symptoms of psychosis likely result in placement into separate residential units or prison programming, therefore reducing exposure to institutional offenders and opportunities for victimization. The measure of mental illness in the current study's sensitivity analysis is capturing individuals with more chronic diagnoses (i.e., durations of at least 2 years) that may also be characterized as more severe. If this is true, then the current analyses support the results found by Wolff et al. (2009).

Ultimately, this thesis finds additional support for the possibility that different types (e.g., diagnoses) or durations (e.g., time since diagnosis) of mental illness are differentially associated with victimization in prison settings. State prisoners report a wide variety of mental health diagnoses and future research on the relationship between mental illness and victimization should include diagnosis specific measures rather than using a collective measure of mental illness. Additionally, other relevant factors associated with mental illness such as, comorbidity (i.e., multiple diagnoses occurring at the same time) and treatment utilization, likely have impacts on the relationship between mental illness and victimization. Therefore, future examinations of the mental health-victimization relationship should work to disentangle the relationships between diagnosis, comorbidity, and treatment to better describe the mechanisms linking mental illness and victimization.

While the current study provides a key first step in exploring the potential reasons for the relationship between mental illness and victimization in different settings, there are several limitations that warrant acknowledgement. It is important to note that the goal of this study is not to make causal claims about the relationship between mental illness and victimization. However, the cross-sectional nature of the SISCF data makes it impossible to ascertain the causal ordering of reported phenomena. Sensitivity analyses address this limitation for prison models by using a restricted definition of mental illness that insured diagnosis prior to incarceration and therefore prior to prison victimization. The same is not true for community victimization because, while this measure guarantees that an inmate was diagnosed while still living in the community, there is no additional information available to discern when an inmate became diagnosed relative to his or her community victimization.

Another limitation of the current study is that the SISCF is comprised of retrospective, self-reported data which introduces the possibility of social desirability and recall biases. Victimization, mental illness and many of the risk factor variables (e.g. homelessness, substance abuse, etc.) used in this analysis are associated with societal stigmas. For example, persons with mental illness tend to be seen as less capable, less intelligent and more dangerous than those without a mental illness. Therefore it is possible that respondents altered their responses to be more desirable. If this is true, it is likely that many of the key variables (including mental health diagnosis and victimization) are under-reported for this sample. It is also possible that inmates serving longer sentences may have trouble with recall for a lot of data relevant to the study (i.e. drug use in the month before incarceration). Although these estimates are not nationally representative (due to sample restrictions), this thesis provides support for the relationship between mental illness and victimization in community and prison settings on a larger geographic scope.

Findings from this thesis provide knowledge about the extent of victimization for a high-risk sample of offenders with and without mental illness. Unlike prior literature, the current study compares the prevalence and correlates of victimization for persons with and without mental illness using the same survey questionnaire rather than relying on general population estimates for comparison. Results from this study improve our understanding of the complex relationship between mental illness and victimization. Findings show that there are key differences between individuals with and without mental illness that contribute to risk of victimization in two distinct environments. Consideration of the risk factors identified here is essential for improving victimization prevention efforts in the community and in prison. Though these findings cannot stand alone to inform policy change or program design, they can inform the identification of at-risk groups who would most greatly benefit from targeted intervention and resource allocation.

Bibliography

- Adams, K. & Fernandino, J. (2008). Managing Mentally Ill Inmates in Prison. *Criminal Justice and Behavior*, 35(8), 913-27.
- Anderson, R. (1996). Homeless violence and the informal rules of street life. *Journal of Social Distress and the Homeless*, 5, 369-380.
- Barrett, L.A. & Schreck, C.J. (2005). Danger on the Streets: Marginality and Victimization Among Homeless People. *American Behavioral Scientist*, 48(8), 1055-1081.
- Baron, R.M. & Kenny, D.A. (1986). The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Baron, R.C., & Salzer, M.S. (2002). Accounting for Unemployment Among People with Mental Illness. *Behavioral Sciences & The Law*, 20(6), 585-99.
- Blitz, C.L., Wolff, N., & Shi, J. (2008). Physical Victimization in Prison: The Role of Mental Illness. *International Journal of Law and Psychiatry*, 31, 385-93.
- Brooks, F. (2017). Foundations of Mental Health and Substance Abuse. In M.P. Bratina (Ed.) *Forensic Mental Health: Framing Integrated Solutions*. New York, NY: Routledge/Taylor & Francis.

- Carr, W.A., Rotter, M., Steinbacher, M., Green, D., Dole, T. Garcia-Mansilla, A., Goldberg, S. & Rosenfeld, B. (2006). Structured Assessment of Correctional Adaptation (SACA): A Measure of the Impact of Incarceration on the Mentally Ill in a Therapeutic Setting. *International Journal of Offender Therapy and Comparative Criminology*, 50(5), 570-81.
- Cene, C.W., Haymore, L.B., Dolan-Soto, D., Lin, F., Pignone, M., DeWalt, D.A., Wu, J...Corbie-Smith, G. (2013). Self-care confidence mediates the relationship between perceived social support and self-care maintenance in adults with heart failure. *Journal of Cardiac Failure*, 19(3), 202-10.
- Clarke, R.V. (1992). Introduction. in R.V. Clarke (eds.) *Situational Crime Prevention: Successful Case Studies*, Albany, NY: Harrow and Heston.
- Clemmer, D. (1940). *The Prison Community*. New Braunfels, TX: Christopher Publishing House.
- Cohen, L. & Felson, M. (1979). Social Change and Crime Rate Trends: A Routine Activities Approach. *American Sociological Review*, 44, 588-608.
- Cole, G.F. & Smith, C.E. (Eds.) (2011). *Criminal Justice in America*. Boston, MA: Cengage Learning.
- Cornish, D.B. and Clarke, R.V. (2003). Opportunities, Precipitators, and Criminal Decisions: A Reply to Wortley's Critique of Situational Crime Prevention. *Crime Prevention Studies*, 16, 41-96.
- Ditton, Paula M. 1999. *Special Report: Mental health treatment of inmates and probationers*. Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics.
- Dunn, E.C., Gilman, S.E., Willett, J.B., Slopen, N.B., & Molnar, B.E. (2012). The Impact of Exposure to Interpersonal Violence on Gender Differences in Adolescent-Onset Major

- Depression: Results from the National Comorbidity Survey Replication (NCS-R).
Depression and Anxiety, 29(5), 392-399.
- Felson, M. (2001). *The Routine Activity Approach: A Very Versatile Theory of Crime*. In R. Paternoster & R. Bachman (Eds.), *Explaining Criminals and Crime: Essays in Contemporary Criminological Theory*, 43-46. Los Angeles, CA: Roxbury Publishing Company.
- Finkelhor, D. & Asdigian, N.L. (1996). Risk Factors for Youth Victimization: Beyond a Lifestyles/Routine Activities Theory Approach. *Violence and Victims*, 11(1), 3-19.
- Fuller, D.A., Orsagh, T., & Raber, D. (1977). *Violence and Victimization within the North Carolina Prison System*. Paper presented at the 1977 Academic of Criminal Justice Sciences Annual Meeting.
- Goodman, L.A., Salyers, M.P., Mueser, K.T., Rosenberg, S.D., Swartz, M., Essock, S.M., Osher, F.C., Butterfield, M.I., & Swanson, J. (2001). Recent Victimization in Women and Men with Severe Mental Illness: Prevalence and Correlates, *Journal of Traumatic Stress*, 14(4), 615-32.
- Hiday, V.A., Swartz, M.S., Swanson, J.W., Borum, R., & Wagner, H.R. (1999). Criminal Victimization of Persons with Severe Mental Illness. *Psychiatric Services*, 50(1), 62-8.
- Human Rights Watch. (2003). *Ill-Equipped: U.S. Prisons and Offenders with Mental Illness*. New York, NY. © 2003 by Human Rights Watch.
- Irwin, J. (1970). *The Felon*. Englewood Cliffs, NJ: Prentice Hall.
- Irwin, J. & Cressey, D.R. (1962). Thieves, Convicts and the Inmate Culture. *Social Problems*, 10(2), 142-55.

- James, D.J. & Glaze, L.E. (2006). Mental Health Problems of Prison and Jail Inmates. *Bureau of Justice Statistics Special Report* (Publication No. NCJ 213600). Washington, DC: U.S. Department of Justice.
- Lu, L. & Nicholson-Crotty, S. (2010). Reassessing the Impact of Hispanic Stereotypes on White Americans' Immigration Preferences. *Social Science Quarterly*, 91(5), 1312-28.
- Manigilio, R. (2008). Severe mental illness and criminal victimization: a systematic review. *Acta Psychiatrica Scandinavica*, 119, 180-91.
- Mumola, C.J. (2007). *Medical Causes of Death in State Prisons, 2001-2004*. Bureau of Justice Statistics Data Brief. U.S. Department of Justice, Office of Justice Programs, Washington, D.C.
- Patterson, E. (2010). Incarcerating Death: Mortality in U.S. State Correctional Facilities, 1985-1998. *Demography*, 47(3), 587-607.
- Perez, D.M., Gover, A.R., Tennyson, K.M., Santos, S.D. (2010). Individual and Institutional Characteristics Related to Inmate Victimization. *International Journal of Offender Therapy and Comparative Criminology*, 54(3), 378-94.
- Poole, E. & Regoli, R. (1980). Race, Institutional Rule-Breaking, and Disciplinary Response: A Study of Discretionary Decision-Making in Prison. *Law and Society*, 14, 931-46.
- Rocheleau, A.M. (2013). An Empirical Exploration of the "Pains of Imprisonment" and the Level of Prison Misconduct and Violence. *Criminal Justice Review*, 00(0), 1-21.
- Ruback, R.B., & Innes, C.A. (1988). The Relevance and Irrelevance of Psychological Research: The Example of Prison Crowding. *American Psychologist*, 43(9), 683-93.

- Salive, M.E., Smith, G.S., & Brewer, T.F. (1990). Death in Prison: Changing Mortality Patterns Among Male Prisoners in Maryland, 1979-87. *American Journal of Public Health, 80*, 1479-1480.
- Sampson, Robert J. and Janet Lauritsen 1994 *Violent victimization and offending: Individual, situational, and community level risk factors*. In Albert J. Reiss and Jeffrey Roth (eds.), *Understanding and Preventing Violence: Social Influences*. Vol. 3. Washington, D.C.: National Academy Press.
- Shields, M.E., Hovdestad, W.E., Pelletier, C., Dykxhoor, J.L., O'Donnell, S.C., & Tonmyr, L. (2016). Childhood Maltreatment as a Risk Factor for Diabetes: Findings from a Population-Based Survey of Canadian Adults. *BMC Public Health, 16*, 879-91.
- Silver, E. (2002). Mental Disorder and Violent Victimization: The Mediating Role of Involvement in Conflicted Social Relationships. *Criminology, 40*, 191-212.
- Silver, E., Arsenaault, L., Langley, J., Caspi, A., & Moffit, T.E. (2005). Mental Disorder and Violent Victimization in a Total Birth Cohort. *American Journal of Public Health, 95*(11).
- Simons, A.M.W., Groffen, D.A.I., & Bosma, H. (2013). Income-related health inequalities: does perceived discrimination matter? *International Journal of Public Health, 58*, 513-20.
- Steadman, Henry J., Osher, Fred C., Robbins, Pamela Clark., Case, Brian and Samuels, Steven. 2009. Prevalence of serious mental illness among jail inmates. *Psychiatric Services, 60*(6), 761-65.
- Sullivan, G., Burnam, A., & Koegel, P. (2000). Pathways to Homelessness Among the Mentally Ill. *Social Psychiatry Psychiatric Epidemiology, 35*, 444-50.
- Sykes, G.M. (1958). *The Society of Captives*. Princeton, NJ: Princeton University Press.

- Teplin, L.A., McClelland, G.M., Abram, K.M., & Weiner, D.A. (2005). Crime Victimization in Adults with Severe Mental Illness: Comparison with the National Crime Victimization Survey. *Arch Gen Psychiatry*, *62*, 911-21.
- Thomas, C.W. (1977). Theoretical Perspectives on Prisonization: A Comparison of the Importation and Deprivation Models. *The Journal of Criminal Law and Criminology*, *68*(1), 135-45.
- Thomas, C.W., Petersen, D.M., & Zingraff, R.M. (1978). Structural and Social Psychological Correlates of Prisonization. *Criminology*, *16*(3), 383-93.
- Toman, E.L. (2017). The Victim-Offender Overlap Behind Bars: Linking Prison Misconduct and Victimization. *Justice Quarterly*, DOI:10.1080/07418825.2017.1402072.
- Wilper, Andrew P. Woolhandler, Steffie., Boyd, Wesley J., Lasser, Karen E., McCormick, Danny M., Bor, David H., and Himmelstein, David U. 2009. The health and health care of U.S. prisoners: Results of a nationwide survey. *American Journal of Public Health*, *99*, 666-672.
- Wolff, N., Blitz, C.L., & Shi, J. (2007a). Rates of Sexual Victimization in Prison for Inmates With and Without Mental Illness. *Psychiatric Services*, *58*(8), 1087-94.
- Wolff, N., Blitz, C.L., Shi, J., Siegel, J. & Bachman, R. (2007b). Physical Violence inside Prisons: Rates of Victimization. *Criminal Justice and Behavior*, *34*(5), 588-99.
- Wolff, N., Shi, J. & Siegel, J. (2009). Understanding Physical Victimization Inside Prisons: Factors that Predict Risk. *Justice Quarterly*, *26*(3), 445-75.
- Wood, S.R., & Buttaro, A. (2013). Co-Occurring Severe Mental Illnesses and Substance Abuse Disorders as Predictors of State Prison Inmate Assaults. *Crime & Delinquency*, *59*(4), 510-35.

- Wooldredge, J.D. (1994). Inmate Crime and Victimization in a Southwestern Correctional Facility. *Journal of Criminal Justice*, 22(4), 367-381.
- Wooldredge, J.D. (1998). Inmate Lifestyles and Opportunities for Victimization. *Journal of Research in Crime and Delinquency*, 35(4), 480-502.
- Wortley, R. (1997). Reconsidering the role of opportunity in situational crime prevention. In: Newman, G.R. and Clarke, R.V. and Shoham, S.G. (eds.) *Rational Choice and Situational Crime Prevention*. (65-81). Aldershot: Ashgate.
- Wortley, R. (2002). *Situational Prison Control: Crime Prevention in Correctional Institutions*. Cambridge, UK: Cambridge University Press.