ABSTRACT

Title of Thesis: GENDER AND SEXUAL MINORITY MENTAL HEALTH AND USE OF CARE IN PRISON

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Non-white and gender and sexual minority (GSM) individuals experience minority stress through stigmatization and marginalization which can lead to higher rates of mental health issues, and limited access to healthcare. Using an intersectionality framework, these mental health issues are compounded for individuals with both GSM and non-white identities. Within the incarceration setting, mental health issues may be exacerbated due to the pains of imprisonment which can lead to frustration and psychological distress, along with differentially adverse experiences for GSM and non-white individuals. This study examines mental health symptoms, diagnoses, and use of care for GSM, non-white, and the intersection of GSM and non-white individuals in correctional facilities using the 2016 Survey of Prison Inmates (N=24,234). In nearly all the analyses GSM individuals and GSM non-white individuals had higher rates of mental health symptoms, diagnoses, and care, and non-white individuals had significantly lower rates of mental health symptoms, diagnoses, and use of care. This may indicate that GSM individuals continue to experience pains of imprisonment despite higher use of mental health care, and that there may be a need for GSM-specific mental health care. Non-white individuals may have lower rates of symptoms and diagnoses due to White-centric frames of evaluation and fear of approaching providers for needed healthcare. It may be useful to develop culturally sensitive evaluation criteria for non-white individuals. This study is the

first of its kind to look at mental health symptoms of GSM individuals in prison in a nationally representative sample.

GENDER AND SEXUAL MINORITY MENTAL HEALTH AND USE OF CARE IN PRISON

by

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Chapter 1: Introduction

Nearly one in five U.S. adults live with a mental illness (National Institute of Mental Health, 2022). The prevalence of mental illness is disproportionately concentrated among non-white and GSM[1] individuals particularly those occupying multiple marginalized identities such as GSM racial minorities (Shangani et al., 2020). Experiences with minority stress stemming from processes of stigmatization and marginalization (Downing & Przedworski, 2018; Meyer, 2003; Sutter & Perrin, 2016) can lead to higher rates of mental health issues (Fingerhut et al., 2021; Tebbe & Moradi, 2016; Staples et al., 2018; Testa et al., 2017) across developmental stages (Downing & Przedworski, 2018; Meyer, 2003; Sutter & Perrin, 2016). Moreover, GSM individuals are more likely to experience stressful life events, such as limited family support, higher rates of criminalization, and victimization that can further diminish their mental health (Fredriksen-Goldsen, 2011).

Despite having higher rates of mental health issues, non-white and GSM individuals have limited access to healthcare. This is, in part, due to healthcare stereotype threat, in which individuals may fear approaching healthcare providers due to stigma against GSM identities (Fingerhut et al., 2021; Fingerhut & Abdou, 2017). For example, sexual minority youth are much more likely to let problems go untreated and are less likely to communicate with healthcare providers (Reisner et al., 2021). This may

[1] GSM stands for gender or sexual minority. Those who are gender minorities identify as something other than their sex assigned at birth. Those who are sexual minorities identify as something other than straight. This paper uses GSM as opposed to LGBTQ+ because the dataset used in the analysis does not have information about additional LGBTQ identities.

disproportionately impact racial and GSM minorities who experience added stigma in the healthcare setting (Gessner et al., 2020). For example, Black sexual minority women are more likely to experience discrimination and bias (Thorpe et al., 2022).

These mental health issues are amplified in the carceral setting. In 1958, Sykes writes about the many carceral setting deprivations, characterized as the "pains of imprisonment" which can lead to frustration and emotional/psychological distress. While Sykes focuses on males in prison, other research indicates that pains of imprisonment can vary based on gender, sexual minority, and race (Crewe et al., 2017; Maycock, 2021; Willingham, 2011; Wood & May, 2003; Harer & Steffenmeier, 1996). For example, women, Black, and trans individuals experience greater (and different) pains of imprisonment which can lend way to mental duress and disproportionately impact their mental health (Crewe et al., 2017; Maycock, 2021; Willingham, 2011; Wood & May, 2003; Harer & Steffenmeier, 1996). GSM individuals are more likely to be punished for "deviant" gender and sexuality expressions (ACLU, 2014) and have high rates of victimization and mental duress (Haney, 2001; Neal & Clements, 2010). Non-white individuals tend to have fewer visitations, and may be more likely to be punished for behavior in prison (Wakefield and Uggen, 2010; Olson, 2016). The modern prison context is also simultaneously characterized by a lack of adequate health care along with over prescription of medication (Douglas et al., 2009; Fearn, 2005; Kilty, 2012; Wilper et al., 2009; Pinnuck, 1998).

Though research has examined the ways in which the pains of imprisonment are gendered or racially stratified, to date this work is limited in examining diverse gender identities, sexual minorities, and how GSM intersects with race. This research aims to fill

this gap by using the Survey of Prison Inmates (2016) to examine how mental health and use of care vary across GSM and non-white individuals in the incarceration setting. I seek to answer the following research questions: (1) How do mental health symptoms vary by GSM and racial identities, and their intersection? (2) How do mental health diagnoses vary by GSM and racial identities, and their intersection? (3) How does use of mental health care in prison vary by GSM and racial identities, and their intersection? The findings reveal that GSM individuals experience the highest rates of mental health symptoms and diagnoses but also report the highest levels of care. Conversely, non-white individuals report statistically lower levels of mental health symptoms, diagnoses, and use of care. Those who are both GSM and non-white, experience significantly higher rates of mental health symptoms and diagnoses, and lower use of care, though to a lesser extent than GSM individuals alone.

Chapter 2: Conceptual Argument

Minority Mental Health in the General Population

Mental health diagnoses are prevalent in adults in the United States, with nearly one in five U.S. adults living with a mental illness, and 1 in 20 experiencing serious mental illness (National Institute of Mental Health, 2022). This is captured in both symptoms and diagnoses (see, for example, Richter et al, 2019; Smith et al., 2019). Mental health symptoms refer to the effects of mental illnesses on an individual (whether diagnosed or undiagnosed). This can include hopelessness, worthlessness, trouble sleeping, mania, etc. Mental health diagnoses refer to official mental illness diagnosis from a professional. This can include bipolar disorder, generalized anxiety, obsessive compulsive disorder, etc. Mental health treatment is also important to look at, and this refers to whether an individual receives mental health treatment (usually in the form of therapy or psychiatry) for a mental health illness.

GSM, Race, & Mental Health: Minority Stress

Racial minorities and GSM individuals tend to experience added stress throughout everyday life, which can impact their mental health. This can be understood through the minority stress framework, which argues that that GSM individuals will experience chronic stress due to stigmatization and marginalization (Downing & Przedworski, 2018; Meyer, 2003; Sutter & Perrin, 2016). While it was originally developed to explain sexual minority health disparities as opposed to racial minority health disparities, research has shown that race can exacerbate experiences of minority stress (Shangani et al., 2020).

GSM individuals experience higher prevalence of mental health issues than the general population (Downing & Przedworski, 2018; Sutter & Perrin, 2016). They have higher rates of self-harm, suicide attempts, depression (Bostwick et al., 2010), anxiety (Cochran et al., 2003), mood disorders (Cochran et al., 2007), substance abuse (Burgard et al., 2005), and post-traumatic stress disorder (PTSD) (Hatzenbuehler et al., 2009). This is due to minority stress (Fingerhut et al. 2021) and greater exposure to risk factors such as traumatic events, limited family support, and high rates of criminalization, institutionalization, discrimination, and victimization (Fredriksen-Goldsen, 2011), which is directly influenced by homophobia, gender stratification (Alden and Parker 2005), and micro-aggressions (Nadal et al. 2016).

Chronic stress due to minority threat manifests through internalized homophobia, stigma, and experiences of violence or discrimination (Herek, 2009; Meyer, 1995, 2020; Meyer & Frost, 2012). This may also be impacted by increased exposure to traumatic events, limited family support, high rates of criminalization, institutionalization, discrimination, and victimization within the GSM community (Fredriksen-Goldsen, 2011). There are many pathways through which minority stress can impact mental health symptoms. These include depression (Tebbe & Moradi, 2016), internalized trans negativity (Staples et al., 2018), rejection, non-affirmation, victimization, internalized transphobia, and negative expectations (Testa et al., 2017).

There is widespread empirical support for minority stress for sexual minorities in the general population (Almeida et al., 2009; D'Augelli & Grossman, 2001; Frost et al., 2015; Herek et al., 1999). Sexual minority individuals are more likely to experience health problems after experiencing external prejudice, even after adjusting for other

general stressful life events (Frost et al., 2015), and those who are part of the LGB community that survive hate crimes, physical attacks, or discrimination have more mental health symptoms for both youth and adults (Almeida et al., 2009; D'Augelli & Grossman, 2001; Herek et al., 1999).

While there has been some pushback and conflicting support for minority stress, these studies have important drawbacks in their analyses. For example, Frost et al. (2015) find mixed support for sexual minorities individuals, and no support in regard to gender. For gender, however, they only compare cis gender men with cis gender women (who are considered to be the gender minority), and do not compare across gender minority subgroups, such as those who are intersex, transgender, or gender non-conforming. Their sample also only consisted of individuals in New York City which may be more accepting of gender and sexual minorities. While many may argue that there is now more widespread social acceptance of GSM statuses and identities, empirical findings do not support this claim (Herek, 2009; Meyer & Frost, 2012).

Access to Healthcare in the General Population

GSM, Race, and Access to Care: Healthcare Stereotype Threat

Racial minorities and GSM individuals may have limited access to healthcare due to healthcare stereotype threat. Healthcare stereotype threat argues that GSM individuals may be less likely to utilize healthcare due to the fear that providers will judge them based on negative group stereotypes around GSM identity (Fingerhut et al., 2021; Fingerhut & Abdou, 2017). This can also be extended to racial minorities (Green et al., 2022; Thorpe et al., 2022; Gessner et al., 2020).

Current studies suggest limited access to healthcare in general for sexual minority individuals (Reisner et al., 2021; Gessner et al., 2020). Reisner et al. (2021) find that sexual minority youth are more likely to have a problem go untreated, less likely to get the medical care they needed, and less likely to communicate with their healthcare provider about health problems among youth in Birmingham, Alabama, Houston, Texas, and Los Angeles County, California. A qualitative study done by Gessner et al. (2020) suggests that sexual minority adults face stigma and erasure in the healthcare setting but also have affirmative care for sexual minority adults in San Francisco, California; New York City, New York; Austin, Texas; and Tucson, Arizona. Research also suggests that healthcare providers themselves hold strong implicit subconscious biases and prevalent, but weaker explicit conscious biases around negative stereotypes for their sexual minority patients (Sabin et al., 2015). This discrimination may create a vicious cycle that further exacerbates the mental and physical health problems for which GSM individuals originally went to the provider (Fingerhut et al., 2021; Fingerhut & Abdou, 2017). Considering the high rates of mental health symptoms in GSM individuals, it is important to examine whether they have access to and are utilizing healthcare resources.

The Intersection of GSM and Race for Mental Health and Access to Care

Mental health symptoms, diagnoses, and treatment are disproportionately concentrated across individuals occupying multiple marginalized identities (See, for example, Shangani et al., 2020; Cerezo et al., 2020; Thorpe et al., 2022). This can be understood using an intersectionality framework. Intersectionality is the idea that those who are part of multiple marginalized identities will experience compounded discrimination (Crenshaw, 1989; Zambrana & Dill, 2009). The most common form of

intersectional research looks at race, sex, and social class. An individual who is part of two minority groups, such as being Black and a cisgender woman, will experience compounded discrimination as opposed to an individual who is white and a cisgender woman or a Black and a cisgender man. Additionally, social class plays an important role in intersectional research due to the capitalistic nature of our society and its connection with race and gender (Belkhir & Barnett, 2001).

Intersectionality, however, is not limited to race, sex, and social class alone. GSM status also needs to be considered, because historically there has been gendered, sexualized, and racialized profiling of queer people of color by law enforcement. This is "a direct result of centuries of dehumanizing and criminalizing queerness" (Buist and Lenning, 2016, p. 30). Transgender individuals are disproportionately incarcerated compared to their cis gender counterparts (National Center for Transgender Equity, 2015). There has been an increase in the criminalization of Black LGBTQIA+ women, who occupy multiple intersecting marginal identities (Ritchie, 2012).

Using an intersectionality lens, minority stress may also act differently for racial minorities. Because of the intersection between race and GSM status, non-white individuals who are part of the GSM community may experience higher levels of stigma, which can increase minority stress (Shangani et al., 2020). For sexual minority Latinx and African American women, loss of racial and ethnic communities along with chronic stress increased alcohol abuse (Cerezo et al., 2020). Black sexual minority women in particular, have higher self-reported mental health symptoms (Calabrese et al., 2015). For Asian American GSM individuals, minority stress accounts for part of their psychological distress, with the rest being caused by race-related relationship problems and

heterosexism as the prevailing social norm in Asian American communities (Szymanski & Sung, 2010).

Much less is understood about the intersection between race and GSM status when it comes to healthcare stereotype threat. For example, Black sexual minority women experience healthcare discrimination and provider bias, and as such, may be more likely to experience healthcare stereotype threat (Thorpe et al., 2022). Additionally, a qualitative study shows that individuals who are GSM and non-white report feeling intersectional stigma in the healthcare setting and experiencing healthcare stereotype threat (Gessner et al., 2020). Additionally, GSM Black and Latinx individuals are less likely to have health insurance and a primary care provider (Green et al., 2022)

Mental Health and the Incarceration Environment

Pains of Imprisonment

Individuals in prison experience physical brutality, neglect, and the psychological pains of imprisonment (Fleury-Steiner & Longazel, 2013; Crewe, 2011). Pains of imprisonment, as coined by Sykes (1958) refers to the deprivations and frustrations that characterize prison life. These include the deprivations of liberty, goods and services, heterosexual relationships, autonomy, and security. As Sykes (1958) argues, "we must recognize the fact that [deprivations and frustrations of the modern prison] can be just as painful as the physical maltreatment which they have replaced" (p. 512). Overall, deprivations in prison lead to emotional and psychological pains.

When in prison, individuals face a loss of liberty. They are subject to structured routines, military like environments and demands, and small cells. When in prison, they also often lose relationships to the outside world and their support system. In addition to

the prison environment, society stigmatizes and rejects those in prison and strips them of their citizenship. Together, this leads to the degradation of those in prison, and emotional pains of the incarceration environment (Sykes, 1958).

Those in prison also face deprivation of goods and services. While they have necessities, they lack amenities. For example, everyone in prison wears the same uniforms, has the same homemade furniture, and overall faces material impoverishment. They also have a mundane prison environment and are often used for underpaid prison labor. Because economic possessions are linked to worth in our society, this impoverishment can be an attack on one's self image, and lead to mental duress (Sykes, 1958).

Sykes (1958) also talks about prison as a place where there is deprivation of heterosexual relationships (specifically for the male prison population). Those in prison are not allowed to see their heterosexual partners and often face involuntary celibacy. Sykes (1958) argues that sexual frustrations can lead to "habitual homosexuals" who are forced into homosexuality to relieve frustrations, which then leads to guilt and being "shut off from the world of women" which "gives the male world much of its meaning (p. 516)." While deprivation of heterosexual relationships is not relevant to sexual minority individuals who are the focus of this paper, it does speak to the way that homosexual relationships are viewed as a threat to masculinity, and how they are used to "other" sexual minority individuals.

Those in prison face a loss of autonomy. There is a strict regime which they must follow an intensive monitoring and scheduling practices. Additionally, the prison rules often don't make sense to those in prison, and power is total and imposed. Sykes (1958)

refers to this as the "principle of bureaucratic indifference," which refers to the ways in which those at the bottom of the power structure often see things as important, but by the time it makes it to those in power, the requests are seen as not important. When individuals in prison have needs that are not met, it can lead to riots. The psychological implications of this are that those in prison can internalize feelings of being weak and helpless and feel treated as children rather than adults. This can also lead to public humiliation, and with authoritarian regimes and decision-making, this can lead to feelings of helplessness.

Lastly, those in prison also face deprivation of security. They are often housed with individuals who have aggressive and violent behavior who are willing to commit crimes in prison. There is also a culture where those in prison get "tested" by others in prison, so they need to be mentally and physically prepared to fight for their own safety. This can cause stress and fear for one's safety (Sykes, 1958).

Contemporary Conditions of Confinement: Gender, Race, and LGBTQIA+ Identities

In contemporary literature, there continues to be concerns with the pains of imprisonment that individuals in prison face. Individuals in prison who feel bored, have conflict with prison staff, and are concerned for their safety are more likely to engage in misconduct in prisons and experience pains of imprisonment. Additionally, while it is negatively related with prison misconduct, individuals in prison also face additional hardships, such as overcrowding, future concerns, and past regrets (Rocheleau, 2013). Additionally, contemporary pains related to overcrowding in prisons can exacerbate mental health related to physical and sexual abuse along with depressive symptoms (Edgemon, 2022).

Sykes' theory is originally based only on males in prison with little attention to any sort of gender, racial, or LGBTQIA+ diversity. Since then, researchers have expanded the pains of imprisonment framework to examine how pains are experienced by individuals of these different groups. While individuals in prison face seemingly identical prison structures, the prison environment reproduces structural inequalities of the outside world. For example, Harer & Steffenmeier (1996) find that Black individuals in prison have significantly higher rates of violent behavior, but lower rates of alcohol and drug misuse than white individuals, which mirrors what is seen outside the prison setting.

Cisgender women in prison may face different pains than cisgender men. For example, cis-gender women in prison in England and Wales report having more painful prison experiences than cisgender men, and often feel abandoned by loved ones and family, a loss of power, control, and autonomy, reduced mental well-being, and a loss of trust, privacy, and intimacy (Crewe et al., 2017). In women's prisons, staff are concerned with issues related to mothering skills, sexual practices, and dependency on men and the state, while in men's prisons, unruliness is linked with violence (McCorkel, 2013). Cis-gender women in this prison site also were called derogatory names by prison staff, and were subject to Project Habilitate Women, which took away their self-worth and sense of self.

Further looking at diversity in gender and LGBTQIA+ identities, Maycock (2021) finds that transgender men and women in Scotland experience imprisonment pains, such as transphobia, isolation, and lack of community. In some prisons, transgender individuals are punished on a daily basis due to differing gender expressions and face more time in administrative segregation and solitary confinement (Borchert, 2017). There

is also a recriminalization of gay identities in prison settings with the regulation of same-sex relationships, and systematic mistreatment of LGBTQIA+ individuals. These individuals face sexual and identity harassment not only from individuals in prison, but also from prison staff (Borchert, 2017).

Men and women's prisons both face a decline in rehabilitative ideals, punitive and coercive controls, and a shift in the racial demographic of the prison population (McCorkel, 2013). Despite these changes in racial compositions, the pains of imprisonment framework as not been directly applied directly to race. There are studies, however, that find that race may play a role in differential prison experiences. While the pains of imprisonment framework has not been applied directly to race, other studies have found that race may also play a role in differential prison experiences (Willingham, 2011; Wood & May, 2003; Harer & Steffenmeier, 1996). Black individuals in prison have significantly lower rates of alcohol and drug misuse, but higher rates of violent behavior than white individuals in prison (Harer & Steffenmeier, 1996). Additionally, Black women in particular experience higher rates of sexual assault (usually by male prison guards) and are more likely to be locked in solitary confinement (Willingham, 2011).

Mental Health in Prison

Those with mental illnesses are disproportionately represented in the incarceration setting, which may be due to the deinstitutionalization of mental health facilities which has caused the criminal justice system to be the point of contact for those with severe mental health issues (Lamb and Weinberger, 2005). Once incarcerated, those with mental health illnesses experience the "pains of imprisonment" which includes the depravations

of liberty, goods and services, heterosexual relationships, autonomy, and security in prison (Sykes, 1958). Other scholars have expanded this to include the pains of containment, coercion, isolation, and brutality (Fleury-Steiner & Longazel, 2013) along with the abuse of power in prison systems in response to increased tough on crime policies and punitiveness in the prison setting (Crewe, 2011). Those with mental health illnesses also experience higher rates of victimization (Blitz et al., 2008; James & Glaze, 2006), which can further exacerbate mental health symptoms (Wolff et al., 2007).

Deinstitutionalization also limited the availability of long-term mental health care and led to the development of community-based treatments which are less effective for a significant portion of those with severe mental health illnesses (Lamb and Weinberger, 2005). Because of the high rates of mental health illnesses, courts mandated that prisons needed to provide access to adequate health care in prisons (Scott-Hayward, 2009). Prisons, however, continue to have limited access to care (Schnittker et al. 2015). Reingle and Connell (2014) find that over half of those who had medications for mental illness at the time of incarceration were not receiving pharmacotherapy in prison, that 36% of those with mental health conditions used counseling services, and that 21% of those with mental health conditions used self-help groups. Availability of mental health resources in prison is dependent upon resource availability, public support, and correctional management decisions (Scott-Hayward, 2009). Medication can also be sporadic and not routinely given in prisons (Bowen et al., 2009).

Conflicting research, however, indicates that prisons offer more healthcare than would otherwise be available. For example, prison can often be a place where individuals have access to healthcare for the first time (Douglas et al., 2009; Fearn, 2005). Prisons

may also offer increased access to prescription medications, however, this may be due to the over prescription of medications in prisons in the United States, Canada, and Australia (Kilty, 2012; Wilper et al., 2009; Pinnuck, 1998). Therefore, for some individuals, prisons may offer increased access to healthcare.

GSM, Race, and the Prison Environment

Prison conditions reflect the inequalities of the social world for GSM and non-white individuals. Because GSM individuals experience uniquely harsh conditions of confinement, high rates of mental health challenges, and limited access to care (Downing & Przedworski, 2018; Sutter & Perrin, 2016; Cochran et al., 2003; Burgard et al., 2005; Hatzenbuehler et al., 2009), rates of mental health symptoms and diagnoses, and limited use of care may be exacerbated in the incarceration setting.

Overall, GSM individuals in prison have higher rates of anxiety and stress (Haney, 2001) and PTSD (Neal & Clements, 2010). The structural heteronormativity in prison makes it particularly difficult for GSM individuals, who face discrimination and tend to be punished for "deviant" sexuality or gender expressions (ACLU, 2014). Past research has also shown that despite these high rates of victimization and mental health issues, GSM individuals lack necessary medical care and medication (National Center for Transgender Equity, 2015).

Similarly, non-white populations tend to have higher rates of mental health issues and less access to care in the non-prison world (Shangani et al., 2020; Cerezo et al., 2020; Calabrese et al., 2015; Szymanski & Sung, 2010), which may be replicated in the incarceration setting. For example, when looking at white versus Black populations, white individuals are more likely to have visitation (Wakefield and Uggen, 2010), and

seek mental health treatment (Gary 2005, Armstrong et al., 2007). Additionally, while in prison, Black individuals are more likely to be placed in solitary confinement despite having similar rates of violent behavior across Black, Hispanic, and white racial groups (Olson, 2016). This can increase the pains of imprisonment, and negatively affect mental health. Porter et al. (2021) directly look at mental health of Black versus white respondents in regard to time served in prison, and find that more time served is better for white males' mental health but worse for Black males' mental health. They also find that there are no differences in the presence of mental health symptoms between groups. Porter et al.'s (2021) study, however, did not look at the differences across other races or GSM individuals.

Current Research

I examine mental health symptoms, diagnoses, and use of care in prison across GSM and race. My research questions are: (1) How do mental health symptoms vary by GSM and racial identities? (2) How do mental health diagnoses vary by GSM and racial identities? (3) How does use of mental health care in prison vary by GSM and racial identities?

Hypotheses

Considering that the GSM population has higher rates of mental health symptoms and diagnoses than the general population (Downing & Przedworski, 2018; Sutter & Perrin, 2016), and experiences high rates of victimization and discrimination in prison (ACLU, 2014; Neal & Clements, 2010), I predict: (**H1a**) GSM individuals will have more symptoms than non-GSM individuals in prison. Considering that non-white individuals have higher rates of mental health issues in the general population (CITE), I

predict that (**H1b**) Non-white individuals will have more symptoms than white individuals. Using an intersectionality framework, I predict that (**H1c**) Non-white GSM individuals will have more symptoms than their counterparts.

I predict that: (**H2a**) GSM individuals will have more diagnoses than non-GSM individuals in prison. Considering that racial minorities have higher rates of mental health issues both in and outside of the incarceration setting (CITE), I predict that (**H2b**) Non-white individuals will have more diagnoses that white individuals in prison. Using the intersectionality framework, I predict that (**H2c**) Non-white GSM individuals will have more diagnoses than their counterparts.

Prior research offers conflicting evidence on whether prisons lend way to more or less access to care, with some studies arguing that there is limited access (Bowen et al., 2009; Reingle & Connell, 2014), and others arguing that there may be increased access (Douglas et al, 2009; Fearn, 2005; Kilty, 2012, Wilper et al., 2009; Pinnuck, 1998). However, given that research finds lower access to care among GSM and racial minorities (Fingerhut et al., 2021; Fingerhut & Abdou, 2017; Gessner et al., 2020; Thorpe et al., 2022), I argue that GSM and racial minority groups will be less likely to use mental health care in prison. Considering that GSM individuals are more likely to avoid going to healthcare providers due to their minority status (Fingerhut et al., 2021; Fingerhut & Abdou, 2017), I predict that: (**H3a**) GSM individuals will be less likely to have use mental health care as compared to non-GSM individuals. Considering that racial minorities are also less likely to approach healthcare providers due to healthcare stereotype threat, and that racial minority health concerns are often not taken seriously (Thorpe et al., 2022; Gessner et al., 2020), (**H3b**) I predict that: non-white individuals

will be less likely to have use mental health care as compared to white individuals. Using the intersectionality framework, I predict that (**H3c**) non-white GSM individuals will have less use of care than their counterparts.

Chapter 3: Data, Measures, and Methods

Data Source

This study uses the 2016 Survey of Prison Inmates (SPI). This is a nationally representative data sample of those who are over the age of 18 that are incarcerated in state and federal correctional facilities. Data were collected by Research Triangle Institute International under the Bureau of Justice Statistics. All information was self-identified by the respondents and was not linked to administrative records. Interviews were conducted in person, in both Spanish and English, and were 50 minutes on average using computer-assisted personal interviewing (CAPI). Interviewers asked the questions aloud and inputted the answers into the computer, where CAPI automatically implemented skip patterns.

The sample was drawn from the 2,001 state, federal, and private prison facilities that house over 1.5 million people in prison. Of those in prison, 1.4 million were housed in male facilities and 102 thousand were housed in female facilities. The SPI identified these prisons using the BJS 2012 Census of State and Federal Adult Correctional Facilities and supplemental information for facilities built 2012 onward. They did a two-stage sampling design: Initially they took a random sample of the prisons (response rate: 98.4%), and then took a random sample of individuals within these prisons (response rate: 70%). In 2016, more than 24,000 individuals completed the survey (N=24,234).

Measures

Dependent Variables

To measure *mental health symptoms,* the SPI asks how often the respondent felt nervous, hopeless, restless, depressed, worthless, and like everything was an effort in the last 30 days with options ranging from none (coded as 1) to all the time (coded as 5). This variable is summed across questions to get an idea of the holistic impact of mental health symptoms (see Diaz et al., 2001; Fulginiti et al., 2021; Melchior et al., 1993). Because these scores range from 6 to 30, I subtract 6 from each respondent's summed symptom score (See Figure 1). The new scores range from 0, which indicates feeling symptoms none of the time (N= 3,626; 14.90%), to 24, which indicates feeling all symptoms all of the time (N= 106; 0.44%). In the whole sample, the average symptom sum is 6.25 (N = 24,337, SD = 5.37).

Mental health diagnoses are self-reported and include if the respondent has ever been diagnosed with bipolar, depression, schizophrenia, PTSD, anxiety, borderline personality disorder, or other and are measured in two different ways. Firstly, whether an individual has *at least one mental health diagnosis* is measured as a binary (based on past research such as Porter et al., 2021). In the full sample, 10,876 individuals (44.69%) report having been diagnosed with at least one mental illness. I also look at the *number of diagnoses*, because the more diagnoses one has, the more it impacts life outcomes (Gibb et al., 2010). In this case, response options for each item are summed (See Figure 2). This ranged from no diagnoses (0) (55.31%; N = 13,461) to all diagnoses (7) (0.12%; N = 28), with an average of 1.17 diagnoses (N=24,337; SD = 1.62).

Use of mental health care while incarcerated[2] measures whether the respondent ever used medications or professional help. Prescription medication is measured as: "Since you were admitted to prison, have you taken prescription medicine for any problem you were having with your emotions, nerves, or mental health?" with the options of yes, no, and don't know. This is coded as use of medication = 1 (N=6,831; 28.07%, SD = 0.45) and no use of medication = 0 (N=17,506; 71.93%). Respondents who indicated that they didn't know were coded as missing (N=289). Professional help is measured as: "Since you were admitted to prison, have you received counseling, treatment, or therapy from a mental health professional such as a psychiatrist, psychologist, social worker, or nurse for any problem you were having with your emotions, nerves, or mental health?" With the options of yes, no, and don't know. Professional help while incarcerated is coded as 1 (N=6,674; 27.42%; SD = 0.45) and no professional help while incarcerated is coded as 0 (N=17,663; 72.58%). Respondents who indicated that they didn't know were coded as missing (N = 375). I combine these measures to be a binary 0 = use of care (N = 15,804; 64.94%, SD = 0.48) and 1 if a respondent used at least one form of mental health care (N= 8,533; 35.06%).[3]

[2] Past research has used the term "access to mental health care," however I use the term "use of mental health care" instead. Using this data, I am only able to determine whether an individual used the healthcare provided to them, and therefore the analysis will not account for individuals who attempted to use healthcare but were denied.

[3] While I recognize that by looking at use of healthcare among all of those in prison, as opposed to only those with diagnoses we are measuring use care as opposed to access to care, previous studies do not select based on diagnoses (See Daquin et al. 2018 and Drapalski et al. 2009).

Independent Variables

The independent variables include GSM status and race. GSM status was identified by the respondent in following questions in the SPI: Sexual orientation is asked as: “Which of the following best represents how you think of yourself?” with the options of don’t know, lesbian or gay, straight (that is not lesbian or gay), bisexual, or something else. Sex identity is asked as: “How do you describe yourself?” with the options of male, female, transgender, or do not identify as male, female or transgender. The SPI also includes information about sex assigned at birth, which is asked as: “What sex were you assigned at birth, on your original birth certificate?” with the options of male, female, and don't know.

For *GSM*, I code respondents as 1 if they indicate being trans, gender non-conforming, lesbian, gay, bisexual, or queer (N=1,990; 8.07%), and 0 if they indicate being straight and not transgender (N=22,679; 91.93%). Individuals who indicated that they did not know were coded as missing (N=177). For trans individuals, additional information is taken from the self-described sex identity and self-reported sex assigned at birth questions. To account for trans respondents who describe themselves as male or female in the sex identity question (as opposed to transgender), I create a new variable that categorizes those who chose transgender as their self-described sex identity (N= 31) along with those who indicate a different self-described sex identity from their self-reported sex assigned at birth (N= 41). These respondents are included in the GSM category.

Non-white is identified in the SPI with the following survey questions: “Which of these categories best describes your race? You may answer yes to one or more of these categories,” with individual questions for white, Black or African-American, American

Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander and anything else. I code respondents as 1 if they indicate being non-white (N = 12,594; 51.83%) and 0 if they indicate being white (N = 11,704; 48.17%).

For *GSM non-white* individuals, I create an interaction term where I multiply the non-white and GSM variables to get a set of the sample that is both GSM and non-white. GSM non-white individuals made up 3.05% of the sample (N = 742) (See Table 2). Respondents were coded as missing (N= 550) if they refused to answer the racial category question or if they indicated "don't know" in the GSM question.

Respondent answers were also coded as "missing" if they did not respond to all of the survey questions regarding the independent and dependent variables of interest (i.e., if a respondent provided a racial category, but not GSM, they were coded as missing; if a respondent provided a rating for mental health symptoms, but not diagnoses, they were coded as missing; etc.). This is to ensure that the same sample group is being used across analyses. The final analytic sample is comprised of 22,114 individuals.[4]

Controls

I control for *length of time in prison*, and the following pre-incarceration characteristics: *homelessness*, *foster care*, and *health insurance* (See Table 1). I control for length of time in prison because it can impact mental health (see Porter et al., 2021). Pre-incarceration characteristics that can increase the level of mental health symptoms and number of diagnoses include if the respondent was homelessness or housing insecure (Perry & Craig, 2015), was part of a foster home before age 18 (Kerker & Dore, 2006),

[4] For descriptive statistics see Table 1. For the breakdown of the independent variables by group, see Table 2.

and had healthcare (Johnson, 2006). GSM individuals are also more likely to be housing insecure and part of foster homes and are less likely to have healthcare (Center for Substance Abuse Treatment, 2012; Fingerhut et al., 2021; Hunt & Moodie-Mills, 2012).

I also run a separate set of analyses controlling for *substance use* and *drug/alcohol treatment*. This is because prior literature finds that substance use and drug treatment are correlated with mental health (Bradizza et al., 2006). I measured substance use as 1 if the respondent indicated that during the 12 months before admission to prison, (1) there was a month or more that they spent a lot of their time getting or using drugs, or (2) the respondent indicated that they drank alcohol 6 or more days during the 12 months before admission to prison. Drug/alcohol treatment is measured as 1 if the respondent indicates that since admission to prison, they have received any treatment or counseling from an alcohol or drug detoxification unit where they spent up to 72 hours to dry out, or if the respondent indicates that since their admission to prison, they received any treatment or counseling from an alcohol or drug program in which they lived in a special treatment unit / facility (N= 1,732; 6.97%). If the respondent said no to both questions, they were coded as 0 (N= 23,114; 93.03%). Individuals who skipped the question because it did not pertain to them were coded as 0 (N = 22,226), and individuals who refused to answer the question or indicated that they did not know were coded as missing (N=2).

Analytic Strategy

The goal of this study is to examine differences in mental health symptoms and diagnoses and use of care for those who are GSM in the prison setting. To do so, I run

analyses informed by the SPI questions about when the respondent had mental health symptoms, diagnoses, and use of care.

Because the mental health symptom score is a count, the first analysis uses a negative binomial regression to examine if there are differences in mental health symptoms between GSM and non-GSM individuals, non-white and white individual, and non-white GSM individuals and their counterparts. While mental health symptoms are measured as a summed Likert scale, after running a preliminary diagnostic, they follow a Poisson distribution (See Figure 1). Because there is significant overdispersion (Pearson goodness-of-fit = 97350.29; $p < 0.001$), the negative binomial model is preferred to the Poisson regression model. Incident rate ratio are used to compare the differences between the groups.

The second set of analyses looks at mental health diagnoses. I initially run a binomial logistic regression model to examine the binomial count of whether there are differences in having at least one mental health diagnosis compared to having none. I also run this as an odds ratio to better understand differences between groups. Additionally, I run a negative binomial regression for the count variable of number of diagnoses to examine if there are differences in the number of diagnoses between GSM and non-GSM individuals, non-white and white individual, and non-white GSM individuals and their counterparts. A negative binomial regression is preferred to a Poisson because there is significant overdispersion (Pearson goodness-of-fit = 45687.3; $p < 0.001$). This is also run as an incident rate ratio to better understand and compare the differences between the groups.

The third analysis uses a binomial logistic regression to examine if there are differences in any use of mental health care for GSM, non-white, and non-white GSM individuals because use of mental health care is measured as a binary variable. I also run this as an odds ratio to compare differences between groups.

The last analysis uses a comparison of means to examine difference in mental health symptoms, diagnoses, and use of care across racial subgroups and by GSM status.

Chapter 4: Results

Mental Health Symptoms

GSM individuals are more likely to have symptoms (λ= 0.21; SE = 0.03; $p < 0.001$) followed by GSM non-white individuals (λ = 0.11; SE = 0.05; p = 0.02), while non-white individuals are less likely to have symptoms (λ = -0.08; SE = 0.01; $p < 0.001$) (See Table 3 and Figure 3). When run as incident rate ratios, GSM individuals are expected to have a mental health symptom score that is 1.23 times greater than non-GSM respondents, holding the other variables constant ($p<0.001$). Respondents who are GSM and non-white are expected to have a mental health symptom score that is 1.11 times greater than non-GSM respondents, holding the other variables constant (p = 0.02). Respondents who are non-white are expected to have a mental health symptom score that is .92 times lesser than white respondents, holding the other variables constant ($p<0.001$) (See Table 3 and Figure 3).

When controlling for substance use and drug/alcohol treatment, there is still a significant difference between symptoms scores for GSM versus non-GSM individuals (λ= 0.21; SE = 0.03; $p < 0.001$) and non-white versus white individuals (λ= -0.06; SE = .01, $p < 0.001$), but not GSM and non-white versus their counterparts (λ= 0.07; SE = .05, p = 0.18) (See Table 4). When run as incident rate ratios, findings show that GSM individuals are 1.24 times more likely to have mental health symptoms, and non-white individuals are 0.94 times as likely to have mental health symptoms (See Table 4).

Mental Health Diagnoses

Using the logistic regression, GSM individuals are more likely to have at least one mental health diagnosis ($\beta = 1.16$, SE = 0.08, $p < 0.001$). Non-white individuals are less likely to have at least one mental health diagnosis ($\beta = -0.88$, SE = 0.03, $p < 0.001$). The interaction between non-white and GSM was not statistically significant ($\beta = 0.21$, SE = 0.12, $p = 0.075$) (See Table 5 and Figure 4). When looking at the odds ratio, GSM individuals are 3.20 times more likely to have a diagnosis than non-GSM individuals ($p < 0.001$), and non-white individuals are 0.42 times as likely to have a diagnosis than white individuals ($p < 0.001$) (See Table 5 and Figure 4).

When looking at the total number of diagnoses, negative binomial is preferred to Poisson because there is significant over dispersion (G^2=42,023.73; $p < 0.001$). Using the negative binomial regression, GSM individuals are more likely to have more diagnoses ($\lambda = 0.51$, SE = 0.4, $p < 0.001$), followed by non-white GSM individuals ($\lambda = 0.31$, SE = 0.07, $p < 0.001$). Non-white individuals are less likely to have mental health diagnoses ($\lambda = -0.54$, SE = 0.02, $p < 0.001$) (See Table 6 and Figure 5). When run as incident rate ratios, GSM individuals have 1.67 times more diagnoses than non-GSM individuals ($p < 0.001$), non-white GSM individuals have 1.36 times more diagnoses than non-GSM white individuals ($p < 0.001$), and non-white individuals have 0.58 times less diagnoses than white individuals ($p < 0.001$) (See Table 6 and Figure 5).

When controlling for substance use and drug/alcohol treatment, there continues to be a significant difference between diagnoses for GSM versus non-GSM individuals ($\lambda = 0.52$, SE = 0.04, $p < 0.001$), GSM and non-white individuals versus their counterparts ($\lambda = 0.29$, SE = 0.07, $p < 0.001$), and non-white versus white individuals ($\lambda = -0.52$, SE = 0.02, $p < 0.001$) (See Table 7). When run as incident rate ratios, controlling for substance

use and drug treatment, GSM individuals have 1.68 times more diagnoses than non-GSM individuals, non-white GSM individuals have 1.24 times more diagnoses than their counterparts, and non-white individuals have 0.59 times less diagnoses than white individuals (See Table 7).

Use of Care in Prison

GSM individuals are the most likely to use mental health care ($\beta = 1.06$, SE = 0.07; $p<0.001$), followed by non-white GSM individuals ($\beta = 0.29$, SE = 0.03, $p<0.001$). Non-white individuals were less likely to use mental health care ($\beta = -0.67$; SE = 0.11; $p = 0.001$). When looking at the odds ratio, respondents who are GSM are 2.89 times more likely to use mental health care in prison ($p < 0.001$), respondents who are GSM and non-white are 1.34 times more likely to use mental health care in prison ($p < 0.001$), and respondents who are non-white are .51 times as likely to use mental health care in prison ($p = 0.006$) (See Table 8 and Figure 6). Because prior research suggests that some GSM and racial minority groups may receive overmedication as a means of control (Kilty, 2012; Wilper et al., 2009; Pinnuck, 1998), I disaggregate the outcome by prescription and counseling, however, results remain the same (See Tables 9 and 10).

Because use of mental health care may be influenced by mental health symptoms and diagnoses, I also run the analysis while controlling for these. When doing so, I find that GSM individuals continue to be more likely to use mental health care ($\beta = 0.64$, SE = 0.08, $p<0.001$) and non-white individuals are less likely to use mental health care ($\beta = -.28$ SE = 0.04, $p<0.001$) (See Table 10). The analysis for non-white GSM individuals was not statistically significant ($\beta = .16$ SE = 0.13, $p = 0.235$). When looking at these as odds

ratios, I find that GSM individuals are 1.90 times more likely to use mental health care than non-GSM individuals and non-white individuals are 0.75 times as likely to use mental health care compared to white individuals (See Table 10).

When controlling for substance use and drug/alcohol treatment along with diagnoses and symptom scores, there is a significant difference in use of care for GSM versus non-GSM individuals ($\beta = 0.65$, SE = 0.08, $p < 0.001$), and non-white versus white individuals ($\beta = -0.27$, SE = 0.04, $p < 0.001$), but not for GSM and non-white individuals versus their counterparts ($\beta = 0.14$, SE = 0.13, $p = 1.02$), (See Table 11).

Exploratory Sub-Group Descriptive Analyses

This study also includes descriptive statistics of means by racial subgroups and GSM status (see Table 1). When look at mental health symptoms, GSM individuals have significantly higher rates of mental health symptoms across all racial subgroups except Non-Hispanic Asian/Pacific Islander. When looking across racial subgroups alone, non-Hispanic Native American individuals have significantly higher mental health symptoms than all groups except non-Hispanic other, and Hispanic individuals have significantly lower mental health symptoms than all other subgroups. When looking at mental health diagnoses, GSM individuals have significantly higher rates of mental health diagnoses across all racial subgroups. When looking across racial subgroups alone, non-Hispanic Black and Hispanic individuals have the lowest rates of mental health diagnoses, and Non-Hispanic Native American individuals have the highest rates of mental health diagnoses. Lastly, when looking at mental health use of care, GSM individuals have significantly higher rates of use of mental health care across all racial subgroups. Non-Hispanic Native American individuals have highest rates of use of care, and Hispanic

individuals have the lowest rates of use of mental health care. Additionally, when looking at substance use, GSM individuals (t = 0.09, SE = 0.01) are significantly more likely to use substances than non-GSM individuals (t = 0.07, SE = 0.006), and non-white individuals (t = 0.10, SE = 0.003) are significantly less likely to use substances than white individuals (t = 0.05, SE = 0.002).

Chapter 5: Discussion

This study is exploratory, and examines GSM, non-white, and the intersection of GSM and non-white mental health diagnoses, symptoms, and use of care in the incarceration setting. Past research suggests that GSM and non-white individuals have higher rates of mental health issues (Fingerhut et al., 2021; Tebbe & Moradi, 2016; Staples et al., 2018; Testa et al., 2017), lower access to mental health care in the general population (Fingerhut et al., 2021; Fingerhut & Abdou, 2017; Gessner et al., 2020; Reisner et al., 2021; Thorpe et al., 2022), and uniquely adverse incarceration experiences (Crewe et al., 2017; Maycock, 2021; Willingham, 2011; Wood & May, 2003; Harer & Steffenmeier, 1996). As such, I hypothesize that mental health issues and limited access to care would be exacerbated for GSM and non-white individuals in the incarceration setting.

I find support for the hypothesis that GSM individuals have higher rates of mental health symptoms, diagnoses, and care in the incarceration setting. While I am unable to examine the mechanisms that produce this, prior research suggests that high rates of mental health symptoms may be due to high rates of stress and mental health symptoms in the general population that are reflected in the prison setting (Downing & Przedworski, 2018; Meyer, 2003; Shangani et al., 2020; Sutter & Perrin, 2016). This may also be exacerbated or impacted by the strains of imprisonment of the incarceration setting (Crewe et al., 2017; Maycock, 2021; Sykes, 1958). High rates of mental health diagnoses may reflect the high rates of mental health diagnoses for GSM individuals in the general population (Tebbe & Moradi, 2016). GSM individuals may also have higher rates of mental health diagnoses, because trans individuals may be diagnosed with gender identity

disorder (GID) which may inflate their total number of diagnoses (Bradly & Zucker, 1997).

Prior research suggests that GSM individuals have less access to care in the general population (Fingerhut et al., 2021; Fingerhut & Abdou, 2017, Reisner et al., 2021), yet in this analysis, GSM individuals have significantly higher use of mental health care in the incarceration setting, even when controlling for mental health symptoms and diagnoses. This may potentially indicate a GSM subculture in which GSM individuals are more likely to seek out mental health care, at least in the prison setting. Future research should seek to explore this possibility.

Non-white individuals have significantly lower mental health symptoms, diagnoses, and use of care compared to white individuals. Mental health symptoms and diagnoses may reflect white-centric view of mental health and use white-centered language (SenGupta et al., 2004). This may underestimate the true mental health symptoms and diagnoses of non-white individuals. Similarly, low rates of diagnoses may be due to healthcare stereotype threat and fear of approaching healthcare providers for needed mental health care (Gessner et al., 2020; Thorpe et al., 2022). Low rates of use of mental health care may be due to these lower rates of mental health symptoms and diagnoses, however, these findings held true even when controlling for this. Low rates of mental health care may also be due to healthcare stereotype threat, the historic discrimination of non-white individuals in the healthcare setting (Gessner et al., 2020; Green et al., 2022; Thorpe et al., 2022), and the need for better cultural competence in the healthcare setting (Copeland & Butler, 2007; Primm et al., 2005).

Non-white GSM individuals have statistically significantly higher rates of mental health symptoms, diagnoses[5], and use of care, however this is lower than GSM individuals alone and higher than non-white individuals alone. It is interesting that non-white GSM individuals, despite being in the racial group that has significantly lower rates of mental health symptoms, diagnoses, and use of care, continues to have statistically significantly higher rates of mental health symptoms, diagnoses, and use of care in most analyses. This may indicate that the mental health symptoms, diagnoses, and use of care related to their GSM status overrides the significantly lower rates indicated by non-white individuals alone.

When controlling for substance use, mental health symptoms and use of care remain the same across GSM and non-white groups, but not individuals who are both GSM and non-white. Mental health diagnoses are statistically significant across all groups. This may indicate that earlier findings, that mental health symptoms and use of care related to GSM status overrides the significantly lower rates indicated by non-white individuals alone, are mediated by substance use. This finding, however, remains the same for diagnoses.

Limitations

There are several limitations with this study. This study relies on self-identification of GSM status, which may cause underreporting due to the fear of being "outed" in the prison setting and discriminated against. This may cause the analysis to underestimate the amount of GSM individuals in prison. It also cannot assess causality of

[5] This is true when mental health diagnoses are measured as a count variable. When it is measured as any mental health diagnoses, there is no statistical significance at a 95% confidence level.

the prison setting or compare individual prison experiences with non-prison experiences. Therefore, this study is unable to tell whether the mental health conditions are a result of the prison experience or something that individuals brought with them into prison. This study also does not take into account geographical locations of prisons and local prison environments which can impact mental health, the prison environment, and GSM experiences, especially considering differences in LGBTQIA+ laws in prison. Additionally, within the intersectionality framework, this study is unable to include class, however, the data are likely limited in variation on class given the sample (Pettit & Western, 2004), so inclusion likely would not substantially impact the results. This study is also unable to account for age, which has been shown to be correlated with anxieties and attitudes in the prison setting (MacKenzie,1987). Considering that LGBTQIA+ identity is higher among younger populations (Gates, 2014), this may cause GSM mental health symptoms to be higher than is actually the case.

Additionally, this study is limited in that it looks at race as a binary white versus non-white variable. While I recognize that non-white is a heterogenous group made up of multiple different cultures and identities, I include them together in the analysis because these groups are all marginalized and face societal oppression in United States culture (See, for example, Priester et al., 2016; Eliason & Amodia, 2016). Past research has, however, found variation in mental health across race as follows: American Indian or Alaska Native, more than one race and Puerto Rican have higher rates of mental health symptoms and diagnoses compare to white individuals. African American, Asian, Mexican, Central and South American, and other Hispanic individuals have lower rates of mental health symptoms and diagnoses compared to white individuals. American

Indian or Alaska Native and individuals with more than one race have higher use of mental health care, while Puerto Rican, African American, Asian, Mexican, Central and South American, and other Hispanic have lower use of mental health care (Harris et al., 2005).

Future research should explore the differences in GSM and racial subgroups to see how it impacts mental health symptoms, diagnoses, and use of care. Understanding geographical differences in GSM and non-white mental health and use of care can help us better understand which prison environments need greater mental health care or need to improve their environments for GSM and non-white individuals. Future research also should explore how these findings vary across GSM subgroups, non-white subgroups, and geographical regions.

This study looks at both mental health symptoms and diagnoses, which helps to (1) include individuals who are unable to get official diagnoses due to limited access to healthcare (2) protect against individuals who have temporary mental health symptoms but not diagnoses. This also looks at diagnoses as both a prevalence and a count. Looking at diagnoses as a prevalence allows us to look at the impact of at least mental health diagnoses as a whole. Looking at diagnoses as a count allows us to further explore the nuances that multiple diagnose may have on individuals in the incarceration setting.

Conclusion

This study is the first of its kind to look at mental health symptoms of GSM individuals in prison in a nationally representative sample. Findings show that GSM individual have higher rates of mental health symptoms, diagnoses, and use of care compared to non-GSM individuals in the incarceration setting. Non-white individuals

have lower mental health symptoms, diagnoses, and use of care compared to white individuals. Non-white GSM individuals have statistically significantly higher rates of mental health symptoms, diagnoses, and use of care, however this is lower than GSM individuals alone and higher than non-white individuals alone. and diagnoses. These findings suggest that there may be a need for updating current mental health care programs to be GSM-friendly to address the high rates of mental health symptoms that GSM individuals face in prison. Additionally, considering that non-white individuals are less likely to have mental health symptoms and diagnoses, it may be important to update mental health evaluation criteria to be more culturally inclusive to better understand mental health symptoms for non-white individuals.

Figures:

Figure 1: *Distribution of Mental Health Symptoms (Sum)*

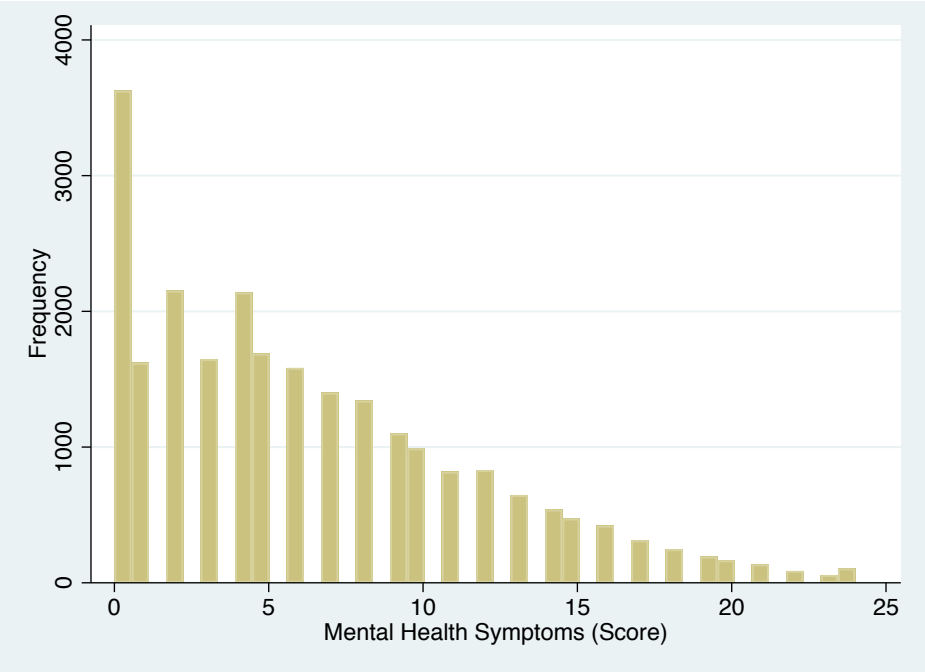


Figure 2: *Distribution of Mental Health Diagnoses (Sum)*

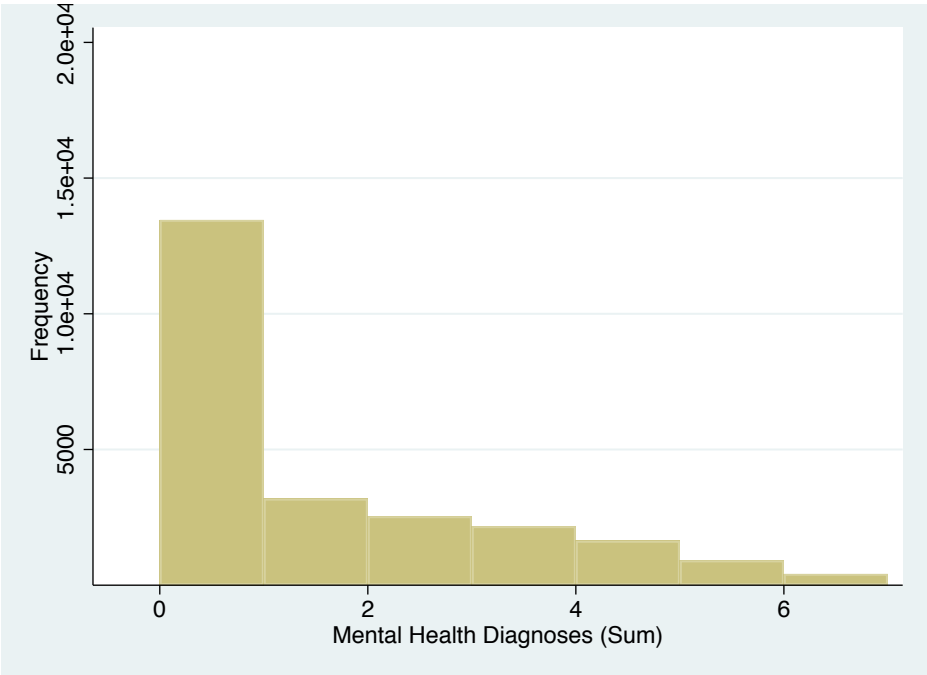


Figure 3: *Symptom Score Incident Rate Ratio*

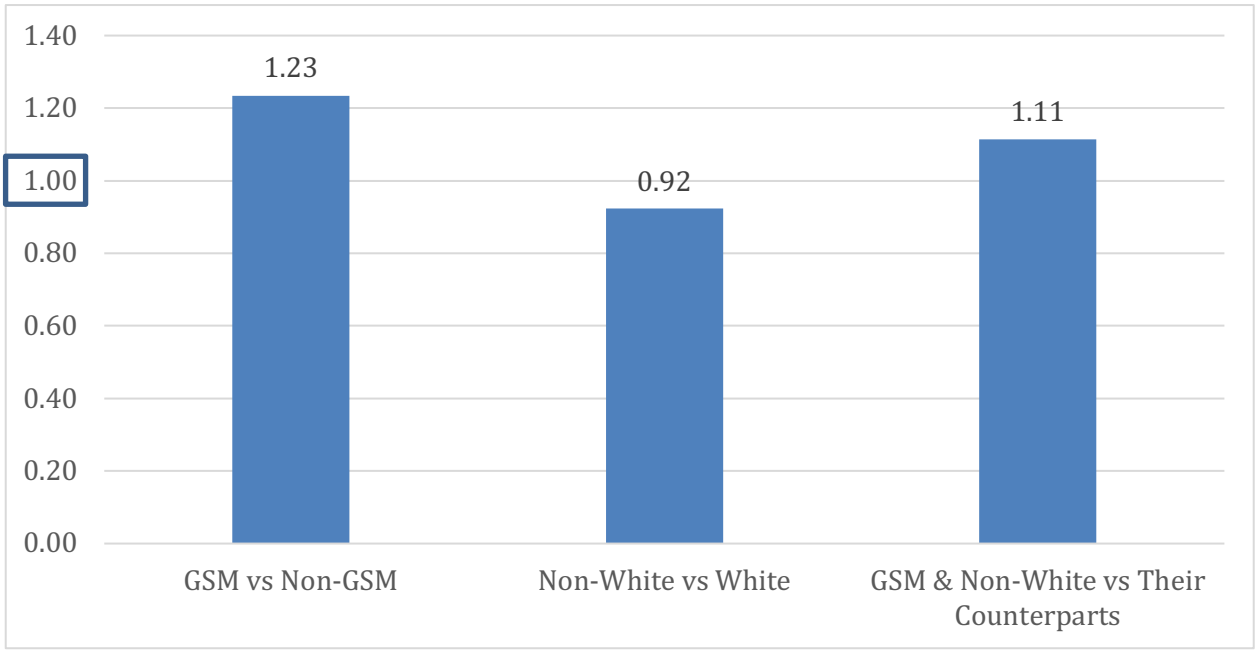


Figure 4: *Diagnosis (Any) Odds Ratio*

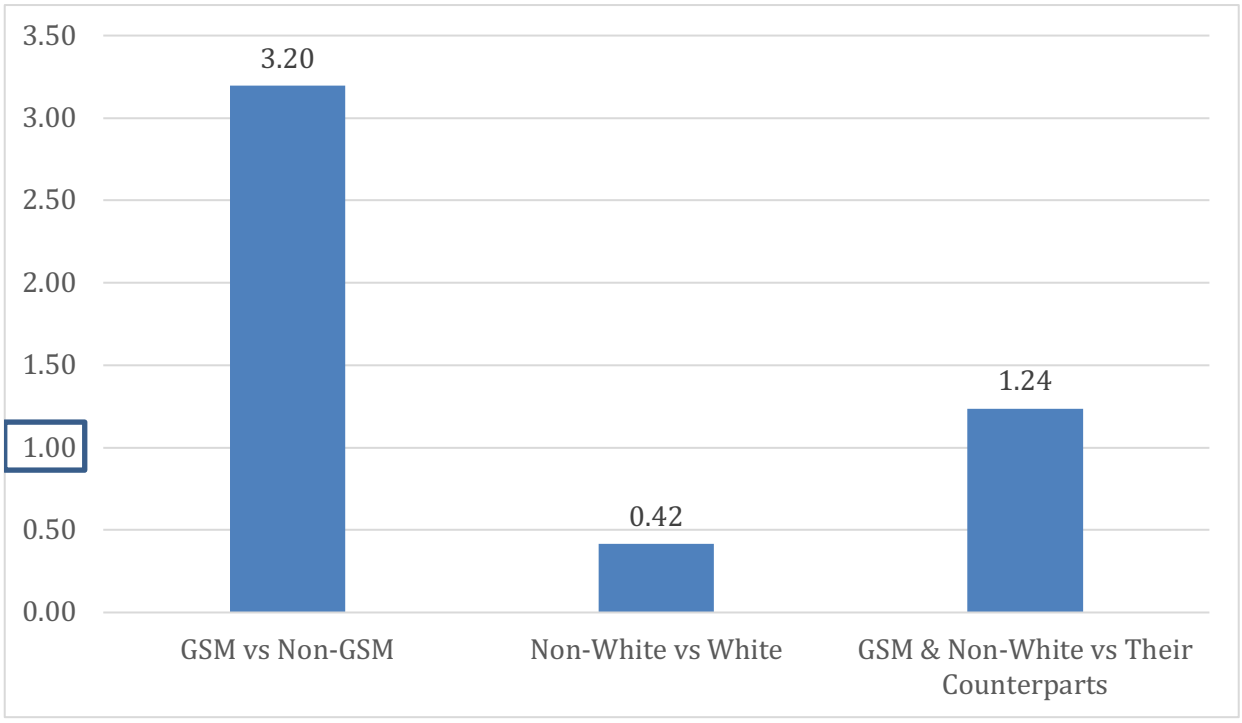


Figure 5: *Diagnosis (Sum) Incident Rate Ratio*

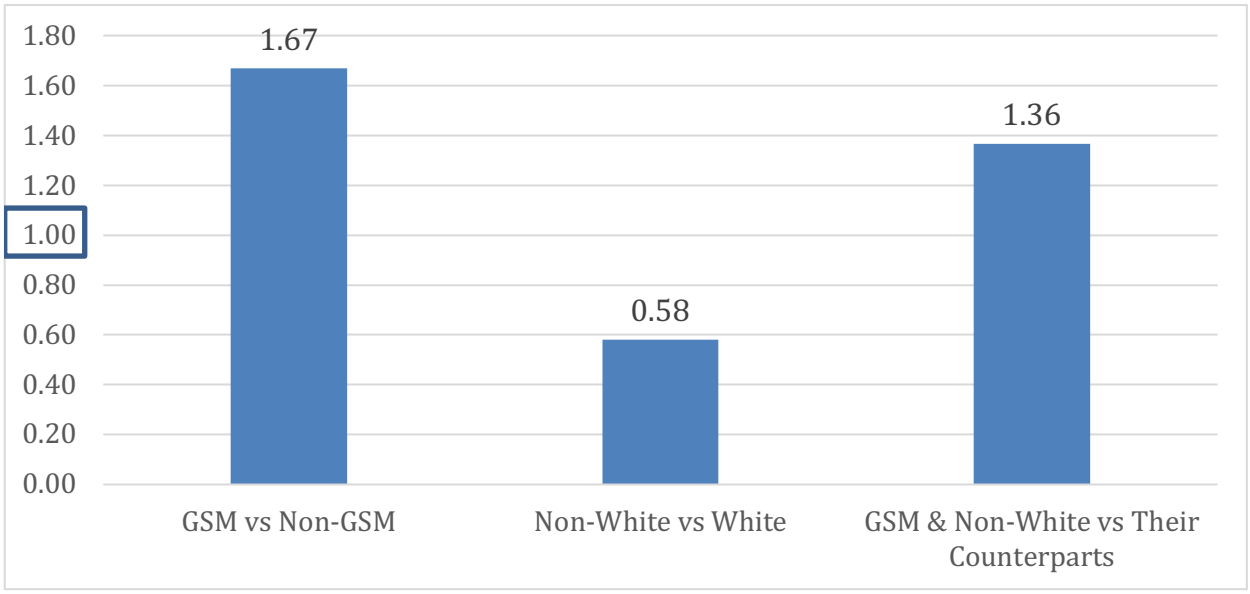


Figure 6: *Treatment (Any) Odds Ratio: Without Controls*

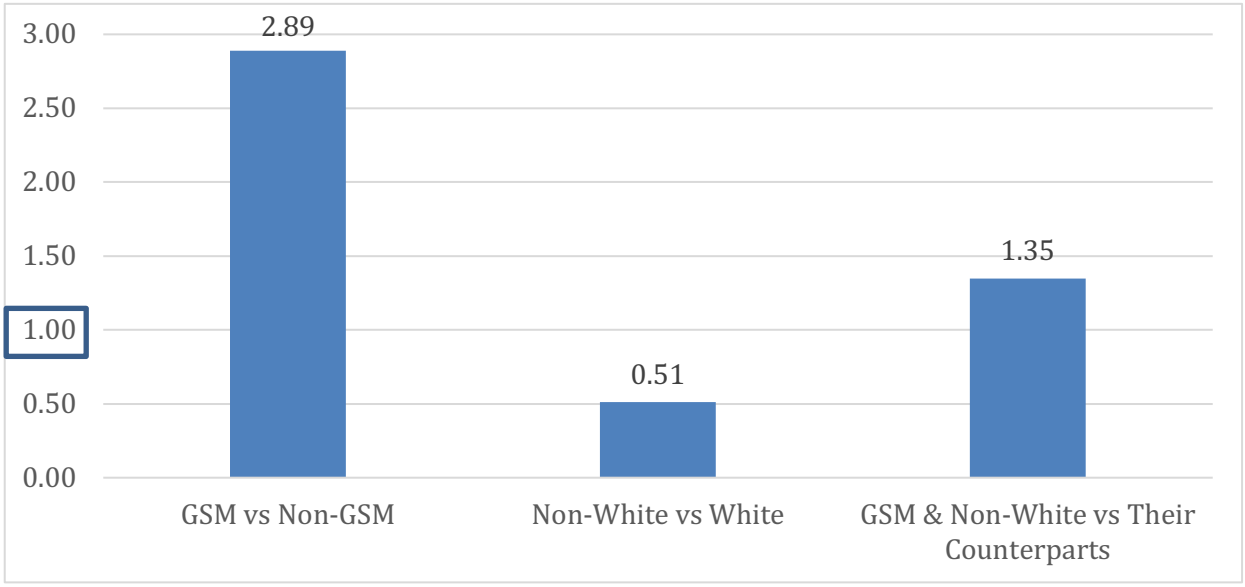
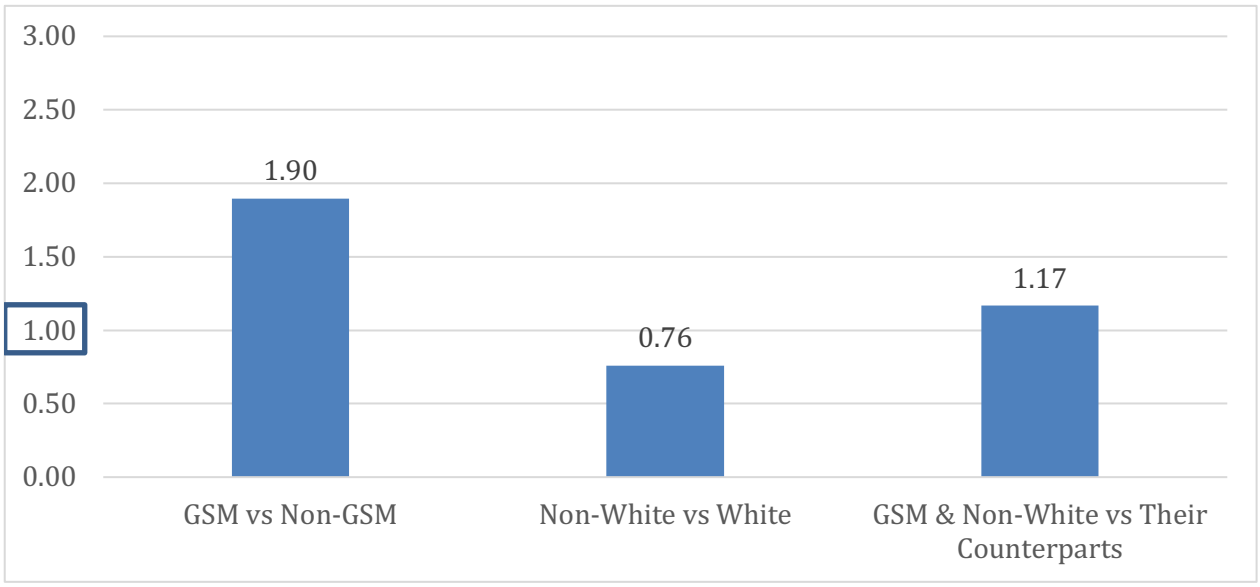


Figure 7: *Treatment (Any) Odds Ratio: With Controls*



Tables:

Table 1: *Descriptive Statistics*

Variable Breakdowns	Mean.	St. Dev.	Min	Max
Dependent Variables				
Mental health symptoms	6.25	5.37	0	24
Mental health diagnoses (sum)	1.16	1.62	0	7
Use of mental health care	.35	. 47	0	1
Independent Variables				
GSM	.08	.27	0	1
Non-white	.51	.50	0	1
GSM & non-white	.03	.17	0	1
Control Variables				
Years incarcerated	4.93	6.68	0	101
Homeless pre-incarceration	.17	.38	0	1
Part of a foster home before age 18	.16	.37	0	1
Healthcare pre-incarceration	.51	.50	0	1
Substance use	.53	.50	0	1
Treatment	.07	.25	0	1

Independent Variables by Analysis Groups	Mean.	St. Dev.	N
Mental Health Symptoms			
GSM	8.33	5.51	1,960
Non-white	5.93	5.35	12,594
GSM & Non-white	8.34	5.61	742
Mental Health Diagnoses (Sum)			
GSM	2.34	1.86	1,960
Non-white	.86	1.47	12,594
GSM & Non-white	2.04	1.90	742
Use of Mental Health Care			
GSM	.53	.50	1,960
Non-white	.22	.42	12,594
GSM & Non-white	.50	.50	742

Independent Variables by Race and Ethnicity	Mean.	St. Dev.	N
Mental Health Symptoms			
Non-Hispanic White	6.70	0.05	10,013
GSM	8.25	0.16	1,047
Non-GSM	6.51	0.06	8,953
Non-Hispanic Black	6.10	0.06	8,445
GSM	8.52	0.24	497

Non-GSM	5.95	0.06	7,941
Hispanic	5.57	0.08	5,233
GSM	8.31	0.30	395
Non-GSM	5.35	0.08	4,835
Non-Hispanic Native American	7.32	0.11	2,365
GSM	9.22	0.32	272
Non-GSM	7.07	0.12	2,086
Non-Hispanic Asian	6.54	0.23	547
GSM	8.08	0.68	51
Non-GSM	6.38	0.24	496
Non-Hispanic Other	7.01	0.18	1,000
GSM	10.73	0.68	77
Non-GSM	6.69	0.18	922
Mental Health Diagnoses			
Non-Hispanic White	1.57	0.02	10,013
GSM	2.54	0.05	1,047
Non-GSM	1.46	0.02	8,953
Non-Hispanic Black	0.90	0.02	8,445
GSM	2.06	0.08	497
Non-GSM	0.82	0.02	7,941
Hispanic	0.85	0.02	5,233
GSM	2.18	0.10	395
Non-GSM	0.74	0.02	4,835
Non-Hispanic Native American	1.70	0.04	2,365
GSM	3.03	0.11	272
Non-GSM	1.53	0.04	2,086
Non-Hispanic Asian	1.21	0.07	547
GSM	2.65	0.25	51
Non-GSM	1.06	0.07	496
Non-Hispanic Other	1.49	0.06	1,000
GSM	2.75	0.23	77
Non-GSM	1.38	0.06	922
Use of Mental Health Care			
Non-Hispanic White	0.34	0.00	10,013
GSM	0.56	0.02	1,047
Non-GSM	0.32	0.00	8,953
Non-Hispanic Black	0.24	0.00	8,445
GSM	0.53	0.02	497
Non-GSM	0.22	0.00	7,941
Hispanic	0.20	0.01	5,233
GSM	0.46	0.03	395
Non-GSM	0.18	0.01	4,835
Non-Hispanic Native American	0.37	0.01	2,365
GSM	0.64	0.03	272
Non-GSM	0.34	0.01	2,086
Non-Hispanic Asian	0.26	0.02	547
GSM	0.61	0.07	51
Non-GSM	0.23	0.02	496

Non-Hispanic Other	0.34	0.02	1,000
GSM	0.53	0.06	77
Non-GSM	0.33	0.02	922

Table 2: *Independent Variables*

GSM		
Group	**N**	**%**
Non-GSM	22,342	91.95
GSM	1,956	8.05
Gender	**N**	**%**
Cis-gender	24,207	99.63
Cis-female	6,166	25.38
Cis-male	18,132	74.62
Trans	91	0.37
Trans woman	14	0.06
Trans man	15	0.06
Gender non-conforming	21	0.09
Sexual Orientation	**N**	**%**
Straight	22,348	91.97
Sexual minority	3,790	8.03
Lesbian	1,950	1.56
Gay	177	0.73
Bisexual	1,164	4.97
Questioning	157	0.65
Other	66	0.27
Race	**N**	**%**
White	11,704	48.17
Non-white	12,594	51.83
Black	9,102	37.47
Native American	2,879	11.86
Asian	436	1.79
Pacific Islander	372	1.53
Other	2,615	10.76

Table 3: *Symptom Score: Negative Binomial Regression*

Symptom Score	Coef.	St.Err.	[95% Conf	Interval]	IRR	Sig
Gender and Sexual Minority (GSM)	.21	.03	.151	.27	1.234	***
Non-white	-.08	.014	-.107	-.054	.923	***
GSM & Non-white	.108	.048	.014	.203	1.114	**
Years incarcerated	-.005	.001	-.007	-.003	.995	***
Homeless	.314	.017	.28	.348	1.369	***
Foster Home	.167	.018	.132	.202	1.182	***
Insurance	.062	.013	.037	.087	1.064	***
Constant	1.728	.013	1.701	1.754	5.627	***
lnalpha	-.294	.013	-.319	-.269	-.294	

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 4: *Symptom Score: Negative Binomial Regression with Substance Use and Treatment Controls*

Symptom Score	Coef.	St.Err.	[95% Conf	Interval]	IRR	Sig
Gender and Sexual Minority (GSM)	0.216	0.031	0.156	0.276	1.241	***
Non-white	-0.062	0.014	-0.089	-0.034	0.940	***
GSM & Non-white	0.065	0.049	-0.031	0.162	1.068	
Years incarcerated	-0.005	0.001	-0.007	-0.003	0.995	***
Homeless	0.301	0.017	0.267	0.335	1.351	***
Foster Home	0.155	0.018	0.120	0.191	1.168	***
Insurance	0.060	0.013	0.034	0.086	1.062	***
Substance Use	0.089	0.013	0.063	0.115	1.093	
Drug/Alcohol Treatment	0.029	0.025	-0.021	0.079	1.029	
Constant	1.679	0.016	1.648	1.710	5.360	***
lnalpha	-0.345	0.014	-0.371	-0.319	0.014	

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 5: *Diagnosis (Any): Logistic Regression*

Any Diagnosis	Coef.	St.Err.	[95% Conf	Interval]	Odds Ratio	Sig
Gender and Sexual Minority (GSM)	1.162	.08	1.004	1.319	3.195	***
Non-white	-.879	.03	-.938	-.82	.415	***
GSM & Non-white	.212	.119	-.021	.445	1.236	*
Years incarcerated	-.017	.002	-.022	-.013	.983	***
Homeless pre-incarceration	.878	.04	.799	.956	2.405	***
Part of a foster home before age 18	.74	.041	.659	.82	2.095	***
Healthcare pre-incarceration	.444	.029	.386	.501	1.558	***
Constant	-.318	.03	-.376	-.26	.728	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 6: *Diagnosis (Sum): Negative Binomial Regression*

Diagnosis Sum	Coef.	St.Err.	[95% Conf	Interval]	IRR	Sig
Gender and Sexual Minority (GSM)	.511	.043	.427	.596	1.668	***
Non-white	-.545	.022	-.587	-.502	.58	***
GSM & Non-white	.311	.07	.174	.448	1.365	***
Years incarcerated	-.016	.002	-.019	-.013	.984	***
Homeless pre-incarceration	.559	.026	.509	.609	1.749	***
Part of a foster home before age 18	.478	.027	.426	.53	1.613	***
Healthcare pre-incarceration	.297	.021	.257	.337	1.346	***
Constant	-.028	.021	-.069	.014	.973	
lnalpha	.236	.023	.191	.281	.236	

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 7: *Diagnosis (Sum): Negative Binomial Regression with Substance Use and Treatment Controls*

Diagnosis Sum	Coef.	St.Err.	[95% Conf	Interval]	IRR	Sig
Gender and Sexual Minority (GSM)	0.516	0.043	0.431	0.600	1.675	***
Non-white	-0.523	0.022	-0.567	-0.479	0.592	***
GSM & Non-white	0.290	0.071	0.150	0.429	1.336	
Years incarcerated	-0.015	0.002	-0.019	-0.012	0.985	***
Homeless pre-incarceration	0.538	0.026	0.487	0.589	1.712	***
Part of a foster home before age 18	0.446	0.027	0.393	0.499	1.562	***
Healthcare pre-incarceration	0.294	0.021	0.253	0.336	1.342	***
Substance Use	0.145	0.021	0.104	0.187	1.157	***
Drug/Alcohol Treatment	0.198	0.038	0.123	0.273	1.219	***
Constant	-0.116	0.025	-0.165	-0.067	0.890	***
lnalpha	0.168	0.024	0.121	0.216	0.168	

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 8: *Treatment (Any) Logistic Regression*

Treatment (Any)	Coef.	St.Err.	[95% Conf	Interval]	Odds Ratio	Sig
Gender and Sexual Minority (GSM)	1.06	.07	.924	1.197	2.887	***
Non-white	-.67	.031	-.731	-.609	.512	***
GSM & Non-white	.3	.109	.087	.513	1.349	***
Years incarcerated	.017	.002	.013	.022	1.017	***
Homeless pre-incarceration	.623	.039	.547	.699	1.864	***
Part of a foster home before age 18	.452	.04	.373	.53	1.571	***
Healthcare pre-incarceration	.419	.03	.361	.478	1.521	***
Constant	-.928	.031	-.988	-.868	.395	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 9: *Treatment (Prescription): Logistic Regression*

Prescription	Coef.	St.Err.	[95% Conf	Interval]	Odds Ratio	Sig
Gender and Sexual Minority (GSM)	1.045	.067	.913	1.177	2.843	***
Non-white	-.744	.034	-.81	-.678	0.475	***
GSM & Non-white	.391	.107	.181	.6	1.478	***
Years incarcerated	.01	.002	.005	.014	1.010	***
Homeless pre-incarceration	.584	.04	.505	.663	1.793	***
Part of a foster home before age 18	.434	.042	.352	.515	1.543	***
Healthcare pre-incarceration	.434	.032	.371	.497	1.544	***
Constant	-1.208	.033	-1.273	-1.144	0.299	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 10: *Treatment (Professional Help): Logistic Regression*

Professional Help	Coef.	St.Err.	[95% Conf	Interval]	Odds Ratio	Sig
Gender and Sexual Minority (GSM)	.936	.067	.805	1.067	2.549	***
Non-white	-.578	.034	-.644	-.512	0.561	***
GSM & Non-white	.355	.107	.146	.564	1.426	***
Years incarcerated	.027	.002	.023	.032	1.028	***
Homeless pre-incarceration	.612	.04	.533	.69	1.844	***
Part of a foster home before age 18	.439	.041	.358	.521	1.552	***
Healthcare pre-incarceration	.392	.032	.33	.455	1.480	***
Constant	-1.381	.033	-1.447	-1.316	0.251	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 11: *Treatment (Professional Help) Controlling for Diagnoses and Symptom Scores: Logistic Regression*

Treatment (Any)	Coef.	St.Err.	[95% Conf	Interval]	Sig
Gender and Sexual Minority (GSM)	.64	.082	.48	.8	***
Non-white	-.275	.038	-.35	-.2	***
GSM & Non-white	.155	.13	-.1	.409	
Diagnosis (Any)	2.591	.04	2.513	2.67	***
Symptom Score	.075	.004	.068	.082	***
Years incarcerated	.041	.003	.036	.046	***
Homeless pre-incarceration	.108	.047	.017	.199	**
Part of a foster home before age 18	.048	.048	-.046	.142	
Healthcare pre-incarceration	.248	.036	.177	.319	***
Constant	-2.865	.05	-2.963	-2.766	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

Table 12: *Treatment (Professional Help) Controlling for Diagnoses, Symptom Scores, and Substance Use: Logistic Regression*

Treatment (Any)	Coef.	St.Err.	[95% Conf	Interval]	Odds Ratio	Sig
Gender and Sexual Minority (GSM)	0.645	0.084	0.479	0.810	1.905	***
Non-white	-0.271	0.040	-0.350	-0.191	0.763	***
GSM & Non-white	0.139	0.136	-0.128	0.405	1.149	
Diagnosis (Any)	2.592	0.042	2.510	2.675	13.363	***
Symptom Score	0.075	0.004	0.068	0.083	1.078	***
Years incarcerated	0.043	0.003	0.037	0.049	1.044	***
Homeless pre-incarceration	0.114	0.048	0.019	0.209	1.121	**
Part of a foster home before age 18	0.040	0.050	-0.057	0.138	1.041	
Healthcare pre-incarceration	0.245	0.038	0.171	0.319	1.278	***
Substance Use	0.000	0.038	-0.075	0.075	1.000	
Drug/Alcohol Treatment	0.357	0.069	0.222	0.491	1.428	***
Constant	-2.903	0.057	-3.015	-2.790	0.055	***

**** p<.01, ** p<.05, * p<.1*

NOTES: GSM individuals are compared to non-GSM individuals. Non-white individuals are compared to white individuals. GSM and non-white individuals are compared to individuals who are white and non-GSM.

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