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Psychosocial Correlates of Psychological Distress among Black Men Who Have Sex with Men and Women in Los Angeles, California

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Psychosocial Correlates of Psychological Distress among Black Men Who Have Sex with Men and Women in Los Angeles, California

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Public Health

by

Heather Lynn Guentzel Frank

2020

ABSTRACT OF THE DISSERTATION

Psychosocial Correlates of Psychological Distress
among Black Men Who Have Sex with Men and Women
in Los Angeles, California

by

Heather Lynn Guentzel Frank
Doctor of Philosophy in Public Health
University of California, Los Angeles, 2020
Professor Courtney S. Thomas Tobin, Chair

The purpose of this dissertation was to identify the distinct risk and protective factors that are associated with psychological distress among Black MSMW. Black MSMW encounter a host of stressors in their daily lives that impact their mental and physical health, including HIV prevention and HIV care engagement. Through three studies, the dissertation aimed to address critical gaps in knowledge about the relationships among stress exposure, health and sexual risk factors, social and personal resources, and sociodemographic and individuals-level factors that shape psychological distress among Black MSMW.

The results of Study #1, *Stress exposure and psychological distress among Black MSMW*, suggested that Black MSMW with histories of childhood sexual abuse faced greater adult stress exposure, which contributed to greater odds of psychological distress. The results of Study #2, *Health and sexual risks associated with psychological distress among Black MSMW*, demonstrated that sexual risk from placing a greater importance of privacy regarding sex with men was significantly associated with greater odds of psychological distress, after

controlling for health risks, sociodemographic and individual-level characteristics, and stress exposures. The results of Study #3, *Psychosocial resources associated with psychological distress among Black MSMW*, demonstrated that social support was significantly associated with distress, above and beyond all other covariates.

These studies, by examining the correlates of psychological distress among Black MSMW in Los Angeles, may guide future research on these relationships and interventions aimed at engaging Black MSMW in the HIV prevention continuum and the HIV continuum of care.

The dissertation of Heather Lynn Guentzel Frank is approved.

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2020

Dedication

This project would not be complete without an expression of gratitude to the family and friends that supported me on along the way. Thank you to my parents, Evelyn and Richard Guentzel, for nurturing my pursuits. Thank you to my sister, Melanie Guentzel, and my sisters from other mothers, Jackie Soucek and Vanessa Solomon, my mentors and cheerleaders. Thank you to the Frank family, Steven, Ginny, Marcie, and Riley for bringing me into the fold. My deepest appreciation, of course, goes to my beloved, Scott Frank, and our intrepid daughter, Annika. They bring me joy, levity, and love beyond measure.

I am eternally grateful to the people working on the front lines of the HIV epidemic. I extend gratitude to the Aliveness Project, founded as one of the first grassroots responses in Minnesota to the HIV crisis in the late 80s and home to my first experiences working among people living with AIDS. For them, it was critical to act in a vacuum of political will and inadequate resources to save their friends from dying. To serve people living with AIDS was to engage in a larger struggle for social justice. For me, at its core, what they did and what I aim to do is about tikkun olam, a Jewish concept meaning to repair the world.

I became an ally to my LGBTQ friends, not knowing at the time that 20 years later I would still be engaging in public health research to shine a light on their struggles and their resilience. My heart goes out to all the men and women that have contributed their voices to guide my life's work, from my early days in Kampala, Uganda, to my most recent in downtown Los Angeles. Each of their stories is unique but what resounds throughout is pain, courage, and survival. Their lives are hard, and sometimes very lonely, but they are not forgotten. I stand in solidarity and in hope for a cure for HIV and an end to the HIV stigma, homophobia/bi-phobia, racism, and hate that fuels the epidemic.

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Acknowledgments

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Chapter 1: Introduction to Psychological Distress Among Black MSMW

Though prior research has emphasized that Black men who have sex with men only (MSMO) experience the greatest risk for HIV infection, it has shown that Black men who have sex with men *and* women (MSMW) face considerable HIV-related health disparities. When compared to White MSMW living with HIV, Black MSMW living with HIV had higher viral loads (Friedman, Stall, et al., 2014). HIV negative Black MSMW, when compared to HIV negative Black MSMO are less likely to be aware of pre-exposure prophylaxis (PrEP) (Friedman, Sang, et al., 2019). Furthermore, compared to HIV-positive Black MSMO, HIV-positive Black MSMW are more likely to be HIV-positive unaware and virally unsuppressed and less likely to uptake secondary prevention (e.g., obtaining resources to support their engagement and retention in care) and biomedical care (Friedman, Sang, et al., 2018), i.e., anti-retroviral therapy. Thus, Black MSMW are missing out on the many life-saving prevention and care options now available through the HIV continuum of care and the HIV prevention continuum.

The HIV continuum of care was previously known as the Treatment Cascade (Gardner et al., 2011). The HIV continuum of care's (cascade's) focus was ensuring that all HIV positive individuals had access to life-saving anti-retroviral treatments (Gardner et al., 2011). That access hinged on their awareness that they were HIV infected and that they were engaged in regular HIV care and received and adhered to effective antiretroviral therapy (Gardner et al., 2011). The definition of the HIV care continuum has continued to evolve with progressions in research and practice. More recently, it has been defined as having the following stages: diagnosis of HIV infection, linkage to care, retention in care, receipt of antiretroviral therapy, and achievement of viral suppression (HIV.gov, 2016).

Just as there is a continuum of care for HIV positive individuals, there is a prevention continuum for those at high risk for HIV infection. Recent advances in biomedical approaches to the prevention continuum, such as the administration of pre-exposure prophylaxis (PrEP) and

post-exposure prophylaxis (PEP), have received the most attention from the media and the public. PrEP and PEP refer to the use of HIV anti-retroviral therapy to prevent HIV infection and reduce the transmission of HIV through viral suppression (HIV.gov, 2016). Recent estimates indicate that PrEP may reduce the risk of HIV infection in people who are at high risk by up to 92% (Centers for Disease Control and Prevention [CDC], 2018). Despite increased access to these life-saving medical advances in the United States, Black MSMW remain among the least likely to engage in in the HIV care continuum and HIV prevention continuum (Arnold et al., 2017; Friedman, Sang, et al., 2018; Friedman, Sang, et al., 2019). Yet, little is known about barriers and facilitators to the continuum of care among this population since they have traditionally been overlooked in HIV studies (Friedman, Wei, et al., 2014). Failure to address the needs of this population only increases their risk for HIV infection and contributes to lower rates of participation in the HIV prevention continuum of care. As such, research that clarifies the distinct risk and protective factors that shape preventive care choices among Black MSMW is needed.

Who are Black MSMW?

Black MSMW, comprise a group of men in the United States that are behaviorally bisexual, and may or may not identify with common labels for sexual identity (e.g., gay, bisexual, heterosexual). National estimates of Black MSMW are challenging to assess, because they do not identify with such labels. Recently, the National Health Interview Survey began including a question on sexual orientation, broken down by gender and race. This new data allowed for estimates of bisexual identity by gender and race. Approximately 0.4% of males identified as bisexual (Gonzales et al., 2016). Of those, approximately 8.6% of non-Hispanic Black males identified as bisexual (Gonzales et al., 2016). Although Black MSMW comprise only a small proportion of sexual minorities in the United States, they have drawn the gaze of the American public for close to two decades.

Between 2000 and 2002, findings from preliminary public health research were announced which concluded that Black MSMW's failure to disclose their sexual encounters with

men to their female partners posed significant threat to Black women's health (CDC 2000; 2002). As a result, the popular media began emphasizing Black MSMW's role in Black women's elevated rates of HIV, coining the term "down low" to refer to the secret sexual practices of Black MSMW (Denizet-Lewis, 2003; King, 2004; Sternberg, 2001; Trebay, 2000; Tucker, 2004). This controversial cultural phenomenon, with its alleged link to the raging HIV epidemic in the Black community, subsequently occupied the attention of journalists, took center stage on the Oprah Winfrey television show watched around the world, and sparked online debates among millions of You Tube followers (Trebay, 2000). As such, the media has played a powerful role in popularizing and legitimizing stigmatizing public perceptions about Black MSMW.

Common public narratives about Black MSMW include, husbands sneaking around to have sex with other men, men who offer no condom to avoid implying they may be a risk to their sexual partner, or thugs in the jail cell threatening to rape a fellow inmate. More importantly, these men were violating societal expectations about gender roles and sexual relationships. Afterall, those who threaten or disrupt the social order may be regarded as subversive (Herdt, 1997). For example, one prominent Judeo-Christian perspective on gender and sexuality influences the social order and privileges heterosexuality while denigrating non-heterosexual relationships, behaviors, and identities (Herek, 2009). Out of this perspective are derived "heteronormal roles and folk theory of human nature in their society" and a fear of those that do not conform. That fear is named "homophobia" (Herdt 1997, p. 2). The hostile attitudes that accompany homophobia have confronted—sexual minorities "that have dared to risk the sanctions of society in expressing the crisis of their sexual desires" or produced in them "turmoil and fear in their daily lives and the insistent need to conform and pretend or hide their sexual being" (Herdt, 1997, p. 2). From that perspective, the policing of boy's masculine socialization has implications for the emotional and physical well-being of non-gender conforming boys (Stall et al., 2008).

These are but a few perspectives on how cultural context shapes the social order and rules around race, sexuality and gender. There are others that can be explored. Similarly, there are variations among individual and group identities that form in response to cultural contexts to be explored. The United States, a culturally diverse country of first peoples, multi-generational families, and first-generation immigrants, encompasses many perspectives on race, sexuality and gender. With that in mind, it is critical to explore the cultural contexts in which identities, of both individuals and groups, are constructed. And, it is critical to explore the role those identities play in shaping perceptions of race, sexuality and gender and the consequences of those perceptions on health and health disparities. The messaging in the media was based in stereotypes that originated during in an era of grossly unequal power relations (e.g., slavery and Jim Crow era), during which coercive tactics, including rape and castration, were often used to control Black men whom White slave owners viewed as subordinates (Fiske, 2005; Hall, 1997; Omi & Winant, 1994). While these methods are no longer legally sanctioned, underlying messages about racial inferiority and sexual deviance remain prevalent within discussions about Black MSMW, who engage in what some may view as non-normative sexual behavior. Therefore, while rooted in historical context, and subject to changes through discourses that challenge them, such messages continue to appear in new forms on a connotative level across regimes of representation (Hall, 1997), with serious implications for the health of this population. Unfortunately, public health played a role in fostering these perceptions of Black MSMW. More recently, the narrative of non-gender conformity and sexualities that are subversive to heteronormative perspectives has been elevated by new discourse on variations in masculinities, their impact on health outcomes, and their amenability to interventions aimed at improving health outcomes (Creighton & Oliffe, 2010), particularly in the areas of mental health (Addis & Cohane, 2005; Oliffe et al., 2019; Pachankis et al., 2018; Shenkman & Toussia-Cohen, 2019).

Roots of the "down low" narrative. In 2000, the Centers for Disease Control and Prevention (CDC) reported the rising rates of HIV infection among Black men who reported sex with men (CDC, 2000). This article stated that Black MSM were more likely to identify as heterosexual than Hispanic and White MSM, and that Black MSM's non-disclosure of sexual identity was a challenge for HIV intervention to stem the epidemic. In 2002, the CDC released another study reporting that the main mode of HIV infection for both Black men and women was through sex with Black men (CDC, 2002). With the help of a few statistics at their disposal, the popular media picked up on this data and began weaving a story about the dangers of engaging in relationships with heterosexual Black men.

The CDC findings were cited, and often misinterpreted, in high-profile newspapers. For example, *USA Today* (Sternberg, 2001) published an article entitled "The Danger of Living 'Down Low'; Black Men Who Hide Their Bisexuality Can Put Women at Risk". The author references a study in which 1 in 6 gay and bisexual-identified men reported having sex with women and 25% reported unprotected sex with both men and women. The author does not reveal the racial composition of the study's participants or properly cite the study, but the implication is clear: The bisexual behavior of Black men is a problem, which as the author laments, is "creating havoc for those trying to battle HIV within the African-American community". But was it? Some researchers in the public health community were disturbed that the overtly racist tone of these articles might just be rehashing old tropes (Ford et al., 2007; Phillips, 2005). Thus, for the health of all concerned, some researchers sought to understand the true risks that Black MSMW—particularly those "on the down low"—and their partners faced from the HIV epidemic. After all, if the HIV risks were true, then Black MSMW and their partners needed the help of the public health community, not this public shaming.

Becoming "MSMW": Alternative voices in public health research. As a first step to understanding HIV risk among Black MSMW, scholars such as Millett, Phillips, Ford, and their colleagues set about dismantling the racist overtones of the down low discourse and unhinging

Black MSMW from such value-laden, racist stereotypes. Phillips pointed out that the down-low discourse is just one more “neo-racist weapon of mass destruction” and a propagation of old tactics used to exploit Black sexuality that has led to anxiety among and around Black people (2005, p. 3). Phillips also noted the serious consequences of this popular representation of Black MSMW as “on the down low”: (1) it aids and abets the spread of HIV/AIDS; (2) feeds a neo-racist agenda; (3) obscures the link between poverty and HIV/AIDS; (4) contributes to homophobia in the Black community; and (5) is an opportunity to re-examine and reframe issues related to sexual freedom and choice. It was a call to action for the public health community that motivated a new approach that is broader in its view of sexuality. These efforts would also spark a new focus on Black MSMW, recognizing the need to identify the psychosocial and environmental factors that contribute to the distinct contexts they face and undermine their wellbeing.

Later, Ford et al. (2007) linked the down low discourse to more general social constructions of Black sexuality as excessive, deviant, diseased, and predatory, revealing the ways that epidemiologic research reinforces these social constructions and hinders efforts to reduce health disparities. The authors contended that “by its very nature, research linking HIV/AIDS disparities to Black men on the DL [down low] relies on social constructions of Black sexuality in ways that may influence both individuals’ attitudes and behaviors, as well as how researchers conceptualize, measure, and strive to address disparities” (Ford et al., 2007, p. 212). Ford et al. remind us that any discourse that stresses Black sexual deviance, e.g., being on the down low, “as the key explanation for disparities taps into earlier discourses linking stigmatized diseases (such as syphilis) to race” (2007, p. 212). For that reason, Ford and colleagues called upon the public health community to think critically about the role this discourse plays in the root causes of HIV infection and disease. Specifically, is the man on the down low’s behavior the root cause of HIV infection or is it more about the stigmatizing social

construction of this man? Such questions became the focus of many academic conversations that sought to clarify risks among Black MSMW.

A few years later, Bond et al. (2009) questioned the very legitimacy of the down low as a concept for study using data from the CDC-funded Brothers y Hermanos study. This study recruited Black and Latino MSM to examine factors associated with HIV risk behavior and HIV infection. Men were enrolled from May 2005 to April 2006 in Philadelphia, Los Angeles, and New York City. Candidates had to be male (and identify as such). Bond and colleagues found that for 1151 Black MSM, there were no statistically significant differences in HIV risk behaviors or reported sex with females between men who identified with the down low label and those who did not. In addition, men using the label were more likely to identify as bisexual or homosexual than heterosexual while those who did not identify with the label were just as likely to identify as heterosexual. Based on these findings, the authors concluded that HIV prevention programs directed at Black MSM should focus on behavioral risks rather than identities. Some have even argued that labels like MSM and WSW (women who have sex with women) "erase" the alternative identities of sexual minorities and call for a more comprehensive assessment of identities along with risk behaviors (Young & Meyer, 2005). Pathela, Blank, et al. (2006) and Pathela, Hajat, et al. (2006), suggest that sexual risk behaviors paired with questions about the gender of sexual partners, along with a standard set of identity options can be helpful, not only in a clinical setting at the individual level, but also in tailoring outreach efforts to communities with variations in identity, sexual risk, and demographics. In a population-based study in New York City among men who reported sex with men, Pathela, Hajat, et al. (2006) found that heterosexual-identified men and gay-identified men had different demographic characteristics and statistically significant differences in condom use and HIV testing behaviors. Heterosexual-identified men who reported sex with men were more likely to belong to minority racial or ethnic groups, be foreign-born, have lower education and income levels, and be married than gay-identified. Gay-identified men were more likely to use condoms at their last sexual encounter

and to have tested for HIV than heterosexual-identified men; these may be indicative of HIV prevention efforts aimed at the gay community. Collectively, this scholarship called attention to the problems inherent in the down low narrative while also providing new insights into the distinct risk factors faced by Black MSMW. This was a pivotal moment for public health scholars, as it identified a sub-group of men worthy of study.

Meanwhile, Greg Millett and his colleagues (2005) sought to discover the behavioral risks of Black MSMW in comparison to Black heterosexually behaving men and Black MSMW of other races and ethnicities through a review of the literature. Further, they sought to understand the HIV risks Black MSMW posed to Black women. For the purposes of the study, they limited their literature search to "black or African American or Afro-American, straight or heterosexual or men who have sex with women, MSM or men who have sex with men or gay or bisexual or homosexual or down-low or DL, between 1980 and [June 2004]" (Millett et al., 2005, p. 535), yielding a total of 24 articles. With this new definition, Millett and his colleagues were part of the new wave of epidemiological research that began to take a critical eye to the claims in the popular media about this seemingly widespread and deadly behavior among Black men exclusively. Millett's work challenged the very utility of "the down low" as a concept for scientific study of risk behaviors, suggesting that an examination of sexual identity and sexual behavior may yield more promising revelations about patterns of disease among groups of MSMW.

In a review of the 24 existing studies, Millett et al. (2005) looked for evidence of the down low phenomenon among Black (i.e., Black or African American or Afro-American) MSM. The authors found only four studies that used the term down low but, when they shifted their search to include definitions based on sexual identity and behavior, they did find that a greater proportion of Black men reported bisexual identities or behavior and were less likely to disclose them to others than men of other racial or ethnic identities. These findings were most pronounced in large probability-based studies but were also found in smaller, studies. However, the most critical findings from yielded from the analysis were twofold. The first critical finding

was that “data from existing studies of MSM reveal low agreement between professed sexual identity and corresponding sexual behavior among Black and other MSM; show that Black MSM are more likely than MSM of other racial or ethnic groups to be bisexually active or identified; and, compared with white MSM, are less likely to disclose their bisexual or homosexual activities to others.” The second critical finding was that “Black MSM who do not disclose their homosexual or bisexual activities engage in a lower prevalence of HIV risks than Black MSM who do disclose; and Black men who are currently bisexually active account for a very small proportion of the overall population of Black men (2%).” Despite these findings, Millett and his colleagues contended that although men of other racial and ethnic identities also engaged in bisexual behaviors, there is greater cause for concern because of higher background prevalence of HIV in African American communities than in other communities.

This concern extends to their female partners when HIV-infected Black MSMW engage in unprotected sex. Despite these concerns, the authors proposed a few caveats to their own conclusions, suggesting several observations missing from the discourse on the down low and identity-based studies that could negate attributions of Black women’s HIV risk to Black MSMW. First, according to a large, multi-site study, heterosexually-identified HIV positive Black MSMW were less likely to engage in unprotected sex with female partners than HIV positive homosexually and bisexually-identified Black men (Montgomery et al., 2003). Second, according to the National AIDS Behavioral Survey, a population-based study, high risk Black heterosexuals comprised 20% of the Black population (Grinstead et al., 1997) and more Black heterosexuals reported ongoing sexual risks (73%) than White heterosexuals (56%) (Catania et al., 1995). In addition, Millet and colleagues (2005) cited a strong body of evidence demonstrating higher rates of these high risk behaviors among Black heterosexuals as compared with other racial and ethnic groups, including low rates of condom use during vaginal and anal sex (CDC, 1998; American Academy of Pediatrics Committee, 2001; Cornelius et al., 2000; Grinstead et al., 1997; Jaffe et al., 1988; Peterson et al., 1993) and more trading of sex

for drugs or money (Lewis & Watters, 1991). Within a context of high HIV prevalence in the Black population, these heterosexual behaviors could help to explain higher rates of HIV infection in the Black population when compared to those of other racial and ethnic identities Millett et al. (2005). Millett et al. (2005) also pointed to studies identifying distributions of power in gender roles and socioeconomic status as possible explanations why women engage in unprotected sex with their male partners, even when they are aware of the behavioral risks of those partners (Adimora & Schoenbach, 2002; Amaro, 1995; Amaro & Raj, 2000; Korte et al., 2004; Pulerwitz et al., 2002; Sikkema et al., 1995). This issue of power in relationships was not specific to Black women, they contended, but in the context of high HIV prevalence the issue takes on greater salience for Black women and for a discourse on the down low (Millett et al., 2005).

Media's response to changing narratives. In response to these new narratives from the scientific community, some popular media coverage of the down low tried to offer a potentially more balanced perspective on the down low, but not without shortcomings. One article in Essence's online Health section entitled "Black Women and HIV: Don't Blame the Down Low" (Floyd, 2010) opened with "if only two percent of Black men are bisexual, can we really point to the D.L. phenomenon as the reason so many Black women are contracting HIV?" The author, Lynya Floyd, Ph.D., asked the question of Ingrid (Lisa) Bowleg, Ph.D., from Drexel University School of Public Health. Dr. Bowleg responded with a "no" and the comment, "I continue to be stunned that Black heterosexual men are absolutely invisible [in this discussion of Black women and HIV]. It's as if everybody got distracted by the sensationalism of the down low. But if you think about this logically, there just can't be that many bisexual men." Floyd then asked the reader, "so what is happening with Black heterosexual men?" Commenting on her study findings presented in a poster in 2010 at the 18th International AIDS Conference in Vienna, Austria, Bowleg suggested, "unemployment, incarceration, these structural factors exert

so much stress on people that it constrains their ability to engage in behaviors that will protect them [from HIV]."

It remains critical for public health scientists to accept responsibility for perpetuating such negative stereotypes for all Black men. These stereotypes exacerbate the challenges for engaging Black men overall in HIV prevention and care and particularly subgroups of Black men further stigmatized for their same-sex behaviors. In fact, it would have been better to acknowledge that these stereotypes had likely perpetuated the HIV epidemic among Black men and that the reasons behind their own HIV risks warranted study.

Public health's responsibility to black MSMW. While examining the social construction of racial stereotypes is an important consideration for the research agenda on Black MSMW, Ford et al. (2007), also suggested that we consider the research process itself, the ways it perpetuated the stigmatization of marginalized groups, and public health's responsibility to these communities. For Black MSMW, this included recognizing the public narrative about and evolution of the down low as a category of research this group, carefully evaluating their lived experiences, and identifying the distinct risks they face in order to develop culturally-appropriate and group specific interventions. Nevertheless, this group remained on the margins of public health research examining Black Americans and LGB populations due to stigmatization from the scientific community and popular media. While recent research has demonstrated the heightened HIV risk faced by this population, there is still much to be learned about the dynamics of their risk and the distinct barriers to the HIV continuum of care. The following section examines what the current science does and does not reveal about Black MSMW's barriers to engagement in the HIV continuum of care, with attention to barriers within the socioecological and psychosocial environment that influence Black MSMW's health and health-seeking behaviors.

Studying Black MSMW to Improve Health

For many of the reasons discussed above, engaging Black MSMW in public health research is challenging (Bempong, 2015). Study design is critical to learning more about Black MSMW. Black MSMW are often lumped into broader studies of Black MSM, because they sometimes comprise such small proportions of the study samples. In addition, study recruitment itself poses its own challenges, requiring complex recruitment protocols aimed at tactfully assessing bisexual behavior (Bempong, 2015). Thus, for the next sections literature on MSM was consulted, with special attention to studies that looked separately at Black MSMO and Black MSMW.

Psychological Distress among Black MSMW

Assessment of psychological distress. Psychological distress among sexual minorities has been assessed using several measures. For example, Cochran et al. (2003) based their analysis on the Composite International Diagnostic Interview Short Form (CIDI-SF; Kessler et al., 1998) comprised of diagnoses based on Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 1987) criteria for 1-year prevalence of major depression, generalized anxiety disorder, and panic disorder. Platt and Scheitle (2018), in an update of Cochran et al. (2003), used the Kessler Psychological Distress K6 Scale (Kessler et al., 2002), used to assess DSM-IV/SCID disorders and Global Assessment of Functioning (GAF) scores. In a similar study, Gonzales et al., (2016), using the Kessler 6-Item Psychological Distress Scale (Kessler et al., 2003), found significant differences in psychological distress have been detected by sexual identity. They found that 40.1% of bisexual men reported moderate or severe psychological distress, as compared to 16.9% of heterosexual and 25.9% of gay men and ($P < .001$) (Gonzalez et al., 2016).

The data used for these studies were from population-based surveys that included sexual minorities. Other studies use specific measures of psychological distress, such as depression and anxiety. For example, using Center for Epidemiologic Study of Depression

(Radloff, 1977), researchers have found that Black MSMW have significantly higher depression scores than Black MSMO (Friedman, Stall, et al., 2014; Friedman, Sang, et al., 2019). Another common measure of psychological distress is the Brief Symptom Inventory (Derogatis, 1983; 1993; Derogatis et al., 1976), a 53-item assessment of 9 dimensions of psychological distress. Mount et al., (2014), used the BSI-53 to assess psychological distress among college-aged African American sexual minority men. The study group had significantly higher group mean than the BSI-53's normative group mean. An 18-item version (Derogatis & Fitzpatrick, 2004) and individual dimensions of the assessment have been used for studies drawing comparisons of psychological distress among sexual minorities (Mustanski et al., 2010; Pachankis, 2015). In summary, it is critical to be explicit about the measure of psychological distress when examining relationships with stress exposure, psychosocial risks, and psychosocial resources. The assessment of psychological distress is further complicated by covariates of psychological distress, such as stress exposure, psychosocial resources, and sociodemographic and individual-level characteristics.

Psychological distress and stress exposure. Black MSMW encounter a host of stressors in their daily lives that impact the mental and physical health. Stressors are the "conditions of threat, challenge, demands of structural constraints that, by the very fact of their occurrence or existence, call into question the operating integrity of the organism" (Wheaton & Montazer, 2017). These stressors can influence mood, sense of well-being, behavior, as well as physical health (Schneiderman et al., 2005; Simon et al., 2006). Prolonged stress responses can also result in adverse feelings and conditions (fear, anxiety, frustration, anger, guilt, despair, depression, demoralization, joy, fulfillment, and hope) commonly referred to as psychological distress (Mirowsky & Ross, 1989).

The anticipation of being stigmatized for one's concealable identity, such as sexual orientation, is associated with heightened psychological distress (Meyer, 2003; Quinn & Chaudoir, 2009). The negative health effects of living with a stigmatized sexual identity include,

for example, suicidal ideation, anxiety, and depressed mood (Díaz et al., 2001; Nam et al., 2015). Black MSMW face unique concerns regarding discrimination at the intersection of racism and bi-phobia (Jeffries, 2014). A population-based study using a combined sample of gay-identified and bisexually-identified men, found that those men had higher prevalence of depression, panic attacks, and psychological distress than their heterosexual counterparts (Cochran et al., 2003). A more recent study, a community sample that compared gay-identified, bisexually-identified, and heterosexual-identified men, found that bisexual-identified men had significantly higher psychological distress and past-year suicidal ideation than heterosexual men (Nam et al., 2019). These health effects appear to be heighted for Black bisexual men. One study found that black bisexual-identified men experience higher levels of stress than their White counterparts (Platt & Scheitle, 2018).

Negative attitudes toward bisexually-identified individuals, particularly bisexually-identified men, have been documented in population-based studies (Dodge et al., 2016; Friedman, Dodge, et al., 2014). These negative attitudes are common to both heterosexual and homosexual individuals (Friedman, Dodge, et al., 2014). As Black men, Black MSMW have encountered racism throughout their lives and face increasingly high-profile racial resentment since the 2016 elections (Abramovitz & McCoy, 2019). As a result of these racial attitudes, Black Americans are more likely than other racial groups to experience everyday discrimination (Goel et al., 2016) and perceived discrimination (Kessler et al., 1999; Parker, 2016). Discrimination rooted in racism extends to health care access (Bailey et al., 2017), with real consequences for the health of Black Americans (Lewis & Van Dyke, 2018; Paradies et al., 2015; Pascoe & Smart Richman, 2009; Williams, 2012).

Black MSM must also contend with discrimination regarding their sexual orientation (Malebranche et al., 2004). Discriminatory attitudes regarding sexual orientation may be particularly stressful when they are perpetrated by members of the Black community or others close to Black MSM, such as family and friends, and it starts young. Experiences with

homophobia-based discrimination may begin in the context of family during childhood and adolescence, with abusive dynamics (D'Augelli et al., 1998; Pilkington & D'Augelli, 1995). As young MSM grow up, they are increasingly aware that their same-sex attraction is at odds with social convention (Trussler et al., 2000). In response, MSM may choose not to disclose their sexuality or sexual behaviors to family and friends to avoid social isolation, discrimination, or verbal or physical abuse (CDC, 2003; Doll & Beeker, 1996; Stokes & Peterson, 1998). Non-disclosure among young MSM has been associated with low self-esteem, depression, or lack of peer support, all psychosocial issues associated with sexual risk behaviors (Kennamer et al., 2000; Stokes & Peterson, 1998). Unfortunately, one study of Black, non-gay identified, behaviorally bisexual men and gay-identified Black men found that Black, non-gay identified, behaviorally bisexual men were less likely to disclose, and more likely to conceal, their sexual orientation than gay men to the detriment of their mental health (Schrimshaw et al. 2013).

There is an intersectional impact of discrimination by race, gender, and sexual orientation on behavioral health choices and engagement with health care services (Bird & Bogart, 2001; Eaton, Driffin, Keger, et al., 2015; Malebranche et al., 2004; Whitehead et al., 2016). Black MSM carry their experiences of discrimination based on race and sexuality into medical settings, making them vigilant for signs of judgment from providers and cautious regarding their disclosure related to their sexuality and sexual behaviors (Malebranche et al., 2004). Unfortunately, for Black MSM, this mistrust in the health care system and difficulty disclosing MSM status to providers can limit health care access with consequences of physical and mental health (McKirnan et al., 2013). Moreover, the need for secrecy and privacy, concealment of sexual identity, is itself a stressor, a trigger for stress-related processes associated with poor physical and mental health outcomes (Meyer, 2003; Meyer & Frost, 2013).

Empirical research on the effects of stress exposure on mental health of Black MSMW is limited. As reflected in the literature already reviewed, most studies with sufficient statistical power to effectively study Black MSMW have focused on the role of sociodemographic and

behavioral factors related to HIV risk and engagement in the HIV continuum of care or assessing Black MSMW's relative risk compared Black MSWO or Black MSMO. Others have explored the role of perceived and everyday discrimination in relation to Black MSMW's limited engagement in the HIV continuum of care, yet we do not know much about the mechanisms driving these relationships. Fewer have empirically assessed the ways that psychological distress contributes to outcomes among Black MSMW. Identifying with stigmatized groups can impact the psychological wellbeing of sexual minorities (Díaz et al, 2001; Herek,1999; Meyer, 2003), because of the anticipation of stigmatizing attitudes (Quinn & Chaudoir, 2009). As Black MSMW have a unique experience related to discrimination, understanding that experience and its impact on psychological distress may provide important new insights into the specific social and individual-level factors on which to intervene and provide support.

Psychological distress and sexual trauma. Compared to Black MSMO, Black bisexually-identified MSMW and Black gay-identified MSMW are significantly more likely to report having been victims of intimate partner violence and depression (Friedman, Bukowski, et al., 2019). A high prevalence of childhood sexual abuse, defined as coerced sex before the age of 18, or sex wanted or unwanted, with someone significantly older (e.g., 5 or more years) has been documented among Black MSM (Fields et al., 2008). These experiences in childhood can be mitigated or made worse by adulthood experiences with discrimination, chronic stress, and social support (Allen et al., 2014). Childhood sexual abuse among Black MSM has been correlated with adult victimization, elevated sexual risk-taking, sexual compulsivity, low social support, and depression and anxiety (Allen et al., 2014; Parsons et al., 2012; Rooney et al., 2018; Safren et al., 2011).

Psychological distress and health and sexual risk factors. Research on Black MSMW, has demonstrated that psychological vulnerabilities, such as depression, are associated with heightened HIV-related disparities (Allen et al., 2014; Friedman, Bukowski, et al., 2019; Friedman, Stall, et al., 2014). Moreover, research among MSM have identified

multiple individual-level and social conditions that generate a syndemic of psychological comorbidities, substance use, and victimization that contribute to higher HIV prevalence. Such conditions are exacerbated for non-White MSM and non-gay identified sexual minorities (Ayala et al., 2012; Battle & Crum, 2007; Dale et al., 2016; Egan et al., 2011; Stall et al., 2008). Moreover, conditions contribute to higher HIV prevalence and risk among Black MSM include partner selection (Berry et al., 2007; Fisher Raymond & McFarland, 2009); sexual networks (Tieu et al., 2015); heightened psychological comorbidities, such as depression (Dyer et al., 2015), and internalized homonegativity and gender role conflict (Bingham et al., 2013). Syndemic factors have an even more severe burden on Black MSMW than on Black MSW and MSMO. When compared to Black MSW and MSMO, Black MSMW are more likely to report depression, suicidality, substance use, and incarceration (Dyer et al, 2015). Another study among 422 bisexual individuals aimed at validation of measures of illegitimacy of bisexual identity, anticipated bi-negativity, internalized bi-negativity, and identity affirmation found that negative attitudes toward bisexuality were positively associate with depression (Paul et al., 2014). A population-based study (Gonzales et al., 2016) found that bisexual men had greater odds of psychological distress, as measured by Kessler 6-Item Psychological Distress Scale (Kessler et al., 2003), and alcohol consumption than heterosexual men. Using data from a population-based study, Dyer et al. (2017) found MSMW versus MSWO had 30 to 60% increased odds of substance use (non-injection heroin, cocaine and crack use in the past 30 days).

Engaging in transactional sex also has consequences for the psychological and physical well-being of MSMW. A population-based study found that MSMW versus MSMW have almost five times the odds of engaging in the sex trade and being HIV infected (Dyer et al., 2017). Another population-based study of sexual risk among MSM found that, compared to MSW, MSMW with current female partners (within the last 12 months) had greater odds of exchange sex as well as unprotected sex and sexually transmitted infections (Dyer et al., 2015). There is a

high prevalence of transactional sex among MSM in Los Angeles (Javanbakht et al., 2019), particularly among those having sex with female partners (Gorbach et al., 2009), and transactional sex has been associated with symptoms of anxiety (Bauermeister et al., 2017). Sexual compulsivity, a risk factor for HIV among MSM (Parsons et al., 2012; Rooney et al., 2018), has strong associations with depression and anxiety among men who have sex with men (Rooney et al., 2018).

Substance abuse may go hand-in-hand with sexual risk behaviors among MSMW (Gorbach et al., 2009). The connection between substance and abuse and same-sex risk behaviors has been acknowledged by Black non-gay identified MSMW (Harawa et al, 2008). Treatment settings sensitive to the challenges of Black MSMW's expression of their sexuality may facilitate their recovery. During focus groups in Los Angeles, California, Black non-gay identified MSMW in treatment for substance abuse indicated that "a readiness to admit their same-sex activity and come to terms with their homosexuality/bisexuality was necessary for recovery" (Harawa et al., 2008, p. 748).

Black MSMW have also reported high levels of gender role conflict, "internal conflict with traditional gender-role stereotypes and an individual's perceived need to comply with these roles," also reported higher levels of psychological distress, e.g., anxiety and depression, and lower levels of self-esteem (Bingham et al., 2013, p. 127). One aspect of this concealment is related to societal gender role expectations, those related to masculine sexuality, power, and privilege. These expectations may keep men from acting in way authentic to themselves, producing gender role conflict (O'Neil, 2008, 2015). Gender role conflict can result in a loss of self-power, status and other positive values, and is significantly related to psychological and interpersonal problems (O'Neil, 2008), including sexism, violence, homophobia, depression, substance abuse, and relationship issues (O'Neil, 2015). In addition, it can intersect with sexuality, fueling hostility toward non-gender conforming gay, bisexual, and transgender boys, and with systemic racism and expectations of Black males to remain stoic while enduring the

stress of racial discrimination (Pappas, 2018). Among young Black MSM, their internal conflict over cultural conceptions of masculinity (gender role strain), efforts to camouflage their homosexuality, and strategies to prove their masculinity, exacerbate psychological distress (Fields et al., 2015). Fields et al. (2015) found that among young Black MSM participating in a qualitative study, this conflict may increase HIV risk through social isolation, poor self-esteem, reduced access to HIV prevention messages, and limited parental family involvement in sexuality development and early sexual decision-making.

Psychological distress and psychosocial resources. Literature on MSM and on Black MSM has shown that psychosocial resources are important for engagement in HIV prevention and care. One study suggested that, among MSM, disclosure of sexuality is a key component to receiving life-saving MSM-related services. Among MSM in Los Angeles and Chicago, including bisexually-identified MSM, MSM that disclosed their same-sex behaviors were more likely to receive a panel of STI screenings, including HIV screening, and vaccinations for hepatitis A and B and human papilloma virus (Singh et al., 2018). Studies of Black MSM have shown that, within the context of structural discrimination and homophobia, social support from peers among young Black MSM lowered risk of delayed HIV testing (Scott et al., 2014). Other studies among Black MSM have examined the role of psychosocial resources, such as a gay identity, on minority stress. For example, Wong et al. (2014) found that having a connection to a social network significantly reduced stress associated with gay identification on distress as well as stress from racism and homophobia among Black MSMW (Wong et al., 2014). Wilson et al. (2016), who studied young black gay and bisexual men (YBGBM) in New York, found that self-efficacy and hardiness/adaptive coping may play a more important role in protecting YBGBM from risks compared to social support and should be targeted in interventions, suggesting that there are different patterns of resilience among this group. Qualitative work has suggested that other factors, in addition to social support, are contributing to resilience among

vulnerable Black MSM include inner strengths, social relationships, diversity of experience, religion/spirituality, altruism, creativity (Buttram, 2015).

However, a considerable amount of attention in the literature has been focused on the complexities of social support. Qualitative work has suggested that, among Black MSM, “the lack of social and emotional support in their family and peer communities may have contributed to a desire to be emotionally connected to others, while for others it may have contributed to difficulty in trusting and skepticism in forming stable relationships with others, suggesting a potential for psychological and behavioral risks” (Saleh et al., 2016, p. 11). In addition, for Black MSM, “the withdrawal of social support can accentuate feelings of alienation, stress, and psychological distress associated with living in a racist society. In the face of difficult socioeconomic circumstances, more basic needs such as securing food and clothing may tend to be prioritized over longer-term sexual health promotion goals” (Saleh et al., 2016, p. 12). Moreover, internalized beliefs about cultural expectations regarding Black men’s sexuality and masculinity may be a barrier to the formation of Black MSM’s social support networks (Saleh et al., 2016). Furthermore, for Black MSMW, the pressure to conceal behaviors may not be conducive to the same kinds of social support offered to gay-identified Black MSM.

Other research has focused on the complicated relationships between gender role conflict and self-esteem, a potential psychosocial resource. For example, Szymanski and Carr (2008), found that among gay-identified and bisexually-identified men, gender role conflict was directly related to self-esteem and indirectly related to self-esteem through internalized heterosexism; self-esteem was directly and indirectly (through avoidant coping) related to psychological distress. Other research has suggested that, for Black men, self-esteem is also closely tied to their private regard toward Black people (Davis et al., 2017) and their psychological health (Bynum et al., 2008).

More research focused on a strengths-based approach to mental health is needed. More studies are needed understand the facilitators to engaging Black MSMW in HIV prevention and

care (Bogart et al., 2017), including the role that social support plays in relation to psychological distress among Black MSMW. While the field of research on the role of affirmative attitudes toward bisexuality on health outcomes, including mental health outcomes is growing (Colpitts & Gahagan, 2016; Gahagan & Colpitts, 2017; Paul et al., 2014; Riggle et al., 2014), more research is needed on the role of affirmative attitudes toward one's race and bisexual identity, particularly among Black MSMW. In a study of young African American males, Bynum et al. (2008), found that higher levels of private regard for the Black race reduced the impact of racist experiences for symptoms of anxiety. Perrin et al. (2019) recently published the results of a minority strengths model tested among a national sample of LGBTQ individuals from diverse racial/ethnic backgrounds. This study demonstrated variance on identity pride, self-esteem, resilience, and positive behaviors; it also explained 41.6% of the variance in mental health (Perrin et al., 2019). More studies like these are needed to identify within group differences on strengths-based measures and psychological distress among Black MSM. One example of such research, by Crawford et al. (2002), of a study of the impact of racial-ethnic and sexual identity development on the psychosocial functioning of Black gay-identified and bisexually-identified men, found that participants that had higher levels of integrated self-identification reported higher levels of self-esteem, HIV prevention self-efficacy, stronger social support networks, greater levels of life satisfaction, and lower levels of male gender role conflict and psychological distress than participants that had less positive (i.e., less well integrated) Black and gay identity development.

Psychological distress and sociodemographic and individual-level characteristics. Among Black MSM, social and structural barriers such as income, joblessness, and incarceration are known to contribute to risk for HIV infection (Millett et al., 2006). Less is known about how sociodemographic and individual-level factors need to be considered as control variables and covariates of psychological distress among Black MSM. Sociodemographic characteristics, such as age, educational attainment, life experiences (e.g., incarceration,

childhood sexual abuse, and homelessness), may vary with psychological distress. Unfortunately, studies such as these have not been able to examine the intersection of racism with these factors, because of sample size issues, but sociodemographic and individual characteristics are shaped, in part, by living in a racialized society and must be considered for any study involving Black MSMW.

Among African Americans, age, poverty, education, employment status, and marital status have all been associated with depressive symptoms (Lincoln et al., 2011), as has incarceration among African American men (Assari et al., 2018). Living in a racist society has implications for Black Americans with respect to, low educational attainment (Williams & Land, 2006), residence in poor neighborhoods (Williams, 1999); likelihood of housing insecurity (Staveteig & Wigton, 2005), and likelihood of incarceration (Western & Pettit, 2010). Moreover, homelessness individuals and those with mental illnesses are more likely to become trapped in a cycle of incarceration and recidivism, for lack of resources or commitment to alternative social service provisions to break this cycle (Hirschtritt & Binder, 2017; Mulvey & Schubert, 2017). For Black MSM, these experiences may be exacerbated by racialized socioeconomic and psychosocial disparities. In one study that compared Caucasian/White MSM to African American/Black MSM, the latter experienced a wide range of health and social disparities including: educational attainment; employment; homelessness; identifying as gay; HIV status; arrest history; social support; and satisfaction with one's living situation (Buttram & Kurtz, 2015). Moreover, for Black MSM, living with intersectional racial and sexual minority statuses, in circumstances where family social support is withdrawn, feelings of alienation, stress, and psychological distress may be associated with living in a racist society (Saleh et al., 2016).

Psychological distress and HIV status. Psychological distress is known to increase risk for HIV seroconversion among MSM. For example, a longitudinal study that followed MSM with negative HIV antibodies at baseline found that depression was independently associated with HIV seroconversion (Koblin et al., 2006). The differences in the dynamics of psychological

distress by HIV status among Black MSM are less well-known. Most studies among Black MSM that have examined variations in mental health and psychosocial risk differences by HIV status have focused on outcomes for HIV incidence and sexual risk (Ayala et al., 2012; Koblin et al., 2013). For example, a study of Black MSM in six American cities revealed that men 30 years old and younger reported significantly higher levels of sexual risk and were more likely to have a sexually transmitted infection diagnosed during follow-up than their older counterparts. Younger men had lower levels of engagement in health care, as defined by not having a usual place for health care not having visited a health care provider recently, and to have unmet health care needs (Koblin et al., 2013). A recent randomized control trial among Black behaviorally-homosexual MSM (Bauermeister et al., 2018) found that different factors may impact psychological distress by HIV status. Among the HIV negative or status unknown participants, internalized (homonegativity) and externalized stigma (racial and sexuality discrimination) were positively associated with psychological distress, and diminished the protective effect of social support on psychological distress (Bauermeister et al., 2018). Further, among the HIV positive participants, externalized stigma was associated with greater anxiety symptoms and diminished social support (Bauermeister et al., 2018). The body of evidence is still growing, however, and findings are sometimes conflicting. For example, another study that have looked at differences in psychological distress between Black MSM newly diagnosed with HIV and their HIV-uninfected peers focused on psychosocial risks attributed to psychological distress detected no differences by HIV status (Mayer et al., 2014). That analysis of data from a cohort of prospectively-followed Black MSM, including bisexually-identified Black MSM, enrolled in six US cities, found that nearly equal proportions of newly-diagnosed Black MSM and their HIV-uninfected peers were poor, had depressive symptoms, and expressed internalized homophobia (Mayer et al., 2014). Thus, it is important for more studies to examine differences in correlates of psychological distress by HIV status.

This syndemic of conditions has also led to a higher background prevalence of HIV in African American communities, and perhaps is the primary reason for their heightened HIV risk for Black MSMs (Feldman, 2010). While these clues shed light on some of the socioeconomic and contextual factors that Black MSMW likely share with their Black MSM counterparts regarding HIV risk and access to care, the psychosocial factors shape the care choices and health behaviors of Black MSMW remain unclear.

Similarly, research on Black MSM provides some additional clues about the psychosocial barriers that interfere with their engagement in the HIV continuum of care, such as attitudes, knowledge, and experience related to Preexposure Antiretroviral Prophylaxis (Mimiaga et al., 2009); and a dearth of culturally relevant HIV intervention studies (Maulsby et al., 2013; Maulsby et al., 2014). Studies that have specifically investigated the uptake and adherence to pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) have identified issues such as a limited awareness (Eaton, Driffin, Baumeister, et al., 2015), limited understanding of biomedical interventions (Mimiaga et al., 2016; Rolle et al., 2017), negative perceptions of these interventions (Brooks et al., 2015), ineffective messaging (Mansergh et al., 2012); and costs, adherence requirements, and access (Pérez-Figueroa, 2015). Other psychosocial barriers that can interfere with Black MSM's choice to engage in health care include perceived stigma and discrimination from their health care providers; health risks, such as mental health disorders and current substance abuse; and personal self-concept, such as self-esteem and internalized homonegativity (Bogart et al., 2011; Eaton, Driffin, Bauermeister, et al., 2015; Hussen et al., 2015; Hightow-Weidman et al., 2017; Irvin et al., 2014). Black MSMW likely encounter many of the same psychosocial barriers, but also face unique barriers to care, too, but the studies mentioned do not distinguish Black MSMW from Black MSMO in their analyses. Thus, it is difficult to decipher the specific intervention needs of Black MSMW.

Given the HIV disparities facing Black MSMW, there is an urgency to engage this group in the continuum of care to address their unique HIV disparities. Additional research can identify

the barriers that impact the choices Black MSMW make regarding engagement in prevention and treatment. Overcoming such barriers will facilitate early diagnosis to prevent severe disease progression, to engage them in treatment and secondary prevention, and to share with them the benefits of recent biomedical advances (HIV.gov, 2016). Recent, albeit limited research on Black MSMW's distinct psychosocial barriers to HIV prevention and treatment substantiate this claim.

Black MSMW are facing psychosocial risks that elevate their risks for HIV infection (Dyer et al., 2018; Friedman, Sang, et al., 2019) and higher viral loads (Friedman, Sang, et al., 2018). That is, there are a host of social and individual barriers that are standing in the way of their engagement in HIV prevention and care (Friedman, Sang, et al., 2018). For example, when compared with gay-identified MSMO, bisexually-identified MSMW and gay-identified MSMW were significantly more likely to report drug use, trauma, sexuality nondisclosure, lack of gay community support, and depression symptoms (Friedman, Sang, et al., 2019). Furthermore, studies of Black MSMW alone have attributed psychosocial factors to elevated risks for HIV infection and transmission (Dangerfield et al., 2017; Dyer et al., 2018; Harawa, Guentzel-Frank, et al., 2018; Joseph et al., 2018; Li et al., 2018). Similarly, studies have attributed psychosocial risks and sociodemographic characteristics to poor engagement in HIV prevention and care (Arnold et al., 2017; Friedman et al., 2018; Friedman, Bukowski, 2019; Friedman, Sang, et al., 2019). Such factors include current depression, substance use, and trauma (Friedman, Sang, et al., 2018; Friedman, Sang, et al., 2019) and social stressors such as competing needs for housing and income, and provider and insurance issues, concerns about disclosure of same-sex disclosure (Arnold et al., 2017).

A major barrier to engagement in HIV prevention and care among Black MSMW is the need for secrecy or privacy. Studies among Black MSMW have long-identified the need for secrecy and privacy as a reason for non-disclosure of same-sex behaviors (Bingham et al., 2013; Harawa et al., 2008; Lapinski et al., 2010; Operario et al., 2011). Their concealment

perpetuates their risk for HIV infection and limit their access to the HIV continuum of care; however, it is understandable given negative attitudes toward sexual minorities, particularly bisexual men. Moreover, concealment of sexual identity is among the foremost contributors to sexual minority's psychological distress (Meyer, 2003). The dynamics of concealment, along with a deeper understanding of other factors comprising the correlates of poor mental health outcomes, is needed to overcome the barriers to MSM-related health care.

Additional research is needed on factors contributing to psychological distress among Black MSMW to help tailor HIV interventions by HIV status and to identify the distinct risk and protective factors that contribute to psychological distress among Black MSMW by HIV status. Insights from this research can be used to shape future interventions related to engaging this population in biomedical HIV interventions.

Focus of the Dissertation

This dissertation aims to address several critical gaps in knowledge about the risk factors and social and personal resources that shape psychological distress among Black MSMW. To this end, this study evaluates how sociodemographic and individual-level factors, stressors (discrimination, past-year racism, adult sexual trauma), psychosocial risks (access to health care, substance abuse, MSM-related healthcare avoidance, sexual risks, sexual compulsivity, gender role conflict, and the importance of privacy regarding sex with men), and psychosocial resources (social support from family and friends, private regard for Black race, and self-esteem), are correlated with psychological distress. This project also aims to inform the tailoring of future health assessments and interventions among Black MSMW (HIV positive and negative) to account for the factors that impact psychological distress.

The study uses data from the Men of African American Legacy Empowering Self (MAALES) HIV Intervention Study of Black MSMW in Los Angeles, 2007-2010 (Bempong., 2015; Harawa et al., 2013). The study analyses are informed by Critical Race Theory (Ford & Airhihenbuwa, 2010a, 2010b) and the Minority Stress Model (Meyer, 2003). These theoretical

models provide structure for studying correlates of mental health outcomes among sexual and racial minorities within their cultural context. Critical Race Theory is the lens through which racial disparities on Black MSMW's health are examined. The Minority Stress Model (Meyer, 2003) provides the framework for characterizing the effect of stress from stigma, prejudice, and discrimination on Black MSMW's psychological distress; the effects of stress on Black MSMW's personal and social resources and their relationship to psychological distress; and the impact of HIV status on these relationships. It will also inform the tailoring of culturally competent biomedical interventions for HIV, by examining the factors most influential on psychological distress, a barrier to engagement with healthcare. Moreover, it responds to those early calls to action, which sounded the alarm about the overwhelming barriers facing Black MSMW in the fight against HIV. The Integrated Conceptual Model and descriptions of the three studies comprising the dissertation are described Chapter 2.

Chapter 2: Theoretical Framework

Framing the Issue

Barriers to HIV prevention and the HIV continuum of care among Black MSMW remain poorly understood, primarily because they are not typically distinguished from Black MSMO, and there are many challenges to conducting research among this population. These challenges are, in part, due to the legacy of racism and homophobia, which has led to Black MSMW living in a society that polices their behaviors and fosters a need for privacy and discretion. For a decade, Black MSMW have been heavily scrutinized in the media and villainized for the alleged HIV risks they pose to Black women (King, 2004; Sternberg, 2001; Trebay, 2000). As one would expect, these experiences have made this group more suspicious of the public health community and health care providers (Ford et al., 2007). Therefore, for Black MSMW, their lives are often characterized by a heightened sense of vigilance and fear, which contributes to elevated rates of depression, anxiety, and other issues that indicate psychological distress (Friedman, Bukowski, et al., 2019; Friedman, Stall, et al., 2014). Moreover, these conditions may undermine their ability to engage in healthy behaviors and preventive care choices, including those related to HIV prevention and treatment (Arnold, 2017).

Despite increased attention on the health behaviors and health care access of Black MSMW, there has been limited consideration of the factors that shape psychological distress among this population. Given their health disparities relative to White MSMW and Black MSMO, such as low awareness and engagement in the HIV prevention continuum and HIV care continuum, and reports of higher levels of psychological distress, such as depression, it is critical to clarify the stressors faced by this population and to understand the ways that their lived experience may shape their psychological wellbeing. With this knowledge, HIV interventions directed at Black MSMW can be tailored to diagnose and address factors contributing to psychological distress.

This dissertation utilizes theoretical approaches that focus on the health effects of stigma and discrimination based on race and sexual minority behaviors. Specifically, the study analyses are informed by Public Health Critical Race (PHCR) praxis (Ford & Airhihenbuwa, 2010b) and the Minority Stress Model (Meyer, 2003). These models complement one another, providing a comprehensive framework to guide the study of correlates of psychological distress among Black MSMW while drawing explicit attention to how race, social position, sexual minority status, and HIV status shape distress.

Public Health Critical Race Praxis

Public Health Critical Race (PHCR) praxis (Ford & Airhihenbuwa, 2010b) is the lens through which I approach my research. At its core, PHCR comprises the four characteristics of race consciousness, contemporary racialization, social location, and the elimination of racial inequities (see Figure 2-1). First, *race consciousness*, an overarching tenet of PHCR, "connotes the acknowledgement and explicit study of racial dynamics both in society and within one's personal life" (p. 1391). Second, "*contemporary racialization* "describes how socially constructed racial and ethnic categories are used to order groups in society" (p. 1391). Third, *social location* "refers to an individual's or a group's position within a social hierarchy (e.g., privileged vs. marginalized, minority vs. majority) and informs the perspectives from which one views a problem" (p. 1391). And, lastly, the final characteristic of PHCR is *the elimination of racial inequities*, which it emphasizes on moving beyond understanding inequities to eliminating them. For public health research and practice, these four characteristics frame four main areas of focus: contemporary racialization, knowledge production, conceptualization and measurement, and action (p. 1391). Within these four main areas of focus, there are corresponding principles that guide PHCR praxis (p. 1394).

Principle	Affiliated Focus(es)	Definition	Conventional Approach	PHCR Approach
1. Race consciousness	All	Deep awareness of one's racial position; awareness of racial stratification processes operating in colorblind context	Colorblindness-belief in the irrelevance of racism characterized by the tendency to attribute racial inequities to non-racial factors (e.g., SES)	A researcher clarifies her racial biases before beginning research within a diverse community
2.Primacy of racialization	Contemporary Racialization	The fundamental contribution of racial stratification to societal problems; the central focus of CRT scholarship on explaining racial phenomena	Tendency to attribute effects to race rather than racialization or racism	A study on neighborhood characteristics includes factors hypothesized to reflect structural racism
3. Race as a social construct	Contemporary Racialization Conceptualization & Measurement	Significance that derives from social, political and historical forces	Biological determinism—the belief that race is meaningful because it provides insights about one's biology and propensities	A study assesses race not as a risk factor but to identify a population at risk for specific racism exposure
4. Ordinariness of racism	Contemporary Racialization	Racism is embedded in the social fabric of society	Racial exceptionalism—defines racism as rare, discrete, and overtly egregious incidents	A study of racism and health operationalizes racism as routine exposures (e.g., being followed while shopping)
5. Structural determinism	Contemporary Racialization	The fundamental role of macro-level forces in driving and sustaining inequities across time and contexts; the tendency of dominant group members and institutions to make decisions or take actions that preserve existing power hierarches	Emphasizing individual or interpersonal factors	A multilevel study considers policy factors that may promote residential segregation
6. Social construction of knowledge	Knowledge Production	The claim that established knowledge within a discipline can be re-evaluated using antiracism modes of analysis	The belief that empirical research carried out properly is impermeable to social influences	A disparities-related literature review compares articles published in minority vs majority journals
7. Critical approaches	Knowledge Production Action	To dig beneath the surface; to develop a comprehensive understanding of one's biases	To accept phenomena or explanation at face value	A researcher considers alternative explanations for findings than those previously posited
8. Intersectionality	Conceptualization & Measurement Action	The interlocking nature of co-occurring social categories (e.g., race and gender) and the forms of social stratification that maintain them	Additive model of co-occurring social categories (e.g., race and gender)	Efforts to reduce HIV risk behaviors among diverse men who have sex with men address racial stereotypes
9. Disciplinary self-critique	Action	The systematic examination by members of a discipline of its conventions and impacts on the broader society	Limited critical examination of how a discipline's norms might influence the knowledge on a topic	Researchers examine implications for research of using 'health inequities' s. 'health inequalities'
10. Voice	Knowledge Production Action	Prioritizing the perspectives of marginalized persons; Privileging the experiential knowledge of outsiders within	Routine privileging of majority perspectives	Responses of skepticism or anger when outsiders within speak truth to power

Figure 2-1. PHCR principles and affiliated focuses (Ford & Airhihenbuwa, 2010b).

For the purposes of this study, I will draw on the following principles: (1) race consciousness, (2) race as a social construct, (3) ordinariness of racism. These guiding principles of PHCR (Ford & Airhihenbuwa (2010b) will shape the study the first main gap in the literature on psychological distress among Black MSMW. The first gap pertains to which sociodemographic and individual-level factors are related to stress exposure among Black MSMW. A description of how these three principles are applied to the study are described below.

Race consciousness*. Race consciousness*, an overarching tenet of PHCR, "connotes the acknowledgement and explicit study of racial dynamics both in society and within one's personal life" (Ford & Airhihenbuwa, 2010b, p. 1391). Figure 2-2 demonstrates how the principle of race consciousness encompasses all other principles and focuses outlined in Figure 2-1. *Race consciousness* will guide the study's overarching and "deep awareness of my own racial position and awareness of racial stratification processes operating in colorblind contexts." Racism and discrimination are part of our societal fabric. But for now, it is critical to recognize its negative consequences as well as the endurance and resilience of those bearing its greatest burdens. Race consciousness also brings to light lived experiences of racial minorities, primarily people of color, through a strengths-based approach, to look at the personal and social resources that mitigate the personal harm endured. Through a race consciousness perspective, I too, have an active role in this research. To that end, I will be reflexive throughout this process in my approach to the research questions, analyses, and findings.

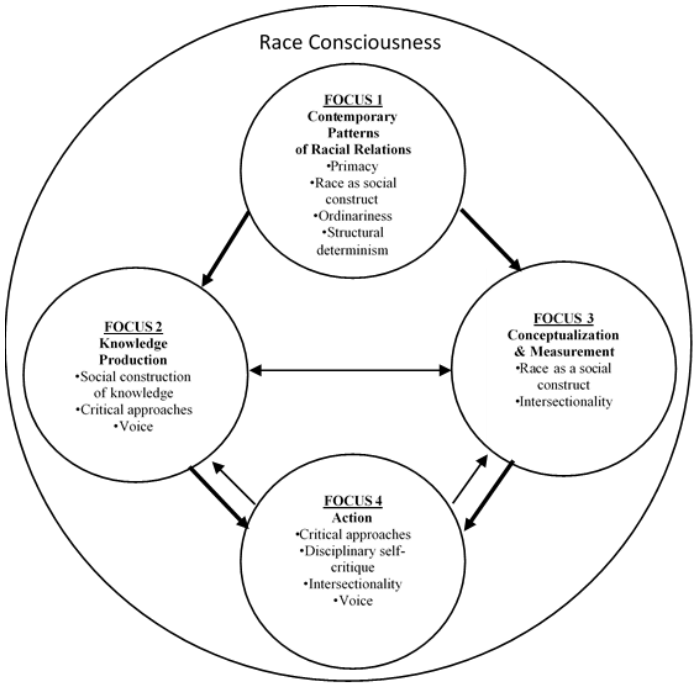

Figure 2-2. Public health critical race praxis, race consciousness, the four focuses, and ten affiliated principles (Ford & Airhihenbuwa, 2010b).

Race as a social construct*. Race as a social construct* is the "significance that derives from social, political and historical forces" (Ford & Airhihenbuwa, 2010b). This principle recognizes that sociodemographic and individual factors are derived from social, political, and historical forces that raise the risks for a population's specific racism exposures. They are products of contemporary racialization. Contemporary racialization processes shape the social location of individuals. And, their sociodemographic and individual-level characteristics quantify and qualify their social location. Moreover, contemporary racialization shapes the social construction of race and embeds racism in the social fabric of a society from which a sense of racism's ordinariness is shaped.

Ordinariness*.* The *ordinariness* of race refers to how racism is embedded in the social fabric of society (Ford & Airhihenbuwa, 2010b). PHCR's principle of the ordinariness of racism recognizes that routine nature of racism exposures, because racism is embedded in our society.

By recognizing race as a social construct, it then becomes an explicit concept for consideration and measurement.

Minority Stress Model

While PHCR provides insight into Black MSMW's racialized experiences and social status by racial and sexual identity, Meyer's Minority Stress Model (MSM) can shed light on how their experiences and social status impact their psychological health. This model provides a framework for empirically assessing the linkages between social factors, stress exposure, and health outcomes, which is needed to better understand the factors that shape psychological distress among Black MSMW.

The Minority Stress Model is the framework for the study of how stress based on minority status impacts health (see Figure 2-3). Ilan Meyer's (Meyer, 2003, 2010) minority stress model draws connections between chronic stress from stigma, prejudice, and discrimination and the relatively poor psychological health outcomes observed among lesbian, gay, and bisexual (LGB) populations. This model is inferred from several sociological and social psychological theoretical perspectives falling under an umbrella of social stress theories that focus on the stress associated with a minority status or position (Meyer, 2003). Minority social stress has been implicated in health disparities among racial and ethnic minorities (Allison, 1998; Clark et al., 1999) and in studies of how discrimination becomes embodied (Krieger, 2001). Meyer posits that social stress (e.g., stress generated from conditions in the social environment) has strong impacts on stigmatized sexual minorities just as it does on stigmatized minorities based on socioeconomic status, race/ethnicity, or gender. He also specifies stressful social processes affecting risk for psychological disorders among LGB and accounts for resilience and coping as buffers to stress (Meyer, 2007).

Social stress is often chronic (i.e., repeated, episodic, and continuous) and poses threats to which an individual cannot easily adapt or overcome; chronic stressors may be constant and

embedded in the environments in which a person lives and works or borne out of acute stressors with long-lasting effects (Baum et al., 1990). An internal response to stress is generated from discrepancies between external conditions and one's own needs, values, perceptions, resources, and skills (Aneshensel, 1992). From the perspective of the minority stress model, "minority stress is (a) *unique*—that is, additive to general stressors that are experienced by all people, and therefore, stigmatized people are required an adaptation effort above that required of similar others who are not stigmatized; (b) *chronic*—that is, minority stress is related to relatively stable underlying social and cultural structures; and (c) *socially-based*—that is, it stems from social processes, institutions, and structures beyond the individual rather than individual events or conditions that characterize general stressors or biological, genetic, or other nonsocial characteristics of the person or the group" (Meyer, 2003, p. 677).

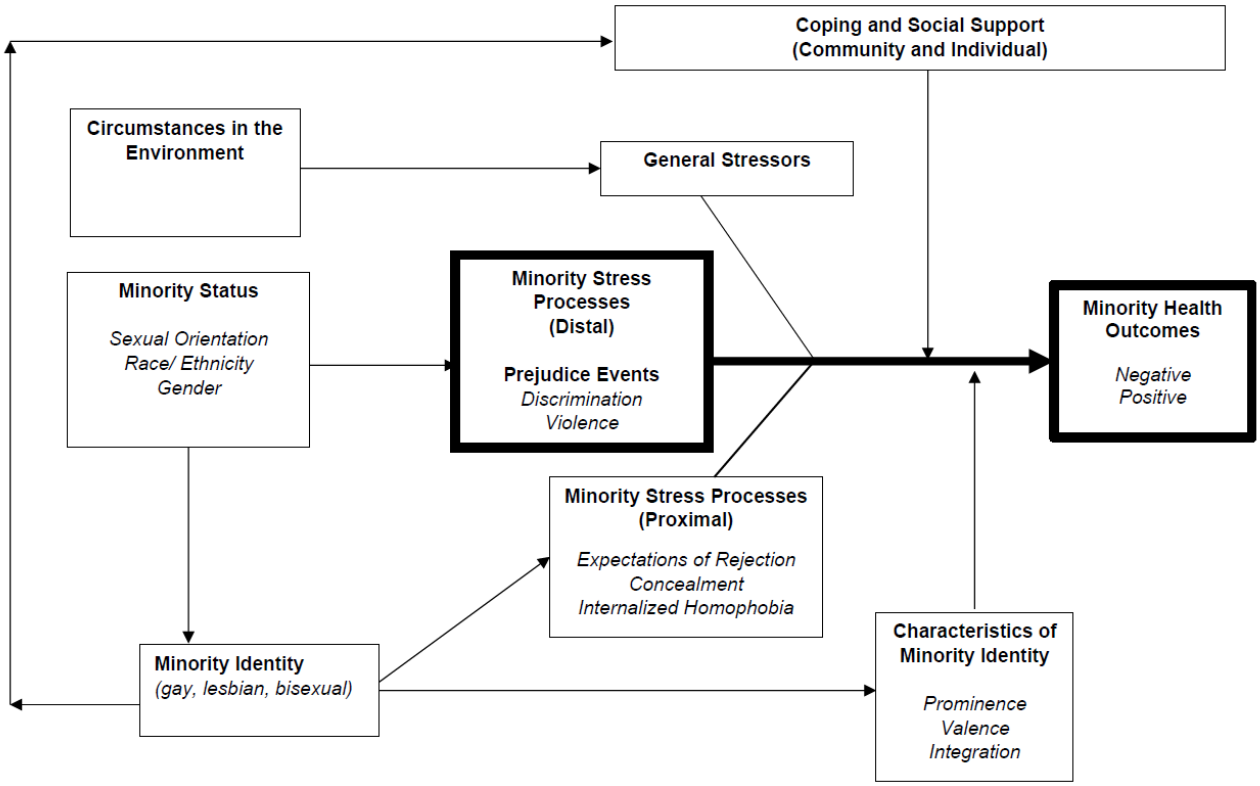

Figure 2-3. Minority stress processes in gay, lesbian, and bisexual populations (Meyer, 2003).

The components of the minority stress model are as follows (Meyer, 2007). First, the model includes circumstances in the environment (i.e., environmental stressors) that produce advantages and disadvantages related to factors such as SES and overlap and affect exposure to both stress and resources (Díaz et al., 2001). Environmental stressors may be general, such as job loss, or unique to a minority group, such as discrimination in employment. These stressors may also overlap, representing interdependence (Pearlin, 1999). Second, the model considers three minority statuses: sexual orientation, race/ethnicity, and gender. Third, minority status is linked directly to distal minority stress processes, including experiences with prejudice (e.g., discrimination and violence). Fourth, the relationship between minority status and proximal minority stress processes (e.g., expectations of rejection, concealment, and internalized homophobia) is modified by minority identity (e.g., gay, lesbian, bisexual). Fifth, general

stressors converge with distal and proximal stress processes to produce positive and negative mental health outcomes.

The model, applied specifically to LGB populations, posits that prejudice based on sexual minority status is stressful and can lead to adverse health outcomes (Meyer, 2007). LGB individuals suffer unique consequences from distal stressors related to identity, such as antigay violence perpetrated by those with prejudice toward them (Herek, 1999). They may also suffer legal discrimination in housing, employment, and basic civil rights, such as marriage and adoption (Meyer, 2007). In addition, individuals may also suffer from proximal stress processes related to self-identity. These processes are accounted for in the model. The processes of minority stress relevant to LGB health are "a) external, objective stressful events and conditions (acute and chronic), b) expectations of such events and the vigilance this expectation requires, and c) the internalization of negative societal attitudes" (Meyer, 2003, p. 678). To these stressors, Meyer (2003) adds one additional proximal stress process, the concealment of one's sexual orientation. In summary, stress processes may operate in LGB individuals so that they are "vigilant in interactions with others (expectations of rejection), hide their identity for fear of harm (concealment), or internalize stigma (internalized homophobia)" (Meyer, 2003, p. 678).

Characteristics of minority identity, such as prominence of an LGB identity, can be modifiers of the stress process. For example, LGB identity can serve as a source of strength through positive coping. Positive coping involves garnering personal resources (e.g., adaptability, self-acceptance) and group resources (e.g., developing positive in-group pride, joining a gay-affirmative church) to cope with and build resilience against the adverse mental health effects of minority stress related to prejudice, discrimination, and stigmatization (Meyer, 2003, 2007).

Meyer points to social theorists concerned with alienation from social structures, norms, and institutions (Durkheim, 1951; Merton, 1968) as influential in minority stress theory (Meyer, 2003). Sexual minorities may conflict with the dominant culture, social structures, and norms

that shape social institutions, such as heterosexual marriage and alienated from the benefits of those institutions (e.g., family life and intimacy) (Meyer, 2003). Likewise, social identity and self-categorization theories (David & Turner, 1999; Tajfel & Turner, 2019) explain the impact of intergroup relations on sexual minority health (Meyer, 2003). These theories posit that the process of categorization into a social group triggers intergroup processes, such as competition and discrimination, providing an anchor for group and self-definition (Meyer, 2003). In addition, social comparison and symbolic interaction theories (Pettigrew, 1967; Stryker & Statham, 1985) suggest negative evaluation (e.g., stereotypes and prejudice directed at minority persons) by others can lead to adverse psychological consequences (Meyer, 2003). Meyer identifies the unifying concept among these theories that emerges from stress theory, that is, the mismatch or disharmony with one's environment as the source of minority stress (Pearlin, 1999; Selye, 1980).

Integrated Conceptual Framework

Integrating key principles from PHCR for public health research and practice and the MSM provides a more comprehensive framework to identify the correlates of variations in psychological distress. This integrated framework is presented in Figure 2-4. It addresses a broad range of social stressors, sociodemographic and individual-level characteristics, and psychosocial risks and resources that may influence psychological distress outcomes. And, it takes into consideration the role of HIV Status in moderating the relationships between these correlates and psychological distress. Hence, this model guides analyses in the present dissertation focused on a Black MSMW in Los Angeles.

Psychological distress is the main outcome; however, in order to understand how psychological distress varies among Black MSMW, it is critical to understand relationships among its potential correlates: sociodemographic and individual-level factors, stress exposure, health and sexual risks, and psychosocial resources. In addition, given the high viral loads among HIV positive Black MSMW and HIV negative Black MSMW's low engagement in HIV

prevention initiatives (Friedman, Bukowski et al., 2019; Friedman, Stall et al., 2014; Friedman, Wei, et al., 2014), it is critical to understand whether HIV status moderates the relationship of these covariates with psychological distress.

Sociodemographic and individual-level characteristics are, as PHCR describes, indicators of an individual's or a group's position within a social hierarchy (e.g., privileged vs. marginalized, minority vs. majority). Sociodemographic and individual-level factors are known to impact stress exposure and psychological distress among sexual minorities, particularly those that are also racial minorities (Cochran et al., 2003; Meyer, 2003).

From a race consciousness perspective, it is the racial dynamics and racialization processes shaping groups in a society that shape individual's and group's social location. All study participants identify as Black or African American. But the unique social location of Black MSMW within the social hierarchy influences the kind of individual characteristics that impact their stress and psychological distress. Cultural context shapes the impact of sociodemographic and individual-level characteristics on stress exposure by race and sexual identity. In the United States, for example, Black Americans experience high levels of racism and racial discrimination compared to White Americans (Williams & Sternthal, 2010) and stress related to multiple life stressors, such as lower educational attainment and neighborhood stress (Sternthal et al., 2011). This higher level of stress among Black Americans is likely related to segregation, concentrating disadvantages marked by extreme poverty and unemployment, pollution, deteriorating housing, violence, all factors producing stress (Williams et al., 2010; Williams & Collins, 2001). In turn, these disadvantages produce poor health outcomes among African Americans (Assari, 2018), including psychological distress (Graham et al., 2016; Molina & James, 2016; Williams et al., 2017). This stress is likely compounded by a sexual minority identity (Meyer, 2003). The stressors associated with their racial discrimination, racism in the past year, and adult sexual trauma among MSM, are compounded by their social location. Their stressors, by virtue of the men's social location as sexual minorities, are also sexual minority

stressors. For example, Black MSMW in Los Angeles have high rates of incarceration, incarceration recidivism, and housing insecurity, and they vary in how they identify their sexual identity along a spectrum from heterosexually-identified to gay-identified (Harawa, Brewer, et al., 2018). Further, childhood sexual trauma, common among Black MSM (Allen et al., 2014; Fields et al., 2008) can contribute to challenges in adulthood (Allen et al., 2014; Parsons et al., 2012; Rooney et al., 2018; Safren et al., 2011). Thus, there is a need to identify which sociodemographic and individual-level characteristics are associated with stress exposure among Black MSMW so that interventions can be tailored to their lived experiences.

The Minority Stress Model (Meyer, 2003) posits that the effect of the social stress they experience in relation to their social location is manifested in the type and quantity of individual's and group's health risks and resources. Minority stress shapes risks and resources. For that reason, the model also accounts for how stressors shape individual and group health risks and resources and, in turn, how those risks and resources impact psychological distress. For this study, health and sexual risks are represented by health care access, alcohol binging, drug use, MSM-related health care avoidance, sexual risk behavior, sexual compulsivity, gender role conflict, and the importance of privacy regarding sex with me. Psychosocial resources are represented by social support from family and friends, private regard for their race, and self-esteem. The Theoretical Framework for the three studies is described in the next section.

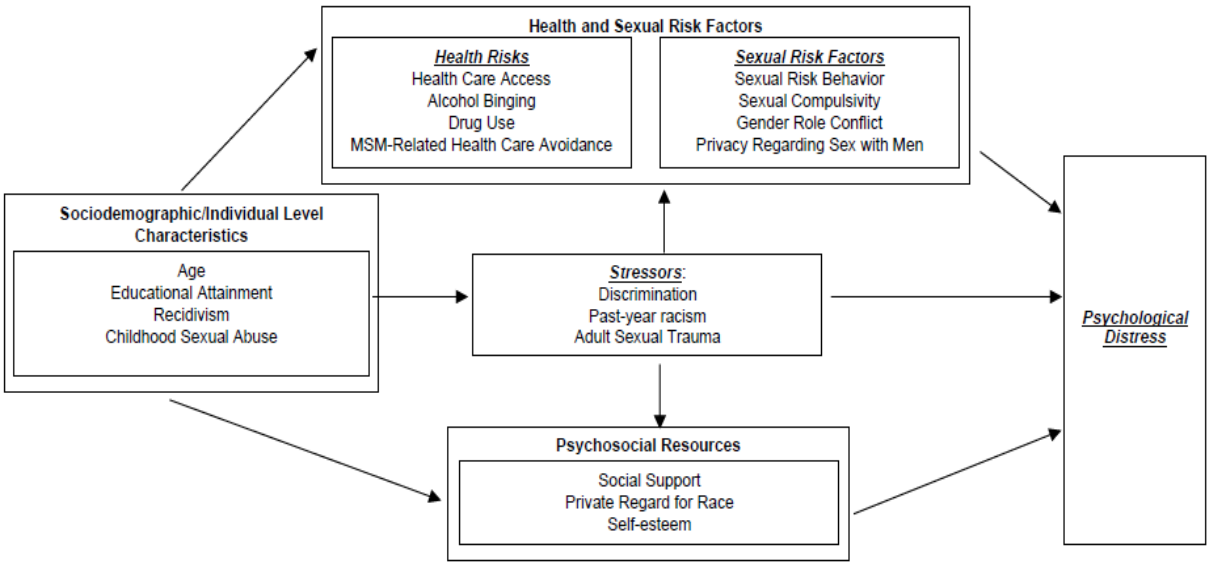

Figure 2-4. Conceptual model for correlates of psychological distress by HIV status among Black MSMW in Los Angeles, California.

Dissertation Title: Psychosocial Correlates of Psychological Distress among Black Men Who Have Sex with Men and Women (MSMW) in Los Angeles, California

Study #1: Stress exposure and psychological distress among Black MSMW

Study #2: Health and sexual risks associated with psychological distress among Black MSMW

Study #3: Psychosocial resources associated with psychological distress among Black MSMW

Study 1: Stress Exposure and Psychological Distress among Black MSMW

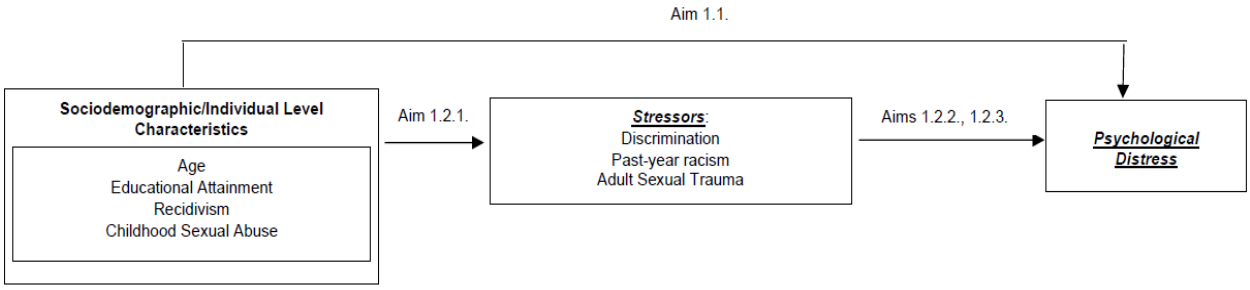

Figure 2-5. Study 1: Stress exposure and psychological distress among Black MSMW.

Research Question 1.1: Are there sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?

Aim 1.1: Assess sociodemographic and individual-level characteristic patterns in psychological distress among Black MSMW

Research Question 1.2: Does stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?

Aim 1.2.1: Examine sociodemographic and individual-level characteristic patterns in stress exposure

Aim 1.2.2: Assess the relationship between stress exposure and psychological distress

Aim 1.2.3: Evaluate the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress

Stress Study 1 is "*Stress exposure and psychological distress among Black MSMW*". The research questions, aims, and hypotheses guiding Study 1 are as follows:

***Research Question 1.1*: Are there sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?**

Aim 1.1*: *Assess sociodemographic and individual-level characteristic patterns in psychological distress among Black MSMW.

Hypothesis 1.1*: Disadvantaged social position (e.g., one or more incarcerations, lower education) and childhood sexual abuse are associated with greater odds of psychological distress compared to advantaged social position (e.g., no history of incarceration, higher education) and no childhood sexual abuse.*

Research Question 1.2*:* **Does stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?**

Aim 1.2.1: ***Examine sociodemographic and individual-level characteristic patterns in stress exposure.***

Hypothesis 1.2.1*: Disadvantaged social position (e.g., one or more incarcerations, lower education) and childhood sexual abuse are associated with greater stress exposure (racial discrimination, racism, adult sexual trauma) compared to advantaged social position (e.g., no history of incarceration, higher education) and no childhood sexual abuse.*

Aim 1.2.2: Assess the relationship between stress exposure and psychological distress.

Hypothesis 1.2.2*: Greater stress exposure is associated with greater odds of psychological distress.*

Aim 1.2.3*:* ***Evaluate the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress.***

Hypothesis 1.2.3*: Differences in stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses face greater stress exposure, which contributes to greater odds of psychological distress.*

Study 2: Health and Sexual Risks Associated with Psychological Distress among Black MSMW

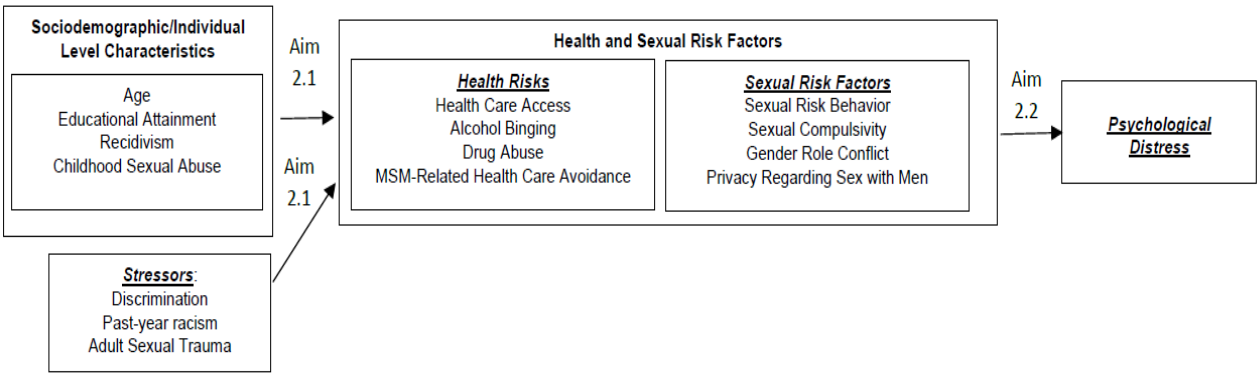

Figure 2-6. Study 2: Health and sexual risks associated with psychological distress among Black MSMW.

Research Question 2.1: What sociodemographic and individual-level characteristic and social stressors are associated with health and sexual risks among Black MSMW?

Aim 2.1: Identify the sociodemographic and individual-level characteristics and social stressors associated with health and sexual risks among Black MSMW?

Research Question 2.2: Are health and sexual risks associated with greater odds of psychological distress among Black MSMW?

Aim 2.2: Assess the relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure.

Study 2 is "Health and sexual risks associated with psychological distress among Black MSMW". The research questions, aims, and hypotheses guiding Study 2 are as follows:

***Research Question 2.1*: What sociodemographic and individual-level characteristic and social stressors are associated with health and sexual risks among Black MSMW?**

Aim 2.1*: *Identify the sociodemographic and individual-level characteristics and social stressors associated with health and sexual risks among Black MSMW?

Hypothesis 2.1: *Disadvantaged social position (e.g., younger age, one or more incarcerations, lower education)childhood sexual abuse, and greater stress exposure (racial discrimination, racism, adult sexual trauma)are associated with greater odds of health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and sexual risks (greater sexual risk behavior, greater sexual*

compulsivity, greater gender role conflict, and greater importance of privacy regarding sex with men) compared to advantaged social position (e.g., older age, no history of incarceration, higher education), no childhood sexual abuse, and lower social stress exposure.

***Research Question 2.2**:* **Are health and sexual risks associated with greater odds of psychological distress among Black MSMW?**

Aim 2.2**: **Assess the relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure.

***Hypothesis 2.2**: Health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men) are associated with greater odds of psychological distress, after accounting for differences in social position (age, educational attainment, incarceration recidivism), childhood sexual abuse, and stress exposure (racial discrimination, past-year racism, adult sexual trauma).*

Study 3: Psychosocial Resources Associated with Psychological Distress among Black MSMW

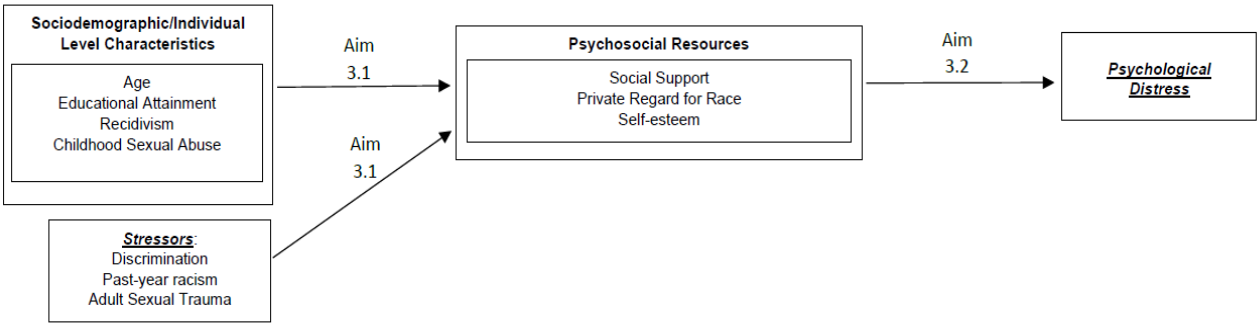

Figure 2-7. Study 3: Psychosocial resources associated with psychological distress among Black MSMW.

Research Question 3.1: What sociodemographic and individual-level characteristic and social stressors are associated with psychosocial resources among Black MSMW?

Aim 3.1: Identify the sociodemographic and individual-level characteristics and social stressors associated with psychosocial resources among Black MSMW

Research Question 3.2: Are psychosocial resources associated with lower odds of psychological distress among Black MSMW?

Aim 3.2: Assess the relationships between psychosocial resources and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure

Study 3 is "*Psychosocial resources associated with psychological distress among Black MSMW*". The research questions, aims, and hypotheses guiding Study 3 are as follows:

Research Question 3.1: **What sociodemographic and individual-level characteristic and social stressors are associated with psychosocial resources among Black MSMW?**

Aim 3.1: Identify the sociodemographic and individual-level characteristics and social stressors associated with psychosocial resources among Black MSMW.

Hypothesis 3.1*: Advantaged social position (e.g. older age, no history of incarceration, higher education), no childhood sexual abuse,, and lower stress exposure (racial discrimination, racism, adult sexual trauma) are associated with greater odds of psychosocial resources (social support, private regard for race, self-esteem) compared*

to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse, and greater stress exposure.

***Research Question 3.2*: Are psychosocial resources associated with lower odds of psychological distress among Black MSMW?**

Aim 3.2: Assess the relationships between psychosocial resources and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure.

Hypothesis 3.2*: Greater psychosocial resources (social support, private regard for race, self-esteem) are associated with lower odds of psychological distress, after accounting for differences in social position (age, educational attainment, incarceration recidivism), childhood sexual abuse),and stress exposure (racial discrimination, past-year racism, adult sexual trauma).*

Chapter 3: Methods

Sample

The sample for the current study is drawn from the Men of African American Legacy Empowering Self (MAALES) intervention study (NCT 01492530). The purpose of the study was to test the efficacy of a multi-session, small-group, holistically-framed intervention designed to build skills, address sociocultural issues and reduce risk behaviors in Black MSMW (Harawa et al., 2013). From 2007 to 2011, 437 Black MSMW were enrolled into this parallel randomized controlled trial (RCT) (Harawa et al., 2013). Institutional Review Board (IRB) approval was granted by both Charles R. Drew University of Medicine and Science and UCLA in Los Angeles, California. To be eligible, participants had to self-identify as a Black/African American man, have been labeled male at birth, and be at least 18 years of age. Participants also had to report at least one sexual activity (mutual masturbation, oral, vaginal, anal intercourse) with a biological female and a male (or male-to-female transgender person) in the past 24 months and could not have participated in an HIV prevention program in the prior 6 months. Recruitment strategies included outreach in public venues, provider referrals, and incentivized referrals from participants (Harawa et al., 2013). In addition, study personnel used a variety of recruitment materials, such as flyers, postcards, tri-fold brochures, matchbox style condom packets, bus placards, social media and the internet (Bempong et al., 2014). Most recruitment efforts occurred in non-gay identified venues that attracted African American men as a group, particularly health and social service governmental agencies and private businesses, such as barbershops (Bempong et al., 2014). In addition, recruitment efforts included outreach activities on the street (e.g., sidewalks, street corners, beaches, and park), in transit areas (e.g., bus and train stations), in bars and clubs, and in sex venues (Bempong et al., 2014). Trained staff screened interested individuals either in the field or by phone (Harawa et al., 2013).

Eligible individuals were scheduled for a baseline interview at the study offices of Charles Drew University (n = 299), at the offices for community collaborators (n = 96), or in the

field (n = 42) (Harawa et al., 2013). After obtaining informed consent, participants completed the audio computer-assisted self-interview (ACASI) baseline survey (Harawa et al., 2013). The survey assessed key background characteristics (e.g., sociodemographics, incarceration history, and self-reported HIV status) and HIV/STD testing history; hypothesized mediators (e.g., HIV knowledge, condom-related norms, intentions, and self-efficacy, HIV stigma, gender role expectations, and internalized homophobia); and potential moderators (e.g., psychological distress symptoms, experiences of racism) (Bingham et al., 2013). The following primary outcomes were assessed for the prior 90 days: (1) Number of male, female, and male-to-female transgender intercourse partners; (2) Number of episodes of any anal or vaginal intercourse, any unprotected intercourse, and any unprotected serodiscordant intercourse; (3) Substance use–any binge drinking (i.e., five or more drinks in any single day), any illicit drug use, number of days using drugs (specifically, for heroin, cocaine, poppers, club drugs, and methamphetamines–drugs that are strongly associated with elevated HIV risk), and sex while using any of these 'risky drugs'.

Of the 862 individuals screened for the MAALES RCT, 491 (57%) were found eligible. Of these, 437 enrolled and 386 were randomized into the intervention (n = 198) and control (n = 188) conditions (Harawa et al., 2013). A total of 5 participants (2 assigned to the intervention and 3 assigned to the control group) were found to be ineligible after their intervention condition assignments (Harawa et al., 2013). Three additional subjects were removed from the data during data cleaning procedures, thus the dataset had only 429 subjects upon receipt by this study's author. For the current study, the effective sample size is 411.

Measures

The following section describes the measures included in the dissertation studies. Additional details for each of the measures can be found in Appendix A.

Psychological distress. Psychological distress was measured using 49 items from the Brief Symptom Inventory-53 (BSI-53) (Derogatis, 1993), which asked respondents to rate the

degree to which they have been troubled over the preceding week by common symptoms across 9 dimensions (i.e., depression, anxiety, somatization, obsessive-compulsive, interpersonal sensitivity, hostility, phobic anxiety, paranoid ideation, and psychoticism) and 4 additional symptoms of clinical significance (e.g., poor appetite). Psychological distress was measured using 49 items from the Brief Symptom Inventory-53 (BSI-53) (Derogatis, 1993) that examined 9 dimensions of distress (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism). Questions asked respondents to rate the degree to which they have been troubled over the preceding week by common symptoms of these dimensions. Four items examining additional symptoms of clinical significance were excluded (i.e., poor appetite, trouble falling asleep, thoughts of death or dying, feelings of guilt). The following subscales were used in this study: *somatization* (seven items; e.g., “faintness or dizziness;” MAALES α = 0.88); *obsessive-compulsive* (six items; e.g., “having to check and double-check what you do;” MAALES α = 0.88); *interpersonal sensitivity* (four items; e.g., “feeling inferior to others;” MAALES α = 0.8003); *depression* (six items; e.g., “feeling hopeless about the future;” MAALES α = 0.85); *anxiety* (six items; e.g., “nervousness or shakiness inside;” MAALES α = 0.88); *hostility* (five items; e.g., “having urges to break or smash things;” MAALES α = 0.82); *phobic anxiety* (five items; e.g., “feeling nervous when you are left alone;” MAALES α = 0.80); *paranoid ideation* (five items, e.g., “feeling others are to blame for most of your troubles;” MAALES α=0.76); and *psychoticism* (five items; e.g., “never feeling close to another person;” MAALES α = 0.78). The items were measured by a 5-point Likert scale with the following options: 1 = Not at all, 2 = A little bit, 3 = Moderately, 4 = Quite a bit, 5 = Extremely, 8 = Refuse to Answer. For the current analysis, these response options were recoded to 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely. Responses of “Refuse to Answer” were coded as missing. Items within each subscale were then averaged, such that the score for each subscale of psychological distress ranged from 0 to 4, with higher values indicating higher levels of that dimension.

Together, these 49 items drawn from the BSI-53 comprised a highly reliable scale among this sample ($\alpha = 0.97$).

To create an overall measure of psychological distress the scores of the nine subscales were averaged. Psychological distress scores had a range of 0 to 3.88 with a mean of 0.58 and standard deviation of 0.61. The low mean and standard deviation suggest that most respondents reported relatively low distress scores. In addition, a skewness of 1.59 and a high kurtosis of 6.27 suggest that the scores are skewed to the low end. While most participants reported low levels of distress symptoms, another portion of the sample did report higher symptom levels. See Figure 3-1 below for a histogram of the distribution. Taken together, these results suggest that assessing psychological distress categorically-comparing those with low symptoms to those with high symptoms-would be most helpful for evaluating risk among this sample.

To create the categorical measure of psychological distress there were four steps. First, as previously noted, respondent scores for each subdimension were averaged, such that the range for each subdimension's score was from 0 to 4 ("Not at all" to "Extremely" on the BSI Scale). Second, each subdimension's score was then categorized based on a cut point of 2 or higher, which corresponded with "Moderately" to "Extremely" responses for symptoms on the BSI scale. Scores lower than 2 corresponded with responses of "Not at All" to "A Little Bit" for symptoms. For each dimension, scores of 2 or higher were coded as 1 ("High Risk"), and scores with mean values of less than 2 were coded as 0 ("Low Risk"), It should be noted that these cut points are conservative, as they are above the raw scores for severe clinical cases of each subdimension's condition, based on normative data (Derogatis, 1993). Third, the nine subdimensions (now assessed categorically and coded 0/1) were summed and the overall measure of psychological distress was based on a count of the number of "High Risk" subdimensions for each respondent, resulting in a score ranging from 0 to 9. Finally, those with

at least one “high risk” subdimension were considered to have “moderate to high distress” (coded 1). Those with no “high risk” subdimensions were coded as 0 “low distress.”

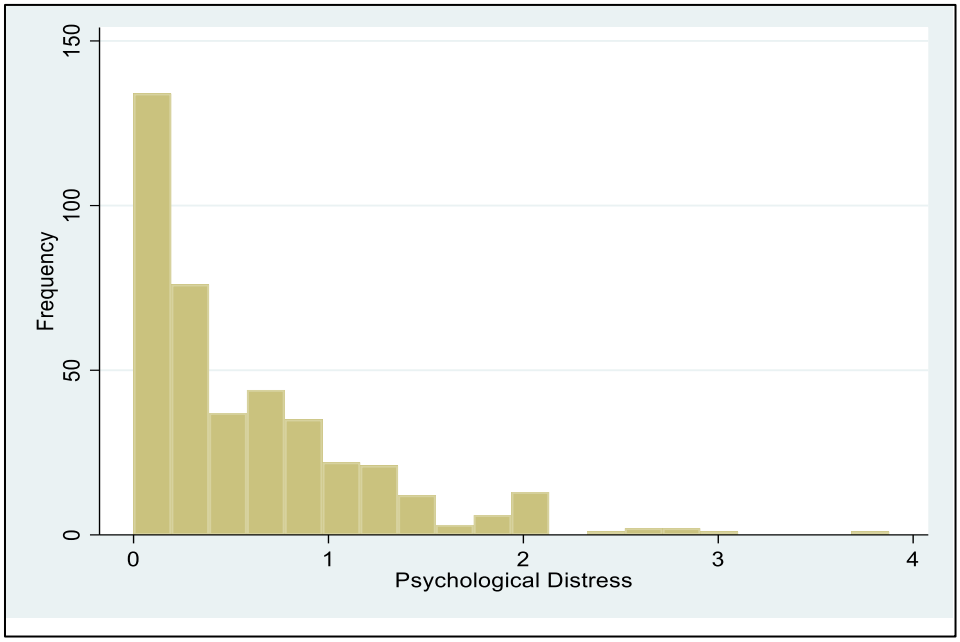

Figure 3-1. The distribution of psychological distress scores.

Stressors. There were three measures of stress exposure assessed: Discrimination, past-year racism, and adult sexual trauma.

Discrimination: The daily life experiences (DLE) scale is a subscale of the Racism and Life Experiences Scale (RaLES-B) (Harrell, 1997, 2000). The DLE is a 20-item self-report measure that assesses daily hassles or the frequency of “microaggressions” because of racial bias in the past year. Examples of the items included, “Being ignored, overlooked, or not given service (In a restaurant, store, etc.)”, “Being treated rudely or disrespectfully”, and “Being accused of something or treated suspiciously”. The response options were 0 = Never happened to me, 1 = Less than once a year, 2 = Few times a year, 3 = About once a month, 4 = Few times a month, 5 = Once a week or more, 8 = Refuse to Answer. Responses of “Refuse to Answer” were coded as missing. Thus, the scale ranged from 0 to 5, with higher values indicating higher levels of discrimination.

To create the measure of discrimination, the responses were averaged. The discrimination scores ranged from 0 to 5, such that higher values corresponded with higher levels of discrimination. This scale was highly reliable among this sample (α = 0.97).

The responses had a mean of 1.94 and standard deviation of 1.23. The mean and standard deviation suggest that most respondents had moderate levels of discrimination, but that responses are spread out around the mean. In addition, a moderate skew of 0.59 and a moderate kurtosis of 2.67 suggest that the scores are skewed to the low end but are still within the parameters of a normal distribution. See Figure 3-2 below for a histogram of the distribution. Thus, a continuous measure of discrimination was utilized for this sample.

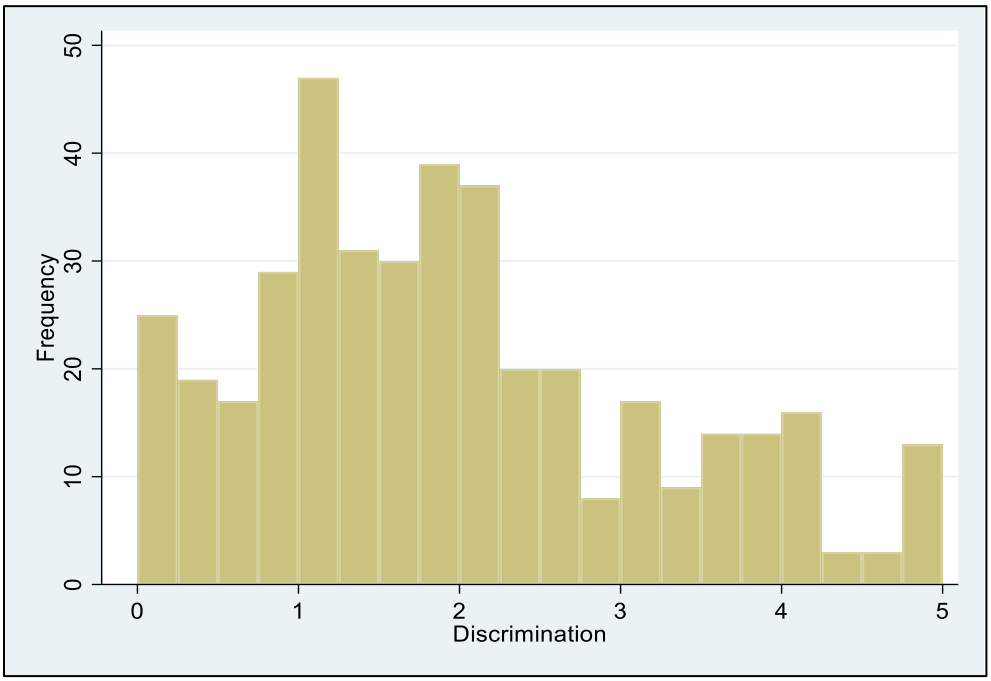

Figure 3-2. The distribution of discrimination scores.

Past-year racism: This item was drawn from The Brief Racism and Life Experiences Scale (RaLES–B) (Harrell, 1997, 2000). Past-year racism was assessed by the question "During the previous 12 months, how much racism have you personally experienced, including racial discrimination and racial prejudice?". The response options were 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = Extremely, 8 = Refuse to Answer. Responses of "Refuse to Answer"

were coded as missing. Thus, the scale ranged from 0 to 4, with higher values indicating higher levels of past-year racism.

To create the measure of past-year racism, the responses were averaged. The past-year racism scores ranged from 0 to 4, such that higher values corresponded with higher levels of past-year racism. The responses had a mean of 1.67 and standard deviation of 1.22. The mean and standard deviation suggest that most respondents had experienced moderate levels of past-year racism, but that responses are spread out around the mean. In addition, a low skewness of 0.21 and a moderate kurtosis of 2.08 suggest that the scores are skewed to the low end but are still within the parameters of a normal distribution. Thus, a continuous measure of past-year racism was utilized for this sample. See Figure 3-3 below for a histogram of the distribution.

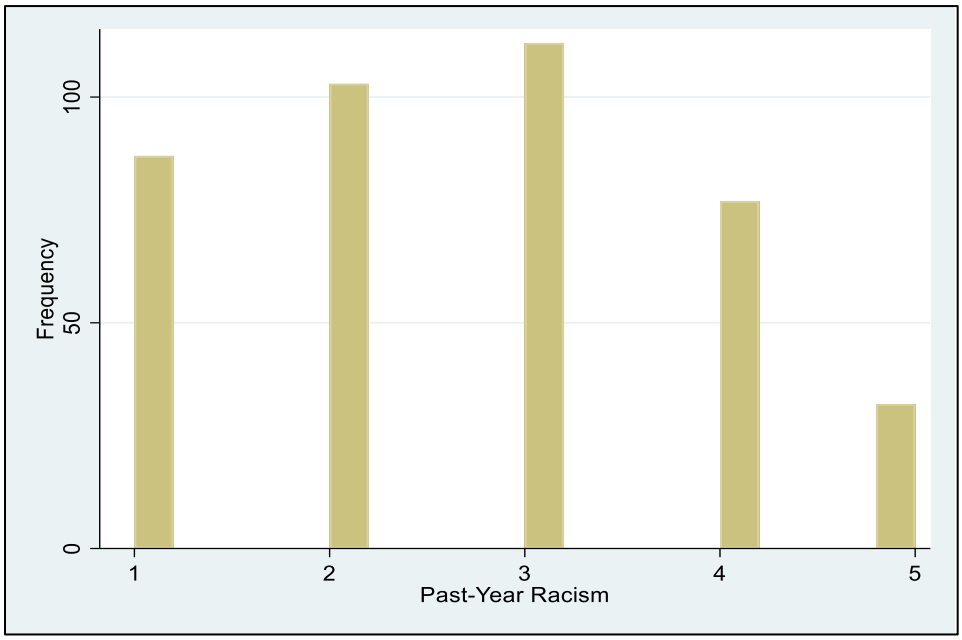

Figure 3-3. The distribution of past-year racism scores.

Adult sexual trauma: Sexual abuse was assessed using two items form the Wyatt Sex History questionnaire, an instrument used extensively with HIV-positive and negative women and HIV-positive men to quantify the number and type of child and adult abuse incidents (Wyatt et al., 1992, 2002). The questionnaire was used to assess sexual trauma among adults as

follows: “Since the age of 18, has anyone ever tried to force you to have anal or oral sex with them against your will?” and “Since the age of 18, has someone ever forced their penis or object in your butt or forced you to have anal sex with them against your will?” The response options were 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer. Responses of “Don’t Know” and “Refuse to Answer” were coded as missing. For the categorical measure of adult sexual trauma, the responses to the questions were combined and recoded such that if respondents reported “yes” for either item they were coded as 1 = Adult sexual trauma and if respondents reported “no” to both items they were coded as 0 = No adult sexual trauma.

Health, drug, and sexual risks. There were eight measures of health and sexual risks assessed: health care access, binge drinking, drug use, MSM-related health care avoidance, sexual risk behaviors, sexual compulsivity, gender role conflict, and the importance of privacy regarding sex with men.

Health care access: Health care access was based on *perceived access* measures, which examined the extent to which various kinds of general medical care were perceived to be a problem for the participant in obtaining care (Cunningham et al., 1999). Examples of the 6-item scale included “Sometimes I go without the medical care I need because it is too expensive”, “It is hard for me to get medical care in an emergency”, and “If I need hospital care, I can get admitted without any trouble”. Response options, on a Likert Scale, were 1 = Strongly Disagree, 2 = Disagree Somewhat, 3 = Neither Agree nor Disagree, 4 = Agree Somewhat, 5 = Strongly Agree, 7 = Don’t Know, 8 = Refuse to Answer, 9 = Not Applicable. For the current analysis, response options of “Don’t Know” and “Refuse to Answer” were coded as missing and the remaining responses were recoded as follows: 0 = Strongly Disagree, 1 = Disagree Somewhat, 2 = Neither Agree nor Disagree, 3 = Agree Somewhat, 4 = Strongly Agree. Negative items (e.g., Sometimes I go without medical care because it is too expensive) were reverse-coded. Thus, the scale ranged from 0 to 4, with higher values indicated higher levels of health care access.

To create the measure of health care access, the responses were averaged. Thus, health care access scores ranged from 0 to 4, such that higher values corresponded with higher levels of health care access. This scale was highly reliable among this sample (α = 0.80). The responses had a mean of 2.52 and standard deviation of 1.04. The mean and standard deviation suggest that most respondents had high levels of health care access, but responses are spread out around the mean. In addition, a low skewness of -0.24 and a moderate kurtosis of 2.10 suggest that the scores are skewed to the high end but are still within the parameters of a normal distribution. See Figure 3-4 below for a histogram of the distribution. Thus, a continuous measure of health care access was utilized for this sample.

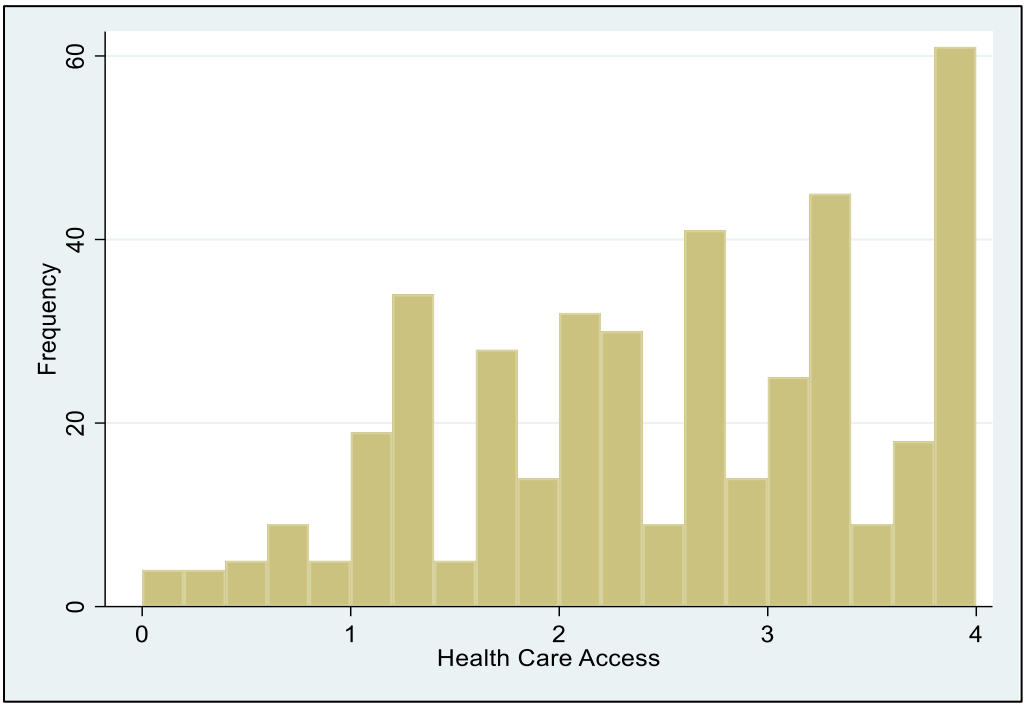

Figure 3-4. The distribution of health care access scores.

Alcohol binging: Binging was assessed by the following measure “In the past 90 days, have you had 5 or more drinks on any single day? By drink, we mean any combination of cans of beer, glasses of wine, or drinks containing liquor of any kind". The response options were: 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer. For the current study, response options

of “Refuse to Answer” were coded as missing and the remaining responses were recoded as 0 = No Binging and 1 = Binging.

Drug use: Two questions were used to assess drug use. The first question was, “Other than alcohol, have you ever used drugs to get high?” Response options were 1 = Yes, 2 = No, 8 = Refuse to Answer. The second question, asked among those that responded “Yes” to the first question was, “Have you used drugs (to get high) in the last 90 days?”. Response options were 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer. For the current study, response options of “Don’t Know and “Refuse to Answer” were coded as missing. Responses were combined into one measure with the following response options: 0 = Never used drugs to get high, 1 = No drug used last 90 days, and 2 = Yes drug used last 90 days.

MSM-related health care avoidance: MSM-related Health Care Avoidance was assessed with the following question: “During the past 6 months, have you avoided seeking medical or health care that you needed because you were afraid someone might find out you have sex with men?” Response options were: 1 = Yes, 2 = No, 8 = Refuse to Answer. For the current study, responses of “Refuse to Answer” were coded as missing and the remaining response options were recoded to 0 = Did not avoid seeking care and 1 = Avoided seeking health care.

Sexual risks.

Sexual risk behavior: Sexual risk behavior was assessed across several questions about the following: drug and alcohol use during sex; giving or receiving money, drugs, or shelter in exchange for sex; and any sex with a female that did not know about participant’s sexual behaviors with men. The following measures comprised the sexual risk index:

Drug and alcohol use with sex: This measure was a categorical, composite variable comprised of 5 questions subset within a series of questions that assess lifetime drug use, 90-day drug use, the categories of drugs used in the last 90 days, and finally sex while under the influence of those drugs. The first question in the series was “Other than alcohol, “have you ever

used drugs to get high?", with response options of 1 = Yes, 2 = No, and 8 = Refuse to Answer. The second question in the series, asked only of those that responded "Yes" to the previous question, was "Have you used drugs in the last 90 days?", with response options of 1 = Yes, 2 = No, 7 = Don't Know, and 8 = Refuse to Answer. Subsequently, respondents that had used drugs in the last 90 days were asked questions about their use of five categories of drugs: crystal methamphetamine, other amphetamines, crank, ice, or Tina; crack or powder cocaine or coke; heroin; ecstasy, X, G, H, B, ketamines, or Special K; and amyl nitrate poppers. An example of the question was "In the past 90 days, have you used crystal methamphetamine, other amphetamines, crank, ice, or Tina?" with response options of 1 = Yes, 0 = No, and 8 = Refuse to Answer. If a participant responded yes to that question, they were then asked for the frequency of anal or vaginal intercourse under the influence of that drug in the prior 90 days. Examples of the measures included: "On how many of the past 90 days did you use crystal methamphetamine, other amphetamines, crank, ice, or Tina before or during sex?" and "On how many of the past 90 days did you use crack or powder cocaine or coke?". Response options for the variables were 1-90, 97 = Don't Know, 98 = Refuse to Answer, 99 = Not Applicable. For the current study, participant responses of "Don't Know" and "Refuse to Answer" were coded as missing. Participants that responded "No" to all questions about sex under the influence of the drug were coded as 0 = not reported/no drugs with sex. In addition, responses of "No" to lifetime drug use, "No" to drug use over the last 90 days, "No" to the use of a specific drug in the last 90 days, did not report the use of a drug during sex (response was missing at random) were recoded as 0 = not reported/no drugs with sex. Respondents that were under the influence of any of the five drugs during sex at least one time in the last 90 days were coded as 1 = drugs with sex.

Exchange sex: This measure was assessed with four items regarding whether individuals engaged in exchange sex–that is, whether they gave or received money, drugs, or shelter in exchange for sex over the prior 3 months. The four items were phrased as follows: "In

the past 90 days, have you received money or a place to stay in exchange for any type of sex?", "In the past 90 days, have you given someone money or a place to stay in exchange for any type of sex?", "In the past 90 days, have you received drugs in exchange for any type of sex?", and "In the past 90 days, have you given someone drugs in exchange for any type of sex?". Response options were 1 = Yes, 0 = No, 7 = Don't Know, 8 = Refuse to Answer. For the current study, responses of "Don't Know" and "Refuse to Answer" were coded as missing. The remaining responses to the four questions were combined into a categorical variable such that if participants responded "No" to all four questions they were coded as 0 = No exchange sex and if they responded "Yes" to one or more questions they were coded as 1 = Exchanged sex.

Nondisclosure to female sex partner: This measure assessed the frequency of sex with female partners that did not know the participant had sex with men. The item was assessed with the following question: "In the past 90 days, did you have vaginal or anal sex with a woman who didn't know that you have sex with men?". Response options were: 1 = No, 2 = Yes, with one female, 3 = Yes, with more than one female, 9 = Did not have sex with a female/Not applicable, 98 = Refuse to Answer.

For the current study, responses of "Refuse to Answer" were coded as missing. The remaining responses were coded as follows. If the participant responded "No" to the question or "Did not have sex with a female/Not applicable" they were coded as 0 = No. If the participant responded "Yes, with one female" or "Yes with more than one female" they were coded as 1 = Yes.

Overall sexual risk. To create the measure of sexual risk behavior, the responses were averaged. Thus, sexual risk behavior scores ranged from 0 to 3, such that higher values corresponded with higher levels of sexual risk. The responses had a mean of 1.03 and standard deviation of 0.93. The mean and standard deviation suggest that most respondents had low levels of sexual risk behavior. In addition, a moderate skewness of 0.47 and a moderate kurtosis of 2.22 suggest that the scores are skewed to the low end but are still within the

parameters of a normal distribution. See Figure 3-5 below for a histogram of the distribution. Thus, counts of sexual risk behavior was utilized for this sample.

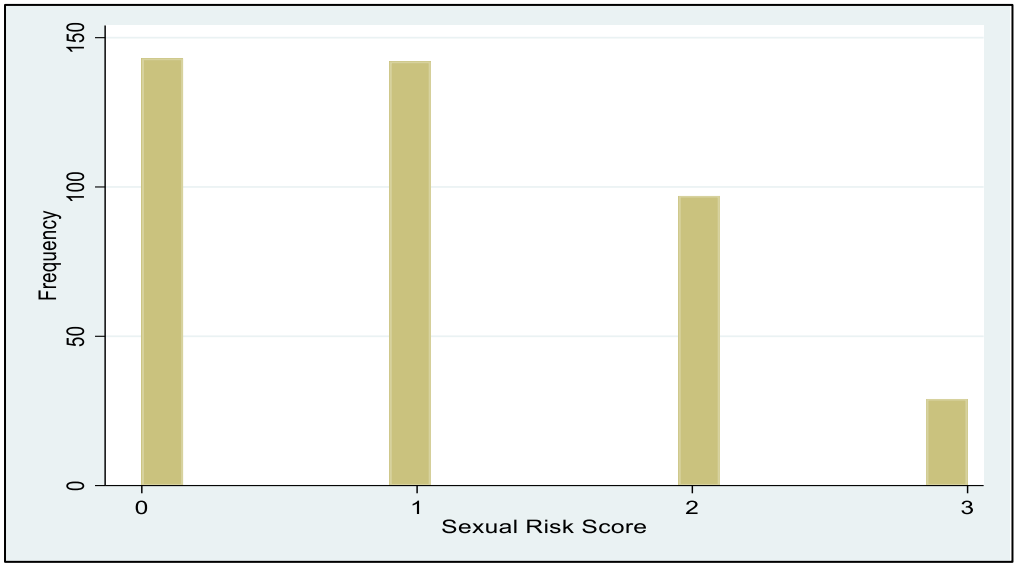

Figure 3-5. The distribution of sexual risk behavior.

Sexual compulsivity: The measure of sexual compulsivity (Kalichman & Rompa, 2001) was comprised of 10 items along a 4-point Likert Scale. Examples of the items included: “My sexual appetite has gotten in the way of my relationships (i.e., my romantic life, my family life, or my close friendships)”, “My sexual thoughts and activities are causing problems in my life”, “My desires for sex have disrupted my daily life” and “I sometimes fail to meet my commitments and responsibilities because of my sexual activities”. Response options were 1 = Not at all like me, 2 = A little bit like me, 3 = Somewhat like me, 4 = Very much like me, 8 = Refuse to answer.

For the current study, responses of “Refuse to Answer” were coded as missing and the remaining response options were recoded as follows: 0 = Not at all like me, 1 = A little bit like me, 2 = Somewhat like me, 3 = Very much like me. Thus, the scale for sexual compulsivity ranged from 0 to 3, with higher values indicating higher levels of sexual compulsivity. To create the measure of sexual compulsivity, the responses were averaged. Thus, sexual compulsivity scores ranged from 0 to 3, such that higher values corresponded with higher levels of sexual compulsivity. This scale was highly reliable among this sample ($\alpha = 0.94$).

The responses had a mean of 1.13 and standard deviation of 0.89. The mean and standard deviation suggest that most respondents had moderate levels of sexual compulsivity but that responses are spread out around the mean. In addition, a moderate skewness of 0.56 and a moderate kurtosis of 2.20 suggest that the scores are skewed to the low end but are still within the parameters of a normal distribution. See Figure 3-6 below for a histogram of the distribution. Thus, a continuous measure of sexual compulsivity was utilized for this sample.

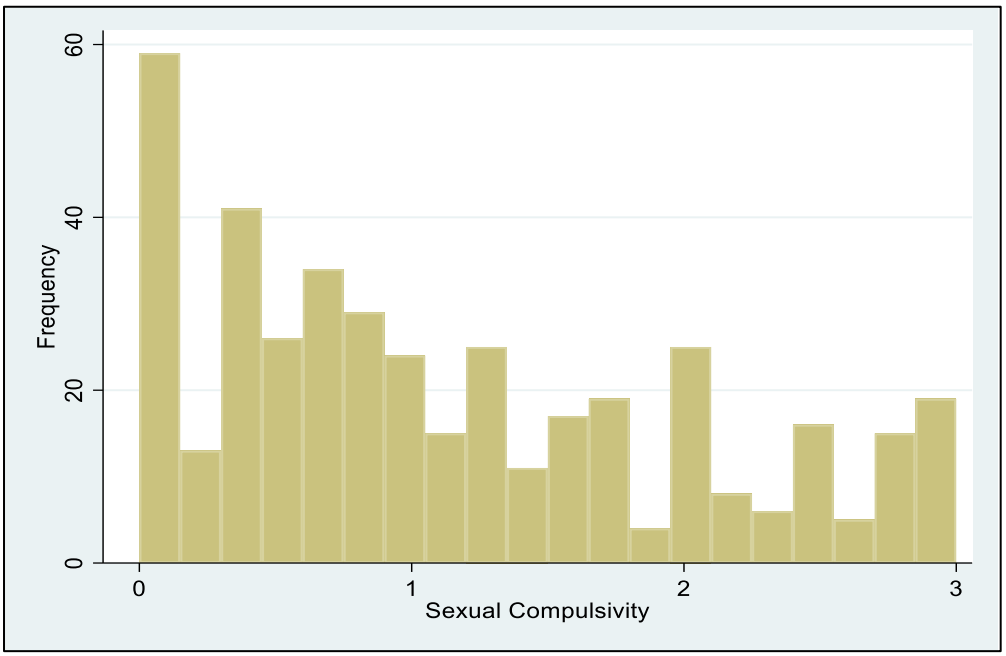

Figure 3-6. The distribution of sexual compulsivity scores.

Gender role conflict (GRCS): This 30-item measure of gender role conflict was derived from the Gender Role Conflict Scale (O'Neil et al., 1986). GRSC is a 37-item scale assessing patterns of gender-role conflict with four significant factors: 1) Success, power, and competition; 2) Restrictive emotionality; 3) Restrictive affectionate behavior between men-Homophobia; and 4) Conflicts between work and leisure-family relations. The GRCS has been used in over 200 studies, many including samples of racially and ethnically diverse samples. For example, Wade's (1996) study with African American men found fair-to-strong reliabilities ranging from 0.76-0.90 for the four subscales. The GRSC has also been found to be reliable in samples of gay men with alpha ranging from 0.75-0.88 (Simonsen et al., 2000).

Recommendations from the MAALES intervention study's community advisory board resulted in adding five new items to assess masculinity. A subsequent study determined that the MAALES study participants' responses loaded highest on 30 items across two factors (Harawa et al., under review). These 30 items are used for the current analyses of gender role conflict. Examples of the scale items include: "Winning is a measure of my value and personal worth", "Verbally expressing my love or caring for another man is difficult for me" and "Affection with other men makes me tense". Response options, on a 6-point Likert Scale, were 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 8 = Refuse to answer. For the current study, response options of "Refuse to Answer" were coded as missing and the remaining responses were recoded as 0=Strongly disagree, 1 = Disagree, 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree.

To create the measure of gender role conflict, the responses were averaged. Thus, gender role conflict scores ranged from 0.03 to 5, such that higher values corresponded with higher levels of gender role conflict. This scale was highly reliable among this sample ($\alpha = 0.93$).

The responses had a mean of 2.46 and standard deviation of 0.87. The mean and standard deviation suggest that most respondents had moderate levels of gender role conflict but that responses are spread out around the mean. In addition, the distribution had kurtosis of 3.12. See Figure 3-7 below for a histogram of the distribution. However, given the low level of skewness and the approximately normal shape of the distribution a continuous measure of gender role conflict was utilized for this sample.

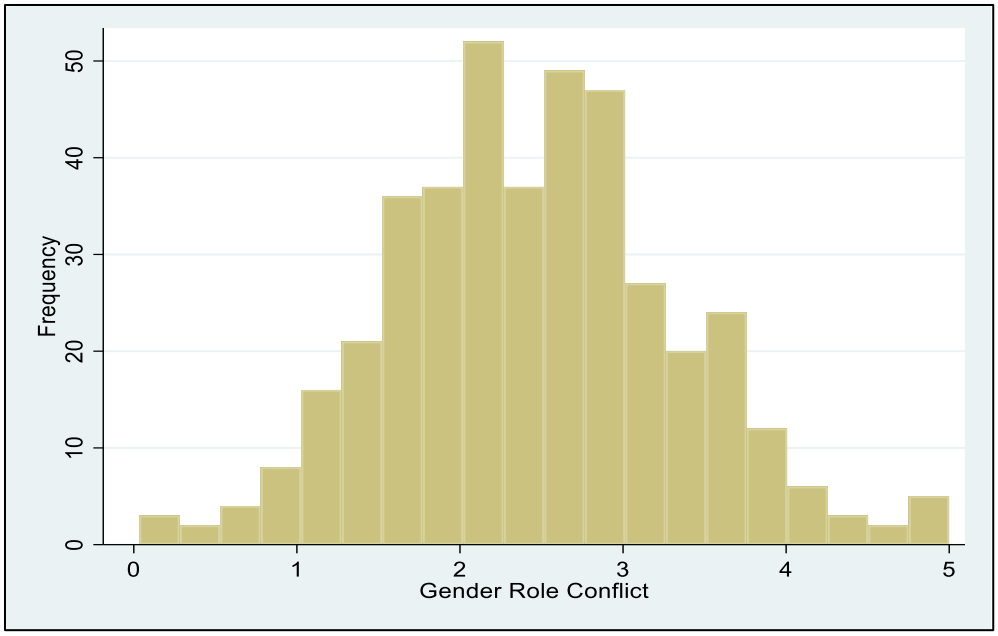

Figure 3-7. The distribution of gender role conflict scores.

Privacy regarding sex with men: This measure was assessed with the following question: “How important is it for you to keep your sexual relationships with men secret?” Response options were 1 = Very important, 2 = Somewhat important, 3 = A little important, 4 = Not at all important, 8 = Refuse to answer. For the current study, response options of “Refuse to Answer” were coded as missing and the remaining response options were reverse-coded as follows: 3 = Very important, 2 = Somewhat important, 1 = A little important, 0 = Not at all important.

To create the measure of privacy regarding sex with men, the responses were averaged. Thus, privacy regarding sex with men scores ranged from 0 to 3, such that higher levels indicated greater importance for privacy regarding sex with men.

The responses had a mean of 1.73 and standard deviation of 1.17. The mean and standard deviation suggest that most respondents placed moderate levels of importance on privacy regarding sex with men but that responses are spread out around the mean. In addition, a low skewness of -0.28 and a low kurtosis of 1.59 in the direction of higher items suggest that the scores are skewed to the high end but are still within the parameters of a normal distribution.

See Figure 3-8 below for a histogram of the distribution. Thus, a continuous measure of privacy regarding sex with men was utilized for this sample.

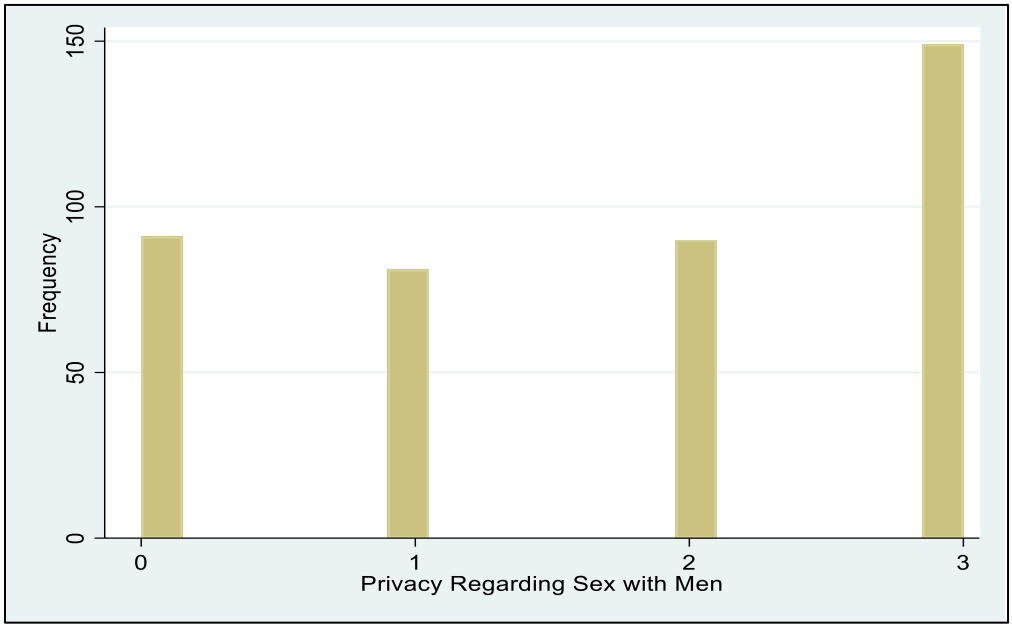

Figure 3-8. The distribution of privacy regarding sex with men scores.

Psychosocial resources. There were three measures of psychosocial resources assessed: social support, private regard for the Black race, and self-esteem.

Multidimensional scale of perceived social support (MSPSS): This construct was assessed using the 10-item MSPSS developed by Zimet et al. (1988). Social support was an important construct to measure, as having less social support had been associated with risky sex (Wyatt et al., 1999). The reliability, validity and factor structure of the MSPSS been demonstrated across a few populations including African Americans (Canty-Mitchell & Zimet, 2000). The MSPSS measures aspects of participants' social network and the availability, receipt, adequacy and sources of support (Zimet et al., 1988). Measures utilized for the current study assessed perceptions of social support adequacy from family, friends and a significant other. Examples of the items included "My family really tries to help me", "I get the emotional help and support I need from my family", "I can count on my friends when things go wrong", and "I can speak with my family about anything". Response options, measured on a 6-point Likert

Scale, were 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 98 = Refuse to Answer. For the current study, response options of "Refuse to Answer" were coded as missing and the remaining response options were recoded as 0 = Strongly disagree, 1 = Disagree, 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree.

To create the measure of social support, the responses were averaged. Thus, social support scores ranged from 0 to 5, such that higher values corresponded with higher levels of social support. This scale was highly reliable among this sample ($\alpha = 0.92$).

The responses had a mean of 3.12 and standard deviation of 1.14. The mean and standard deviation suggest that most respondents had high levels of social support, but that responses are spread out around the mean. In addition, a low negative skewness of -0.35 and a moderate kurtosis of 2.75 suggest that the scores are skewed to the high end but are still within the parameters of a normal distribution. See Figure 3-9 below for a histogram of the distribution. Thus, a continuous measure of social support was utilized for this sample.

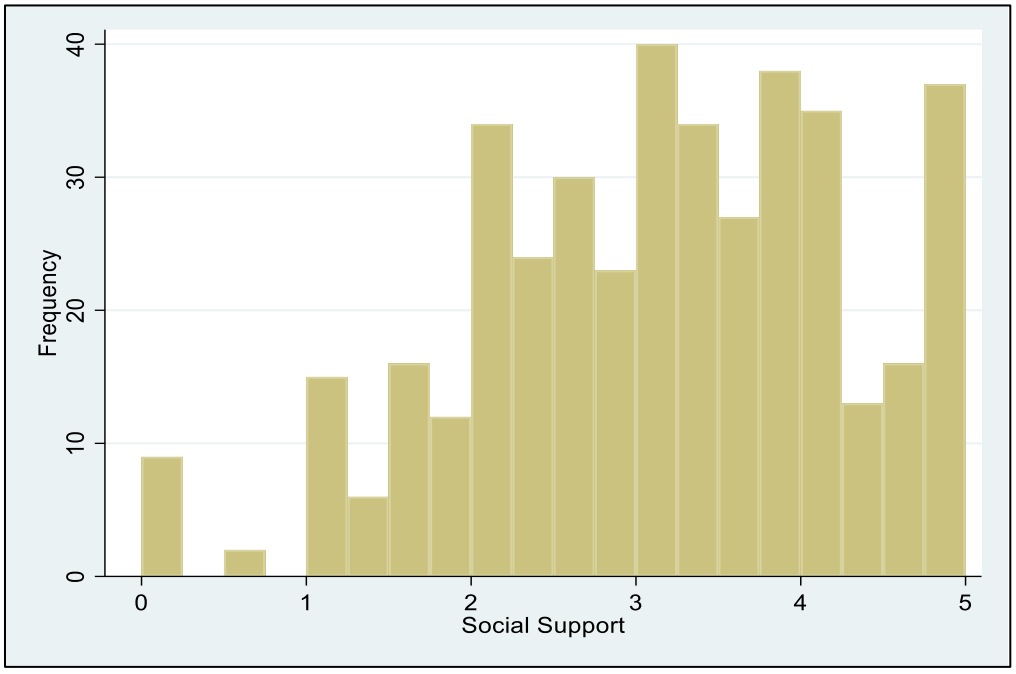

Figure 3-9. The distribution of social support scores.

Private regard for race: This 6-item scale was adapted from the National Survey of Black Americans 1979-1980 (Jackson & Gurin, 2005) to assess participants' level of agreement with attitudes toward other Black people. This scale is consistent with other theoretically-derived scales for private regard for race (Sellers et al., 1997; Sellers et al., 1998). This scale assessed both positive and negative regard for race. The items that reflected positive regard for race were "How true do you think it is that most Black people are intelligent?", "How true do you think it is that most Black people are hardworking?", and How true do you think it is that most Black people are proud of themselves?". The items that reflected negative regard for race were "How true do you think it is that most Black people are lazy?", "How true do you think it is that most Black people give up easily?", and "How true do you think it is that most Black people are violent?". Response options were 1 = Very true, 2 = Somewhat true, 3 = A little true, 4 = Not at all true, 7 = Don't know, 8 = Refuse to Answer, 9 = Not applicable. For the current study responses of "Don't Know" and "Refuse to Answer" were coded as missing and remaining responses are recoded as follows: 0 = Very true, 1 = Somewhat true, 2 = A little true, 3 = Not at all true. Then responses to questions measuring positive regard were reverse-coded as follows: 3 = Very true, 2 = Somewhat true, 1 = A little true, 0 = Not at all true.

To create the measure of private regard for race, the responses were averaged. Thus, private regard for race scores ranged from 1 to 3, such that higher values corresponded with higher, more positive levels of private regard for race. This scale was only poorly reliable among this sample ($\alpha = 0.59$) but was the only measure of its kind that demonstrated a significant relationship with distress during bivariate analyses.

The responses had a mean of 2.17 and standard deviation of 0.47. The mean and standard deviation suggest that most respondents had high levels of private regard for race. In addition, a low skewness of 0.07 and a moderate kurtosis of 2.16 in the direction of higher items suggest that the scores are skewed to the high end but are still within the parameters of a

normal distribution. See Figure 3-10 below for a histogram of the distribution. Thus, a continuous measure of private regard for race was utilized for this sample.

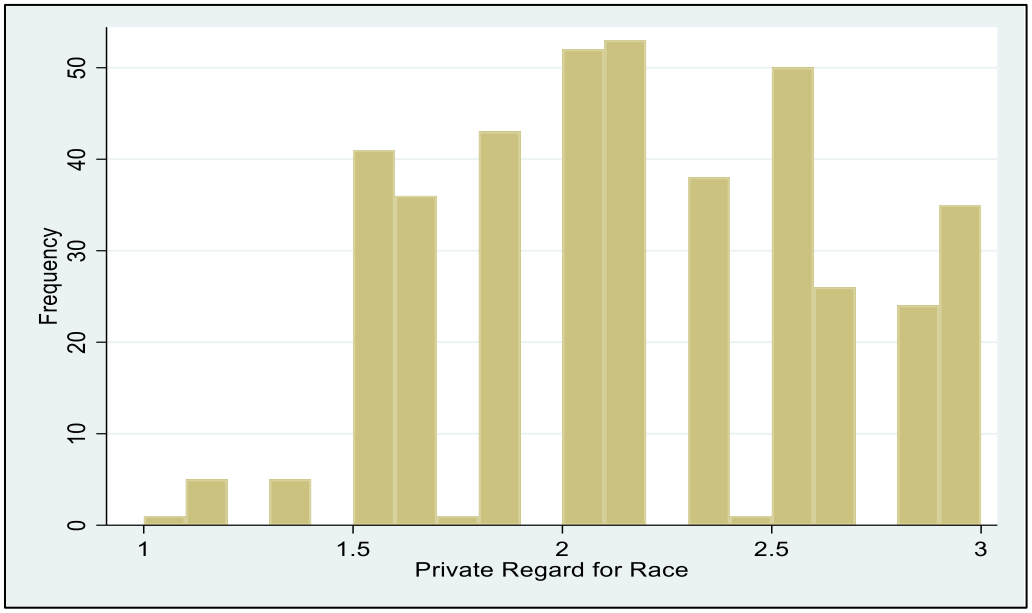

Figure 3-10. The distribution of private regard for race scores.

Self-esteem: The Rosenberg Self-Esteem scale (1965) was used to assess self-esteem. The scale is comprised of 10 items on a 4-point Likert Scale. Examples of the items include "I am a person of worth, at least on an equal basis with others.", "I have a number of good qualities", and "All in all, I feel that I am a failure". Response options were 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree, 8 = Refuse to Answer. For the current study, response options of "Refuse to Answer" were coded as missing, items measuring negative self-esteem were reverse-coded, and response options were coded as 0 = Strongly disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree.

To create the measure of self-esteem, the responses were averaged. Thus, self-esteem scores ranged from 0.6 to 3, such that higher scores corresponded with higher levels of self-esteem. This scale was highly reliable among this sample ($\alpha = 0.84$).

The responses had a mean of 2.13 and standard deviation of 0.52. The mean and standard deviation suggest that most respondents had high levels of self-esteem. In addition,

low skewness of 0.10 and a moderate kurtosis of 2.11 in the direction of higher items suggest that the scores are skewed to the high end but are still within the parameters of a normal distribution. See Figure 3-11 below for a histogram of the distribution. Thus, a continuous measure of self-esteem was utilized for this sample.

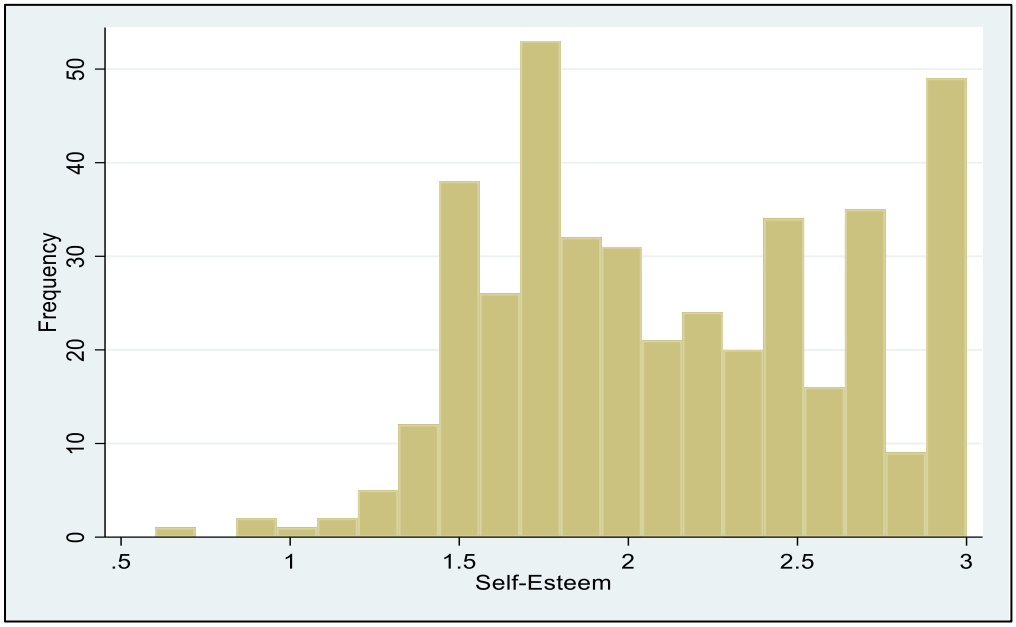

Figure 3-11. The distribution of self-esteem scores.

Sociodemographic and individual-level characteristics. There were four measures for sociodemographic and individual-level characteristics assessed: age, educational attainment, recidivism, and childhood sexual abuse.

Age: A continuous variable was used for age. Respondents had to be age 18 or older to participate. They were instructed to enter their age in years. Response options were 18-97, 98=Refuse to Answer. For the current analyses, responses of “Refuse to Answer” are coded as missing.

Responses had a range of 19 to 89, a mean of 42.6, and standard deviation of 10.4. The mean and standard deviation suggest that most respondents are in their 40s but responses are spread widely around the mean. A low skewness of -0.02 and a high kurtosis of 3.78 in the direction of lower items suggest that the data do not have a normal distribution; however, the

distribution is largely skewed because of one data point—an 89-year-old participant. See Figure 3-12 below for a histogram of the distribution. Thus, a continuous measure was maintained for the analyses.

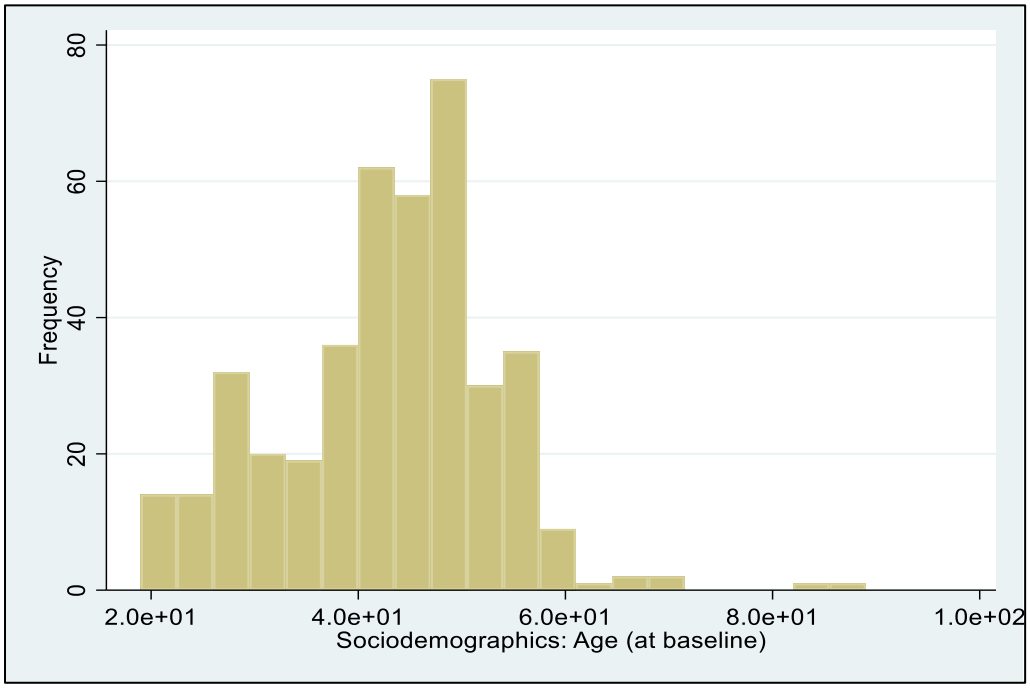

Figure 3-12. The distribution of age in years at baseline.

Educational attainment: The question used to assess educational attainment was "What is the highest level of education that you have completed? (Choose one)". Response options were 1 = Less than High School, 2 = High School diploma or GED, 3 = Two-year associate's degree or certificate, 4 = College degree, 5 = Professional Degree (i.e., Masters, M.D., Ph.D.). For the current study, categories were combined to address low cell counts in higher levels of education (two-year Associates degree and above). Thus, the categories were recoded as follows: 0 = Less than high school, 1 = High School diploma or GED, 2 = Two-year Associates degree/certificate or higher (i.e., college degree, professional degree).

Recidivism: The measure of incarceration recidivism was assessed with two questions. The first question was "Have you ever spent more than one day in a jail, detention facility, or prison? (We are not interested in whether or not you were convicted or why you were there)".

The response options were 1 = Yes, 2 = No, 8 = Refuse to Answer. The second question, assessed among those that responded “Yes” to the above question, was “How many times have you been incarcerated (held in jail, prison, or detention)?”. The response options were 0-996, 997 = Don’t know, 998 = Refuse to Answer, 999 = Not applicable. The range for number of times incarcerated, among those previously incarcerated, was 1 to 200. The responses had a mean of 8.32 and standard deviation of 15.92, which suggest that among those who had been incarcerated, most had high levels of recidivism and the responses were spread widely around the mean. See Figure 3-13 below for a histogram of the distribution. In addition, a median of 5, the high positive skew of 7.54, and high kurtosis of 78.45 suggest that most participants had high levels of recidivism but another portion had substantively higher levels of recidivism and that the distribution was not normal. Taken together, these results suggest that assessing recidivism categorically by comparing those with high levels of incarceration to those with even higher levels of incarceration-would be most helpful for evaluating the impact of incarceration among this sample. Furthermore, a categorical variable facilitates further comparison of respondents with different levels of incarceration to respondents with no history of incarceration. Therefore, to create a categorical measure of recidivism, responses to the two questions were combined as follows, 0 = No (if never incarcerated = 0 and if # of times incarcerated is missing), 1 = 1-4 times (if ever incarcerated = 1 and the number of times = 1-4) and 2 = 5 or more times (if ever incarcerated = 1 and the number of times = 5 or higher).

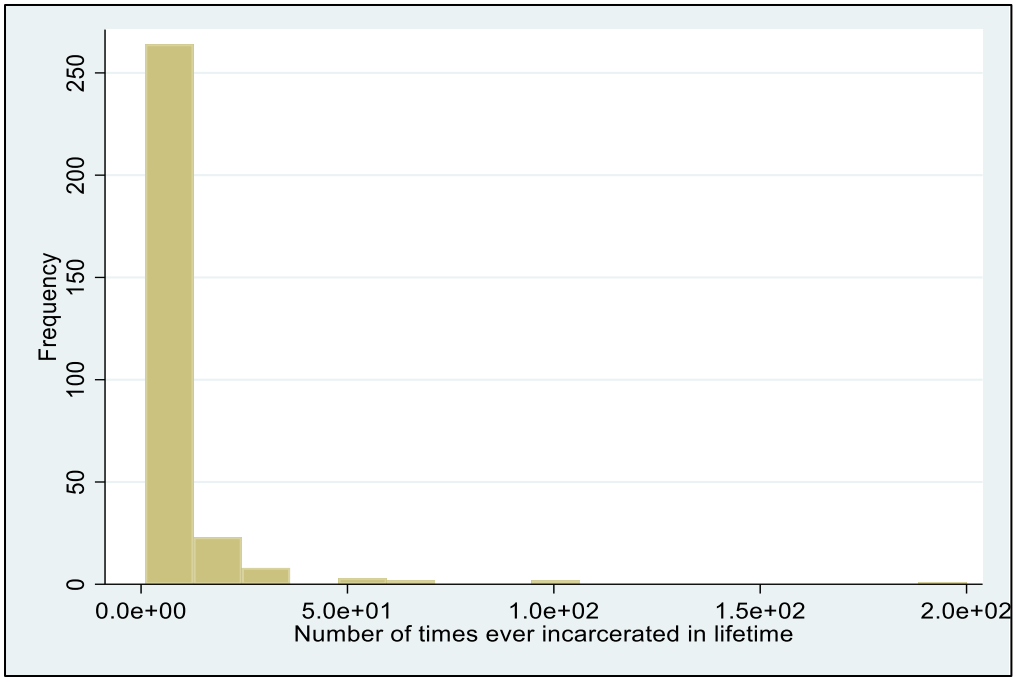

Figure 3-13. The distribution of incarceration recidivism.

Childhood sexual abuse: Questions on childhood sexual abuse were adapted from the Wyatt Sex History Questionnaire (Wyatt et al., 1992,2002), used extensively with HIV-positive and negative women and HIV-positive men to quantify the number and type of childhood sexual abuse incidents (Wyatt et al., 1992, 2002). The questionnaire was used to assess childhood sexual abuse before the age of 18. The questions were: “Before the age of 18, did a relative, family member, friend, or stranger ever feel you up, fondle your body including your butt or genitals, or rub their genitals against your body in a sexual way?”; “Before the age of 18, did anyone force you to perform oral sex on them or to receive oral sex from them?”; “Before 18, did anyone try to force you have intercourse against your will? (This includes instances where someone attempted to put an object or finger in your butt)”; and “Before 18, did anyone have intercourse with you against your will? (This includes instances where someone put an object or finger in your butt).” Response options were 1 = Yes, 2 = No, 7=Don’t Know, 8 = Refuse to Answer. For the current analysis, responses of “Refuse to Answer” were coded as missing and remaining response options were recoded as 1 = Yes and 0 = No.

For the categorical measure of childhood sexual abuse, the responses to the questions were combined and recoded such that if respondents reported “yes” for any of the four items they were coded as 1 = childhood sexual abuse and if respondents reported “no” to all four items they were coded as 0 = no childhood sexual abuse.

Study 1 Analytic Strategy

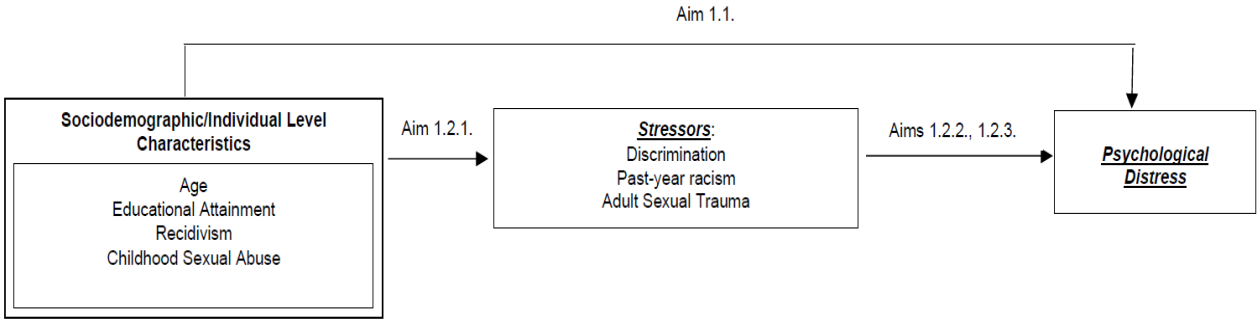

Figure 3-14. Study 1: Stress exposure and psychological distress among Black MSMW.

Research Question 1.1: **Are there sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?**

One aim was used to assess Research Question 1.1. The aim is as follows:

Aim 1.1: Assess sociodemographic and individual-level characteristic patterns in psychological distress among Black MSMW?

The goal of this aim is to determine if disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse are associated with greater odds of psychological distress compared to advantaged social position (e.g., no history of incarceration, higher education) and no childhood sexual abuse. Psychological distress was regressed on all sociodemographic and individual-level characteristics (Model 1). A logistic regression model was used to understand whether these characteristics varied significantly across levels (low and high) of psychological distress, a categorical variable. Statistically significant associations identified key potential sociodemographic and individual-level correlates

associated with psychological distress and whether they varied across levels of psychological distress.

***Research Question 1.2*: Does stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?**

This research question was assessed with three aims to evaluate the extent to which stress exposure explains why sociodemographic and individual level characteristic differences in psychological distress are observed using Baron and Kenny's (1986) steps to test mediation.

Aim 1.2.1: Examine sociodemographic and individual-level characteristic patterns in stress exposure.

The goal of this aim is to determine whether disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse are associated with greater odds of stress exposure (racial discrimination, racism, adult sexual trauma) compared to advantaged social position (e.g., older age, no history of incarceration, higher education) and no childhood sexual abuse. Variations in sociodemographic and individual-level characteristics were measured for each stressor using separate models, so that their association with each stressor could be assessed. Each outcome (discrimination, past-year racism, and sexual trauma) was regressed on sociodemographic and individual-level characteristics in Models 2, 3, and 4, respectively. For Model 2 discrimination was regressed on sociodemographic and individual-level characteristics. For Model 3, past-year racism was regressed on sociodemographic and individual-level characteristics. For Model 4, adult sexual trauma was regressed on sociodemographic and individual-level characteristics.

OLS regression models were used for discrimination and past-year racism because these stressors were measured continuously and were normally distributed. Logistic regression was used for adult sexual trauma, because it was measured categorically. Statistically significant associations identified key sociodemographic and individual-level correlates of each

type of stressor (discrimination, past-year racism, and adult sexual trauma) and whether they varied by each type of stressor.

Aim 1.2.2: Assess the relationship between stress exposure and psychological distress.

The goal of this aim is to determine whether greater stress exposure is associated with greater odds of psychological distress. Variations in each stressor were measured using a step-wise approach to examine the association between social stressors and psychological distress. The relationship between each stressor and psychological distress was examined individually (Models 5, 6, and 7, respectively) and then collectively in the final model (Model 8). For Model 5, psychological distress was regressed on discrimination. For Model 6, psychological distress was regressed on past-year racism. For Model 7, psychological distress was regressed on adult sexual trauma. For Model 8, psychological distress was regressed on discrimination, past-year racism, and adult sexual trauma.

Logistic regression models were used to understand whether each stressor varied across levels of psychological distress, a categorical variable. Statistically significant associations identified key potential independent and joint stress-exposure correlates of psychological distress. In other words, this aim answers the research question by determining whether greater stress exposure is associated with greater odds of psychological distress.

Aim 1.2.3: Evaluate the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress.

The goal of this aim is to determine the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses face greater stress exposure, which contributes to greater odds of psychological distress. The aim was assessed using Baron and Kenny's (1986) steps for mediation. First, in Model 9, the associations between the focal variables

(sociodemographic and individual-level characteristics) and outcome (distress) were assessed. Second, the associations between focal variables (sociodemographic and individual-level characteristics) and potential mediators (stressors) were assessed in Models 10, 11, and 12, respectively. Third, in Model 13, the associations between focal variables (sociodemographic and individual-level characteristics) and outcome (distress) were assessed, while controlling for the potential mediators (stressors). If the original link between the sociodemographic and individual-level factors is still significant or the effect sizes are significantly larger, then there is little evidence to suggest that the stressors (the potential mediator) explain the link between sociodemographic and individual-level characteristics and distress. By contrast, if they are no longer significant or if the effect sizes are significantly smaller, then there is some evidence to suggest that the stressors (the potential mediator) explain the link between sociodemographic and individual-level characteristics and distress.

Logistic regression models were used to understand whether each stressor varied across levels of psychological distress, a categorical variable. Statistically significant associations identified key potential stress-exposure correlates of psychological distress after controlling for sociodemographic and individual-level characteristics. In other words, this aim answers the research question by determining the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses face greater stress exposure, which contributes to greater odds of psychological distress. If the associations between the sociodemographic and individual-level characteristics and distress are no longer significant or significantly reduced once stress exposure is added to the model, then it suggests that stress exposure explains the relationship between sociodemographic and individual-level characteristics and distress, thus, answering the research question.

Study 2 Analytic Strategy

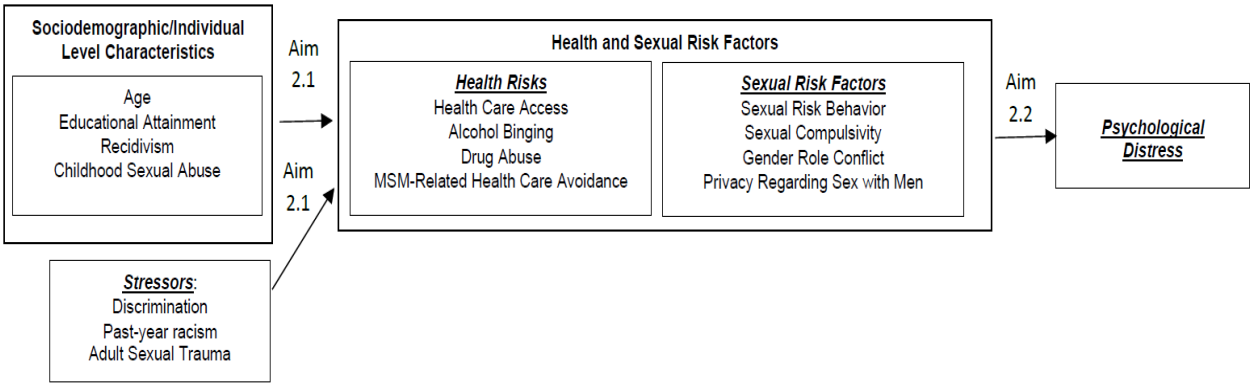

Figure 3-15. Study 2: Health and sexual risks associated with psychological distress among Black MSMW.

Research Question 2.1: **What sociodemographic and individual-level characteristic and social stressors are associated with health and sexual risks among Black MSMW?**

One aim was used to assess Research Question 2.1. The aim is as follows:

Aim 2.1: Identify the sociodemographic and individual-level characteristics and social stressors associated with health and sexual risks among Black MSMW.

The goal of this aim is to determine if disadvantaged social position (younger age, one or more incarcerations, lower education), childhood sexual abuse, and greater stress exposure (from discrimination, past-year racism, and adult sexual trauma) are associated with greater health risks (lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men) compared to advantaged social position (older age, no incarceration, higher education), no childhood sexual abuse, and lower stress exposure. Each health and sexual risk variable was regressed on sociodemographic and individual-level characteristics and stressors (Models 1 through 8). In Model 1, health care access was regressed on sociodemographic and individual-level characteristics and stressors. In Model 2, alcohol binging was regressed on sociodemographic and individual-level

characteristics and stressors. In Model 3, drug use was regressed on sociodemographic and individual-level characteristics and stressors. In Model 4, avoidance of MSM-related health care was regressed on sociodemographic and individual-level characteristics and stressors. In Model 5, sexual risk behavior was regressed on sociodemographic and individual-level characteristics and stressors. In Model 6, sexual compulsivity was regressed on sociodemographic and individual-level characteristics and stressors. In Model 7, gender role conflict was regressed on sociodemographic and individual-level characteristics and stressors. In Model 8, importance of privacy regarding sex with men was regressed on sociodemographic and individual-level characteristics and stressors.

OLS and logistic regression models were used to understand whether these characteristics varied significantly across levels of health and sexual risks, both continuous (health care access, sexual risk behavior, sexual compulsivity, gender role conflict, importance of privacy regard sex with men) and categorical variables (alcohol binging, drug use, avoidance of MSM-related health care). Statistically significant associations identified key potential sociodemographic and individual-level correlates and stress exposure correlates associated with health and sexual risks and whether they varied across levels of health and sexual risks. This aim answers the research question by telling us whether disadvantaged social position and childhood sexual abuse are associated with greater health and sexual risks and whether greater stress exposure is associated with greater health and sexual risks.

***Research Question 2.2*: Are health and sexual risks associated with greater odds of psychological distress among Black MSMW?**

One aim was used to assess Research Question 2.2. The aim is as follows:

Aim 2.2: Assess the relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure.

The goal of this aim is to determine if greater health risks (lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men) are associated with greater odds of psychological distress, after controlling for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (discrimination, past-year racism, adult sexual trauma). In Models 9 and 10, psychological distress was regressed on health risks and sexual risks, respectively, to test for significant relationships between psychological distress and health risks and sexual risks. In Model 11, psychological distress was regressed on health and sexual risks to show the effects of health risks on psychological distress when controlling for sexual risks and the effects of sexual risks on psychological distress when controlling for health risks. In Model 12, psychological distress was regressed on health and sexual risks, controlling for sociodemographic and individual-level characteristics and stressors.

Logistic regression models were used to understand whether these health and sexual risks varied significantly across levels of psychological distress, a categorical variable. Statistically significant associations identified key potential health and sexual risk correlates associated with psychological distress and whether they varied across levels of psychological distress, after controlling for sociodemographic and individual-level characteristics and stressors. This aim answers the research question by telling us whether greater health and sexual risks are associated with greater odds of psychological distress compared to lower health and sexual risks.

Study 3 Analytic Strategy

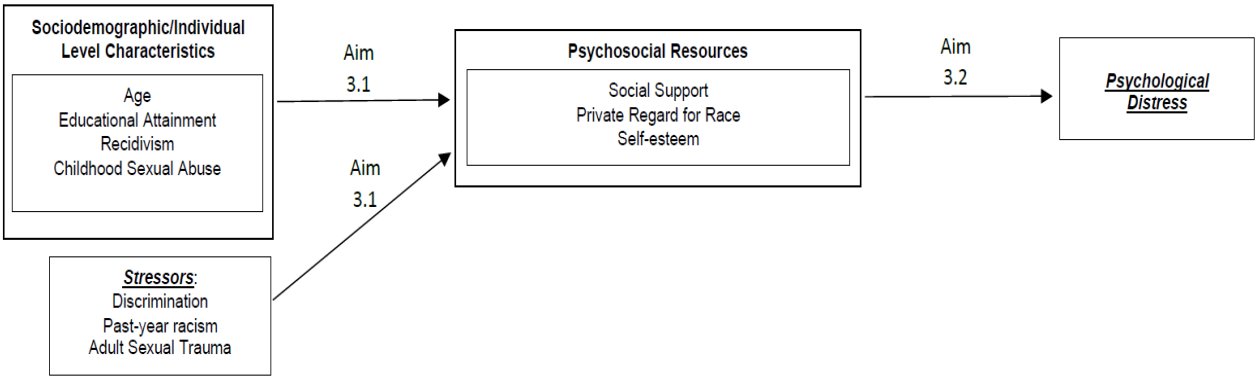

Figure 3-16. Study 3: Psychosocial resources associated with psychological distress among Black MSMW.

Research Question 3.1: **What sociodemographic and individual-level characteristic and social stressors are associated with psychosocial resources among Black MSMW?**

Aim 3.1: Identify the sociodemographic and individual-level characteristics and social stressors associated with psychosocial resources among Black MSMW

The goal of this aim is to determine if advantaged social position (e.g., older age, no history of incarceration, higher education), no childhood sexual abuse, and lower stress exposure (from racial discrimination, racism, adult sexual trauma) are associated with greater psychosocial resources (social support, private regard for race, self-esteem) compared to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse, and greater stress exposure. Each psychosocial resource was regressed on the sociodemographic and individual-level characteristics and stressors (Models 1 through 3). For Model 1, social support was regressed on sociodemographic and individual-level characteristics and stressors. For Model 2, private regard for race was regressed on sociodemographic and individual-level characteristics and stressors. For Model 3, self-esteem was regressed on sociodemographic and individual-level characteristics and stressors.

OLS regression models were used to understand whether these characteristics and stressors varied significantly across levels the psychosocial resources, continuous variables. Statistically significant associations identified key potential sociodemographic and individual-level correlates and stress exposure correlates and psychosocial resources and whether they varied across levels of health and sexual risks. This aim answers the research question by telling us whether advantaged social position and childhood sexual abuse are associated with greater psychosocial resources and whether lower stress exposure is associated with greater psychosocial resources.

***Research Question 3.2*: Are psychosocial resources associated with lower odds of psychological distress among Black MSMW?**

Aim 3.2: Assess the relationships between psychosocial resources and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure.

The goal of this aim is to determine if greater psychosocial resources (social support, private regard for race, self-esteem) are associated with lower odds of psychological distress, after accounting for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism), childhood sexual abuse, and stress exposure (racial discrimination, past-year racism, adult sexual trauma). In Models 4, 5, and 6, psychological distress was regressed on each psychosocial resource, social support, private regard for race, and self-esteem, respectively, to test for significant relationships between psychological distress and psychosocial resource. In Model 7, psychological distress was regressed on all three psychosocial resources to show the effects of each resource when controlling for the other two resources. In Model 8, psychological distress was regressed on psychosocial resources, controlling for sociodemographic and individual-level characteristics and stressors.

Logistic regression models were used to understand whether these psychosocial resources varied significantly across levels of psychological distress, a categorical variable. Statistically significant associations identified key potential psychosocial resource correlates associated with psychological distress and whether they varied across levels of psychological distress, after controlling for sociodemographic and individual-level characteristics and stressors. Hence, this aim answers the research question by telling us whether greater psychosocial resources are associated with lower odds of psychological distress compared to lower psychosocial resources.

Chapter 4: Descriptive Results

Univariate Results

This section outlines the descriptive results of all study variables for the full sample.

Table 4-1

Summary of Univariate Distributions for the Overall Sample, MAALES Intervention Study (2007-2010)

	Overall (n = 411)
	Mean(SD) or %
Psychological Distress Score (BSI-53)	
Low Risk (Ref.)	80.78
High Risk	19.22
HIV Status	
HIV - positive (Ref.)	46.72
HIV – negative	42.34
Indeterminate/Inconclusive/Never Tested/Refused to Answer	10.95
Stressors	
Discrimination [0-5]	1.94 (1.23)
Past-year Racism-Related Stress [0-4]	1.67 (1.22)
Adult Sexual Trauma	
No (Ref.)	72.02
Yes	27.98
Health Risk Factors	
Health Care Access [0-4]	2.52 (1.04)
Alcohol Binging	
No Binging (Ref.)	63.50
Binging	36.50
Drug Use	
Never used drugs to get high (Ref.)	30.66
No drug use last 90 days	29.44
Drug use last 90 days	39.90
MSM-related Health Care Avoidance	
Did not avoid seeking health care (Ref.)	89.05
Avoided seeking health care	10.95
Sexual Risk Factors	
Sexual Risk Behavior [0-3]	1.03 (0.93)
Sexual Compulsivity [0-3]	1.13 (0.89)
Gender Role Conflict [0.03-5]	2.45 (0.87)
Privacy Regarding Sex with Men [0-3]	1.72 (1.17)
Psychosocial Resources	
Social Support [0-5]	3.12 (1.14)
Private Regard for Race [1-3]	2.17 (0.47)
Self-esteem [0.6-3]	2.13 (0.52)

Sociodemographics/Individual-Level Characteristics	
Age [19-89]	42.62 (10.43)
Educational Attainment	
Less than high school (Ref.)	16.55
High school diploma or GED	57.66
Associates degree or higher	25.79
Lifetime Recidivism	
Never incarcerated (Ref.)	26.28
1-4 times	34.79
5 or more times	38.93
Childhood Sexual Abuse [0-4]	
No childhood sexual abuse (Ref.)	42.34
Childhood sexual abuse	57.66

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Psychological distress. The main outcome was psychological distress. Nineteen percent of all participants were at high risk for psychological distress.

Stressors. Most respondents reported moderate levels of stress exposure for all three stressors, but there was considerable variation across the stressors (discrimination, past-year racism, and adult sexual trauma).

Discrimination: The discrimination scores ranged from 0 to 5, such that higher values corresponded with higher levels of discrimination. Overall, the responses had a mean of 1.94 and standard deviation of 1.23. The mean and standard deviation suggested that most respondents had moderate levels of discrimination, but that responses were spread out around the mean.

Past-year racism: The past-year racism scores ranged from 0 to 4, such that higher values corresponded with higher levels of past-year racism. The responses had a mean of 1.67 and standard deviation of 1.22, which suggested that most respondents experienced moderate levels of past-year racism, but that responses are spread out around the mean.

Adult sexual trauma: Almost one-third (28%) of respondents reported adult sexual trauma.

Health and sexual risk factors.

Health care access: Health care access scores ranged from 0 to 4, such that higher values corresponded with higher levels of health care access. The responses had a mean of 2.52 and standard deviation of 1.04. The mean and standard deviation suggested that most respondents had high levels of health care access, but responses were spread out around the mean.

Alcohol binging: Over one third (36%) of the sample had binged alcohol in the last 90 days.

Drug use: Drug use was high among the sample, too, with 40% reporting drug use in the last 90 days, compared to 29% that had not used drugs in the last 90 days or to 31% that had never used drugs to get high.

MSM-related health care avoidance: In general, avoidance of MSM-related health care was relatively low among the sample, with only 11% reporting such avoidance.

Sexual risk behavior: Sexual risk behavior scores ranged from 0 to 3, such that higher values corresponded with higher levels of sexual risk. Overall, the responses had a mean of 1.03 and standard deviation of 0.93. The mean and standard deviation suggested that most respondents had low levels of sexual risk behavior.

Sexual compulsivity: Sexual compulsivity scores ranged from 0 to 3, such that higher values corresponded with higher levels of sexual compulsivity. The responses had a mean of 1.13 and standard deviation of 0.89. The mean and standard deviation suggested that most respondents had moderate levels of sexual compulsivity but that responses were spread out around the mean.

Gender role conflict: Gender role conflict scores ranged from 0.03 to 5, such that higher values corresponded with higher levels of gender role conflict. The responses had a mean of 2.45 and standard deviation of 0.87. The mean and standard deviation suggested that

most respondents had moderate levels of gender role conflict but that responses were spread out around the mean.

Privacy regarding sex with *men*: Scores for the importance of privacy regarding sex with men ranged from 0 to 3, such that higher levels indicated greater importance for privacy regarding sex with men. The responses had a mean of 1.72 and standard deviation of 1.17. The mean and standard deviation suggest that most respondents placed moderate levels of importance for privacy regarding sex with men but that responses are spread out around the mean.

Psychosocial resources. There was little variation in psychosocial resources among participants.

Social support: Social support scores ranged from 0 to 5, such that higher values corresponded with higher levels of social support. The responses had a mean of 3.12 and standard deviation of 1.14. The mean and standard deviation suggested that most respondents had high levels of social support, but that responses were spread out around the mean.

Private regard for race: Private regard for race scores ranged from 1 to 3, such that higher values corresponded with higher, more positive levels of private regard for race. The responses had a mean of 2.17 and standard deviation of 0.47. The mean and standard deviation suggested that most respondents had high levels of private regard for race.

Self-esteem: Self-esteem scores ranged from 0.6 to 3, such that higher scores corresponded with higher levels of self-esteem. The responses had a mean of 2.13 and standard deviation of 0.52. The mean and standard deviation suggested that most respondents had high levels of self-esteem.

Sociodemographic and individual-level characteristics. Variations in several key sociodemographic and individual-level characteristics were also examined for the full sample and by HIV-status.

Age: The average age was 43 years old (SD = 10.43, range 19-89) in the full sample.

Educational attainment: Approximately 1 out of every 6 participants (16%) had less than a high school diploma or GED, compared to 58% that had a high school diploma and 26% that had an Associate's degree or higher.

Incarceration recidivism: Overall, 73% of respondents were incarcerated in their lifetime. Almost 2 out of every 5 (39%) participants had been incarcerated 5 or more times.

Childhood sexual abuse: Fifty-eight percent of the sample reported childhood sexual abuse, compared to 42% that did not.

Overall, the participants were predominantly in their early-mid-40s. In addition, the sample had relatively low educational attainment but there were no statistically significant differences between the two groups. Further, incarceration recidivism and childhood sexual abuse were common among the participants.

Bivariate Results

In this section, the results of bivariate associations between psychological distress and all covariates are reported.

Psychological distress by stressors. The relationships between social stressors and psychological distress were examined individually in Table 4-2. Among the full sample, discrimination was significantly associated with greater odds of psychological distress (OR = 1.98, CI = 1.60-2.44), as were past-year racism (OR = 1.68, CI = 1.36-2.09) and adult sexual trauma (OR = 2.34, CI = 1.40-3.90).

Table 4-2

Summary of Bivariate Associations between Psychological Distress and Stressors, MAALES Intervention Study (2007-2010)

Psychological Distress	
	Overall (n = 411)
	OR(CI)
Stressors	
Discrimination [0-5]	1.98*** (1.60-2.44)
Past-year Racism-Related Stress [0-4]	1.68*** (1.36-2.09)
Adult Sexual Trauma	
No (Ref)	1.00
Yes	2.34* (1.40-3.90)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Psychological distress by health and sexual risk factors. The relationships between health/sexual risks and psychological distress were examined in Table 4-3.

Health care access: Having health care access was not significantly associated with lower odds of psychological distress.

Alcohol binging: When compared to those that had never binged alcohol, alcohol binging was significantly associated with greater odds of psychological distress among the full sample (OR = 2.35, CI = 1.43-3.87).

Drug use: Drug use was not significantly associated with greater psychological distress.

MSM-related health care avoidance: Those that avoided MSM-related health care had significantly greater odds of psychological distress (OR = 4.16, CI = 2.17-7.98) than those that had not avoided MSM-related health care.

Sexual risk behavior: Among the full sample, engaging in sexual risk behaviors was significantly associated with greater odds of psychological distress (OR = 1.44, CI = 1.11-1.87).

Sexual compulsivity: Sexual compulsivity was not significantly associated with greater odds of psychological distress.

Gender role conflict: Gender role conflict was significantly associated with greater odds of psychological distress (OR = 1.41, CI = 1.06-1.87).

Privacy regarding sex with men: A greater emphasis on the importance of privacy regarding sex with men was significantly associated with greater odds of psychological distress (OR = 1.44, CI = 1.15-1.81).

Overall alcohol binging, avoidance of MSM-related health care, engaging in sexual risk behaviors, greater gender role conflict, and placing greater importance on privacy regarding sex with men were significantly associated with greater odds of psychological distress.

Table 4-3

Summary of Bivariate Associations between Psychological Distress and Health Risk Factors, MAALES Intervention Study (2007-2010)

Psychological Distress	
	Overall (n = 411)
	OR(CI)
Health Risk Factors	
Health Care Access [1-5]	0.69 (0.54-0.87)
Alcohol Binging	
No Binging (Ref.)	1.00
Binging	2.35*** (1.43-3.87)
Drug Use	
Never used drugs to get high (Ref.)	1.00
No drug use last 90 days	0.77 (0.39-1.54)
Drug use last 90 days	1.52 (0.85-2.73)
MSM-related Health Care Avoidance	
Did not avoid seeking health care (Ref.)	1.00
Avoided seeking health care	4.16*** (2.17-7.98)
Sexual Risk Factors	
Sexual Risk Behavior [0-3]	1.44** (1.11-1.87)
Sexual Compulsivity [0-3]	1.88 (1.43-2.48)
Gender Role Conflict [0-5]	1.41* (1.06-1.87)
Privacy Regarding Sex with Men [0-3]	1.44** (1.15-1.81)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Psychological distress by psychosocial resources. The relationships between psychosocial resources and psychological distress were examined in Table 4-4.

Social support: Social support from friends and family was significantly associated with lower odds of psychological distress (OR = 0.66, CI = 0.53-0.82).

Private regard for race: Private regard for race was significantly associated with lower odds of psychological distress (OR = 0.33, CI = 0.18-0.56).

Self-esteem: Self-esteem was significantly associated with lower odds of psychological distress (OR = 0.40, CI = 0.24-0.67).

Table 4-4

Summary of Bivariate Associations between Psychological Distress and Psychosocial Resources, MAALES Intervention Study (2007-2010)

Psychological Distress	
	Overall (n = 411)
	OR(CI)
Psychosocial Resources	
Social Support [0-5]	0.66*** (0.53-0.82)
Private Regard for Race [0-3]	0.33*** (0.18-0.56)
Self-esteem [0-3]	0.40*** (0.24-0.67)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Psychological distress by sociodemographic and individual-level characteristics. The relationships between sociodemographic/individual-level characteristics and psychological distress were examined in Table 4-5. Having been incarcerated 1-4 times was significantly associated with lower odds of psychological distress (OR = 0.44, CI = 0.23-0.84) when compared to those that had never been incarcerated. Age and educational attainment were not significantly associated with psychological distress. For an alternative analyses, see Appendices B and C.

Table 4-5

Summary of Bivariate Associations between Psychological Distress and Sociodemographic/ Individual-Level Characteristics, MAALES Intervention Study (2007-2010)

Psychological Distress	
	Overall (n = 411)
	OR(CI)
Sociodemographics/Individual-Level Characteristics	
Age [19-89]	.98 (0.96- 1.00)
Educational Attainment	
Less than high school (Ref.)	1.00
High school diploma or GED	1.12 (0.56-2.27)
Associates degree or higher	1.15 (0.52-2.53)
Lifetime Recidivism	
Never incarcerated (Ref.)	1.00
Incarcerated 1-4 times	0.44** (0.23-0.84)
Incarcerated 5 or more times	0.63 (0.35-1.12)
Childhood Sexual Abuse [0-4]	
No childhood sexual abuse (Ref.)	1.00
Childhood sexual abuse	1.64 (0.98-2.75)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category
Note: Brackets contain ranges for continuous variables

Chapter 5: Results for Study 1

Study 1: Stress Exposure and Psychological Distress among Black MSMW

The overall goal of Study 1 was to better understand the extent to which stress exposure from discrimination, past-year racism, and adult sexual trauma explained relationships between sociodemographic and individual-level characteristics and psychological distress. Two research questions guided the study.

Are There Sociodemographic and Individual-level Characteristic Differences in Psychological Distress among Black MSMW?

The first research question aimed to identify the sociodemographic and individual-level characteristics associated with psychological distress, the focal relationship examined in this study. The goal of this aim was to determine whether disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse ere associated with greater odds of psychological distress compared to advantaged social position (e.g., older age, no history of incarceration, higher education) and no childhood sexual abuse. The relationships between sociodemographic and individual-level characteristics and psychological distress were examined in Table 5-1. Based on the results of univariate and bivariate analyses, educational attainment was not included in the models. Age was not significantly associated with lower odds of psychological distress. Having been incarcerated one to four times was significantly associated with lower odds of psychological distress (OR = 0.43, CI = 0.22-0.82) when compared to those that had never been incarcerated, but having been incarcerated 5 or more times was not significantly associated with psychological distress when compared to those that had never been incarcerated. Those with childhood sexual abuse had greater odds of psychological distress than those that did not have such histories (OR = 1.80, CI = 1.06-3.06). In summary, as expected, a history of childhood sexual abuse was significantly associated with greater odds of psychological distress. However, it was not expected that participants incarcerated 1 to 4 times would have lower odds of distress than those that had

never been incarcerated or that greater disadvantage based on incarceration of 5 or more times was not associated with greater odds of psychological distress or that younger age would not be associated with greater odds of psychological distress compared to older age.

Table 5-1

Psychological Distress Regressed on Sociodemographic and Individual-level Characteristics: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

Model 1: Psychological Distress	
	OR(CI)
Sociodemographic and Individual-level Characteristics	
Age	0.98 (0.96-1.00)
Lifetime recidivism	
Never incarcerated (Ref.)	--
1 - 4 times	0.43** (0.22-0.82)
5 or more times	0.68 (0.37-1.24)
Childhood Sexual Abuse	1.80* (1.06-3.06)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Does Stress Exposure Explain Sociodemographic and Individual-level Characteristic Differences in Psychological Distress among Black MSMW?

After determining sociodemographic and individual level differences in the odds of distress (the focal relationship), the next research question focused on the extent to which those differences were due to differences in stress exposure (the potential mediators). This research question was assessed with three aims to evaluate the extent to which stress exposure explained why sociodemographic and individual level characteristic differences in psychological distress were observed using Baron and Kenny's (1986) steps to test mediation. First, the associations between sociodemographic and individual-level characteristics (main independent variables) and distress (outcome) were assessed. Second, the associations between sociodemographic and individual-level characteristics and stressors (main independent variables and potential mediators) were assessed. Finally, the association between

sociodemographic and individual-level characteristics and distress while also controlling for the stressors. If the original links between the sociodemographic and individual-level factors were still significant or the effect sizes were significantly larger, then there would be little evidence to suggest that the stressors (the potential mediators) explained the link between sociodemographic and individual-level characteristics and distress. However, if these associations were no longer significant or if the effect sizes were significantly smaller with the stressors controlled, then there would be some evidence to suggest that the stressors (the potential mediators) explained the links between sociodemographic and individual-level characteristics and distress. If the relationships between sociodemographics and distress were diminished or reduced to non-significance with the consideration with stressors, then it would suggest that stressors explained the link.

Thus, to address this research question, the first aim was to examine sociodemographic and individual-level characteristic patterns in stress exposure, the relationship between the main independent variables and the potential mediators. The goal of this aim was to determine whether disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse were associated with greater odds of stress exposure (racial discrimination, racism, adult sexual trauma).

The relationships between sociodemographic and individual-level characteristics and stressors were examined in Table 5-2. Childhood sexual abuse was significantly associated with higher levels of discrimination ($p < 0.05$); however, age and incarceration recidivism were not associated with discrimination (Model 2). Similarly, childhood sexual abuse was significantly associated with higher levels of past-year racism ($p < 0.05$), but age and incarceration recidivism were not associated with past-year racism (Model 3). Likewise, participants with histories of childhood sexual abuse had significantly greater odds of adult sexual trauma (OR = 4.49, CI = 2.67-7.55), but age and incarceration recidivism were not associated with adult sexual trauma (Model 4). Thus, as expected, greater odds of stress exposure were only

associated with childhood sexual abuse. Disadvantaged social position, defined by younger age or incarceration recidivism, was not associated with stress exposure.

Table 5-2

Stressors Regressed on Sociodemographic and Individual-level Characteristics: Results of Multivariable OLS and Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Model 2: Discrimination	**Model 3: Past-Year Racism**	**Model 4: Adult Sexual Trauma**
	b(SE)	*b(SE)*	*OR(CI)*
Sociodemographics and Individual-level Characteristics			
Age	-0.01 (0.01)	0.01 (0.01)	1.00 (0.98-1.02)
Lifetime recidivism			
Never incarcerated (Ref.)	--	--	--
1 - 4 times	-0.17 (0.16)	-0.06 (0.15)	0.93 (0.52-1.67)
5 or more times	0.14 (0.15)	0.07 (0.15)	1.07 (0.60-1.91)
Childhood Sexual Abuse	0.30 (0.12)*	0.17 (0.12)*	4.49*** (2.67-7.55)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

The second aim was to assess the relationship between stress exposure and psychological distress, the potential mediators and the outcome variable. The goal of this aim was to determine whether greater stress exposure was associated with greater odds of psychological distress.

The relationships between stressors and psychological distress were examined in Table 5-3 Each of the three stressors was significantly associated with greater odds of psychological distress. In other words, greater exposure to discrimination was associated with significantly greater odds of distress (Model 5; OR = 1.97, CI = 1.60-2.44), as was greater exposure to past-year racism (Model 6; OR = 1.68, CI = 1.36-2.09). Similarly, adult sexual trauma was significantly associated with greater odds of distress (Model 7; OR = 2.34, CI = 1.40-3.90). In the full model, Model 8, where psychological distress was regressed on all three stressors,

discrimination and adult sexual trauma were significantly associated with greater odds of psychological distress, (OR = 1.75, CI = 1.38-2.22, and OR = 2.09, CI = 1.21-3.61, respectively). Thus, stress exposure was independently and significantly associated with greater odds of psychological distress. Past year racism was no longer significant when controlling for the other stressors. Hence, as expected, greater stress exposure was associated with greater odds of psychological distress. Discrimination and adult sexual trauma were significantly and independently associated with psychological distress.

Table 5-3

Psychological Distress Regressed on Stressors, Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Psychological Distress			
	Model 5	**Model 6**	**Model 7**	**Model 8**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Stressors				
Discrimination	1.97*** (1.60-2.44)		--	1.75*** (1.38-2.22)
Past-year Racism	--	1.68*** (1.36-2.09)	--	1.28 (1.00-1.64)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	--	--	2.34*** (1.40-3.90)	2.09** (1.21-3.61)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

The third aim was to evaluate the extent to which stress exposure explained sociodemographic and individual-level characteristic differences in psychological distress. The goal of this aim is to determine the extent to which stress exposure explained sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses faced greater stress exposure, which contributed to greater odds of psychological distress. As previously noted, this aim was assessed using was Baron and Kenny's (1986) steps to determine mediation. The relationships between sociodemographic

and individual-level characteristics, stressors, and psychological distress were examined in Table 5-4. First, the associations between sociodemographic and individual-level characteristics and distress (main independent variables and outcome) are shown again in Model 9. As previously noted (see Model 1), incarceration recidivism of 1 to 4 times was significantly associated with lower odds of psychological distress (OR = 0.43, CI = 0.22-0.82) and age was not associated with psychological distress. By contrast, a history of childhood sexual abuse was significantly associated with greater odds of psychological distress (OR = 1.80, CI = 1.06-3.06).

Second, the association between sociodemographic and individual-level characteristics and stressors (main independent variables and potential mediators) was assessed in Models 10, 11, and 12, respectively, in order to learn if exposure to each of the stressors explained the relationships between sociodemographic and individual-level characteristics and psychological distress. Psychological distress was regressed on the sociodemographic and individual-level characteristics while controlling for discrimination (Model 10) to learn if discrimination explained the relationships between sociodemographic and individual-level characteristics and psychological distress. After controlling for discrimination, incarceration recidivism of 1 to 4 times remained significantly associated with lower odds of psychological distress with little change in the effect sizes (OR = 0.45, CI = 0.23-0.89) and age was not associated with psychological distress. In contrast, childhood sexual abuse was no longer significantly associated with greater odds of psychological distress after controlling for discrimination. Thus, there was some evidence to suggest that discrimination explained the relationship between childhood sexual abuse and psychological distress.

Psychological distress was regressed on the sociodemographic and individual-level characteristics while controlling for past-year racism (Model 11) to learn if past-year racism explained the relationships between sociodemographic and individual-level characteristics and psychological distress. After controlling for past-year racism, incarceration recidivism of 1 to 4 times remained significantly associated with lower odds of psychological distress with little

change in the effect sizes (OR = 0.42, CI = 0.21-0.87) and age was not associated with psychological distress. In contrast, childhood sexual abuse was no longer significantly associated with greater odds of psychological distress after controlling for past-year racism. Thus, there was some evidence to suggest that past-year racism explained the relationship between childhood sexual abuse and psychological distress.

Psychological distress was regressed on the sociodemographic and individual-level characteristics while controlling for adult sexual trauma (Model 12) to learn if adult sexual trauma explained the relationships between sociodemographic and individual-level characteristics and psychological distress. After controlling for adult sexual trauma, incarceration recidivism of 1 to 4 times remained significantly associated with lower odds of psychological distress with little change in the effect sizes (OR = 0.42, CI = 1.27-3.78) and age was not associated with psychological distress. By contrast, childhood sexual abuse was no longer significantly associated with greater odds of psychological distress after controlling for adult sexual trauma. Thus, there was some evidence to suggest that adult sexual trauma explained the relationship between childhood sexual abuse and psychological distress.

Finally, the association between sociodemographic and individual-level characteristics and distress (focal variables and the outcome) was assessed, while controlling for the stressors (potential mediators) in Model 13. After controlling for stressors, incarceration recidivism of 1 to 4 times remained significantly associated with greater odds of psychological distress with little change in the effect sizes (OR = 0.44, CI = 0.22-1.03) and age was not associated with psychological distress. By contrast, childhood sexual abuse was no longer significantly associated with greater odds of psychological distress after controlling for stressors. Higher levels of discrimination were associated with greater odds of psychological distress (OR = 1.72; CI = 1.35-2.20). In addition, adult sexual trauma was associated with greater odds of psychological distress (OR = 2.11; CI = 1.17-3.81).

Taken together, the results demonstrated that exposure to discrimination and adult sexual trauma explained childhood sexual abuse's association's with psychological distress, suggesting that those who experienced childhood sexual abuse faced greater adult stress exposure, which contributed to greater odds of psychological distress. In other words, the association between childhood sexual abuse and distress was no longer significant after accounting for discrimination and adult sexual trauma in the models. This suggests that those two stressors explained the relationship between childhood sexual abuse and distress, thus, answering the research question. However, stress exposure did not explain differences in psychological distress by age or incarceration history. Age was not significantly associated with any of the stressors. The relationship between incarceration of 1 to 4 times and lower odds of psychological distress remained statistically significant after controlling for stressors in separate models and in the full model.

Table 5-4

Psychological Distress Regressed on Sociodemographic and Individual-level Characteristics, Controlling for Stressors: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Psychological Distress				
	Model 9: *OR(CI)*	**Model 10:** *OR(CI)*	**Model 11:** *OR(CI)*	**Model 12:** *OR(CI)*	**Model 13** *OR(CI)*
Sociodemographic and Individual-level Characteristics					
Age	0.98 (0.96-1.00)	0.98 (0.96-1.01)	0.98 (0.95-1.00)	0.98 (0.96-1.00)	0.98 (0.95-1.00)
Lifetime recidivism					
Never incarcerated (Ref.)	--	--	--	--	--
1 - 4 times	0.43** (0.22-0.82)	0.45* (0.23-0.89)	0.42** (0.21-0.87)	0.42** (0.22-0.82)	0.44* (0.22-1.03)
5 or more times	0.68 (0.37-1.24)	0.56 (0.29-1.06)	0.63 (0.34-1.19)	0.66 (0.36-1.22)	0.53 (0.28-1.03)
Childhood Sexual Abuse	1.80* (1.06-3.06)	1.55 (0.89-2.72)	1.62 (0.94-2.82)	1.44 (0.82-2.51)	1.19 (0.65-2.16)
Stressors					
Discrimination	--	1.98*** (1.58-2.43)	--		1.72*** (1.35-2.20)
Past-year Racism	--	--	1.69*** (1.36-2.10)		1.32 (1.02-1.71)
Adult Sexual Trauma					
No (Ref.)	--	--	--	--	--
Yes	--	--	--	2.19** (1.27-3.78)	2.11** (1.17-3.81)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Summary of Study 1 Results

The overall goal of Study 1 was to better understand the extent to which exposure to discrimination, past-year racism, and adult sexual trauma explained the relationships between sociodemographic and individual-level characteristics and psychological distress. The first research question was, “Are there sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?” It was anticipated that disadvantaged social position (e.g., one or more incarcerations, lower education) and childhood sexual abuse would be associated with greater odds of psychological distress. As expected, a history of childhood sexual abuse was significantly associated with greater odds of

psychological distress. However, it was not expected that participants incarcerated 1 to 4 times would have lower odds of distress than those that had never been incarcerated or that greater disadvantage based on incarceration of 5 or more times was not associated with greater odds of psychological distress. In addition, it was not expected that age would not be associated with psychological distress. Thus, social position was related to psychological distress but not always in the ways anticipated. The relationships between distress and age and between distress and incarceration warrant further exploration. It is possible that age is not a factor in relation to psychological distress among Black MSMW or that the relationship between age and psychological distress depends on another variable not measured here. In addition, it is unclear from the current analysis why incarceration recidivism or 1 to 4 times is protective against distress. Perhaps those that have been incarcerated were linked to resources that mitigated distress, such as social support or counseling services, compared to those that have not been incarcerated, respectively.

The second research question was “Does stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?”. It was anticipated that disadvantaged social position (e.g., younger age, one or more incarcerations) and childhood sexual abuse would be associated with greater odds of stress exposure (racial discrimination, racism, adult sexual trauma). Results were consistent with what was anticipated for childhood sexual abuse in relation to stress exposure but not for age and incarceration recidivism. A history of childhood sexual abuse was significantly associated with greater odds of adult sexual trauma and higher levels of discrimination and past-year racism; however, greater stress exposure was not significantly associated with younger age or having been incarcerated 1 or more times compared to older age or never having been incarcerated. Also, it was also anticipated that greater stress exposure would be associated with greater odds of psychological distress compared to lower stress exposure. The results were consistent with

anticipated results, that discrimination, past-year racism, and adult sexual trauma were individually associated with greater odds of psychological distress.

Finally, it was anticipated that stress exposure would explain sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses faced greater stress exposure, which contributed to greater odds of psychological distress. Stress exposure explained only the relationship between childhood sexual abuse and psychological distress. The relationship between childhood sexual abuse and psychological distress was no longer significantly associated with psychological distress after controlling for stress exposure from discrimination, past-year racism and adult sexual trauma, which suggested that stress exposure explained the relationship between childhood sexual abuse and distress. However, stress exposure did not explain the relationship between psychological distress and incarceration recidivism, which remained significant consistently across the models for each stressor and in the full model, with little change in effect size. Moreover, there was no relationship between age and psychological distress. Overall, the results demonstrated that stress exposure from discrimination and adult sexual trauma explained childhood sexual abuse differences in psychological distress, such that those with disadvantaged statuses from childhood sexual abuse faced greater stress exposure, which contributed to greater odds of psychological distress among them. In other words, the association between childhood sexual abuse and distress was no longer mediated by adult stress exposures.

In summary, there were sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW based on age, incarceration of 1 to 4 times, and a history of childhood sexual abuse. Stress exposure from discrimination and adult sexual trauma explained childhood sexual abuse differences in psychological distress among Black MSMW, but stress exposure did not explain incarceration history differences in psychological distress or the lack of differences in psychological distress by age. Taken together, these results

suggest that Black MSMW with histories of childhood sexual abuse faced greater adult stress exposure, which contributed to greater odds of psychological distress. Thus, Black MSMW should be assessed for childhood sexual abuse, adult sexual trauma, and discrimination and interventions should be tailored to address the psychological impacts of these factors. For an alternative analyses, see Appendices B and C.

Chapter 6: Results for Study 2

Study 2: Health and Sexual Risks Associated with Psychological Distress among Black MSMW

The overall goal of Study 2 was to assess the relationships between health and sexual risks and psychological distress among Black MSMW. Two research questions guided the study.

What Sociodemographic and Individual-level Characteristics and Social Stressors are Associated with Health and Sexual Risks among Black MSMW?

The first research question aimed to identify the sociodemographic and individual-level characteristics and social stressors associated with health and sexual risks among Black MSMW. The goal was to determine if other covariates of distress, including disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse), and stress exposure (e.g. discrimination, past-year racism, adult sexual trauma), were associated with greater health risks (e.g. lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (e.g. greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men).

Relationships between sociodemographic and individual-level characteristics, stressors, and health risks.

Table 6-1

Health Risks Regressed on Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable OLS and Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Model 1: Health Care Access	**Model 2: Alcohol Binging**	**Model 3: Drug Use**	**Model 4: MSM-related Health Care Avoidance**
	b (SE)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographic and Individual-level Characteristics				
Age	0.01 (0.01)	0.99 (0.96-1.01)	1.00 (0.98-1.02)	0.98 (0.95-1.01)
Educational Attainment				
Less than high school (Ref.)	--	--	--	--
High school diploma or GED	-0.03 (0.14)	1.50 (0.82-2.71)	1.13 (0.61-2.11)	1.27 (0.53-3.08)
Associate's degree or higher	-0.05 (0.16)	1.19 (0.60-2.36)	1.08 (0.54-2.17)	0.49 (0.15-1.58)
Lifetime recidivism				
Never incarcerated (Ref.)	--	--	--	--
1 - 4 times	-0.03 (0.13)	1.28 (0.75-2.21)	1.99** (1.16-3.39)	1.31 (0.54-3.17)
5 or more times	0.06 (0.13)	1.17 (0.68-2.02)	3.62*** (2.05-6.37)	1.07 (0.44-2.63)
Childhood Sexual Abuse				
No (Ref.)	--	--	--	--
Yes	-0.05 (0.11)	1.24 (0.79-1.93)	1.51 (0.94-2.42)	2.56* (1.13-5.84)
Stressors				
Discrimination	-0.16 (0.05)***	1.19 (0.98-1.45)	1.39** (1.11-1.74)	1.29 (0.95-1.75)
Past-year Racism	0.04 (0.05)	1.19* (1.03-1.54)	0.74** (0.59-0.91)	1.72*** (1.24-2.39)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	0.001 (0.12)**	1.15 (0.71-1.85)	0.87 (0.52-1.46)	1.52 (0.75-3.07)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

The relationships between sociodemographic and individual-level characteristics and stressors and health risks were examined in Table 6-1. Each health risk factor was individually regressed on the sociodemographic and individual-level characteristics and stressors in Models 1 to 4.

Health care access: Results show that no sociodemographic or individual-level characteristics (age, educational attainment, incarceration recidivism, or childhood sexual abuse) were significantly associated with health care access (Model 1). That is, younger participants had similar health care access patterns compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar health care access patterns compared to those that had not completed high school. Those that had been incarcerated 1 to 4 times or 5 or more times had similar health care access patterns compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar health care access patterns as those with no such histories. In contrast, there were different patterns observed in the relationships between the social stressors and healthcare access. Both discrimination ($b = -0.16$, $SE = 0.05$) and adult sexual trauma ($b = 0.001$, $SE = 0.12$) were significantly associated with health care access. Higher levels of discrimination were significantly associated with lower health care access ($p < 0.001$). In addition, those with adult sexual trauma had significantly higher levels of health care access compared to those with no adult sexual trauma ($p < 0.01$). Past-year racism did not vary across levels of health care access.

Alcohol binging: Similarly, there were no sociodemographic or individual-level characteristic (age, educational attainment, incarceration recidivism, or childhood sexual abuse) differences associated with greater odds of alcohol binging (Model 2). Younger participants had similar alcohol consumption behaviors compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar alcohol consumption behaviors compared to those that had not completed high school. Those that had been incarcerated 1 to 4 times or 5 or more times had similar alcohol consumption behaviors compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar alcohol consumption behaviors as those with no such histories. Among stressors, only past-year racism was associated with alcohol binging. Higher levels of past-year racism were significantly

associated with greater odds of binging alcohol (OR = 1.19, CI = 1.03-1.54). However, neither higher levels of discrimination nor adult sexual trauma were associated with greater odds of binging compared to lower levels of discrimination or no adult sexual trauma, respectively.

Drug use: There were few sociodemographic and individual characteristics associated with drug use (Model 3). Participants who had been incarcerated 1-4 times and those who had been incarcerated 5 or more times had significantly greater odds of drug use than those that had never been incarcerated (OR = 1.99, CI = 1.16-3.39 and OR = 3.62, CI = 2.05-6.37, respectively). By contrast, younger participants had similar drug use behaviors as older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar drug use behaviors compared to those that had not completed high school. Participants with histories of childhood sexual abuse had similar drug use behaviors as those with no such histories. Among stressors, discrimination and past-year racism were associated with drug use. Participants that had higher levels of discrimination had greater odds of drug use compared to those with lower levels of discrimination (OR = 1.39, CI = 1.11-1.74). By contrast, participants with higher levels of past-year racism had significantly lower odds of drug use in the past year (OR = 0.74, CI = 0.59-0.91).

MSM-related health care avoidance: There were few sociodemographic and individual characteristics associated with MSM-related health care avoidance (Model 4). Participants with a history of childhood sexual abuse had significantly greater odds of avoidance (OR = 2.56, CI = 1.13-5.84). Younger participants had similar MSM-related health care avoidance patterns. Those with a high school diploma or GED or an Associate's degree or higher had similar MSM-related health care avoidance patterns. Those that had been incarcerated 1 to 4 times or 5 or more times had similar MSM-related health care avoidance patterns. Among the stressors, only higher levels of past-year racism were significantly associated with greater odds of MSM-related health care avoidance (OR = 1.72, CI = 1.24-2.39).

In summary, it was expected that a disadvantaged social position and childhood sexual abuse would be associated with health risks; however, only incarceration recidivism and childhood sexual abuse were associated with health risks. Incarceration recidivism of 1 or more times was significantly associated with health risks from drug use and childhood sexual abuse was significantly associated with MSM-related health care avoidance. Age and educational attainment were not associated with any health risks. Thus, greater health risks as measured by drug use and MSM-related health care avoidance were shaped only by incarceration recidivism and MSM-related health care avoidance, respectively. In addition, social stressors were generally associated with greater health risks. Greater discrimination was associated with lower health care access and drug use. Greater past-year racism was associated with alcohol binging and MSM-related health care avoidance. However, there were a few exceptions. For instance, stress exposure was also associated with lower health risks. Greater past-year racism and adult sexual trauma were associated with lower odds of drug use and higher health care access, respectively. Thus, the links between stress exposure and health risks were mixed.

Relationships between sociodemographic and individual-level characteristics, stressors, and sexual risks.

Table 6-2

Sexual Risks Regressed on Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable OLS Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Model 5: Sexual Risk Behavior	**Model 6: Sexual Compulsivity**	**Model 7: Gender Role Conflict**	**Model 8: Privacy Regarding Sex with Men**
	b (SE)	*b (SE)*	*b (SE)*	*b SE)*
Sociodemographic and Individual-level Characteristics				
Age	0.0003 (0.004)	-0.002 (0.004)	-0.005 (0.004)	0.01 (0.01)
Educational Attainment				
Less than high school (Ref.)	--	--	--	--
High school diploma or GED	0.08 (0.12)	-0.09 (0.11)	-0.20 (0.12)	-0.06 (0.16)
Associate's degree or higher	0.01 (0.14)	-0.18 (0.13)	-0.26 (0.13)	-0.29 (0.18)
Lifetime recidivism				
Never incarcerated (Ref.)	--	--	--	--
1 - 4 times	0.22 (0.12)	0.08 (0.11)	-0.03 (0.11)	0.07 (0.15)
5 or more times	0.39*** (0.12)	0.24* (0.11)	0.09 (0.11)	0.18 (0.15)
Childhood Sexual Abuse				
No (Ref.)				
Yes	0.11 (0.10)	0.14 (0.09)	-0.11 (0.09)	-0.18 (0.12)
Stressors				
Discrimination	0.11** (0.04)	0.17*** (0.04)	0.20*** (0.04)	0.14** (0.06)
Past-year Racism	0.08 (0.04)	0.09* (0.04)	-0.02 (0.04)	0.06 (0.06)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	0.09 (0.10)	0.11 (0.10)	-0.01 (0.10)	-0.12 (0.13)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

The relationships between sociodemographic and individual-level characteristics and stressors and sexual risks were examined in Table 6-2.

Sexual risk behavior: There were few sociodemographic and individual characteristics, associated with sexual risk behavior (Model 5). Younger participants had similar levels of sexual

risk behaviors compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar levels of sexual risk behaviors compared to those that had not completed high school. Participants with histories of childhood sexual abuse had similar levels of sexual risk behaviors as those with no such histories. By contrast, participants that had been incarcerated 5 or more times had significantly higher levels of sexual risk behavior than those that had never been incarcerated ($p < .001$). However, there were similar levels of sexual risk behavior between those that had been incarcerated 1 to 4 times and those that had never been incarcerated. Among stressors, only levels of exposure to discrimination was significantly associated with higher levels of sexual risk behavior from sexual risk behaviors ($p < 0.01$). Higher levels of past-year racism and adult sexual trauma were not associated with higher levels of sexual risks behaviors.

Sexual compulsivity: Only a few sociodemographic and individual characteristics were associated with sexual compulsivity (Model 6). There were similar levels of sexual compulsivity between those that had been incarcerated 1 to 4 times and those that had never been incarcerated. Younger participants had similar levels of sexual compulsivity compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar levels of sexual compulsivity compared to those that had not completed high school. Participants with histories of childhood sexual abuse had similar levels of sexual compulsivity as those with no such histories. By contrast, participants that had been incarcerated 5 or more times had significantly higher levels of sexual compulsivity than those that had never been incarcerated. Among stressors, both discrimination and past-year racism were significantly associated with sexual compulsivity. Higher levels of stress exposure from discrimination were significantly associated with higher levels of sexual compulsivity ($p < 0.001$), and higher levels of stress exposure from past-year racism were significantly associated with higher levels of sexual compulsivity ($p < 0.05$). Stress exposure from adult sexual trauma was not significantly associated with higher levels of sexual compulsivity compared to no adult sexual trauma.

Gender role conflict: No sociodemographic or individual-level characteristics (age, educational attainment, incarceration recidivism, or childhood sexual abuse) were significantly associated with gender role conflict (Model 7). Younger participants had similar patterns of gender role conflict compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar patterns of gender role conflict compared to those that had not completed high school. Those that had been incarcerated 1 to 4 times or 5 or more times had similar patterns of gender role conflict compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar patterns of gender role conflict as those with no such histories. Among stressors, only higher levels of stress exposure from discrimination were significantly associated with higher levels of gender role conflict ($p < 0.001$). Past-year racism and adult sexual trauma were not significantly associated with gender role conflict.

Privacy regarding sex with men: No sociodemographic or individual-level characteristics (age, educational attainment, incarceration recidivism, or childhood sexual abuse) were significantly associated with privacy regarding sex with men (Model 8). Younger participants had similar patterns of privacy regarding sex with men compared to older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar patterns of privacy regarding sex with men compared to those that had not completed high school. Those that had been incarcerated 1 to 4 times or 5 or more times had similar patterns of privacy regarding sex with men compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar patterns of privacy regarding sex with men as those with no such histories. Among stressors, only higher levels of discrimination were significantly associated with greater importance of privacy regarding sex with men ($p < 0.01$). Past-year racism and adult sexual trauma were not significantly associated with greater importance of privacy regarding sex with men.

In summary, it was expected that disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse were associated with greater sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men). However, the results demonstrated few associations between social stress and greater sexual risks. Only lifetime incarceration of 5 or more times was significantly associated with greater sexual risks, from both higher levels of sexual risk behavior and higher levels of sexual compulsivity. By contrast, lifetime incarceration of 1 to 4 times was not significantly associated with higher levels of sexual risk behavior or sexual compulsivity. In addition, there were no differences in sexual risk behaviors or sexual compulsivity by age, educational attainment, and histories of childhood sexual abuse. Moreover, there were no differences in gender role conflict or sexual compulsivity based on age, educational attainment, lifetime incarceration, and childhood sexual abuse. Thus, greater sexual risks as measured by sexual risk behaviors and sexual compulsivity were shaped only by incarceration recidivism of 5 of more times. In addition, it was expected that greater stress exposure (racial discrimination, racism, adult sexual trauma) was associated with greater sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men) compared to lower social stress exposure. As expected, higher levels of stress exposure from discrimination were significantly associated with higher levels of sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men. Likewise, higher levels of stress exposure past-year racism were significantly associated with higher levels of sexual compulsivity. However, higher levels of past-year racism were not associated with greater sexual risk behaviors, greater gender role conflict, or greater importance regarding sex with men. Similarly, stress exposure from adult sexual trauma not associated with greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance

regarding sex with men. Thus, greater sexual risks as measured by sexual risk behaviors were shaped by stress exposure, but only discrimination and racism.

Are Health and Sexual Risks Associated with Greater Odds of Psychological Distress among Black MSMW?

After determining the sociodemographic and individual characteristics and social stressors associated with health and sexual risks, the second research question aimed to assess the relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure. The goal of this aim was to determine whether greater health risks (lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men) were associated with greater odds of psychological distress, after controlling for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (discrimination, past-year racism, adult sexual trauma).

The relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure were examined in Table 6-3. A step-wise modeling approach was used. First, the relationships between health risks and distress were assessed in Model 9. Then, the relationships between sexual risks and distress were assessed in Model 10. In Model 11, the impact of health and sexual risks on distress were considered simultaneously. Finally, the roles of sexual and health risks, along with sociodemographic and individual-level characteristics and social stressors were evaluated collectively in Model 12. This approach was used to consider whether the effects of health and sexual risks on distress were independent of each other and independent of sociodemographic and individual-level characteristics and social stressors.

Table 6-3

Psychological Distress Regressed on Health and Sexual Risks, Accounting for Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

Psychological Distress				
	Model 9	**Model 10**	**Model 11**	**Model 12**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Health Risks				
Health Care Access	0.71** (0.55-0.92)	--	0.76 (0.58-1.00)	0.86 (0.64-1.16)
Alcohol Binging				
No Binging (Ref.)	--	--	--	--
Binging	2.06** (1.18-3.59)	--	1.75 (0.98-3.12)	1.41 (0.74-2.68)
Drug Use				
Never used drugs to get high (Ref.)	--	--	--	--
No drug use last 90 days	0.67 (0.32-1.39)	--	0.68 (0.33-1.43)	0.77 (0.33-1.79)
Drug use last 90 days	1.10 (0.57-2.11)	--	1.11 (0.55-2.22)	1.29 (0.59-2.80)
MSM-related Health Care Avoidance				
Did not avoid seeking health care (Ref.)	--	--	--	--
Avoided seeking health care	3.24*** (1.64-6.41)	--	2.55** (1.23-5.28)	2.18 (0.98-4.82)
Sexual Risks				
Sexual Risk Behavior	--	1.16 (0.87-1.53)	0.96 (0.69-1.32)	0.92 (0.64-1.30)
Sexual Compulsivity	--	1.76*** (1.28-2.42)	1.48* (1.06-2.06)	1.34 (0.93-1.92)
Gender Role Conflict	--	0.92 (0.65-1.30)	0.89 (0.62-2.06)	0.77 (0.52-1.14)
Privacy Regarding Sex with Men	--	1.35* (1.05-1.74)	1.33* (1.03-1.73)	1.46** (1.10-1.96)
Sociodemographic and Individual-level Characteristics				
Age	--	--	--	0.98 (0.96-1.01)
Educational Attainment				
Less than high school (Ref.)	--	--	--	--
High school diploma or GED	--	--	--	1.84 (0.78-4.33)
Associate's degree or higher	--	--	--	2.23 (0.84-5.91)
Lifetime recidivism				
Never incarcerated (Ref.)	--	--	--	--
1 - 4 times	--	--	--	0.35** (0.17-0.73)
5 or more times	--	--	--	0.49

				(0.23-1.02)
Childhood Sexual Abuse				
No (Ref.)	--	--	--	--
Yes	--	--	--	1.05 (0.55-1.99)
Stressors				
Discrimination	--	--	--	1.65*** (1.25-2.17)
Past-year Racism	--	--	--	1.21 (0.91-1.61)
Adult Sexual Trauma	--	--	--	
No (Ref.)	--	--	--	--
Yes	--	--	--	2.33** (1.23-4.43)

*p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

In Model 9, psychological distress was regressed on health risks. Greater health care access was significantly associated lower odds of psychological distress (OR = 0.71, CI = 0.55-0.92) compared to lower health care access. In addition, alcohol binging was significantly associated with greater odds of psychological distress (OR = 2.06, CI = 1.18-3.59) compared to no alcohol binging. Compared to those who did not engage in MSM-related health care avoidance, those who were avoidant had significantly higher odds of psychological distress (OR = 3.24, CI = 1.64-6.41). By contrast, drug use was not associated with differences in the odds of psychological distress.

Next, psychological distress was regressed on sexual risks (Model 10). Higher levels of sexual compulsivity were significantly associated with greater odds of psychological distress (OR = 1.76, CI = 1.28-2.42) Similarly, higher levels of importance of privacy regarding sex with men were associated with greater odds of psychological distress (OR = 1.35, CI = 1.05-1.74). By contrast, higher levels of sexual risk behavior were not significantly associated with greater odds of psychological distress. Similarly, higher levels of gender role conflict were not significantly associated with greater odds of psychological distress.

After assessing the relationship between health risks and psychological distress, psychological distress was regressed on health risks controlling for sexual risks (Model 11).

Only the relationship between MSM-related health care avoidance and psychological distress remained significant such that participants that avoided MSM-related health care had greater odds of distress than participants that did not avoid such health care (OR = 3.24, CI = 1.64-6.41) after accounting for sexual risk. Health care access was no longer significantly associated with lower odds of psychological distress after controlling for sexual risks. Similarly, alcohol binging was no longer significantly associated with greater odds of psychological distress after controlling for sexual risks. No drug use during the last 90 days and drug use during the last 90 days were not significantly associated with greater odds of psychological distress after controlling for sexual risks.

After assessing the relationship between sexual risks and psychological distress, psychological distress was regressed on sexual risks controlling for health risks (Model 11). The relationships between sexual compulsivity and psychological distress and between the importance of privacy regarding sex with men and psychological distress remained significant. Higher levels of sexual compulsivity remained significantly associated with greater odds of psychological distress (OR = 1.48, CI = 1.06-2.06) after controlling for health risks. Greater importance of privacy regarding sex with men remained significantly associated with greater odds of psychological distress (OR = 1.33, CI = 1.03-1.73) after controlling for health risks. By contrast, neither higher levels of sexual risk behavior nor gender role conflict remained significantly associated with greater odds of psychological distress after accounting for health risks.

Finally, psychological distress was regressed on health risks accounting for sexual risks, sociodemographic and individual-level characteristics, and stress exposure and psychological distress was regressed on sexual risks accounting for health risks, sociodemographic and individual-level characteristics, and stress exposure (Model 12). After accounting for sexual risks, sociodemographic and individual-level characteristics, and stress exposure, no health risks were significantly associated with psychological distress. After accounting for health risks,

sociodemographic and individual-level characteristics, and stress exposure, only privacy regarding sex with men was significantly associated with psychological distress. Greater importance of privacy regarding sex with men remained significantly associated with greater odds of psychological distress (OR = 1.46, CI = 1.10-1.96). By contrast, after accounting for health risks, sociodemographic and individual-level characteristics, and stress exposure, higher levels of sexual compulsivity were no longer significantly associated with greater odds of psychological distress. Moreover, sexual risk behavior and gender role conflict were not associated with greater odds of psychological distress.

In summary, greater health risks were significantly associated greater odds of psychological distress. Lower health care access, alcohol binging, and MSM-related health care avoidance were all associated higher odds of psychological distress. Only drug use was not associated with differences in the odds of psychological distress. In addition, greater sexual risks were associated with greater odds of psychological distress. Higher levels of sexual compulsivity and higher levels of importance of privacy regarding sex with men were associated with greater odds of psychological distress. By contrast, higher levels of sexual risk behavior and higher levels of gender role conflict were not significantly associated with greater odds of psychological distress. After accounting for other risk factors, only MSM-related health care avoidance, sexual compulsivity, and privacy regarding sex with men were still significantly associated with psychological distress. Thus, above and beyond other risks, these factors are important for shaping distress. However, after controlling for all other risks, sociodemographic and individual-level characteristics, and stressors, only privacy regarding sex with men was significantly associated with psychological distress. That is, privacy regarding sex with men was the only risk factor still significantly associated with distress, suggesting that above and beyond all other risk factors, sociodemographic and individual-level characteristics, and stressors this factor importantly shapes psychological distress among Black MSMW.

Summary of Study 2 Results

The overall goal of Study 2 was to assess the relationships between health and sexual risks and psychological distress and to determine whether HIV status moderated those relationships. Two research questions guided the study. The first question asked, *"What sociodemographic/ individual-level characteristics and social stressors are associated with health and sexual risks among Black MSMW?"* Based on prior research, it was expected that disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse would be associated with greater health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care). However, only one or more incarcerations and childhood sexual abuse were associated with greater health risks. One or more incarcerations was significantly associated with greater odds of drug use and those with histories of childhood sexual abuse had greater odds of MSM-related health care avoidance. By contrast, disadvantaged social position (younger age, lower educational attainment, lifetime incarceration) and histories of childhood sexual abuse were not associated with greater health risks from lower health care access. In addition, there were no differences in alcohol binging based on age, educational attainment, lifetime incarceration, and histories of childhood sexual abuse, and there were no differences in drug use based on age, educational attainment, and histories of childhood sexual abuse. Finally, there were no differences in MSM-related health care avoidance based on age, educational attainment, and lifetime incarceration. Thus, greater health risks as measured by drug use and MSM-related health care avoidance were shaped only by incarceration recidivism and childhood sexual abuse, respectively.

It was expected that disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse were associated with greater sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men). However, only lifetime incarceration of 5 or more times was significantly associated with greater sexual risks, from both higher levels of

sexual risk behavior and higher levels of sexual compulsivity. By contrast, lifetime incarceration of 1 to 4 times was not significantly associated with higher levels of sexual risk behavior or sexual compulsivity. In addition, there were no differences in sexual risk behaviors or sexual compulsivity by age, educational attainment, and histories of childhood sexual abuse. Moreover, there were no differences in gender role conflict or sexual compulsivity based on age, educational attainment, lifetime incarceration, and childhood sexual abuse. Thus, greater sexual risks as measured by sexual risk behaviors and sexual compulsivity were shaped only by incarceration recidivism of 5 of more times. In addition, it was expected that greater stress exposure (racial discrimination, racism, adult sexual trauma) was associated with greater health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care). However, only two stressors (discrimination and past-year racism) were associated with greater health risks. Higher levels of discrimination were significantly associated with lower health care access and with greater odds of drug use. In addition, higher levels of past-year racism were significantly associated with greater odds of alcohol binging and greater odds of MSM-related health care avoidance. By contrast, adult sexual trauma was associated with higher health care access and higher levels of past-year racism was associated with lower odds of drug use.

Moreover, it was expected that greater stress exposure (racial discrimination, racism, adult sexual trauma) was associated with greater sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men). As expected, higher levels of stress exposure from discrimination were significantly associated with higher levels of sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men. Likewise, higher levels of stress exposure past-year racism were significantly associated with higher levels of sexual compulsivity. However, higher levels of past-year racism were not associated with greater sexual risk behaviors, greater gender role conflict, or greater importance regarding sex with

men. Similarly, stress exposure from adult sexual trauma was not associated with greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance on privacy regarding sex with men. Thus, greater sexual risks as measured by sexual risk behaviors were shaped by stress exposure, but only discrimination and racism.

Taken together, these results suggest that few sociodemographic and individual-level characteristics were associated with few health and sexual risks, with the exceptions of incarceration recidivism and childhood sexual abuse. It is possible that there was not enough variation in social position among the sample to demonstrate differences in health and sexual risk behaviors. For example, most participants (83%) had a high school diploma or higher.

The relationships of stressors to health and sexual risks were mostly as expected for discrimination and past-year racism but not for adult sexual trauma. Greater discrimination was significantly associated with lower health care access and greater odds of drug use and higher levels of sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men. Higher levels of past-year racism were significantly associated with greater odds of alcohol binging, greater odds of MSM-related health care avoidance, and higher levels of sexual compulsivity. In addition, some of the results were not as expected. For example, findings suggested that greater stress exposure from past-year racism was associated with lower health risks from lower odds of drug use, while adult sexual abuse was associated with lower health risks from higher health care access. Perhaps there is a heightened awareness of racism with lower drug use. In addition, it is possible that victims of sexual trauma have increased access to health care because of those traumatic experiences. These dynamics warrant further exploration.

The second research question asked, *"Are health and sexual risks associated with greater odds of psychological distress among Black MSMW?"* It was expected that health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role

conflict, and greater importance regarding sex with men) are associated with greater odds of psychological distress, after accounting for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma). Results were consistent with this expectation, such that greater health risks (based on lower health care access, alcohol binging, and MSM-related health care avoidance) were significantly associated with greater odds of psychological distress. In addition, sexual risks from higher levels of sexual compulsivity and greater importance regarding sex with men were significantly associated with greater odds of psychological distress. However, greater risks from drug use, sexual risk behavior, and gender role conflict were not associated with greater odds of psychological distress.

Based on prior studies, it was expected that greater health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and greater sexual risk behavior (greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men) were associated with greater odds of psychological distress, after accounting for differences in other risks, sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma). However, after controlling for all other risks, sociodemographic and individual-level characteristics, and stressors, only privacy regarding sex with men was significantly associated with psychological distress. That is, privacy regarding sex with men was the only risk factor still significantly associated with distress, suggesting that above and beyond all other risk factors, sociodemographic and individual-level characteristics, and stressors this factor importantly shapes psychological distress among Black MSMW.

Taken together, the results demonstrated that sexual risks (not health risks) were associated with greater odds of psychological distress. Specifically, sexual risk from placing a

greater importance of privacy regarding sex with men was significantly associated with greater odds of psychological distress, after controlling for health risks, sociodemographic and individual-level characteristics, and stress exposure. These findings are consistent with bivariate results, which showed that greater importance of privacy regarding sex with men was associated with greater odds of psychological distress. However, other results were not consistent. Based on bivariate results, it was expected that that alcohol binging, avoidance of MSM-related health care, sexual risk behavior, and gender role conflict would be associated with greater odds of psychological distress. After the inclusion of covariates, these relationships are no longer significant. Thus, these findings suggest that privacy regarding sex with men is an important risk factor above and beyond other risks and differences among this population. For an alternative analyses, see Appendices B and C.

Chapter 7: Results for Study 3

Study 3: Psychosocial Resources Associated with Psychological Distress among Black MSMW

The overall goal of Study 3 was to assess the relationships between psychosocial resources and psychological distress among Black MSMW and to determine whether HIV status moderated those relationships. Two research questions guided the study.

What Sociodemographic and Individual-level Characteristics and Social Stressors are Associated with Psychosocial Resources among Black MSMW?

The first research question aimed to identify the sociodemographic and individual-level characteristics and social stressors associated with psychosocial resources among Black MSMW. The goal of this aim was to determine whether other covariates, including advantaged social position (e.g., older age, no history of incarceration, higher education), no childhood sexual abuse, and lower stress exposure (lower levels of racial discrimination, lower levels of past-year racism, and no adult sexual trauma), were associated with greater psychosocial resources (from social support, private regard for race, self-esteem) compared to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse, and greater stress exposure (higher levels of racial discrimination, higher levels of past-year racism, and adult sexual abuse).

Table 7-1

Psychosocial Resources Regressed on Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable OLS Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Model 1: Social Support	**Model 2: Private Regard for Race**	**Model 3: Self-Esteem**
	b (SE)	*b (SE)*	*b (SE)*
Sociodemographic and Individual-level Characteristics			
Age	0.003 (0.006)	0.003 (0.002)	0.002 (0.002)
Educational Attainment			
Less than high school (Ref.)	--	--	--
High school diploma or GED	0.08 (0.16)	0.07 (0.06)	0.12 (0.07)
Associate's degree or higher	0.17 (0.18)	0.16 (0.07)	0.30 (0.08)***
Lifetime recidivism			
Never incarcerated (Ref.)	--	--	--
1 - 4 times	-0.20 (0.15)	0.02 (0.06)	-0.04 (0.06)
5 or more times	-0.10 (0.14)	-0.01 (0.06)	-0.05 (0.06)
Childhood Sexual Abuse			
No (Ref.)	--	--	--
Yes	-0.13 (0.12)	-0.11 (0.05)*	-0.02 (0.05)
Stressors			
Discrimination	-0.11 (0.05)	-0.04 (0.02)	-0.06 (0.02)**
Past-year Racism	-0.06 (0.05)	-0.02 (0.02)	-0.03 (0.02)
Adult Sexual Trauma			
No (Ref.)	--	--	--
Yes	-0.06 (0.13)	0.01 (0.06)	-0.02 (0.06)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

The relationships between sociodemographic and individual-level characteristics and stressors and psychosocial resources were examined in Table 7-1. Each psychosocial resource was individually regressed on the sociodemographic and individual-level characteristics and stressors in Models 1 to 3.

Social support: Results show that no sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, or childhood sexual abuse) were significantly associated with social support. That is, younger participants had similar social support patterns compared to older participants. Those with a high school diploma

or GED or an Associate's degree or higher had similar social support patterns compared to those that had not completed high school. Those that had been incarcerated 1 to 4 times or 5 or more times had similar social support patterns compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar social support patterns as those with no such histories. Similarly, results showed that no stressors (discrimination, past-year racism, adult sexual trauma) were significantly associated with social support. That is, those with lower levels of discrimination had similar patterns of social support to those with those with higher levels of discrimination. Those with lower levels of past-year racism had similar patterns of social support to those with those with higher levels of past-year racism. Those with no adult sexual trauma had similar patterns of social support to those with adult sexual trauma. Thus, social support was not shaped by differences in stress exposure.

Private regard for race*:* There were a few sociodemographic and individual characteristics associated with private regard for race (Model 2). Participants with histories of childhood sexual abuse had significantly lower levels of private regard for race than did those that had not experienced abuse (b = -0.11, SE = 0.05, $p < 0.05$). By contrast, younger participants had similar private regard for race as did older participants. Those with a high school diploma or GED or an Associate's degree or higher had similar private regard for race compared to those that had not completed high school. Participants that had been incarcerated 1-4 times or 5 or more times had similar private regard for race as those had never been incarcerated. Similarly, results showed that no stressors (discrimination, past-year racism, adult sexual trauma) were significantly associated with private regard for race. That is, those with lower levels of discrimination had similar patterns of private regard for race to those with those with higher levels of discrimination. Those with lower levels of past-year racism had similar patterns of private regard for race to those with those with higher levels of private regard for race. Those with no adult sexual trauma had similar patterns of private regard for race to those with adult sexual trauma. Thus, private regard for race was not shaped by stress exposure.

Self-esteem: There were few sociodemographic and individual characteristics were significantly associated with self-esteem (Model 3). Specifically, participants with an Associate's degree or higher had higher levels of self-esteem than those with less than a high school diploma (b = 0.30, SE = 0.08, $p < 0.001$). By contrast, younger participants had similar self-esteem patterns compared to older participants. Those that had been incarcerated 1 to 4 times or 5 or more times had similar self-esteem patterns compared to those that had never been incarcerated. Participants with histories of childhood sexual abuse had similar self-esteem patterns as those with no such histories. Participants with lower levels of discrimination had significantly higher levels of self-esteem (b = -0.06, SE = 0.02, $p < 0.01$). Participants with lower levels of past-year racism had similar patterns of self-esteem. Those with no adult sexual trauma had similar levels of self-esteem compared to those with adult sexual trauma.

Overall, it was expected that advantaged social position (older age, higher educational attainment, no history of incarceration) and no history of childhood sexual abuse would be associated with greater psychosocial resources compared to disadvantaged social position and childhood sexual abuse. However, only no history of childhood sexual abuse and higher educational attainment were associated with greater psychosocial resources from private regard for race and self-esteem. Age and incarceration recidivism were not associated with any psychosocial resources. Moreover, these covariates mattered only for self-esteem and private regard but not for social support. Hence, it appears that more individually-oriented personal psychosocial resources, in contrast to social resources, were shaped by educational attainment and childhood sexual abuse.

It was also expected that lower levels of social stress would be associated with higher levels of psychosocial resources. Lower levels of discrimination were significantly associated with higher social support and higher self-esteem. Past-year racism and adult sexual trauma were not associated with any psychosocial resources. Thus, stress exposure (as measured by discrimination) only seemed to matter for one of the resources (self-esteem).

Are Psychosocial Resources Associated with Lower Odds of Psychological Distress among Black MSMW?

After determining the sociodemographic and individual characteristics and social stressors associated with psychosocial resources, the second research question aimed to assess the relationships between psychosocial resources and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure. The goal of this aim was to determine whether greater psychosocial resources (social support, private regard for race, self-esteem) were associated with lower odds of psychological distress, after controlling for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma).

The relationships between psychosocial resources and psychological distress, accounting for sociodemographic and individual-level characteristics and stressors were examined in Table 7-2. A step-wise modeling approach was used. First, the relationship between social support was and psychological distress was assessed in Model 4, the relationship between private regard for race and psychological distress was assessed in Model 5, and the relationship between self-esteem and psychological distress was assessed in Model 6. Second, the roles of all psychosocial resources were evaluated collectively in Model 7. Finally, the roles of all the psychosocial resources, along with those sociodemographic and individual-level characteristics and social stressors with statistically significant bivariate associations were evaluated collectively in Model 8. This approach was used to consider whether the effects of psychosocial resources on distress were independent of each other and independent of sociodemographic and individual-level characteristics and social stressors.

Table 7-2

Psychological Distress Regressed on Psychosocial Resources, Accounting for Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 411)

	Psychological Distress				
	Model 4	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*	*OR(CI)*
Psychosocial Resources					
Social Support	0.66*** (0.53-0.82)	--	--	0.73** (0.58-0.92)	0.74* (0.57-0.94)
Private Regard for Race	--	0.33*** (0.19-0.57)	--	0.50** (0.25-0.82)	0.54 (0.28-1.05)
Self-Esteem	--	--	0.40*** (0.24-0.67)	0.61 (0.35-1.07)	0.67 (0.36-1.24)
Sociodemographic and Individual-level Characteristics					
Age	--	--	--	--	0.98 (0.96-1.01)
Educational Attainment					
Less than high school (Ref.)	--	--	--	--	--
High school diploma or GED	--	--	--	--	1.93 (0.84-4.39)
Associate's degree or higher	--	--	--	--	2.48 (0.96-1.01)
Lifetime recidivism					
Never incarcerated (Ref.)	--	--	--	--	--
1 - 4 times	--	--	--	--	0.40** (0.19-0.81)
5 or more times	--	--	--	--	0.49* (0.24-0.98)
Childhood Sexual Abuse					
No (Ref.)	--	--	--	--	--
Yes	--	--	--	--	0.98 (0.52-1.84)
Stressors					
Discrimination	--	--	--	--	1.70*** (1.30-2.21)
Past-year Racism	--	--	--	--	1.29 (1.00-1.69)
Adult Sexual Trauma					
No (Ref.)	--	--	--	--	--
Yes	--	--	--	--	2.19** (1.17-4.06)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

In Model 4, psychological distress was regressed on social support (Model 4). Higher levels of social support were significantly associated with lower odds of psychological distress (OR = 0.66, CI = 0.53-0.82). In Model 5, psychological distress was regressed on private regard

for race. Higher levels private regard for race were significantly associated with lower odds of psychological distress (OR = 0.33, CI = 0.19-0.57). In Model 6, psychological distress was regressed on self-esteem. Higher levels of self-esteem were significantly associated with lower odds of psychological distress (OR = 0.40, CI = 0.24-0.67). In Model 7, psychological distress was regressed on all three resources collectively. After accounting for other resources, the relationship between social support and psychological distress persisted, such that higher levels of social support were significantly associated with lower odds of psychological distress (OR = 0.73, CI = 0.58-0.92). Similarly, after accounting for other resources, the relationship between private regard for race and psychological distress persists, such that higher levels of private regard for race were significantly associated with lower odds of psychological distress (OR = 0.50, CI = 0.25-0.82). By contrast, after controlling for other resources, the relationship between self-esteem and psychological distress was no longer significant; higher levels of self-esteem are not associated with lower odds of distress. Finally, psychological distress was regressed on psychosocial resources, accounting for sociodemographic and individual-level characteristics, and stress exposure (Model 8). After accounting for other resources, sociodemographic and individual-level characteristics, and stress exposure, only social support was significantly associated with psychological distress. Higher levels of social support remained significantly associated with lower odds of psychological distress (OR = 0.74, CI = 0.57-0.94) after controlling for sociodemographic and individual-level characteristics and stressors. After accounting for other resources, sociodemographic and individual-level characteristics, and stress exposure, private regard for race and self-esteem were no longer associated with psychological distress.

In summary, higher in unadjusted analyses levels of social support, private regard for race, and self-esteem were associated with lower odds of psychological distress, in unadjusted analyses. However, after accounting for other resources, only higher levels of social support and private regard for race were significantly associated with lower odds of distress. Self-

esteem was no longer associated with distress. Further, after controlling for other resources, sociodemographic and individual-level characteristics, and stressors, only social support was significantly associated with lower odds of psychological distress. That is, social support was the only resource still significantly associated with distress, suggesting that above and beyond all other resources, sociodemographic and individual-level characteristics, and stressors this factor importantly shapes psychological distress among Black MSMW.

Summary of Study 3 Results

The overall goal of Study 3 was to assess the relationships between psychosocial resources and psychological distress. Two research questions guided the study. The first question asked, "*What sociodemographic and individual-level characteristic and social stressors are associated with psychosocial resources among Black MSMW?*" Based on prior research, it was anticipated that advantaged social position (e.g., older age, no history of incarceration, higher education) and no history of childhood sexual abuse were associated with greater psychosocial resources (social support, private regard for race, self-esteem) compared to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse. Results were consistent with expectations for educational attainment and for childhood sexual abuse. An Associate's degree was significantly associated with higher self-esteem and no childhood sexual abuse was significantly associated with higher private regard for race. By contrast, advantaged social position based on older age and never having been incarcerated were not associated with greater psychosocial resources. Thus, greater psychosocial resources as measured by self-esteem and private regard for race were shaped only by educational attainment and childhood sexual abuse, respectively. It is possible that there was not enough variation in social position among the sample to demonstrate differences in psychosocial resources. For example, most participants (75%) had been incarcerated during their lifetime. In addition, these two resources, private regard for race and

self-esteem, are personal resources (more individually-oriented) resources relative to social support. Further investigation of these dynamics is warranted.

It was also expected that lower levels of social stress exposure would be associated with higher levels of psychosocial resources. However, only lower levels of discrimination were significantly associated with only higher self-esteem. Past-year racism and adult sexual trauma were not associated with any psychosocial resources. These results were not consistent with bivariate findings, which demonstrated that all three stressors were significantly associated with psychological distress. Accounting for all other stressors and sociodemographic and individual-characteristics in the model diminished the strength of the relationships for past-year racism and distress and for adult sexual trauma and distress. Taken together, this suggests that only certain forms of social stress (i.e., discrimination) significantly influence some psychosocial resources (i.e., self-esteem), indicating that this stress-resource association is not uniform across all forms of stress and resources.

The second research question asked, "*Are psychosocial resources associated with lower odds of psychological distress among Black MSMW*?". Based on prior studies, it was anticipated that greater psychosocial resources (social support, private regard for race, self-esteem) would be associated with lower odds of psychological distress, after accounting for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma). However, after controlling for all other resources, sociodemographic and individual-level characteristics, and stressors, only social support was significantly associated with psychological distress.

Taken together, the results demonstrated that higher levels of psychosocial resources were associated with lower odds of psychological distress after controlling for all other covariates. Specifically, higher levels of social support from friends and family was significantly associated with lower odds of psychological distress, after controlling for other resources,

sociodemographic and individual-level characteristics, and stress exposure. These results were consistent with bivariate analyses, which showed that higher levels of social support were significantly associated with lower odds of psychological distress. However, other results were not consistent with bivariate results. For example, bivariate analyses indicated that both private regard for race and self-esteem would be significantly associated with psychological distress in the multivariate models. However, after controlling for other resources, sociodemographic and individual-level characteristics, and stressors, the strength of associations was diminished between private regard for race and distress and between self-esteem and distress. That is, social support was the only resource still significantly associated with distress, suggesting that above and beyond all other risk factors, sociodemographic and individual-level characteristics, and stressors this factor importantly shapes psychological distress among Black MSMW. For an alternative analyses, see Appendices B and C.

Chapter 8: Discussion

Study Rationale

The purpose of this dissertation was to identify the distinct risk and protective factors that are associated with psychological distress among Black MSMW. Black MSMW encounter a host of stressors in their daily lives that impact their mental and physical health. The root causes of these disparities are likely related to heteronormative expectations of masculinity (Herek, 2009), the intersectionality of racism and sexual minority status (Meyer, 2003), and a lack of support from gay-identified and straight-identified communities (Friedman, Wei, et al., 2014). Yet, despite their many challenges, Black MSMW may also be able to draw from their own personal and social resources to mitigate their distress. Research was needed to assess the dynamics of known correlates of psychological distress among Black MSMW, including those that are risks for distress and those that may help mitigate or protect against it. Additional examination was needed to identify how these relationships between these correlates and distress may vary by HIV status. Research among Black MSMW has identified psychological distress as a correlate of HIV risk, HIV prevalence, and poor engagement in HIV interventions and care (Bingham et al., 2013; Friedman, Bukowski, et al., 2019; Friedman, Sang, et al, 2018; Friedman, Stall et al., 2014). In addition, studies among Black MSMW have examined the direct and indirect effects of sociodemographic inequalities and stress exposure from racism, racial discrimination, sexual abuse, and a stigmatized sexual identity on HIV risk, prevalence, and engagement in HIV interventions and care (Allen et al., 2014; Grov et al., 2015; Li et al., 2018; Parsons et al., 2017; Williams, et al., 2015). Furthermore, some research on distress has included resources to mitigate its effects on Black MSMW among the correlates (Allen et al., 2014; Operario et al., 2011). Yet, few studies have collectively examined sociodemographic and individual-level inequalities, social stressors, and psychosocial resources associated with psychological distress among this population.

There are several critical gaps in knowledge about the relationships among stress exposure, health and sexual risk factors, social and personal resources, and sociodemographic and individuals-level factors that shape psychological distress among Black MSMW. Black MSMW, as part of a larger Black American experience, have been subjected to societal, institutional, and neighborhood inequalities (Assari, 2018; Lewis & Van Dyke, 2018; Williams, 2012). They are products of their communities and family advantages and disadvantages (Graham et al., 2016; Molina & James, 2016; Williams et al., 2017). Yet, few studies have examined differences in psychological distress among Black MSMW by differences in social position, as defined by sociodemographic and individual-level characteristics (e.g., age, educational attainment, incarceration, and childhood sexual abuse). Disadvantages in social position (e.g., younger age, lower educational attainment, having been incarcerated) and a history of childhood sexual abuse may contribute to greater risk for psychological distress among Black MSMW compared to advantages in social position (e.g., older age, higher educational attainment, never having been incarcerated) and no childhood sexual abuse. However, little is known about whether these factors are associated with distress among Black MSMW either individually or collectively. Understanding such differences will help to tailor interventions that focus mitigating the negative effects of disadvantaged social position and adverse childhood experiences (i.e., sexual abuse) or building on the positive effects of advantaged social position and positive childhood experiences.

As racial minorities, Black MSMW have experienced health disparities at the intersection of minority racial and sexual minority statuses (Bowleg et al., 2017; Li et al., 2018), including disparities in mental health outcomes and services (Friedman, Bukowski et al., 2019, Harawa et al., 2018). However, these experiences are likely more salient for some than others, resulting in different patterns of psychological distress. Moreover, some Black MSMW have experienced additional stress from traumatic experiences, such as childhood sexual abuse and intimate partner violence (Friedman, Bukowski et al., 2019; Williams et al., 2015), with their own potential

impacts on mental health. However, it is unclear whether these stressors are important to psychological distress above and beyond advantages and disadvantages in social position (i.e., sociodemographic and individual-level characteristics). Thus, there is a need to understand whether stress exposure from race-based discrimination and sexual trauma explain sociodemographic and individual-level characteristic differences in psychological distress. Existing research has also drawn attention to the detrimental mental and physical health effects of negative attitudes toward Black MSMW. However, less is known about whether social stressors are significant to Black MSMW's psychological distress above and beyond sociodemographic and individual-level characteristic differences. Hence, it is critical to understand stress exposure's contribution to psychological distress among Black MSMW above and beyond any differences in social position.

Given the high prevalence of HIV among Black MSMW, considerable research, has justifiably focused on health care engagement and sexual risks. However, as with stressors, less is known about whether health and sexual risks are significant to Black MSMW's psychological distress above and beyond sociodemographic and individual-level characteristic differences and differences in stress exposure. It is important to understand these patterns of risk are associated with Black MSMW's health so that interventions can be tailored to address them.

In general, much of the research among Black MSMW has focused on their vulnerabilities as opposed to their strengths, there is limited understanding of the personal and social resources Black MSMW can draw upon to overcome the challenges they face (Lauby et al., 2012). Consequently, there are critical gaps in interventions aimed at Black MSMW. For that reason, more strengths-based research is needed among Black MSMW from a strengths-based perspective. Thus, it is also important to study whether psychosocial resources mitigate the effects of psychological distress and whether they are significant correlates of distress above and beyond sociodemographic and individual-level factors and stress exposure.

To address these gaps, this dissertation contributes to a relatively small body of literature by assessing the potential correlates of psychological distress among Black MSMW in Los Angeles and by evaluating how the impact of these correlates on distress may be moderated by HIV status. The dissertation comprised three studies aimed at contributing to research and interventions for reducing psychological distress among Black MSMW. These studies examined relationships between stress exposure and psychological distress (Study 1), between health and sexual risks and psychological distress (Study 2), and between psychosocial resources and psychological distress (Study 3), respectively. The following sections highlight the key findings, discuss their implications for research and practice, and describe areas for future research within each study.

Study 1: Stress Exposure and Psychological Distress among Black MSMW

The overall goal of Study 1 was to better understand the extent to which stress exposure from discrimination, past-year racism, and adult sexual trauma explained relationships between sociodemographic and individual-level characteristics and psychological distress. Two research questions guided the study.

The first research question aimed to identify the sociodemographic and individual-level characteristics associated with psychological distress the focal relationship examined in this study. The goal was to determine whether disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse were associated with greater odds of psychological distress compared to advantaged social position (e.g., older age, no history of incarceration, higher education) and no childhood sexual abuse.

The literature suggested that sociodemographic and individual characteristics were shaped, in part, by living in a racialized society and must be considered for any study involving Black MSMW. In the United States, Black Americans experience stress related to multiple life stressors, such as lower educational attainment and neighborhood stress (Sternthal et al., 2011). This higher level of stress among Black Americans is likely related to segregation,

concentrating disadvantages marked by extreme poverty and unemployment, pollution, deteriorating housing, violence, all factors producing greater stress (Williams et al., 2010). In addition, experiences in childhood, such as sexual abuse, have serious consequences for mental health of Black MSMW (Williams et al., 2015). Moreover, the relationship between psychological distress and factors such as incarceration among Black MSMW are poorly understood, because of a paucity of research on criminal justice system involved Black MSMW (Harawa et al., 2017; Harawa, Brewer, et al., 2018). Thus, it is critical to assess the role of sociodemographic and individual-level characteristics, as little is known about whether these factors are associated with distress among Black MSMW either individually or collectively. These characteristics needed to be considered as covariates of psychological distress among Black MSMW. Based on prior research, it was hypothesized that sociodemographic characteristics, such as age, educational attainment, life experiences (e.g., incarceration, childhood sexual abuse), would vary with psychological distress.

As expected, results showed that a history of childhood sexual abuse was significantly associated with greater odds of psychological distress. That a history of childhood sexual abuse was significantly associated with greater odds of psychological distress is consistent with previous research in which childhood sexual abuse among Black MSMW has been associated with measures of psychological distress, including depression and anxiety (Allen et al., 2014; Fields et al. 2008; Parsons et al., 2012). Given the large proportion of Black MSMW that have experienced childhood sexual abuse, standard of care should include an assessment for childhood sexual abuse.

It was unexpected that incarceration of 1 to 4 times would have lower odds of distress than those that had never been incarcerated. That incarceration of 5 or more times was not associated with greater odds of psychological distress was consistent with bivariate results. The implication that incarceration recidivism is protective against psychological distress and that the odds do not increase with higher levels of recidivism is going to require further research. A

nationally representative study among African American men have demonstrated that depression is significantly greater among those that have been incarcerated compared to those that have not been incarceration (Assari et al., 2018). However, the relationship between psychological distress and incarceration among Black MSM is poorly understood, because of limited research on criminal justice involved Black MSM (Harawa et al., 2017; Harawa, Brewer, et al., 2018). Perhaps Black MSMW in Los Angeles are receiving mental health assessments and/or services that connect them to psychological services either while incarcerated or upon release or incarceration is a reprieve from other stressors on the street. Interestingly, Dumont et al. (2013), captured a debate that recently emerged over the suggestion that incarceration is beneficial to Black men's health, as it connects them to public health and medical and behavioral health services they need; opponents suggest that these health effects are tightly circumscribed. Given the high rates of HIV infection among incarcerated and post-incarcerated Black MSM, including Black MSMW, more research is needed to understand the role of psychological distress in that relationship as well as the role that incarceration recidivism plays in the psychological distress itself among Black MSMW.

Similarly, it was unexpected that younger age was not associated with greater odds of psychological distress compared to older age. Among African Americans, younger age has both been associated with depressive symptoms (Lincoln et al., 2011). However, these results were consistent with bivariate analyses that showed no difference the odds of psychological distress by age.

After determining sociodemographic and individual level differences in the odds of distress (the focal relationship), the next research question focused on the extent to which those differences were due to differences in stress exposure (the potential mediators). This research question was assessed with three aims to evaluate the extent to which stress exposure explained why sociodemographic and individual level characteristic differences in psychological distress were observed using Baron and Kenny's (1986) steps to test mediation. First, the

associations between sociodemographic and individual-level characteristics (main independent variables) and distress (outcome) were assessed. Second, the associations between sociodemographic and individual-level characteristics and stressors (main independent variables and potential mediators) were assessed. Finally, the association between sociodemographic and individual-level characteristics and distress while also controlling for the stressors to find out if the original links between the sociodemographic and individual-level factors were still significant or the effect sizes changed.

It was anticipated that stress exposure would explain sociodemographic and individual-level characteristic differences in psychological distress, such that those with disadvantaged statuses and histories of childhood sexual abuse faced greater stress exposure, which contributed to greater odds of psychological distress. However, stress exposure explained only the relationship between childhood sexual abuse and psychological distress. It did not explain the relationship between psychological distress and incarceration recidivism, which remained significant consistently across the models for each stressor and in the full model, with little change in effect size. Moreover, there was no relationship between age and psychological distress across the models for each stressor and in the full model. Meanwhile, the relationship between childhood sexual abuse and psychological distress was no longer significantly associated with psychological distress after controlling for stress exposure from discrimination, past-year racism and adult sexual trauma, which suggested that stress exposure explained the relationship between childhood sexual abuse and distress. Overall, the results demonstrated that stress exposure from discrimination and adult sexual trauma explained childhood sexual abuse differences in psychological distress, such that those with disadvantaged statuses from childhood sexual abuse faced greater stress exposure, which contributed to greater odds of psychological distress among them. In other words, the association between childhood sexual abuse and distress was no longer mediated by adult stress exposures.

These results were not surprising, given that the impact of racial discrimination on Black MSMW's psychological well-being has been documented (Allen et al., 2014), although more research is needed to understand this relationship as well as its mediators and moderators. In the broader literature on health disparities and race in the American context, research has demonstrated that racism and discrimination toward Black Americans has taken a heavy toll on their health above and beyond socioeconomic position (Williams & Sternthal, 2010); however, little is known about how these stressors correlate with psychological distress among Black MSMW. Research on the relationships of racism and discrimination to psychological distress is becoming increasingly important. Black Americans are living in an increasingly overt racialized society (Abramovitz & McCoy, 2019). The consequences of racial discrimination and racism on Black Americans' health is well documented (Lewis & Van Dyke, 2018; Paradies et al., 2015; Pascoe &art Richman, 2009; Williams, 2012). Structural racism has had its impacts on Black MSM, evident in their social/structural barriers, including high rates of unemployment and incarceration (Millett et al., 2006).

These results were also consistent with research on childhood sexual abuse and its associations with adult adversity among Black MSMW (Allen et al., 2014; Fields et al., 2008; Williams et al., 2015). However, research on adult sexual trauma, among Black MSMW is limited. Thus, there is a need to continue to study these relationships in order to address the gaps remaining in research on psychological distress among Black MSMW. It is also critical to understand the extent to which stress exposure explains sociodemographic and individual-level characteristic differences in psychological distress.

Additional research is needed to examine independent and intersectional relationships of racial discrimination, different forms of racism, and bi-phobia on psychological distress among Black MSMW. Moreover, longitudinal studies are needed to better understand the directionality of these relationships. In addition, research is needed on the life course and health outcomes of

Black MSMW that have experienced childhood sexual abuse and subsequent adult sexual trauma, given their high prevalence among Black MSMW.

In summary, there were sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW based on age, incarceration of 1 to 4 times, and a history of childhood sexual abuse. Stress exposure from discrimination and adult sexual trauma explained childhood sexual abuse differences in psychological distress among Black MSMW, but stress exposure did not explain incarceration history differences in psychological distress or the lack of differences in psychological distress by age. Taken together, these results suggest that Black MSMW with histories of childhood sexual abuse faced greater adult stress exposure, which contributed to greater odds of psychological distress. Thus, Black MSMW should be assessed for childhood sexual abuse, adult sexual trauma, and discrimination and interventions should be tailored to address the psychological impacts of these factors.

Study 2: Health and Sexual Risks Associated with Psychological Distress among Black MSMW

The overall goal of Study 2 was to assess the relationships between health and sexual risks and psychological distress among Black MSMW and to determine whether HIV status moderated those relationships. Two research questions guided the study.

The first research question aimed to identify the sociodemographic and individual-level characteristics and social stressors associated with health and sexual risks among Black MSMW. The goal was to determine if other covariates of distress, including disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse, and stress exposure (e.g., discrimination, past-year racism, adult sexual trauma), were associated with greater health risks (e.g., lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (e.g., greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men).

Previous research suggested that psychological distress, health risks, and sexual risk behaviors likely have dynamics that are detrimental to Black MSMW's sexual health. For example, a population-based study found that, compared to MSW, MSMW with current female partners (within the last 12 months) had greater odds of exchanging sex, engaging in unprotected sex, and having sexually transmitted infections (Dyer et al., 2015). The same study found that, compared to MSW and MSMO, MSMW were more likely to report depression, suicidality, substance use, and incarceration than (Dyer et al., 2015). Other studies have demonstrated an intersectional impact of discrimination by race, gender, and sexual orientation on behavioral health choices and engagement with health care services (Bird & Bogart, 2001; Eaton, Driffin, Kegler, et al., 2015; Malebranche et al., 2004; Whitehead et al., 2016). Research suggests that Black MSM carry their experiences of discrimination based on race and sexuality into medical settings, making them vigilant for signs of judgment from providers and cautious regarding their disclosure related to their sexuality and sexual behaviors (Malebranche et al., 2004). Moreover, the need for secrecy and privacy, concealment of sexual identity, is itself a stressor, a trigger for stress-related processes associated with poor physical and mental health outcomes (Meyer, 2003; Meyer & Frost, 2013).

Hence, based on previous research, it was expected that disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse would be associated with greater health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and greater stress exposure (from discrimination, past-year racism, and adult sexual trauma) compared to advantaged social position (e.g., older age, no history of incarceration, higher education), no childhood sexual abuse, and lower stress exposure. However, results suggested that few sociodemographic and individual-level characteristics were associated with greater health and sexual risks, with the exceptions of incarceration recidivism and childhood sexual abuse, among this group. It is possible that there was not enough variation in social position among the sample to demonstrate differences in

health and sexual risk behaviors. For example, most participants (83%) had a high school diploma or higher.

By contrast, greater stress exposure, especially from discrimination and past-year racism, was associated with greater health risks. However, these results also did not always support the expectations. For example, findings suggested that greater stress exposure from past-year racism was associated with lower health risks from lower odds of drug use, while adult sexual abuse was associated with lower health risks from higher health care access. Perhaps there is a heightened awareness of racism with lower drug use. In addition, it is possible that victims of sexual trauma have increased access to health care because of those traumatic experiences. These dynamics warrant further exploration.

After determining the sociodemographic and individual characteristics and social stressors associated with health and sexual risks, the second research question aimed to assess the relationships between health and sexual risks and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure. The goal was to determine whether greater health risks (lower health care access, alcohol binging, drug use, and avoidance of MSM-related health care) and greater sexual risks (greater sexual risk behavior, sexual compulsivity, gender role conflict, and importance of privacy regarding sex with men) were associated with greater odds of psychological distress, after controlling for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (discrimination, past-year racism, adult sexual trauma). It was expected that health risks (lower health care access, alcohol binging, drug use, avoidance of MSM-related health care) and sexual risks (greater sexual risk behavior, greater sexual compulsivity, greater gender role conflict, and greater importance regarding sex with men) were associated with greater odds of psychological distress, after accounting for differences in sociodemographic and individual-level

characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma).

However, the results demonstrated that only one sexual risk (and no health risks) was associated with greater odds of psychological distress after controlling for all other covariates. Specifically, sexual risk from placing a greater importance of privacy regarding sex with men was significantly associated with greater odds of psychological distress, after controlling for health risks, sociodemographic and individual-level characteristics, and stress exposure. These findings are consistent with bivariate results, which showed that greater importance of privacy regarding sex with men was associated with greater odds of psychological distress. However, other results were not consistent. Based on bivariate results, it was expected that that alcohol binging, avoidance of MSM-related health care, sexual risk behavior, and gender role conflict would be associated with greater odds of psychological distress. After the inclusion of covariates, these relationships are no longer significant. Thus, these findings suggest that privacy regarding sex with men is an important risk factor above and beyond other risks and differences among this population.

These findings are also consistent with previous research among Black MSMW that have identified the need for secrecy and privacy as a reason for non-disclosure of same-sex behaviors (Bingham et al., 2013; Harawa et al., 2008; Lapinski et al., 2010; Operario et al., 2011). The need for secrecy and privacy, concealment of sexual identity, is itself a stressor, a trigger for stress-related processes associated with poor physical and mental health outcomes (Meyer, 2003; Meyer & Frost, 2013). In fact, concealment of sexual identity is among the foremost contributors to sexual minority's psychological distress (Meyer, 2003). Thus, a deeper understanding of the dynamics of concealment in relation to distress, is needed to overcome the barriers to MSM-related health care.

Similar research among Black MSM has demonstrated that this mistrust in the health care system and difficulty disclosing MSM status to providers can limit health care access with

consequences of physical and mental health (McKirnan et al., 2013). However, research that differentiates MSMO from MSMW may be able to determine if the patterns of health care avoidance are similar or different and if the correlates are the same. Previous research with the MAALES study population found that gender role conflict was significantly associated psychological distress, lower self-esteem, greater internalized homophobia, less HIV knowledge, lower risk reduction skills, less disclosure of same-sex behaviors to others, and more unprotected vaginal or anal intercourse with female partners (Bingham et al., 2013).

Study 3: Psychosocial Resources Associated with Psychological Distress among Black MSMW

The overall goal of Study 3 was to assess the relationships between psychosocial resources and psychological distress among Black MSMW. Two research questions guided the study.

The first research question aimed to identify the sociodemographic and individual-level characteristics and social stressors associated with psychosocial resources among Black MSMW. The goal was to determine whether other covariates, including advantaged social position (e.g,. older age, no history of incarceration, higher education), no childhood sexual abuse, and lower stress exposure (lower levels of racial discrimination, lower levels of past-year racism, and no adult sexual trauma), were associated with greater psychosocial resources (from social support, private regard for race, self-esteem) compared to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education), childhood sexual abuse, and greater stress exposure (higher levels of racial discrimination, higher levels of past-year racism, and adult sexual abuse).

Despite their many challenges, Black MSMW may also be able to draw from their own personal and social resources to mitigate their distress and channel those resources to guide their HIV prevention and care choices. Yet, research among Black MSM has largely focused on the effects of a withdrawal of social support when they “come out” to family. For example, Saleh,

et al., (2016, p. 12) found that among Black MSM “the withdrawal of social support can accentuate feelings of alienation, stress, and psychological distress associated with living in a racist society. In the face of difficult socioeconomic circumstances, more basic needs such as securing food and clothing may tend to be prioritized over longer-term sexual health promotion goals”. Additional research has focused on the relationships of early of Black MSM’s and Black MSMW’s childhood experiences, such as childhood sexual abuse are either exacerbated or mitigated by experiences as adults (Allen et al., 2014; Williams et al., 2015). For example, Allen et al. (2014) found that Black MSMW’s early adverse experiences, including childhood sexual abuse, were predictive of depression in adulthood; however, this relationship was influenced by adulthood experiences with discrimination, high chronic stress, and low social support. Thus, Black MSMW’s early vulnerability for depression is either made worse or mitigated by their experiences as adults (Allen et al., 2014).

Based on prior research, it was anticipated that advantaged social position (e.g., older age, no history of incarceration, higher education) and no childhood sexual abuse were associated with greater psychosocial resources (social support, private regard for race, self-esteem) compared to disadvantaged social position (e.g., younger age, one or more incarcerations, lower education) and childhood sexual abuse. Results were consistent with expectations for educational attainment and for childhood sexual abuse. An Associate’s degree was significantly associated with higher self-esteem and no childhood sexual abuse was significantly associated with higher private regard for race. By contrast, advantaged social position based on older age and never having been incarcerated were not associated with greater psychosocial resources. Thus, greater psychosocial resources as measured by self-esteem and private regard for race were shaped only by educational attainment and childhood sexual abuse, respectively. It is possible that there was not enough variation in social position among the sample to demonstrate differences in psychosocial resources. For example, most participants (75%) had been incarcerated during their lifetime. In addition, these two resources,

private regard for race and self-esteem, are personal resources (more individually-oriented) resources relative to social support, which is seen as a social resource among Black MSMW. Further investigation of these dynamics is warranted.

Based on prior research, it was also expected that lower levels of social stress exposure would be associated with higher levels of psychosocial resources. However, only lower levels of discrimination were significantly associated with only higher self-esteem. Past-year racism and adult sexual trauma were not associated with any psychosocial resources. These results were not consistent with bivariate findings, which demonstrated that all three stressors were significantly associated with psychological distress. Accounting for all other stressors and sociodemographic and individual-characteristics in the model diminished the strength of the relationships for past-year racism and distress and for adult sexual trauma and distress. Taken together, these findings suggest that only certain forms of social stress (i.e., discrimination) significantly influence some psychosocial resources (i.e., self-esteem), indicating that this association is not uniform across all forms of stress and resources. Thus, further study, such as mediation and moderation analyses, is warranted to understand the dynamics among social position, stress exposure, and psychosocial resources.

After determining the sociodemographic and individual characteristics and social stressors associated with psychosocial resources, the second research question aimed to assess the relationships between psychosocial resources and psychological distress, accounting for differences in sociodemographic and individual-level characteristics and stress exposure. The goal was to determine whether greater psychosocial resources (social support, private regard for race, self-esteem) were associated with lower odds of psychological distress, after controlling for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma).

It was anticipated that greater psychosocial resources (social support, private regard for race, self-esteem) would be associated with lower odds of psychological distress, after accounting for differences in sociodemographic and individual-level characteristics (age, educational attainment, incarceration recidivism, childhood sexual abuse) and stress exposure (racial discrimination, past-year racism, adult sexual trauma). However, after controlling for all other resources, sociodemographic and individual-level characteristics, and stressors, only social support was significantly associated with psychological distress.

Taken together, the results demonstrated that higher levels of psychosocial resources were associated with lower odds of psychological distress after controlling for all other covariates. Specifically, higher levels of social support from friends and family was significantly associated with lower odds of psychological distress, after controlling for other resources, sociodemographic and individual-level characteristics, and stress exposure. These results were consistent with bivariate analyses, which showed that higher levels of social support were significantly associated with lower odds of psychological distress. However, other results were not significant. Based on bivariate analyses it was expected that both private regard for race and self-esteem would be significantly associated with psychological distress in the multivariate models. However, after controlling for other resources, sociodemographic and individual-level characteristics, and stressors, the strength of associations was diminished between private regard for race and distress and between self-esteem and distress. That is, social support was the only resource still significantly associated with distress, suggesting that above and beyond all other risk factors, sociodemographic and individual-level characteristics, and stressors this factor importantly shapes psychological distress among Black MSMW.

The findings are consistent with previous research. Studies among Black MSM have found similar results regarding the relationship between social support networks and psychological distress (Crawford et al., 2002; Wong et al., 2014). However, attaining social support can be complicated for Black MSMW. For example, Black MSMW sometimes feel

disconnected from traditional gay-identified social support networks (Dodge et al., 2012; Friedman, Wei, et al., 2014). In addition, bisexual individuals may also have lower levels of social support from family and friends than their heterosexual counterparts (Saewyc et al., 2009). These feelings and experiences likely stem from bi-phobia and cultural invisibility (Rust, 2000; Udis-Kessler, 1990). Regarding personal resources, self-esteem has complex relationships with other correlates of distress. For example, sexuality non-disclosure among young MSM has been associated with low self-esteem, depression, or lack of peer support (Kennamer et al., 2000; Stokes & Peterson, 1998). Moreover, compared to gay-identified Black, non-gay identified, behaviorally bisexual men were less likely to disclose, and more likely to conceal, their sexual orientation than gay men to the detriment of their mental health (Schrimshaw et al. 2013). In addition, Gender role conflict can result in a loss of self-power, status and other positive values, and is significantly related to psychological and interpersonal problems (O'Neil, 2008). Among young Black MSM, their internal conflict over cultural conceptions of masculinity (gender role strain), efforts to camouflage their homosexuality, and strategies to prove their masculinity, exacerbate psychological distress (Fields et al., 2015). Fields et al. (2015) found that among young Black MSM participating in a qualitative study, this conflict may increase HIV risk through social isolation, poor self-esteem, reduced access to HIV prevention messages, and limited parental family involvement in sexuality development and early sexual decision-making. Other research has suggested that, for Black men, self-esteem is also closely tied to their private regard toward Black people (Davis et al., 2017) and their psychological health (Bynum et al., 2008).Thus, it is necessary to further explore the factors comprising social support that influence psychological distress among Black MSMW.

It is possible that dynamics, such as mediation and moderation effects among the variables, need to be assessed to explain why only social support remained significant when others, such namely private regard for race and self-esteem did not. For example, one study among African American youth found that "The negative relationship between perceived

discrimination and self-esteem was mitigated for youth who reported more messages about race pride and a moderate amount of preparation for bias from their parents. In contrast, low racial pride socialization and both high and low preparation for bias were associated with a negative relationship between perceived discrimination and self-esteem" (Harris-Britt et al., 2007).

Study Limitations

There are several limitations to the current study. First, it is a cross-sectional study, which limits the ability to draw valid conclusions about any association or possible causality because the presence of risk factors and outcomes are measured simultaneously. It is therefore not possible to confidently infer directionality of the relationship; causation should always be confirmed by longitudinal studies. However, the MAALES randomized control trial itself was a longitudinal study; additional analyses can be conducted to confirm directionality of the relationships among this sample. For example, future studies should include longitudinal measures of sexual trauma as they may shape stress exposure from racial discrimination, racism, and adult sexual trauma and psychological distress. Thus, future studies should build on these results to examine these results longitudinally. Second, these dissertation studies are based on retrospective data collection, which introduces recall bias; to minimize recall bias, survey measures were devised with quality assurance checks using Audio Computer-Assisted Self-Interview Software and questions were posed with specific time frames as references and in chronological order whenever relevant. Third, this is a very low SES sample, which may shape some of the associations between social position and distress. Fourth, these data are not nationally representative, which means findings may not be generalizable to all Black MSMW, such as those living in rural settings or those of higher socioeconomic status. However, this analysis was able to identify several areas for future nationally-representative study on Black MSMW (i.e., the relationships of stress exposure, psychosocial risks and resources, and psychological distress and variations in these relationships by HIV status). Furthermore, studies

that include Black MSMO, Black MSMW, and Black MSW can compare these relationships across groups to determine whether they are important for interventions specifically among Black MSMW or to other groups of Black men, too. The strengths of this study lie the measures that allowed for assessment of stress exposures, such as racial discrimination and sexual trauma in childhood and adulthood, and potential psychosocial risk and protective factors.

Contributions to Research and Practice on Black MSMW's Psychological Distress

Despite these limitations, these dissertation studies make several contributions to research and to future interventions among Black MSMW. Study 1 demonstrated that Black MSMW with disadvantaged social statuses from childhood sexual abuse faced greater stress exposure from discrimination and adult sexual trauma, which contributed to greater odds of psychological distress. Study 2 demonstrated that among health and sexual risks, only a greater importance of privacy regarding sex with men (a sexual risk factor), was associated with greater odds of psychological distress, after accounting for differences in sociodemographic and individual-level characteristics and stress exposure. Thus, the matter of privacy was clearly salient among Black MSMW, above and beyond social position, social stressors, health risks, and other sexual risks. Study 3 demonstrated that among psychosocial resources only social support was significantly associated with psychological distress after accounting for all other covariates (sociodemographic and individual-level characteristics, stressors, and other psychosocial resources). Thus, for Black MSMW, social support is a critical protective factor again psychological distress, after controlling for all other factors.

These studies integrated key principles from PHCR for public health research and practice (Ford & Airhihenbuwa, 2010a, 2010b) and the Minority Stress Model (Meyer, 2003). PHCR (Ford & Airhihenbuwa, 2010b) was the lens through which I approached the research, applying the principles of race consciousness, race as a social construct, and the ordinariness of racism. These guiding principles of PHCR (Ford & Airhihenbuwa, 2010b) shaped the study

the first main gap in the literature on psychological distress among Black MSMW. The first gap pertained to which sociodemographic and individual-level factors are related to stress exposure among Black MSMW. *Race consciousness* guided the study's overarching and "deep awareness of my own racial position and awareness of racial stratification processes operating in colorblind contexts." *Race as a social construct* guided the study's inclusion of sociodemographic and individual factors, in recognition that they are derived from social, political, and historical forces that raise the risks for a population's specific racism exposures. They are products of contemporary racialization. The *ordinariness of racism* ensured that the study acknowledged the routine nature of racism exposures, because racism is embedded in our society. By acknowledging race as a social construct, it then becomes an explicit concept for consideration and measurement.

The Minority Stress Model (Meyer, 2003) provided a more comprehensive framework for empirically assessing the linkages between social factors, stress exposure, and health outcomes, which is needed to better understand the factors that shape psychological distress among Black MSMW. Ilan Meyer's (Meyer, 2003, 2010) minority stress model draws connections between chronic stress from stigma, prejudice, and discrimination and the relatively poor psychological health outcomes observed among lesbian, gay, and bisexual (LGB) populations. This model is inferred from several sociological and social psychological theoretical perspectives falling under an umbrella of social stress theories that focus on the stress associated with a minority status or position (Meyer, 2003). Minority social stress has been implicated in health disparities among racial and ethnic minorities (Allison, 1998; Clark et al., 1999) and in studies of how discrimination becomes embodied (Krieger, 2001). Meyer posits that social stress (e.g., stress generated from conditions in the social environment) has strong impacts on stigmatized sexual minorities just as it does on stigmatized minorities based on socioeconomic status, race/ethnicity, or gender. He also specifies stressful social processes

affecting risk for psychological disorders among LGB and accounts for resilience and coping as buffers to stress (Meyer, 2007).

The integrated framework encompassed social stressors, sociodemographic characteristics, psychosocial risks and resources known to correlate with psychological distress. In addition, it took into consideration the role of HIV status in moderating these relationships.

Stress exposure's role in psychological distress was addressed in each study. Stress exposure was based on three measures: racial discrimination, racism in the past year, and adult sexual trauma. To better understand the relationships between each stressor and psychological distress, the first step was to identify relationships between sociodemographic and individual-level factors and each stressor. Each sociodemographic and individual-level characteristic represented, as PHCR describes, indicators of an individual's or a group's position within a social hierarchy (e.g., privileged vs. marginalized, minority vs. majority). From a race consciousness perspective, racial dynamics and racialization processes shape groups in a society and shape individual's and group's social location. All study participants identified as Black or African American. But the unique social location of Black MSMW within the social hierarchy influenced the kind of individual characteristics that correlated with their stress exposure. For example, Black MSMW with histories of childhood sexual abuse, an experience common among sexual minority children, had higher levels of racial discrimination, past-year racism, and adult sexual trauma. After controlling for those stressors, childhood sexual abuse and psychological distress were no longer significantly associated.

Taken together, this dissertation established empirical evidence of PHCR's principles. For example, it demonstrated the importance of acknowledging race as a construct for consideration among Black MSMW, the ordinariness of racism and discrimination in the lives of Black MSMW, in shaping mental health of Black MSMW. The study established empirical evidence that minority stress is a factor shaping psychological distress among Black MSMW, as

demonstrated by the prominence of privacy regarding sex with men, MSM-related health care avoidance, and gender role conflict as correlates of psychological distress.

The effect of the social stress Black MSMW experienced in relation to their social location was manifested in the type and quantity of individual's and group's health risks and resources, as posited in the Minority Stress Model. Minority stress shapes risks and resources. For that reason, the model also considered how stressors correlated with health and sexual risks and social and personal resources and, in turn, how those risks and resources correlated with psychological distress. However, as the Minority Stress Model (Meyer 2003) suggests, they also have psychosocial resources, like self-esteem and social support from friends and family, that may mitigate the stressors they encounter, but to varying degrees.

These studies, by examining the correlates of psychological distress among Black MSMW in Los Angeles, may guide future research on these relationships and interventions aimed at engaging Black MSMW in the HIV prevention continuum and the HIV continuum of care. There are several recommendations for future research and intervention among Black MSMW. Research and practice to address psychological distress among Black MSMW should take a race consciousness perspective, one that includes theoretically and empirically identified minority stressors from racial discrimination, racism, sexual minority behavior and identity, and HIV status. Further, the role of bi-phobia as a stressor should be explored in relation to racially based stressors using the methodology of intersectionality research. Second, future studies should include longitudinal measures of sexual trauma as they may shape stress exposure from racial discrimination, racism, and adult sexual trauma and psychological distress. Third, other correlates, such as bisexual identity and incarceration history, should be explored for their short and long-term effects on stress exposure and psychological distress, and for possible mediators and moderators. In addition, the constructs comprising privacy regarding sex with men, a sexual risk, should be explored in relation to psychological distress.

Perhaps of greatest importance is the need for a strengths-based approach to future research on psychological distress. Further research is needed to understand the dynamics of social support among Black MSMW that will contribute to lower psychological distress. Social support has a critical role in interventions aimed at reducing psychological distress among Black MSMW. Moreover, social support's impact on engagement in the HIV continuum of care the HIV prevention continuum should be explored. Future research should examine the specific concerns of Black MSMW, as compared to Black MSMO, regarding engagement in care for which their bisexual behavior is relevant. In addition, there is a scarcity of interventions among criminal justice involved Black MSMW (Harawa et al., 2017; Harawa, Brewer, et al., 2018) but there are promising HIV interventions among Black MSMW that could be adapted for other settings (Arnold et al., 2015; Harawa, Guentzel Frank, et al., 2018; Joseph et al., 2018; Lauby et al., 2018; Li et al., 2018; Williams et al., 2009). These intervention studies are strengths-based, aimed at building self-esteem and social support, while addressing negative attitudes toward Black MSMW and HIV risk behaviors. Such interventions could be a first step in the pathway to entering the HIV prevention continuum.

Conclusion

This dissertation study identified several factors associated with psychological distress among Black MSMW, including some distinct risk and protective factors that contributed to psychological distress among Black MSMW. There were several critical gaps addressed by evaluating how sociodemographic and individual-level factors, stressors (racial discrimination, racism, adult sexual trauma), psychosocial risks (access to health care, substance abuse, MSM-related health care avoidance, sexual risk behaviors and attitudes toward sex with men), and psychosocial resources (social support, private regard for Black race, self-esteem), are correlated with psychological distress.

Interventions among Black MSMW are already being tailored to address their experiences with racism and discrimination and their experiences of childhood and adult sexual

trauma. However, these interventions need to be scaled up and implemented into health and social service settings. Moreover, they are insufficient to address institutional-level, systems-level, and community-level problems with racial and sexual minority bias and practices that alienate Black MSMW. Thus, a multi-pronged approach to intervention is needed. Institutions overseeing health care and social services and diverse clientele can examine their service practices for evidence of racial and sexual minority biases. Systems-level interventions in clinical care settings can address issues of bias in assessment and treatment of Black MSMW. At the level of the community and the family, interventions need to be developed to create safe spaces for overcoming the conflicts that disenfranchise Black MSMW from their social support systems. Furthermore, future research, including intervention studies, should focus on identifying both informal and formal resources that will enhance the social support of Black MSMW. An intersectional approach could be used to shape interventions to address the roles of race and sexual minority status as stressors in the daily lives of Black MSMW in association with higher levels of psychological distress. Moreover, strengths-based approaches that could bolster personal resources, such as self-esteem and private regard for the Black race and facilitate connections to formal and informal social support resources. Finally, the issue of psychological distress among Black MSMW should be addressed at the systems-level and policy-level interventions in the criminal justice system and among public and private community service providers addressing homelessness, unemployment, food insecurity, substance abuse, behavioral health, and biomedical approaches to HIV care (i.e., ART) and prevention (i.e., PrEP and PEP). Such providers should take a hard look at their own practices that may be perpetuating racial and sexual minority stereotypes and limiting the resources Black MSMW access.

Appendix A: Variable Coding

Psychological Distress (BSI-53, Derogatis, 1993)
MAALES α=0.9727 (with 4 additional items removed) vs α = 0.9745 (with all 53 items)

Question: ***I am going to read a list of problems and complaints that people sometimes have. For each one, tell me how much that problem has bothered or distressed <u>you during the past 7 days</u>, including today. Please tell me whether each problem has bothered you not at all, a little bit, moderately, quite a bit, or extremely.***

Response Options:
1 = Not at all, 2 = A little bit, 3 = Moderately, 4 = Quite a bit, 5 = Extremely, 8 = Refuse to Answer

Symptoms of the Somatization Dimension [MAALES α = 0.8771]

Item 2: Faintness or dizziness
Item 7: Pains in heart or chest
Item 23: Nausea or upset stomach
Item 29: Trouble getting your breath
Item 30: Hot or cold spells
Item 33: Numbness or tingling in parts of your body
Item 37: Feeling weak in parts of your body

Symptoms of the Obsessive-Compulsive Dimension (MAALES α = 0.8757]

Item 5: Trouble remembering things
Item 15: Feeling blocked in getting things done
Item 26: Having to check and double-check what you do
Item 27: Difficulty making decisions
Item 32: Your mind going blank
Item 36: Trouble concentrating

Symptoms of the Interpersonal Sensitivity Dimension [MAALES α = 0.8003]

Item 20: Your feelings being easily hurt
Item 21: Feeling that people are unfriendly or dislike you
Item 22: Feeling inferior to others
Item 42: Feeling very self-conscious with others

Symptoms of the Depression Dimension [MAALES α = 0.8493]

Item 9: Thoughts of ending your life
Item 16: Feeling lonely
Item 17: Feeling blue
Item 18: Feeling not interest in things
Item 35: Feeling hopeless about the future
Item 50: Feelings of worthlessness

Symptoms of Anxiety Dimension [MAALES α = 0.8760]

Item 1: Nervousness or shakiness inside
Item 12: Suddenly scared for not reason
Item 19: Feeling fearful
Item 38: Feeling tense or keyed up
Item 45: Spells of terror or panic
Item 49: Feeling so restless you couldn't sit still

Symptoms of the Hostility Dimension [MAALES α = 0.8229]

Item 6: Feeling easily annoyed or irritated
Item 13: Temper outbursts that you could not control
Item 40: Having urges to beat, injure, or harm someone
Item 41: Having urges to break or smash things
Item 46: Getting into frequent arguments

Symptoms of the Phobic Anxiety Dimension [MAALES α = 0.8035]

Item 8: Feeling afraid in open spaces or on the streets
Item 28: Feeling afraid to travel on buses, subways, or trains
Item 31: Having to avoid certain things, places, or activities because they frighten you
Item 43: Feeling uneasy in crowds, such as shopping or at a movie
Item 47: Feeling nervous when you are left alone

Symptoms of the Paranoid Ideation Dimension [MAALES α = 0.7635]

Item 4: Feeling others are to blame for most of your troubles
Item 10: Feeling that most people cannot be trusted
Item 24: Feeling that you are watched or talked about by others
Item 48: Others not giving you proper credit for your achievements
Item 51: Feeling that people will take advantage of you if you let them

Symptoms of the Psychoticism Dimension [MAALES α = 0.7831]

Item 3: The idea that someone else can control your thoughts
Item 14: Feeling lonely even when you are with people
Item 34: The idea that you should be punished for your sins
Item 44: Never feeling close to another person
Item 53: The idea that something is wrong with your mind

Additional Items of clinical importance

Item 11: Poor appetite
Item 25: Trouble falling asleep
Item 39: Thoughts of death or dying
Item 52: Feelings of guilt

CODING PROCEDURE:

- Response options for all items were recoded: 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely. “Refuse to Answer” responses were coded as missing.
- Respondent scores for each subdimension were averaged. The range for each subdimension’s score was from 0 to 4 (A little bit to Extremely on the BSI Scale).
- To create the categorical measure of psychological distress, there were four steps.
- First, respondent scores for each subdimension were averaged, such that the range for each subdimension’s mean score was from 0 to 4 (“Not at all” to “Extremely” on the BSI Scale).
- Second, each subdimension’s mean score was then categorized based on a cut point of mean of 2. For each dimension, scores of 2 or higher were coded as 1 (“High Risk”), which corresponded with “Moderately” to “Extremely” responses for symptoms on the BSI scale. Scores with mean values of less than 2 were coded as 0 (“Low Risk”), which corresponded with responses of "Not At All” to “A Little Bit" for symptoms.

- Third, the overall measure of psychological distress was then created based on a count of the number of "High Risk" subdimensions for each respondent, resulting in a score ranging from 0 to 9.
- Finally, those with at least one "high risk" subdimension were considered to have "high distress" (coded 1). Those with no "high risk" subdimensions were coded as 0 "low distress" and those with "high risk" were considered to have "moderate to high distress".

STRESSORS

Discrimination

(Racism and Life Experience Scales Daily Life Experiences, Harrell,1997/2016), [MAALES α = 0.9728]

Question: ***During your lifetime, how often have you experienced each of the following because of race?***

Response Options:

0=Never happened to me, 1=Less than once a year, 2=Few times a year, 3=About once a month, 4=Few times a month, 5=Once a week or more, 8 Refuse to Answer

Item 1: Being ignored, overlooked, or not given service (In a restaurant, store, etc.)
Item 2: Being treated rudely or disrespectfully.
Item 3: Being accused of something or treated suspiciously.
Item 4: Others reacting to you as if they were afraid or intimidated.
Item 5: Being observed or followed while in public places.
Item 6: Being treated as if you were "stupid" or "talked down to."
Item 7: Your ideas or opinions being minimized, ignored, or devalued.
Item 8: Overhearing or being told an offensive joke or comment.
Item 9: Being insulted, called a name, or harassed.
Item 10: Others expecting your work to be inferior.
Item 11: Not being taken seriously.
Item 12: Being left out of conversations or activities.
Item 13: Being treated in an "overly " friendly or superficial way.
Item 14: Being avoided, others moving away from you physically.
Item 15: Being mistaken for someone who serves others, for example, a janitor, bellhop, or server.
Item 16: Being stared at by strangers.
Item 17: Being laughed at, made fun of, or taunted.
Item 18: Being mistaken for someone else of your same race (who may not look like you at all).
Item 19: Being asked to speak for or represent your entire racial/ethnic group. For example, "What do Black people think"?
Item 20: Being considered fascinating or exotic by others.

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing.
- Items were summed so that higher scores corresponded with higher values of racial discrimination.

Past-year Racism (The Brief Racism and Life Experiences Scale, Harrell et al., 1997)

Question: *DURING THE PREVIOUS 12 MONTHS, how much racism have you personally experienced, including racial discrimination and racial prejudice?*

Response Options: 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = Extremely, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing.
- Items were summed such that higher values indicate higher levels of racism in the past year.

Adult Sexual Trauma (Wyatt Sex History Questionnaire,1992)

Question: ***These questions refer to experiences you may have had as an adult (since age 18). I will be asking you about sexual experiences that may have occurred without your consent. Some people have difficulty answering because they deal with very upsetting events. These experiences may have involved a friend, relative, stranger, spouse or partner. Remember, these are only incidents that have happened after your 18th birthday. Please answer as best you can.***

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer
Item 1: Since the age of 18, has anyone ever tried to force you to have anal or oral sex with them against your will?
Item 2: Since the age of 18, has someone ever forced their penis or object in your butt or forced you to have anal sex with them against your will?

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were coded as missing.
- For the categorical measure of adult sexual trauma, the responses to the questions were combined and recoded such that if respondents reported "yes" for either item they were coded as 1=adult sexual trauma and if respondents reported "no" to both items they were coded as 0=no adult sexual trauma.

HEALTH AND SEXUAL RISK FACTORS

Health Care Access (Cunningham et al., 1999), [MAALES α = 0.8026]

Response Options: 1 = Strongly Disagree, 2 = Disagree Somewhat, 3 = Neither Agree nor Disagree, 4 = Strongly Agree, 7 = Don't Know, 8 = Refuse to Answer, 9 = Not Applicable

Item 1: Sometimes I go without the medical care I need because it is too expensive. (R)
Item 2: It is hard for me to get medical care in an emergency. (R)
Item 3: If I need hospital care, I can get admitted without any trouble. (R)
Item 4: I am able to get medical care whenever I need it.
Item 5: Places where I can get medical care are very conveniently located.
Item 6: I have easy access to the medical specialists I need.

CODING PROCEDURE:

- Responses of "Don't Know", "Refuse to Answer", and "Not Applicable" were coded as missing.

- Remaining responses were recoded as follows: 0 = Strongly Disagree, 1 = Disagree Somewhat, 2 = Neither Agree nor Disagree, 3 = Agree Somewhat, 4 = Strongly Agree.
- Negative items (e.g., Sometimes I go without medical care because it is too expensive) were reverse-coded.
- Items were summed such that higher values indicate higher levels of health care access.

R = Reverse Coded

Alcohol Binging

Question: In the past 90 days, have you had 5 or more drinks on any single day? By drink, we mean any combination of cans of beer, glasses of wine, or drinks containing liquor of any kind.

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Response options were recoded as follows: 0 = No Binging, 1 = Binging.
- Responses of "Don't Know" and "Refuse to Answer" were coded as missing.

Drug Use

Questions:
Other than alcohol, have you ever used drugs to get high?

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

Subset of those that responded "Yes" to question above: Have you used drugs in the last 90 days?

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Response options of "Don't Know and "Refuse to Answer" were set to missing.
- The remaining responses from the two questions were combined with the following response options: 0 = Never used drugs to get high, 1 = No drug used last 90 days, and 2 = Yes drug used last 90 days.

MSM-Related Health Care Avoidance

Question: During the past 6 months, have you avoided seeking medical or health care that you needed because you were afraid someone might find out you have sex with men?

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing
- Response options were recoded as follows: 0 = Did not avoid seeking health care, 1 = Avoided seeking health care.

Sexual Risk Behavior (an index comprised of the following three measures)

Illicit Drug Use During Sex (a subset of a series of questions about lifetime and 90-day drug use)

This measure was a categorical, composite variable comprised of 5 questions subset within a series of questions that assess lifetime drug use, 90-day drug use, the categories of drugs used in the last 90 days, and finally sex while under the influence of those drugs.
Question: "*Other than alcohol, "have you ever used drugs to get high*?"
Response Options: 1 = Yes, 2 = No, and 8 = Refuse to Answer.

Subset Question (asked only of those that responded "Yes" to the previous question): "*Have you used drugs in the last 90 days*?"
Response options: 1 = Yes, 2 = No, 7 = Don't Know, and 8 = Refuse to Answer.

Subset Question (for respondents that had used drugs in the last 90 days) were asked questions about their use of five categories of drugs: crystal methamphetamine, other amphetamines, crank, ice, or Tina; crack or powder cocaine or coke; heroin; ecstasy, X, G, H, B, ketamines, or Special K; and amyl nitrate poppers. The questions and response options are listed below.

On how many of the past 90 days did you use crystal methamphetamine, other amphetamines, crank, ice, or Tina before or during sex?

On how many of the past 90 days did you use crack or powder cocaine/coke before or during sex?

On how many of the past 90 days did you use heroin before or during sex?

On how many of the past 90 days did you use club drugs such as ecstasy or X, GHB, ketamines or Special K before or during sex?

On how many of the past 90 days did you use Amyl Nitrate/poppers before or during sex?

Response Options: 1-90, 97 = Don't Know, 98 = Refuse to Answer, 99 = Not Applicable

CODING PROCEDURE FOR DRUG USE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing.
- Participants that responded "No" to all questions about sex under the influence of the drug were coded as 0 = not reported/no drugs with sex.
- Responses of "No" to lifetime drug use, "No" to drug use over the last 90 days, "No" to the use of a specific drug in the last 90 days, did not report the use of a drug during sex (responses that were missing at random) were recoded as 0 = not reported/no drugs with sex.
- Respondents that were under the influence of any of the five drugs during sex at least one time in the last 90 days were coded as 1 = drugs with sex.

Exchange Sex (comprised of 4 questions)

In the past 90 days, have you received money or a place to stay in exchange for any type of sex?

In the past 90 days, have you given someone money or a place to stay in exchange for any type of sex?

In the past 90 days, have you received drugs in exchange for any type of sex?

In the past 90 days, have you given someone drugs in exchange for any type of sex?

Response Options: 1 = Yes, 0 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing.
- The remaining responses to the four questions were combined into a categorical variable such that if participants responded "No" to all four questions they were coded as 0 = No exchange sex and if they responded "Yes" to one or more questions they were coded as 1 = Exchanged sex.

Nondisclosure to female sex partner

Question*: In the past 90 days, did you have vaginal or anal sex with a woman who didn't know that you have sex with men? (Choose one)*

Response Options: 1 = No, 2 = Yes, with one female, 3 = Yes, with more than one female, 9 = Did not have sex with a female/Not applicable, 98 = Refuse to Answer

CODING PROCEDURE:

- Recoded with the following response options: 0=No/Did not have sex with a female, 2 Yes with one or more females.
- Refuse to Answer was coded as missing

CODING PROCEDURE FOR VARIABLE:

- Responses of "Refuse to Answer" were set to missing.
- If the participant responded "No" to the question or "Did not have sex with a female/Not applicable" they were coded as 0 = No.
- If the participant responded "Yes, with one female" or "Yes with more than one female" they were coded as 1 = Yes.

CODING FOR INDEX OF SEXUAL RISK:
To create the continuous measure of sexual risk, the responses were averaged. Thus, sexual risk scores ranged from 0 to 3, such that higher values corresponded with higher levels of sexual risk.

Sexual Compulsivity Scale (Kalichman & Rompa, 2001), [MAALES α = 0.9360]

Question: ***A number of statements that some people have used to describe themselves will be shown on the screen. Read each statement and then choose the number to show how well you believe the statement describes your feelings and experiences over the past 90 days.***

Response Options: 1 = Not at all like me, 2 = A little bit like me, 3 = Somewhat like me, 4 = Very much like me, 8 = Refuse to answer

Item 1: My sexual appetite has gotten in the way of my relationships (i.e. my romantic life, my family life, or my close friendships).
Item 2: My sexual thoughts and activities are causing problems in my life.
Item 3: My desires for sex have disrupted my daily life.
Item 4: I sometimes fail to meet my commitments and responsibilities because of my sexual activities.
Item 5: I sometimes get so horny I could lose control of my decision making.
Item 6: I often think about sex while at work.
Item 7: I feel that my sexual thoughts and feelings are sometimes overpowering me.
Item 8: I have to struggle to control my sexual thoughts and behaviors.
Item 9: I think about sex more than I would like to.
Item 10: It has been difficult for me to find sex partners who desire having sex as much as I do.

CODING PROCEDURE:

- Responses of "Refuse to Answer" were coded as missing.
- Remaining responses were coded as follows: 0 = Not at all like me, 1 = A little bit like me, 2 = Somewhat like me, 3 = Very much like me.
- Items were averaged such that higher values indicated higher mean scores on the sexual compulsivity scale, with a possible range of 0-3.

Gender Role Conflict (O'Neil et al., 1986 as adapted by Harawa et al., (in review)
[MAALES α = 0.9312]

Question: ***For each sentence shown, choose the response, which most closely represents the degree to which you agree or disagree with the statement on a scale from one to six, with 1 meaning strongly disagree and 6 meaning strongly agree. There is no right or wrong answer to each statement. Your own reaction is what is asked for.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 8 = Refuse to answer

Item 1: Verbally expressing my love or caring for another man is difficult for me.
Item 2: I have difficulty expressing my tender feelings.
Item 3: I have difficulty expressing my emotional needs to my partner.
Item 4: Talking (about my feelings) during sex is difficult for me.
Item 5: Strong emotions are difficult for me to understand.
Item 6: Affection with other men makes me tense.
Item 7: I have difficulty telling others I care about them.
Item 8: I am sometimes hesitant to show my affection to men because of how others might perceive me.
Item 9: I do not like to show my emotions to other people.
Item 10: Expressing feelings makes me feel open to attack by other people.
Item 11: Expressing my emotions to other men is risky.
Item 12: Hugging other men is difficult for me.
Item 13: Being very personal with other men makes me feel uncomfortable.
Item 14: I often have trouble finding words that describe how I am feeling.
Item 15: Men should never show their feminine side.
Item 16: Telling others about my strong feelings for them is not part of my sexual behavior.
Item 17: I worry about failing and how it affects my status as a man.
Item 18: Winning is a measure of my value and personal worth.
Item 19: I strive to be more successful than others.

Item 20: Competing with others is the best way to succeed.
Item 21: Being smarter or physically stronger than other men is important to me.
Item 22: I like to feel superior to other people.
Item 23: Men must seem strong to be respected.
Item 24: Making money is part of my idea of being a successful man.
Item 25: I measure other people's value by their level of achievement and success.
Item 26: Doing well all the time is important to me.
Item 27: I often feel that I need to be in charge of those around me.
Item 28: I am often concerned about how others judge my performance at work or school.
Item 29: I sometimes define my personal value by my career success.
Item 30: It is important for men to look tough.

CODING PROCEDURE:

- Responses of "Refuse to Answer" were coded as missing.
- Remaining responses were coded as follows: 0 = Strongly disagree, 1 = Disagree,
- 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree
- Items were summed such that higher values indicated higher levels of gender role conflict with a possible range of 0 to 5.

Privacy Regarding Sex with Men

Question: *How important is it for you to keep your sexual relationships with men secret?*

Response Options: 1 = Very important, 2 = Somewhat important, 3 = A little important, 4 = Not at all important, 7 = Refuse to answer

CODING PROCEDURE:

- Responses of Refuse to Answer were set missing.
- Remaining response options were reverse-coded as follows: 3 = Very important,
- 2 = Somewhat important, 1 = A little important, 0 = Not at all important.
- Items were summed such that higher values indicated greater importance for privacy regarding sex with men with a possible range of 0 to 3.

PSYCHOSOCIAL RESOURCES

Social Support ((10-item adaptation of the Multidimensional Scale of Perceived Social Support (MSPSS), Zimet et al., 1988)), [MAALES α = 0.9206]

Question: ***Please indicate how strongly you agree with the following statements. Family refers to partner/spouse, children and/or those other people related to you by blood, marriage, or adoption.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 98 = Refuse to Answer

Item 1: My family really tries to help me.
Item 2: I get the emotional help and support I need from my family.
Item 3: My friends really try to help me.
Item 4: I can count on my friends when things go wrong.
Item 5: I can talk about my problems with my family.
Item 6: I have friends with whom I can share my joys and sorrows.
Item 7: My family is willing to help me make decisions.

Item 8: I can talk about my problems with my friends.
Item 9: I can speak with my family about anything.
Item 10: I can speak with my close friends about anything.

CODING PROCEDURE:

- Refuse to Answer were set to missing.
- Remaining responses are coded as follows: 0 = Strongly disagree, 1 = Disagree, 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree
- The variable is measured continuously such that higher levels reflect greater social support with a possible range of 0 to 5.

Private Regard for Race (6-item scale adapted from the National Survey of Black Americans 1979-1980 (Jackson & Gurin, 2005) [MAALES α = 0.5955]

Question: ***Many different words have been used to describe Black people in general. Some of these words describe good points and some of these words describe bad points. How true do you think each of these words is in describing most Black people?***

Response Options: 1 = Very true, 2 = Somewhat true, 3 = A little true, 4 = Not at all true, 7 = Don't know, 8 = Refuse to Answer, 9 = Not applicable

Item 1: How true do you think it is that most Black people are intelligent? (Choose one) (R)
Item 2: How true do you think it is that most Black people are lazy? (Choose one)
Item 3: How true do you think it is that most Black people are hardworking? (Choose one) (R)
Item 4: How true do you think it is that most Black people give up easily? (Choose one)
Item 5: How true do you think it is that most Black people are proud of themselves? (Choose one) (R)
Item 6: How true do you think it is that most Black people are violent? (Choose one)

CODING PROCEDURE:

- "Don't Know" and "Refuse to Answer" were set to missing.
- Remaining responses are recoded as follows: 0=Very true, 1 = Somewhat true, 2 = A little true, 3=Not at all true
- Responses to questions measuring positive regard were reverse-coded as follows: 3 = Very true, 2 = Somewhat true, 1 = A little true, 0=Not at all true.
- The variable is measured continuously such that higher levels reflect greater private regard for the Black race with a possible range of 0-4.

R = Reverse-coded

Self-Esteem (Rosenberg Self-Esteem scale, 1965), [MAALES α = 0.8392]

Question: ***Below is a list of statements dealing with your general feelings about yourself. Please respond whether you strongly agree, agree, disagree or strongly disagree.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree, 8 = Refuse to Answer

Item 1: I am a person of worth, at least on an equal basis with others.
Item 2: I have a number of good qualities.
Item 3: All in all, I feel that I am a failure. (R)
Item 4: I am able to do things as well as most other people.

Item 5: I do not have much to be proud of. (R)
Item 6: I have a positive attitude toward myself.
Item 7: On the whole, I am satisfied with myself.
Item 8: I wish I could have more respect for myself. (R)
Item 9: I certainly feel useless at times. (R)
Item 10: At times, I think I am no good at all. (R)

CODING PROCEDURES:

- Responses of "Refuse to Answer" were set to missing.
- Remaining response options were recoded as follows: 0 = Strongly disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree
- Items 3, 5, 8, 9, and 10 were reverse-coded.
- Items were averaged such that higher levels reflect greater self-esteem with a possible range of 0 to 3.

R = Reverse-coded

SOCIODEMOGRAPHIC/INDIVIDUAL-LEVEL CHARACTERISTICS

Age (respondents had to be 18 or older to participate)

Question: *Enter your age in Years.*

Response Options: 18-97, 98 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing and age is coded continuously with a possible range of 19 to 89.

Educational Attainment

Question: *What is the highest level of education that you have completed? (Choose one)*

Response Options: 1 = Less than High School, 2 = High School diploma or GED, 3 = Two-year associate's degree or certificate, 4 = College degree, 5 = Professional Degree (i.e., Masters, M.D., Ph.D.)

CODING PROCEDURE:

- Categories were combined to address low cell counts in higher levels of education (two-year Associates degree and above). The categories were recoded as follows: 0 = Less than high school, 1 = High School diploma or GED, 2 = Two-year Associates degree/certificate or higher (i.e., college degree, professional degree).

Recidivism (a composite variable comprised of responses to two questions)

Question: *Have you ever spent more than one day in a jail, detention facility, or prison? (We are not interested in whether or not you were convicted or why you were there)*

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

Subset Question: *How many times have you been incarcerated (held in jail, prison, or detention)?*

Response Options: 0-996, 997 = Don't know, 998 = Refuse to Answer, 999 = Not applicable

CODING PROCEDURE:

- Responses of “Don’t Know”,” Refuse to Answer”, and “Not applicable” were set to missing.
- The responses to “Have you ever spent more than one day in a jail, detention facility, or prison? (We are not interested in whether or not you were convicted or why you were there)” were recoded as follows, 0 = No, 1 = Yes.
- The responses to “How many times have you been incarcerated (held in jail, prison, or detention)?” were categorized as 1 = 1-4 times and 2 = 5 or more times.
- For the final composite variable, the categories are as follows, 0=No (if ever incarcerated = 0 and # of times incarcerated is missing), 1 = 1-4 times (if ever incarcerated = 1) and 2 = 5 or more times (if ever incarcerated = 1).

Childhood Sexual Abuse (Wyatt Sex History Questionnaire,1992), (MAALES α = 0.8785)

Question: ***Now, I am going to ask about incidents that may have happened to you when you were a child, that is, before the age of 18. These questions may bring up painful memories, but please try to answer them as honestly as you can. This information is important for each individual's well-being.***

Response Options: 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer

Item 1: Before the age of 18, did a relative, family member, friend, or stranger ever feel you up, fondle your body including your butt or genitals, or rub their genitals against your body in a sexual way?
Item 2: Before the age of 18, did anyone force you to perform oral sex on them or to receive oral sex from them?
Item 3: Before 18, did anyone try to force you have intercourse against your will? (This includes instances where someone attempted to put an object or finger in your butt).
Item 4: Before 18, did anyone have intercourse with you against your will? (This includes instances where someone put an object or finger in your butt).

CODING PROCEDURE:

- Responses of “Refuse to Answer” were coded as missing and the remaining responses were recoded as follows, 0 = No and 1 = Yes.
- Items were summed such that higher values indicated higher levels of historical sexual trauma with a possible range of 0 to 4.
- For the categorical measure of childhood sexual abuse, the responses to the questions were combined and recoded such that if respondents reported “yes” for any of the four items they were coded as 1 = childhood sexual abuse and if respondents reported “no” to all four items they were coded as 0 = no childhood sexual abuse.

Appendix B: Post-Dissertation Defense Revised Variable Coding

Psychological Distress (BSI-53, Derogatis, 1993)
MAALES α = 0.972*5 (with 4 additional items removed) vs α = 0.9744 (with all 53 items)

Question: ***I am going to read a list of problems and complaints that people sometimes have. For each one, tell me how much that problem has bothered or distressed <u>you during the past 7 days</u>, including today. Please tell me whether each problem has bothered you not at all, a little bit, moderately, quite a bit, or extremely.***

Response Options: 1 = Not at all, 2 = A little bit, 3 = Moderately, 4 = Quite a bit, 5 = Extremely, 8 = Refuse to Answer

Symptoms of the Somatization Dimension [MAALES α = 0.8767]

Item 2: Faintness or dizziness
Item 7: Pains in heart or chest
Item 23: Nausea or upset stomach
Item 29: Trouble getting your breath
Item 30: Hot or cold spells
Item 33: Numbness or tingling in parts of your body
Item 37: Feeling weak in parts of your body

Symptoms of the Obsessive-Compulsive Dimension (MAALES α = 0.8748]

Item 5: Trouble remembering things
Item 15: Feeling blocked in getting things done
Item 26: Having to check and double-check what you do
Item 27: Difficulty making decisions
Item 32: Your mind going blank
Item 36: Trouble concentrating

Symptoms of the Interpersonal Sensitivity Dimension [MAALES α = 0.7969]

Item 20: Your feelings being easily hurt
Item 21: Feeling that people are unfriendly or dislike you
Item 22: Feeling inferior to others
Item 42: Feeling very self-conscious with others

Symptoms of the Depression Dimension [MAALES α = 0.8495]

Item 9: Thoughts of ending your life
Item 16: Feeling lonely
Item 17: Feeling blue
Item 18: Feeling not interest in things
Item 35: Feeling hopeless about the future
Item 50: Feelings of worthlessness

Symptoms of Anxiety Dimension [MAALES α = 0.8758]

Item 1: Nervousness or shakiness inside
Item 12: Suddenly scared for not reason
Item 19: Feeling fearful
Item 38: Feeling tense or keyed up
Item 45: Spells of terror or panic
Item 49: Feeling so restless you couldn't sit still

Symptoms of the Hostility Dimension [MAALES α = 0.8199]

Item 6: Feeling easily annoyed or irritated
Item 13: Temper outbursts that you could not control
Item 40: Having urges to beat, injure, or harm someone
Item 41: Having urges to break or smash things
Item 46: Getting into frequent arguments

Symptoms of the Phobic Anxiety Dimension [MAALES α = 0.8009]

Item 8: Feeling afraid in open spaces or on the streets
Item 28: Feeling afraid to travel on buses, subways, or trains
Item 31: Having to avoid certain things, places, or activities because they frighten you
Item 43: Feeling uneasy in crowds, such as shopping or at a movie
Item 47: Feeling nervous when you are left alone

Symptoms of the Paranoid Ideation Dimension [MAALES α = 0.7629]

Item 4: Feeling others are to blame for most of your troubles
Item 10: Feeling that most people cannot be trusted
Item 24: Feeling that you are watched or talked about by others
Item 48: Others not giving you proper credit for your achievements
Item 51: Feeling that people will take advantage of you if you let them

Symptoms of the Psychoticism Dimension [MAALES α = 0.7784]

Item 3: The idea that someone else can control your thoughts
Item 14: Feeling lonely even when you are with people
Item 34: The idea that you should be punished for your sins
Item 44: Never feeling close to another person
Item 53: The idea that something is wrong with your mind

Additional Items of clinical importance

Item 11: Poor appetite
Item 25: Trouble falling asleep
Item 39: Thoughts of death or dying
Item 52: Feelings of guilt

CODING PROCEDURE:

- Response options for all items were recoded: 0 = Not at all, 1 = A little bit, 2 = Moderately, 3 = Quite a bit, 4 = Extremely. “Refuse to Answer” responses were set to missing before receipt of the dataset.
- A total of 2 cases were removed based on missing information. The criteria for determining the removal of cases were as follows.
    - Cases missing all 49 items were removed from the study
    - Cases missing 3 or fewer responses across all 49 items could remain in the study, as long as the case was missing no more than 1 item on a single dimension.
    - Cases missing more than 1 response on a single dimension were removed from the study.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 49 items.
        - 1 case was missing 1 response,
        - 1 case was missing on 2 responses,

        - 1 case was missing 3 responses
        - 2 cases were missing on all 49 responses
        - 424 cases had no missing responses
    - 2 cases missing on all 49 responses were removed from the study
    - 2 cases with 2 items missing on the hostility dimension were removed from the study.
    - After removing a total of 2 cases, dimensions with 1 missing response included somatization, obsessive compulsive, anxiety, hostility, and psychoticism and dimensions with no missing responses included interpersonal sensitivity, depression, phobic anxiety, and paranoid ideation.
- Respondent scores for each dimension were averaged. The range for each dimension's mean score was from 0 to 4 (A little bit to Extremely on the BSI Scale). However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that psychological distress did not have a normal distribution.
- To create the categorical measure of psychological distress, there were four steps.
    - First, respondent scores for each dimension were averaged, such that the range for each subdimension's mean score was from 0 to 4 ("Not at all" to "Extremely" on the BSI Scale).
    - Second, each dimension's mean score was then categorized based on a cut point of 2. For each dimension, scores of 2 or higher were coded as 1 ("High Risk"), which corresponded with "Moderately" to "Extremely" responses for symptoms on the BSI scale. Scores with mean values of less than 2 were coded as 0 ("Low Risk"), which corresponded with responses of "Not at All" to "A Little Bit" for symptoms.
    - Third, the overall measure of psychological distress was then created based on a count of the number of "High Risk" dimensions for each respondent, resulting in a score ranging from 0 to 9.
    - Finally, those with at least one "high risk" dimension were considered to have "high distress" (coded 1). Those with no "high risk" dimensions were coded as 0 "low distress" and those with "high risk" were considered to have "moderate to high distress".

STRESSORS

Discrimination

(Racism and Life Experience Scales Daily Life Experiences, Harrell,1997/2016), [MAALES α = 0.9728]

Question: ***During your lifetime, how often have you experienced each of the following because of race?***

Response Options: 0 = Never happened to me, 1 = Less than once a year, 2 = Few times a year, 3 = About once a month, 4 = Few times a month, 5 = Once a week or more, 8 = Refuse to Answer

Item 1: Being ignored, overlooked, or not given service (In a restaurant, store, etc.)
Item 2: Being treated rudely or disrespectfully.
Item 3: Being accused of something or treated suspiciously.
Item 4: Others reacting to you as if they were afraid or intimidated.

Item 5: Being observed or followed while in public places.
Item 6: Being treated as if you were "stupid" or "talked down to."
Item 7: Your ideas or opinions being minimized, ignored, or devalued.
Item 8: Overhearing or being told an offensive joke or comment.
Item 9: Being insulted, called a name, or harassed.
Item 10: Others expecting your work to be inferior.
Item 11: Not being taken seriously.
Item 12: Being left out of conversations or activities.
Item 13: Being treated in an "overly " friendly or superficial way.
Item 14: Being avoided, others moving away from you physically.
Item 15: Being mistaken for someone who serves others, for example, a janitor, bellhop, or server.
Item 16: Being stared at by strangers.
Item 17: Being laughed at, made fun of, or taunted.
Item 18: Being mistaken for someone else of your same race (who may not look like you at all).
Item 19: Being asked to speak for or represent your entire racial/ethnic group. For example, "What do Black people think"?
Item 20: Being considered fascinating or exotic by others.

CODING PROCEDURE:

- Responses of “Refuse to Answer” were set to missing before receipt of the data set.
- A total of 5 cases were removed based on missing information. The criteria for determining the removal of cases were as follows.
    - Cases with no more than 1 missing response across all 20 scale items were included in the study.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 20 items
        - 1 case was missing 4 responses and was excluded from the study
        - 4 cases were missing 20 responses and were excluded from the study.
- Items were summed so that higher scores corresponded with higher values of racial discrimination with a possible range of 0 to 100. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that discrimination did not have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 36, with 0 = Scores equal to or less than 36 and 1 = Scores greater than 36.

Past-year Racism (The Brief Racism and Life Experiences Scale, Harrell et al., 1997)

Question: *DURING THE PREVIOUS 12 MONTHS, how much racism have you personally experienced, including racial discrimination and racial prejudice?*

Response Options: 0 = Not at all, 1 = A little, 2 = Some, 3 = A lot, 4 = Extremely, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of “Refuse to Answer” were set to missing before receipt of the dataset.
- For the categorical measure of adult sexual trauma, the responses to the questions were combined and recoded such that: 0 = None or a little and 1 = Some to Extremely

Adult Sexual Trauma (Wyatt Sex History Questionnaire,1992)

Question: ***These questions refer to experiences you may have had as an adult (since age 18). I will be asking you about sexual experiences that may have occurred without your consent. Some people have difficulty answering because they deal with very upsetting events. These experiences may have involved a friend, relative, stranger, spouse or partner. Remember, these are only incidents that have happened after your 18th birthday. Please answer as best you can.***

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer

Item 1: Since the age of 18, has anyone ever tried to force you to have anal or oral sex with them against your will?
Item 2: Since the age of 18, has someone ever forced their penis or object in your butt or forced you to have anal sex with them against your will?

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were set as missing before receipt of the dataset.
- For the categorical measure of adult sexual trauma, the responses to the questions were combined and recoded such that if respondents reported "yes" for either item they were coded as 1 = adult sexual trauma and if respondents reported "no" to both items they were coded as 0 = no adult sexual trauma.

HEALTH AND SEXUAL RISK FACTORS

Health Care Access (Cunningham et al., 1999), [MAALES α = 0.804639]

Response Options: 1 = Strongly Disagree, 2 = Disagree Somewhat, 3 = Neither Agree nor Disagree, 4 = Strongly Agree, 7 = Don't Know, 8 = Refuse to Answer, 9 = Not Applicable

Item 1: Sometimes I go without the medical care I need because it is too expensive. (R)
Item 2: It is hard for me to get medical care in an emergency. (R)
Item 3: If I need hospital care, I can get admitted without any trouble.
Item 4: I am able to get medical care whenever I need it.
Item 5: Places where I can get medical care are very conveniently located.
Item 6: I have easy access to the medical specialists I need.

CODING PROCEDURE:

- Responses of "Don't Know", "Refuse to Answer", and "Not Applicable" were set to missing before receipt of the data set.
- Remaining responses were recoded as follows: 0 = Strongly Disagree, 1 = Disagree Somewhat, 2 = Neither Agree nor Disagree, 3 = Agree Somewhat, 4 = Strongly Agree.
- Negative items (e.g., Sometimes I go without medical care because it is too expensive) were reverse-coded.
- A total of 5 cases were removed from the study based on missing information. The criteria for determining the removal of cases were as follows.
    - Cases with no more than 1 missing response across all 6 scale items were included in the following analyses.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 6 items
    - 5 cases were missing 1 response and remained in the study.

- 2 cases were missing 2 responses and were removed from the study.
- 1 case was missing 3 responses and were removed from the study.
- 2 cases were missing 6 responses and were removed from the stud

Items were summed so that higher scores corresponded with higher values of racial discrimination with a possible range of 0 to 24. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that health care access did not have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 16, with 0 = Scores equal to or less than 16 and 1 = Scores greater than 16. R = Reverse Coded

Alcohol Binging

Question: In the past 90 days, have you had 5 or more drinks on any single day? By drink, we mean any combination of cans of beer, glasses of wine, or drinks containing liquor of any kind.

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing before receipt of the dataset.
- Response options were recoded as follows: 0 = No Binging, 1 = Binging.

Drug Use

Questions:
Other than alcohol, have you ever used drugs to get high?

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

Subset of those that responded "Yes" to question above: Have you used drugs in the last 90 days?

Response Options: 1 = Yes, 2 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Response options of "Don't Know and "Refuse to Answer" were set to missing before receipt of the dataset.
- The remaining responses from the two questions were combined with the following response options: 0 = Never used drugs to get high, 1 = No drug used last 90 days, and 2 = Yes drug used last 90 days.

MSM-Related Health Care Avoidance

Question: During the past 6 months, have you avoided seeking medical or health care that you needed because you were afraid someone might find out you have sex with men?

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing before receipt of the dataset.

- Response options were recoded as follows: 0 = Did not avoid seeking health care, 1 = Avoided seeking health care.

Sexual Risk Behavior (an index comprised of the following three measures)

Illicit Drug Use During Sex (a subset of a series of questions about lifetime and 90-day drug use)

This measure was a categorical, composite variable comprised of 5 questions subset within a series of questions that assess lifetime drug use, 90-day drug use, the categories of drugs used in the last 90 days, and finally sex while under the influence of those drugs.

Question: "*Other than alcohol, "have you ever used drugs to get high*?"
Response Options: 1 = Yes, 2 = No, and 8 = Refuse to Answer.

Subset Question (asked only of those that responded "Yes" to the previous question): "*Have you used drugs in the last 90 days*?"
Response options: 1 = Yes, 2 = No, 7 = Don't Know, and 8 = Refuse to Answer.

Subset Question (for respondents that had used drugs in the last 90 days) were asked questions about their use of five categories of drugs: crystal methamphetamine, other amphetamines, crank, ice, or Tina; crack or powder cocaine or coke; heroin; ecstasy, X, G, H, B, ketamines, or Special K; and amyl nitrate poppers. The questions and response options are listed below.

On how many of the past 90 days did you use crystal methamphetamine, other amphetamines, crank, ice, or Tina before or during sex?

On how many of the past 90 days did you use crack or powder cocaine/coke before or during sex?

On how many of the past 90 days did you use heroin before or during sex?

On how many of the past 90 days did you use club drugs such as ecstasy or X, GHB, ketamines or Special K before or during sex?

On how many of the past 90 days did you use Amyl Nitrate/poppers before or during sex?

Response Options: 1-90, 97 = Don't Know, 98 = Refuse to Answer, 99 = Not Applicable

CODING PROCEDURE FOR DRUG USE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing before receipt of the dataset.
- Participants that responded "No" to all questions about sex under the influence of the drug were coded as 0 = not reported/no drugs with sex.
- Responses of "No" to lifetime drug use, "No" to drug use over the last 90 days, "No" to the use of a specific drug in the last 90 days, did not report the use of a drug during sex (responses that were missing at random) were recoded as 0 = not reported/no drugs with sex.

- Respondents that were under the influence of any of the five drugs during sex at least one time in the last 90 days were coded as 1 = drugs with sex.

Exchange Sex (comprised of 4 questions)

In the past 90 days, have you received money or a place to stay in exchange for any type of sex?

In the past 90 days, have you given someone money or a place to stay in exchange for any type of sex?

In the past 90 days, have you received drugs in exchange for any type of sex?

In the past 90 days, have you given someone drugs in exchange for any type of sex?

Response Options: 1 = Yes, 0 = No, 7 = Don't Know, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing before receipt of the dataset.
- The remaining responses to the four questions were combined into a categorical variable such that if participants responded "No" to all four questions they were coded as 0 = No exchange sex and if they responded "Yes" to one or more questions they were coded as 1 = Exchanged sex.

Nondisclosure of sex with men to female sex partner

Question*: In the past 90 days, did you have vaginal or anal sex with a woman who didn't know that you have sex with men? (Choose one)*

Response Options: 1 = No, 2 = Yes, with one female, 3 = Yes, with more than one female, 9 = Did not have sex with a female/Not applicable, 98 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Don't Know" and "Refuse to Answer" were set to missing before receipt of the dataset.
- Recoded with the following response options: 0 = No/Did not have sex with a female, 2 Yes with one or more females.
-

CODING PROCEDURE FOR VARIABLE:

- Responses of "Refuse to Answer" were set to missing before receipt of the dataset.
- If the participant responded "No" to the question or "Did not have sex with a female/Not applicable" they were coded as 0 = No.
- If the participant responded "Yes, with one female" or "Yes with more than one female" they were coded as 1 = Yes.

CODING FOR INDEX OF SEXUAL RISK:
To create the categorical measure of sexual risk, the responses were recoded as follows:
0 = No sexual risk behavior, 1 = One or more sexual risk behaviors

Sexual Compulsivity Scale (Kalichman and Rompa, 2001), [MAALES α = 0.9368]

Question: ***A number of statements that some people have used to describe themselves will be shown on the screen. Read each statement and then choose the number to***

show how well you believe the statement describes your feelings and experiences <u>over the past 90 days</u>.

Response Options: 1 = Not at all like me, 2 = A little bit like me, 3 = Somewhat like me, 4 = Very much like me, 8 = Refuse to answer

Item 1: My sexual appetite has gotten in the way of my relationships (i.e. my romantic life, my family life, or my close friendships).
Item 2: My sexual thoughts and activities are causing problems in my life.
Item 3: My desires for sex have disrupted my daily life.
Item 4: I sometimes fail to meet my commitments and responsibilities because of my sexual activities.
Item 5: I sometimes get so horny I could lose control of my decision making.
Item 6: I often think about sex while at work.
Item 7: I feel that my sexual thoughts and feelings are sometimes overpowering me.
Item 8: I have to struggle to control my sexual thoughts and behaviors.
Item 9: I think about sex more than I would like to.
Item 10: It has been difficult for me to find sex partners who desire having sex as much as I do.

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing before receipt of the dataset.
- Remaining responses were coded as follows: 0 = Not at all like me, 1 = A little bit like me, 2 = Somewhat like me, 3 = Very much like me.
- A total of 5 cases were removed from the study based on missing information. The criteria for determining the removal of cases were as follows.
    - Cases with no more than 1 missing response across all 10 scale items remained in the study.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 10 items
    - 2 cases were missing 1 response and remained in the study.
    - 1 case was missing 4 responses and was removed from the study,
    - 1 case was missing on 7 responses and was removed from the study,
    - 1 case was missing on 8 responses and was removed from the study, and
    - 2 cases were missing 10 responses and was removed from the study.
- Items were summed such that higher values indicated higher scores on the sexual compulsivity scale, with a possible range of 0-30. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that sexual compulsivity did not have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 10, with 0 = Scores equal to or less than 10 and 1 = Scores greater than 10.

Gender Role Conflict (O'Neil et al., 1986 as adapted by Harawa et al., (in review)
[MAALES $\alpha = 0.9326$]

Question: ***For each sentence shown, choose the response, which most closely represents the degree to which you agree or disagree with the statement on a scale from one to six, with 1 meaning strongly disagree and 6 meaning strongly agree. There is no right or wrong answer to each statement. Your own reaction is what is asked for.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 8 = Refuse to answer

Item 1: Verbally expressing my love or caring for another man is difficult for me.
Item 2: I have difficulty expressing my tender feelings.
Item 3: I have difficulty expressing my emotional needs to my partner.
Item 4: Talking (about my feelings) during sex is difficult for me.
Item 5: Strong emotions are difficult for me to understand.
Item 6: Affection with other men makes me tense.
Item 7: I have difficulty telling others I care about them.
Item 8: I am sometimes hesitant to show my affection to men because of how others might perceive me.
Item 9: I do not like to show my emotions to other people.
Item 10: Expressing feelings makes me feel open to attack by other people.
Item 11: Expressing my emotions to other men is risky.
Item 12: Hugging other men is difficult for me.
Item 13: Being very personal with other men makes me feel uncomfortable.
Item 14: I often have trouble finding words that describe how I am feeling.
Item 15: Men should never show their feminine side.
Item 16: Telling others about my strong feelings for them is not part of my sexual behavior.
Item 17: I worry about failing and how it affects my status as a man.
Item 18: Winning is a measure of my value and personal worth.
Item 19: I strive to be more successful than others.
Item 20: Competing with others is the best way to succeed.
Item 21: Being smarter or physically stronger than other men is important to me.
Item 22: I like to feel superior to other people.
Item 23: Men must seem strong to be respected.
Item 24: Making money is part of my idea of being a successful man.
Item 25: I measure other people's value by their level of achievement and success.
Item 26: Doing well all the time is important to me.
Item 27: I often feel that I need to be in charge of those around me.
Item 28: I am often concerned about how others judge my performance at work or school.
Item 29: I sometimes define my personal value by my career success.
Item 30: It is important for men to look tough.

CODING PROCEDURE:

- Responses of “Refuse to Answer” were set to missing before receipt of the data.
- Remaining responses were coded as follows: 0 = Strongly disagree, 1 = Disagree, 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree
- A total of 4 cases were removed from the study based on missing information. The criteria for determining the removal of cases were as follows.
    - Cases with no more than 1 missing response across all 30 scale items were included in the study.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 30 items
    - 4 cases were missing 1 response and remained in the study.
    - 3 cases were missing 2 responses and were removed from the study.
    - 1 case missing 3 responses and was removed from the study.
- Items were summed such that higher values indicated higher levels of gender role conflict with a possible range of 10 to 150. Based on the sktest in STATA, a test for

normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that the gender role conflict scale had a normal distribution and continuous measure could be maintained for univariate, bivariate, and multivariate analyses. However, in order to compare results from a previous study using this data to examine relationships between gender role conflict and psychological distress, the mean was used as a cut point for a categorical variable such that 0 = Scores at or Below 73 and 1 = Scores Above 73.

Privacy Regarding Sex with Men

Question: *How important is it for you to keep your sexual relationships with men secret?*

Response Options: 1 = Very important, 2 = Somewhat important, 3 = A little important, 4 = Not at all important, 7 = Refuse to answer

CODING PROCEDURE:

- Responses of Refuse to Answer were set missing.
- Remaining response options were reverse-coded as follows: 3 = Very important, 2 = Somewhat important, 1 = A little important, 0 = Not at all important.
- For the categorical variable, items were recoded as follows: 0 = Not at all to a little bit and 1 = Somewhat to very important

PSYCHOSOCIAL RESOURCES

Social Support (10-item adaptation of the Multidimensional Scale of Perceived Social Support (MSPSS), Zimet et al., 1988)), [MAALES α = 0.9213]

Question: ***Please indicate how strongly you agree with the following statements. Family refers to partner/spouse, children and/or those other people related to you by blood, marriage, or adoption.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Mildly disagree, 4 = Mildly agree, 5 = Agree, 6 = Strongly agree, 98 = Refuse to Answer

Item 1: My family really tries to help me.
Item 2: I get the emotional help and support I need from my family.
Item 3: My friends really try to help me.
Item 4: I can count on my friends when things go wrong.
Item 5: I can talk about my problems with my family.
Item 6: I have friends with whom I can share my joys and sorrows.
Item 7: My family is willing to help me make decisions.
Item 8: I can talk about my problems with my friends.
Item 9: I can speak with my family about anything.
Item 10: I can speak with my close friends about anything.

CODING PROCEDURE:

- Refuse to Answer were set to missing before receipt of the data.
- Remaining responses are coded as follows: 0 = Strongly disagree, 1 = Disagree, 2 = Mildly disagree, 3 = Mildly agree, 4 = Agree, 5 = Strongly agree
- No cases were removed from the study based on missing information. The criteria for determining the removal of cases were as follows

- Cases with no more than 1 missing response across all 10 scale items were included in the following analyses.
- The procedures for determining which cases to remove were as follows:
  - Missing were checked across all 10 items
  - 3 cases were missing 1 response and remained in the study.
- Scale items were then summed such that higher levels reflect greater social support with a possible range of 0 to 50. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that social support did not have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 31, with 0 = Scores equal to or less than 31 and 1 = Scores greater than 31.

Brief Scale of Racial Pride (Lukwago et al., 2001) [MAALES α = 0.8293]

Question: Do you agree or disagree with the following statements?

Response Options:* 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree *7 = Don't know, 8 = Refuse to Answer, 9 = Not applicable

Item 1: Black people help make America strong.
Item 2: There are many Black women in my life who I respect.
Item 3: There are many Black men in my life who I respect.
Item 4: I often regret that I am Black. (R)
Item 5: Being Black is an important part of who I am.
Item 6: I feel a strong connection to other Black men.
Item 7: Blacks contribute less to society than others.
Item 8: Racial pride is necessary for developing strong Black communities.
Item 9: I think everybody should be taught about how Black people contributed to building America.
Item 10: Black men should keep up with issues that are important to the Black community.
Item 11: Overall, I often feel that Blacks are not worthwhile. (R)
Item 12: I am proud to be a Black man.

CODING PROCEDURE:

- "Don't Know" and "Refuse to Answer" were set to missing upon receipt of the data.
- Remaining responses are recoded as follows: 0 = strongly disagree, 1 = disagree, 2 = agree, 3 = strongly agree
- Responses to questions measuring a lack of pride were reverse-coded as follows: 3 = strongly disagree, 2 = disagree, 1 = agree, 0 = strongly agree
- One case was removed from the study based on missing information. The criteria for determining the removal of cases were as follows
  - Cases with no more than 1 missing response across all 12 scale items were included in the study.
- The procedures for determining which cases to remove were as follows:
  - Missing were checked across all 12 items
  - 1 case was missing on 12 responses and was removed from the study
- Scale items were summed such that higher levels reflect greater private regard for the Black race with a possible range of 9 to 36. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that racial pride did not

have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 31, with 0 = Scores equal to or less than 31 and 1 = Scores greater than 31.

R = Reverse-coded

Self-Esteem (Rosenberg Self-Esteem scale, 1965), [MAALES α = 0.8386]

Question: ***Below is a list of statements dealing with your general feelings about yourself. Please respond whether you strongly agree, agree, disagree or strongly disagree.***

Response Options: 1 = Strongly disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree, 8 = Refuse to Answer

Item 1: I am a person of worth, at least on an equal basis with others.
Item 2: I have a number of good qualities.
Item 3: All in all, I feel that I am a failure. (R)
Item 4: I am able to do things as well as most other people.
Item 5: I do not have much to be proud of. (R)
Item 6: I have a positive attitude toward myself.
Item 7: On the whole, I am satisfied with myself.
Item 8: I wish I could have more respect for myself. (R)
Item 9: I certainly feel useless at times. (R)
Item 10: At times, I think I am no good at all. (R)

CODING PROCEDURES:

- Responses of "Refuse to Answer" were set to missing before receipt of the dataset.
- Remaining response options were recoded as follows: 0 = Strongly disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree
- Items 3, 5, 8, 9, and 10 were reverse-coded.
- 4 cases were removed from the study based on missing information. The criteria for determining the removal of cases were as follows
    - Cases with no more than 1 missing response across all 10 scale items were included in the study.
- The procedures for determining which cases to remove were as follows:
    - Missing were checked across all 10 items
    - 4 cases were missing on 1 response and remained in the study.
    - 2 cases were missing on 3 responses and were removed from the study.
    - 2 cases were missing on 10 responses and were removed from the study.
- Scale items were summed such that higher levels reflect greater self-esteem with a possible range of 16 to 40. However, based on the sktest in STATA, a test for normality based on skewness and another based on kurtosis which combines the two tests into an overall test statistic, it was determined that self-esteem did not have a normal distribution. For that reason, a categorical variable was created. Ultimately, the binary categorical variable was split at the median of 31, with 0 = Scores equal to or less than 31 and 1 = Scores greater than 31.

R = Reverse-coded

SOCIODEMOGRAPHIC/INDIVIDUAL-LEVEL CHARACTERISTICS

Age (respondents had to be 18 or older to participate)

Question: *Enter your age in Years.*

Response Options: 18-97, 98 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Refuse to Answer" were set to missing and
- age had a possible range of 19 to 89.
- It was recoded as a categorical variable with the following categories: 0 = 19-29, 1 = 30-39, 2 = 40-49, and 3 = 50 and over

Educational Attainment

Question: *What is the highest level of education that you have completed? (Choose one)*

Response Options: 1 = Less than High School, 2 = High School diploma or GED, 3 = Two-year associate's degree or certificate, 4 = College degree, 5 = Professional Degree (i.e., Masters, M.D., Ph.D.)

CODING PROCEDURE:

- Categories were combined to address low cell counts in higher levels of education (two-year Associates degree and above). The categories were recoded as follows: 0 = Less than high school through High School diploma or GED, 1 = Two-year Associates degree/certificate or higher (i.e., college degree, professional degree).

Housing Insecurity

Question: *In the past 12 months, was there ever a time you did not have a regular place to live?*

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

CODING PROCEDURE:

- Refuse to Answer categories were set to missing before receipt of the dataset
- Remaining items were recoded as follows: 0 = No Housing Insecurity, 1 = Yes, Housing Insecurity

Lifetime Incarceration (a composite variable comprised of responses to two questions)

Question: *Have you ever spent more than one day in a jail, detention facility, or prison? (We are not interested in whether or not you were convicted or why you were there)*

Response Options: 1 = Yes, 2 = No, 8 = Refuse to Answer

CODING PROCEDURE:

- Responses of "Don't Know"," Refuse to Answer", and "Not applicable" were set to missing prior to receipt of data.

- The responses to “Have you ever spent more than one day in a jail, detention facility, or prison? (We are not interested in whether or not you were convicted or why you were there)” were recoded as follows, 0 = No, 1 = Yes.
-

Childhood Sexual Abuse (Wyatt Sex History Questionnaire,1992), (MAALES α = 0.8785)

Question: ***Now, I am going to ask about incidents that may have happened to you when you were a child, that is, before the age of 18. These questions may bring up painful memories, but please try to answer them as honestly as you can. This information is important for each individual's well-being.***

Response Options: 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer

Item 1: Before the age of 18, did a relative, family member, friend, or stranger ever feel you up, fondle your body including your butt or genitals, or rub their genitals against your body in a sexual way?
Item 2: Before the age of 18, did anyone force you to perform oral sex on them or to receive oral sex from them?
Item 3: Before 18, did anyone try to force you have intercourse against your will? (This includes instances where someone attempted to put an object or finger in your butt).
Item 4: Before 18, did anyone have intercourse with you against your will? (This includes instances where someone put an object or finger in your butt).

CODING PROCEDURE:

- Responses of “Refuse to Answer” were set to missing before receipt of the data and the remaining responses were recoded as follows, 0 = No and 1 = Yes.
- For the categorical measure of childhood sexual abuse, the responses to the questions were combined and recoded such that if respondents reported “yes” for any of the four items they were coded as 1 = childhood sexual abuse and if respondents reported “no” to all four items they were coded as 0 = no childhood sexual abuse.

HIV STATUS (CDC-sponsored HIV Testing Survey, 2006)

Question: Have you ever been tested for HIV, even if you did not get the results?

Response Options: 1 = Yes, 2 = No, 7 = Don’t Know, 8 = Refuse to Answer

Subset Question: *What was your most recent HIV test result? Choose one.* (Choose one)

Response Options: 0 = HIV positive, 1 = HIV negative, 2 = Indeterminate, 3 = Inconclusive, 8 = Refuse to Answer

CODING PROCEDURE:

- “Have you ever been tested for HIV, even if you did not get the results?” was recoded as follows, 0 = No, 1 = Yes. Responses of “Don’t Know” and “Refuse to Answer” were set to missing.
    - Among the 429 participants, the frequencies were as follows, 34 Never tested, 395 Ever tested, 0 Don’t Know, 0 Refuse to Answer.
    - In the final data set comprised of 410 participants, 31 never tested, 371 Ever tested.

- The question, "*What was your most recent HIV test result? Choose one.*" was asked only of those that reported ever having an HIV test. Responses of "Don't Know" and "Refuse to Answer" were set to missing before receipt of the data.
    - The frequencies among the 429 participants were as follows: 200 HIV positive, 181 HIV negative, 3 Indeterminate, 5 Inconclusive, 40 missing (of which 34 never tested and 6 refused to answer/Don't Know).
    - In the final data set comprised of 403 participants, HIV status among participants was as follows: 189 HIV positive, 169 HIV negative, 3 Indeterminate, 5 Inconclusive, 37 missing (of which 31 never tested, 6 refused to answer/Don't Know).
- Responses to the two questions were combined and coded as follows, 0 = HIV negative, 1 = HIV positive, 2 = Indeterminate/Inconclusive/Never tested/Refuse to Answer/Don't Know

*All Cronbach's alphas are based on the 403 cases included in the study

Appendix C: Post-Dissertation Defense Revised Analyses

Descriptive Statistics

Table 4-1

Summary of Univariate Distributions for the Overall Sample, MAALES Intervention Study (2007-2010)

	Univariate distributions
	(n = 403) %
Psychological Distress Score (BSI-53)	
Low Risk (Ref.)	80.89
High Risk	19.11
Stressors	
Discrimination	
Low discrimination (Ref.)	52.61
High discrimination	47.39
Past-year Racism-Related Stress	
None or a little (Ref.)	46.15
Some to Extremely	53.85
Adult Sexual Trauma	
No (Ref.)	72.71
Yes	27.79
Health Risk Factors	
Health Care Access	
Low health care access (Ref.)	57.82
High health care access	42.18
Alcohol Binging	
No Binging (Ref.)	63.52
Binging	36.48
Drug Use	
Never used drugs to get high (Ref.)	31.02
No drug use last 90 days	29.78
Drug use last 90 days	39.21
MSM-related Health Care Avoidance	
Did not avoid seeking health care (Ref.)	89.08
Avoided seeking health care	10.92
Sexual Risk Factors	
Sexual Risk Behavior	
No sexual risk behavior (Ref.)	35.24
One of more sexual risk behaviors**	64.76
Sexual Compulsivity	
Low sexual compulsivity (Ref.)	55.33
High sexual compulsivity	44.67

	Univariate Distributions
	(n=403) %
Sexual Risk Factors continued	
Gender Role Conflict	
Low gender role conflict (Ref.)	50.12
High gender role conflict	49.88
Importance of Privacy Regarding Sex with Men	
Not at all to a little bit (Ref.)	41.44
Somewhat to very important	58.56
Psychosocial Resources	
Social Support	
Low social support (Ref.)	49.13
High social support	50.87
Racial Pride	
Low racial pride (Ref.)	54.59
High racial pride	45.41
Self-esteem	
Low self-esteem (Ref.)	54.84
High self-esteem	45.16
Sociodemographic/Individual-Level Characteristics	
Age	
19-29 (Ref.)	14.64
30-39	17.87
40-49	42.93
50 and above	24.57
Educational Attainment	
Less than high school through high school (Ref.)	74.44
Associates degree or higher	25.56
Housing	
No Housing Insecurity (Ref.)	61.54
Housing Insecurity	38.46
Lifetime Incarceration	
Never incarcerated (Ref.)	23.08
Ever incarcerated	76.92
Childhood Sexual Abuse	
No childhood sexual abuse (Ref.)	42.68
Childhood sexual abuse	57.32
HIV Status	
HIV - negative (Ref.)	41.94
HIV - positive	46.90
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	11.17

*Ref. = Reference Group
**Drug use during sex, exchange sex, nondisclosure of sex with men to female sex partner

Table 4-2

Summary of Bivariate Associations between Psychological Distress, Stressors, Health and Sexual Risks, Psychosocial Resources, and Sociodemographic and Individual-level Characteristics, MAALES Intervention Study (2007-2010)

Psychological Distress	
	(n = 403) *OR(CI)*
Psychological Distress Score (BSI-53)	
Low Risk (Ref.)	
High Risk	
Stressors	
Discrimination	
Low discrimination (Ref.)	--
High discrimination	4.42 (2.52-7.78)***
Past-year Racism-Related Stress	
None or a little (Ref.)	--
Some to Extremely	2.53 (1.47-4.34)***
Adult Sexual Trauma	
No (Ref.)	--
Yes	2.51 (1.50-4.22)***
Health Risk Factors	
Health Care Access	
Low health care access (Ref.)	--
High health care access	0.48 (0.28-0.83)**
Alcohol Binging	
No Binging (Ref.)	--
Binging	2.36 (1.43-3.91)***
Drug Use	
Never used drugs to get high (Ref.)	--
No drug use last 90 days	0.82 (0.41-1.64)
Drug use last 90 days	1.62 (0.90-2.93)
MSM-related Health Care Avoidance	
Did not avoid seeking health care (Ref.)	--
Avoided seeking health care	3.94 (2.04-7.63)***
Sexual Risk Factors	
Sexual Risk Behavior	
No sexual risk behavior (Ref.)	--
One of more sexual risk behaviors**	1.46 (0.85-2.51)
Sexual Compulsivity	
Low sexual compulsivity (Ref.)	--
High sexual compulsivity	2.61 (1.56-4.36)***
Gender Role Conflict	
Low gender role conflict (Ref.)	--
High gender role conflict	1.64 (0.99-2.71)

Psychological Distress	
	(n = 403) *OR(CI)*
Sexual Risk Factors continued	
Privacy Regarding Sex with Men	
Not at all to a little bit (Ref.)	--
Somewhat to very important	1.86 (1.09-3.17)*
Psychosocial Resources	
Social Support	
Low social support (Ref.)	--
High social support	0.42 (0.25-0.70)***
Racial Pride	
Low racial pride (Ref.)	--
High racial pride	0.77 (0.47-1.28)
Self-esteem	
Low self-esteem (Ref.)	--
High self-esteem	0.56 (0.33-0.93)*
Sociodemographics/Individual-Level Characteristics	
Age	
19-29 (Ref.)	--
30-39	0.60 (0.27-1.33)
40-49	0.46 (0.23-0.91)*
50 and above	0.41 (0.19-0.89)*
Educational Attainment	
Less than high school through high school (Ref.)	--
Associates degree or higher	1.03 (0.58-1.81)
Housing	
No Housing Insecurity (Ref.)	--
Housing Insecurity	1.18 (0.71-1.95)
Lifetime Incarceration	
Never incarcerated (Ref.)	--
Ever incarcerated	0.47 (0.27-0.81)**
Childhood Sexual Abuse	
No childhood sexual abuse (Ref.)	--
Childhood sexual abuse	1.71 (1.01-2.89)
HIV Status	
HIV - negative (Ref.)	--
HIV - positive	0.81 (0.48-1.37)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	0.96 (0.42-2.17)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Study 1: Stress exposure and psychological distress among Black MSMW

Are there sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?

Table 5-1

Psychological Distress Regressed on Sociodemographic and Individual-level Characteristics: Results of Multivariable Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

Model 1: Psychological Distress	
	OR(CI)
Sociodemographics/Individual-Level Characteristics	
Age	
19-29 (Ref.)	--
30-39	0.75 (0.32-1.77)
40-49	0.58 (0.27-1.24)
50 and above	0.48 (0.21-1.11)
Educational Attainment	
Less than high school through high school (Ref.)	--
Associates degree or higher	0.98 (0.54-1.77)
Housing	
No Housing Insecurity (Ref.)	--
Housing Insecurity	1.14 (0.67-1.95)
Lifetime Incarceration	
Never incarcerated (Ref.)	--
Ever incarcerated	0.49 (0.27-0.89)*
Childhood Sexual Abuse	
No childhood sexual abuse (Ref.)	--
Childhood sexual abuse	1.88 (1.09-3.23)*
HIV Status	
HIV - negative (Ref.)	--
HIV - positive	0.88 (0.50-1.54)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	0.96 (0.41-2.24)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Does stress exposure explain sociodemographic and individual-level characteristic differences in psychological distress among Black MSMW?

Table 5-2

Stressors Regressed on Sociodemographic and Individual-level Characteristics: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

	Model 2: Discrimination	**Model 3: Past-Year Racism**	**Model 4: Adult Sexual Trauma**
	OR(CI)	*OR(CI)*	*OR(CI)*
Sociodemographics/Individual-Level Characteristics			
Age			
19-29 (Ref.)	--	--	--
30-39	1.32 (0.63-2.76)	1.59 (0.75-3.36)	0.77 (0.33-1.76)
40-49	0.92 (0.48-1.75)	1.29 (0.67-2.47)	0.49 (0.23-1.04)
50 and above	0.89 (0.44-1.78)	1.61 (0.80-3.25)	0.68 (0.31-1.49)
Educational Attainment			
Less than high school through high school (Ref.)	--	--	--
Associates degree or higher	0.65 (0.41-1.05)	0.91 (0.57-1.45)	1.17 (0.69-1.97)
Housing			
No Housing Insecurity (Ref.)	--	--	--
Housing Insecurity	1.05 (0.69-1.60)	1.16 (0.76-1.78)	1.03 (0.64-1.68)
Lifetime Incarceration			
Never incarcerated (Ref.)	--	--	--
Ever incarcerated	0.66 (0.40-1.10)	0.75 (0.45-1.25)	1.20 (0.67-2.17)
Childhood Sexual Abuse			
No childhood sexual abuse (Ref.)	--	--	--
Childhood sexual abuse	1.50 (1.00-2.25	1.23 (0.82-1.84)	4.39*** (2.59-7.42)
HIV Status			
HIV - negative (Ref.)	--	--	--
HIV - positive	0.72 (0.46-1.11)	0.45*** (0.29-0.70)	1.67 (1.00-2.78)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	1.49 (0.76-2.95)	0.63 (0.32-1.23)	1.31 (0.59-2.90)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Table 5-3

Psychological Distress Regressed on Stressors, Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

	Psychological Distress			
	Model 5	**Model 6**	**Model 7**	**Model 8**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Stressors				
Discrimination				
Low discrimination (Ref.)	--	--	--	--
High discrimination	4.43*** (2.52-7.78)	--	--	3.28*** (1.74-6.19)
Past-year Racism-Related Stress				
None or a little (Ref.)	--	--	--	--
Some to Extremely	--	2.53*** (1.48-4.34)	--	1.52 (0.82-2.83)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	--	--	2.51*** (1.50-4.22)	2.11** (1.22-3.63)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Table 5-4

Psychological Distress Regressed on Sociodemographic and Individual-level Characteristics, Controlling for Stressors: Results of Multivariable Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

Psychological Distress					
	Model 9:	**Model 10:**	**Model 11:**	**Model 12:**	**Model 13**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographic/ Individual-Level Characteristics					
Age					
19-29 (Ref.)	--	--	--	--	--
30-39	0.75 (0.32-1.77)	0.69 (0.28-1.68)	0.69 (0.29-1.67)	0.78 (0.32-1.86)	0.69 (0.28-1.68)
40-49	0.58 (0.27-1.24)	0.58 (0.26-1.25)	0.55 (0.26-1.19)	0.65 (0.30-1.39)	0.59 (0.27-1.30)
50 and above	0.48 (0.21-1.11)	0.48 (0.20-1.13)	0.43 (0.19-1.01)	0.50 (0.22-1.17)	0.46 (0.19-1.10)
Educational Attainment					
Less than high school through high school (Ref.)	--	--	--	--	--
Associates degree or higher	0.98 (0.54-1.77)	1.10 (0.59-2.02)	1.00 (0.54-1.81)	0.96 (0.52-1.74)	1.09 (0.58-2.04)
Housing					
No Housing Insecurity (Ref.)	--	--	--	--	--
Housing Insecurity	1.14 (0.67-1.95)	1.13 (0.65-1.98)	1.10 (0.64-1.89)	1.13 (0.66-1.94)	1.13 (0.64-1.98)
Lifetime Incarceration					
Never incarcerated (Ref.)	--	--	--	--	--
Ever incarcerated	0.49* (0.27-0.89)	0.54* (0.29-0.99)	0.51* (0.28-0.94)	0.47** (0.26-0.86)	0.52* (0.28-0.96)
Childhood Sexual Abuse					
No childhood sexual abuse (Ref.)	--	--	--	--	--
Childhood sexual abuse	1.88* (1.09-3.23)	1.64 (0.94-2.86)	1.84* (1.06-3.18)	1.46 (0.83-2.59)	1.33 (0.74-2.40)
HIV Status					
HIV - negative (Ref.)	--	--	--	--	--
HIV - positive	0.88 (0.50-1.54)	0.98 (0.55-1.76)	1.03 (0.58-1.84)	0.80 (0.45-1.42)	0.94 (0.51-1.72)
Indeterminate/Inconclusive/ Never Tested/Refused to Answer/Don't Know	0.96 (0.41-2.24)	0.81 (0.34-1.96)	1.03 (0.43-2.43)	0.89 (0.37-2.12)	0.80 (0.32-1.98)

Psychological Distress					
	Model 9:	**Model 10:**	**Model 11:**	**Model 12:**	**Model 13**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*	*OR(CI)*
Stressors					
Discrimination					
Low discrimination (Ref.)	--	--	--	--	--
High discrimination	--	4.18*** (2.34-7.45)	--	--	3.18*** (1.66-6.08)
Past-year Racism-Related Stress					
None or a little (Ref.)	--	--	--	--	--
Some to Extremely	--	--	2.51*** (1.44-4.40)	--	1.55 (0.82-2.93)
Adult Sexual Trauma					
No (Ref.)	--	--	--	--	--
Yes	--	--	--	2.38** (1.36-4.18)	2.08* (1.16-3.74)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Study 2: Health and sexual risks associated with psychological distress among Black MSMW

What sociodemographic and individual-level characteristics and social stressors are associated with health and sexual risks among Black MSMW?

Table 6-1

Health risks Regressed on Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

	Model 1: Health Care Access	**Model 2: Alcohol Binging**	**Model 3: Drug Use**	**Model 4: MSM-related Health Care Avoidance**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographic/Individual-Level Characteristics				
Age				
19-29 (Ref.)	--	--	--	--
30-39	2.41* (1.08-5.35)	0.59 (0.28-1.27)	0.64 (0.28-1.45)	0.60 (0.19-1.91)
40-49	1.85 (0.92-3.75)	0.51 (0.26-1.00)	1.16 (0.56-2.55)	0.69 (0.26-1.86)
50 and above	1.24 (0.58-2.65)	0.47* (0.23-0.98)	1.17 (0.54-2.55)	0.39 (0.13-1.20)
Educational Attainment				
Less than high school through high school (Ref.)	--	--	--	--
Associates degree or higher	0.90 (0.55-1.47)	0.88 (0.53-1.44)	0.89 (0.54-1.49)	0.34* (0.13-0.94)
Housing				
No Housing Insecurity (Ref.)	--	--	--	--
Housing Insecurity	0.96 (0.62-1.49)	0.84 (0.54-1.32)	1.54 (0.95-2.50)	0.93 (0.46-1.88)
Lifetime Incarceration				
Never incarcerated (Ref.)	--	--	--	--
Ever incarcerated	0.77 (0.45-1.31)	1.39 (0.80-2.40)	2.49*** (1.45-4.27)	1.08 (0.46-2.56)
Childhood Sexual Abuse				
No childhood sexual abuse (Ref.)	--	--	--	--
Childhood sexual abuse	0.87 (0.56-1.36)	1.36 (0.87-2.13)	1.39 (0.87-2.23)	2.92** (1.29-6.65)

	Model 1: Health Care Access	Model 2: Alcohol Binging	Model 3: Drug Use	Model 4: MSM-related Health Care Avoidance
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographic/Individual-Level Characteristics continued				
HIV Status				
HIV - negative (Ref.)	--	--	--	--
HIV - positive	2.11*** (1.33-3.34)	0.62* (0.39-0.99)	0.49** (0.29-0.81)	0.57 (0.25-1.26)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	0.78 (0.37-1.66)	0.74 (0.36-1.50)	0.49 (0.23-1.04)	2.38 (0.93-6.09)
Stressors				
Discrimination				
Low discrimination (Ref.)	--	--	--	--
High discrimination	0.58* (0.36-0.95)	1.43 (0.88-2.32)	1.97** (1.16-3.36)	1.42 (0.62-3.24)
Past-year Racism-Related Stress				
None or a little (Ref.)	--	--	--	--
Some to Extremely	0.74 (0.46-1.19)	1.48 (0.91-2.42)	0.46** (0.27-0.78)	3.17** (1.31-7.68)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	1.16 (0.71-1.92)	1.22 (0.74-1.99)	0.86 (0.51-1.48)	1.68 (0.81-3.47)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Table 6-2

Sexual risks regressed on sociodemographic and individual-level characteristics and stressors: Results of multivariable logistic regression from the MAALES Intervention Study, 2007-2010 (n = 403)

	Model 5: Sexual Risk Behavior	**Model 6: Sexual Compulsivity**	**Model 7: Gender Role Conflict**	**Model 8: Privacy Regarding Sex with Men**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographics/Individual-Level Characteristics				
Age				
19-29 (Ref.)	--	--	--	--
30-39	1.10 (0.49-2.46)	0.78 (0.36-1.70)	0.38* (0.17-0.83)	1.26 (0.58-2.72)
40-49	1.39 (0.68-2.81)	0.61 (0.31-1.20)	0.53 (0.27-1.06)	1.18 (0.61-2.32)
50 and above	1.14 (0.54-2.43)	0.81 (0.39-1.68)	0.44* (0.21-0.92)	1.68 (0.81-3.48)
Educational Attainment				
Less than high school through high school (Ref.)	--	--	--	--
Associates degree or higher	0.86 (0.52-1.43)	0.78 (0.48-1.27)	0.75 (0.46-1.20)	0.74 (0.46-1.20)
Housing				
No Housing Insecurity (Ref.)	--	--	--	--
Housing Insecurity	0.98 (0.61-1.55)	1.70* (1.10-2.62)	1.51 (0.98-2.23)	0.97 (0.63-1.51)
Lifetime Incarceration				
Never incarcerated (Ref.)	--	--	--	--
Ever incarcerated	2.17** (1.27-3.70)	1.59 (0.93-2.72)	1.27 (0.75-2.14)	1.02 (0.60-1.73)
Childhood Sexual Abuse				
No childhood sexual abuse (Ref.)	--	--	--	--
Childhood sexual abuse	1.38 (0.87-2.19)	1.35 (0.87-2.10)	0.78 (0.51-1.20)	0.68 (0.44-1.06)
HIV Status				
HIV - negative (Ref.)	--	--	--	--
HIV - positive	0.30*** (0.18-0.49)	0.68 (0.43-1.07)	0.78 (0.50-1.23)	0.38*** (0.24-0.61)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	0.63 (0.30-1.36)	1.37 (0.87-2.10)	1.06 (0.53-2.15)	0.61 (0.30-1.22)

	Model 5: Sexual Risk Behavior	**Model 6: Sexual Compulsivity**	**Model 7: Gender Role Conflict**	**Model 8: Privacy Regarding Sex with Men**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Stressors				
Discrimination				
Low discrimination (Ref.)	--	--	--	--
High discrimination	1.35 (0.81-2.26)	1.62 (1.00-2.61)	1.95** (1.21-3.14)	1.36 (0.83-1.51)
Past-year Racism-Related Stress				
None or a little (Ref.)	--	--	--	--
Some to Extremely	1.25 (0.76-2.05)	1.39 (0.86-2.24)	1.23 (0.77-1.97)	1.36 (0.84-2.19)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	1.11 (0.65-1.87)	1.49 (0.91-2.44)	0.97 (0.60-2.54)	0.95 (0.58-1.55)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Are health and sexual risks associated with greater odds of psychological distress among Black MSMW?

Table 6-3

Psychological Distress Regressed on Health and Sexual Risks, Accounting for Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

Psychological Distress				
	Model 9	**Model 10**	**Model 11**	**Model 12**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Health Risk Factors				
Health Care Access				
Low health care access (Ref.)	--	--	--	--
High health care access	0.60 (0.34-1.06)	--	0.70 (0.39-1.27)	0.77 (0.40-1.48)
Alcohol Binging				
No Binging (Ref.)	--	--	--	--
Binging	1.97* (1.13-3.44)	--	1.78 (1.00-3.16)	1.50 (0.81-2.79)
Drug Use				
Never used drugs to get high (Ref.)	--	--	--	--
No drug use last 90 days	0.78 (0.38-1.60)	--	0.73 (0.35-1.52)	0.98 (0.44-2.21)
Drug use last 90 days	1.25 (0.65-2.42)	--	1.28 (0.65-2.52)	1.38 (0.66-2.88)
MSM-related Health Care Avoidance				
Did not avoid seeking health care (Ref.)	--	--	--	--
Avoided seeking health care	3.10** (1.53-6.28)	--	2.71** (1.31-5.60)	2.36* (1.05-5.29)
Sexual Risk Factors				
Sexual Risk Behavior				
No sexual risk behavior (Ref.)	--	--	--	--
One of more sexual risk behaviors****	--	1.10 (0.62-1.95)	0.80 (0.43-1.49)	0.97 (0.49-1.92)
Sexual Compulsivity				
Low sexual compulsivity (Ref.)	--	--	--	--
High sexual compulsivity	--	2.35** (1.38-4.00)	1.79* (1.01-3.18)	1.65 (0.89-3.06)
Gender Role Conflict				
Low gender role conflict (Ref.)	--	--		
High gender role conflict	--	1.20 (0.70-2.07)	1.13 (0.64-1.99)	0.97 (0.53-1.79)
Privacy Regarding Sex with Men				
Not at all to a little bit (Ref.)	--	--	--	
Somewhat to very important	--	1.58 (0.90-2.78)	1.53 (0.85-2.76)	1.72 (0.92-3.21)

Psychological Distress				
	Model 9	**Model 10**	**Model 11**	**Model 12**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*
Stressors				
Discrimination				
Low discrimination (Ref.)	--	--	--	--
High discrimination	--	--	--	2.67** (1.34-5.31)
Past-year Racism-Related Stress				
None or a little (Ref.)	--	--	--	--
Some to Extremely	--	--	--	1.26 (0.63-2.49)
Adult Sexual Trauma				
No (Ref.)	--	--	--	--
Yes	--	--	--	1.98* (1.06-3.70)
Sociodemographic/Individual-Level Characteristics				
Age				
19-29 (Ref.)	--	--	--	--
30-39	--	--	--	0.84 (0.32-2.19)
40-49	--	--	--	0.73 (0.31-1.69)
50 and above	--	--	--	0.55 (0.22-1.39)
Educational Attainment				
Less than high school through high school (Ref.)	--	--	--	--
Associates degree or higher	--	--	--	1.22 (0.63-2.35)
Housing				
No Housing Insecurity (Ref.)	--	--	--	--
Housing Insecurity	--	--	--	1.10 (0.60-2.00)
Lifetime Incarceration				
Never incarcerated (Ref.)	--	--	--	--
Ever incarcerated	--	--	--	0.43** (0.22-0.84)
Childhood Sexual Abuse				
No childhood sexual abuse (Ref.)	--	--	--	--
Childhood sexual abuse	--	--	--	1.16 (0.62-2.17)
HIV Status				
HIV - negative (Ref.)	--	--	--	--
HIV - positive	--	--	--	1.24 (0.64-2.39)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	--	--	--	0.68 (0.25-1.84)

*****p < 0.05
**p < 0.01
*** p < 0.001
****Sexual risk behaviors include using drugs to get high during sex, exchange sex, and non-disclosure of sex with men to a female partner
Ref. = reference category

Study 3: Psychosocial resources associated with psychological distress among Black MSMW

What sociodemographic and individual-level characteristics and social stressors are associated with psychosocial resources among Black MSMW?

Table 7-1

Psychosocial Resources Regressed on Sociodemographic and Individual-level Characteristics and Stressors: Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

	Model 1: Social Support	**Model 2: Private Regard for Race**	**Model 3: Self-Esteem**
	OR(CI)	*OR(CI)*	*OR(CI)*
Stressors			
Discrimination			
Low discrimination (Ref.)	--	--	--
High discrimination	0.76 (0.47-1.22)	0.82 (0.51-1.31)	0.65 (0.41-1.05)
Past-year Racism-Related Stress			
None or a little (Ref.)	--	--	--
Some to Extremely	0.67 (0.42-1.08)	1.13 (0.71-1.80)	0.77 (0.48-1.24)
Adult Sexual Trauma			
No (Ref.)	--	--	--
Yes	0.67 (0.46-1.22)	0.88 (0.54-1.43)	0.75 (0.46-1.24)
Sociodemographics/Individual-Level Characteristics			
Age			
19-29 (Ref.)	--	--	--
30-39	2.09 (0.97-4.49)	1.12 (0.52-2.41)	1.30 (0.60-2.81)
40-49	1.51 (0.77-2.94)	1.56 (0.80-3.03)	1.14 (0.58-2.23)
50 and above	0.92 (0.45-1.88)	1.43 (0.70-2.90)	1.28 (0.62-2.64)
Educational Attainment			
Less than high school through high school (Ref.)	--	--	--
Associates degree or higher	0.98 (0.61-1.58)	1.59 (1.00-2.54)	2.07** (1.29-3.34)
Housing			
No Housing Insecurity (Ref.)	--	--	--
Housing Insecurity	0.55** (0.36-0.85)	1.07 (0.70-1.64)	0.77 (0.50-1.19)
Lifetime Incarceration			
Never incarcerated (Ref.)	--	--	--
Ever incarcerated	0.77 (0.46-1.29)	0.90 (0.54-1.51)	0.83 (0.49-1.41)

	Model 1: Social Support	Model 2: Private Regard for Race	Model 3: Self-Esteem
	OR(CI)	*OR(CI)*	*OR(CI)*
Sociodemographics/Individual-Level Characteristics continued			
Childhood Sexual Abuse			
No childhood sexual abuse (Ref.)	--	--	--
Childhood sexual abuse	0.84 (0.55-1.30)	0.85 (0.56-1.30)	0.95 (0.62-1.46)
HIV Status			
HIV - negative (Ref.)	--	--	--
HIV - positive	1.06 (0.68-1.67)	1.26 (0.81-1.96)	1.08 (0.69-1.69)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	0.49 (0.24-1.00)	0.56 (0.27-1.15)	0.46* (0.22-0.97)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

Are psychosocial resources associated with lower odds of psychological distress among Black MSMW?

Table 7-2

Psychological Distress Regressed on Psychosocial Resources, Accounting for Sociodemographic and Individual-level Characteristics and S Results of Multivariable Logistic Regression from the MAALES Intervention Study, 2007-2010 (n = 403)

Psychological Distress					
	Model 4	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*	*OR(CI)*
Psychosocial Resources					
Social Support					
Los social support (Ref.)	--	--	--	--	--
High social support	0.42*** (0.25-0.70)	--	--	0.45** (0.26-0.76)	0.47** (0.26-0.84)
Racial Pride					
Low racial pride (Ref.)	--	--	--	--	--
High racial pride	--	0.77 (0.47-1.28)	--	1.06 (0.59-1.87)	1.13 (0.60-2.14)
Self-esteem					
Low self-esteem (Ref.)	--	--	--	--	--
High self-esteem	--	--	0.56* (0.33-0.93)	0.62 (0.34-1.11)	0.72 (0.38-1.40)
Stressors					
Discrimination					
Low discrimination (Ref.)	--	--	--	--	--
High discrimination	--	--	--	--	2.97*** (1.55-5.70)
Past-year Racism-Related Stress					
None or a little (Ref.)	--	--	--	--	--
Some to Extremely	--	--	--	--	1.47 (0.77-2.79)
Adult Sexual Trauma					
No (Ref.)	--	--	--	--	--
Yes	--	--	--	--	2.05* (1.13-3.72)
Sociodemographics/Individual-Level Characteristics					
Age					
19-29 (Ref.)	--	--	--	--	--
30-39	--	--	--	--	0.76 (0.31-1.89)
40-49	--	--	--	--	0.63 (0.28-1.40)
50 and above	--	--	--	--	0.44 (0.18-1.06)

Psychological Distress					
	Model 4	**Model 5**	**Model 6**	**Model 7**	**Model 8**
	OR(CI)	*OR(CI)*	*OR(CI)*	*OR(CI)*	*OR(CI)*
Sociodemographic/Individual-Level Characteristics continued					
Educational Attainment					
Less than high school through high school (Ref.)	--	--	--	--	--
Associates degree or higher	--	--	--	--	1.15 (0.60-2.19)
Housing					
No Housing Insecurity (Ref.)	--	--	--	--	--
Housing Insecurity	--	--	--	--	1.01 (0.57-1.80)
Lifetime Incarceration					
Never incarcerated (Ref.)	--	--	--	--	--
Ever incarcerated	--	--	--	--	0.47* (0.25-0.90)
Childhood Sexual Abuse					
No childhood sexual abuse (Ref.)	--	--	--	--	--
Childhood sexual abuse	--	--	--	--	1.25 (0.69-2.28)
HIV Status					
HIV - negative (Ref.)	--	--	--	--	--
HIV - positive	--	--	--	--	0.91 (0.49-1.67)
Indeterminate/Inconclusive/Never Tested/Refused to Answer/Don't Know	--	--	--	--	0.67 (0.26-1.69)

*****p < 0.05
**p < 0.01
*** p < 0.001
Ref. = reference category

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