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SEXUAL VICTIMIZATION, MENTAL HEALTH, AND PROTECTIVE FACTORS AMONG WOMEN WITH MULTIPLE MARGINALIZED STATUSES

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DISSERTATION

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DEDICATION

This work is dedicated to first-generation students of color questioning their presence in academia. You belong.

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ABSTRACT

Intersectionality (Crenshaw, 1989) and minority stress (Meyer, 2003) frameworks were used as theoretical foundations to examine associations among sexual minority status (e.g., lesbian and bisexual) and race/ethnicity (e.g., White, Black, Latinx), adult sexual victimization and revictimization, mental health symptoms (i.e., depression, anxiety, posttraumatic stress disorder symptoms), and protective factors (i.e., religiosity, spirituality, social support). Participants were 673 women who identified as lesbian/mostly lesbian or bisexual who completed wave 3 of the Chicago Health and Life Experiences of Women (CHLEW) survey. Participants were racially and ethnically diverse, with slightly more women identifying as White (37.4%, n = 261), than Black (36.0%, n = 250). About one quarter of the sample identified as Latinx (23.2%, n = 162). More than one-third (38%) of the participants reported having experienced sexual assault (i.e., rape, other kind of sexual assault) after the age of 14. Results revealed that level of

protective factors varied across race/ethnicity by sexual identity groups (i.e., Black lesbian, Black bisexual, Latinx lesbian, Latinx bisexual, White lesbian, White bisexual) yet mental health symptoms did not differ across groups. Black lesbian women reported the highest level of protective factors while White Lesbian women reported the lowest level of protective factors. There was no significant interaction between race/ethnicity by sexual identity groups and adult sexual victimization in the relationship of protective factors and mental health symptoms. There also were no significant interactions between race/ethnicity by sexual identity groups and adult sexual victimization in the associations to levels of social support. However, White lesbian women had higher friend, significant other, and total social support relative to other groups (Black lesbian, Black bisexual, Latinx lesbian, Latinx bisexual, White bisexual). It may be profitable to follow these women across time and conduct a trajectory analyses to further understand the temporal order of protective factors, mental health symptoms and sexual victimization experiences.

Index:

SMW = sexual minority women; **SMWOC** = sexual minority women of color; **LGB** = lesbian, gay, bisexual; **CSA** = child sexual abuse; **PTSD** = posttraumatic stress disorder; **CHLEW** = Chicago Health and Life Experiences of Women; **Latinx** = Person that identifies as Latina.

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Chapter 1

Introduction

Differences in mental health symptoms exist among heterosexual and sexual minority women (SMW; e.g., lesbian and bisexual). In a seminal report describing evidence for the minority stress model, Meyer (2003) presented data suggesting that the odds of lifetime mood and anxiety disorders were twice as high for lesbian, gay, and bisexual (LGB) women and men as they were for heterosexual women and men. Similarly, Bostwick et al. (2010) examined dimensions of sexual orientation (identity, attraction, and behavior) and the prevalence of mood and anxiety disorders among heterosexual and sexual minority men and women and found that lesbian and bisexual sexual identities were associated with higher rates of lifetime mood and anxiety disorders among women. Specifically, 58.7% of bisexual women reported a lifetime history of a mood disorder, relative to 44.4% of lesbian women, and 30.5% of heterosexual women. This pattern was similar for past-year prevalence rates; bisexual women reported the highest rates of past-year mood and anxiety disorders relative to lesbian and heterosexual women. Moreover, bisexual women were twice as likely to report any lifetime or past-year mood or anxiety disorder relative to heterosexual women, while lesbian women were more likely to report any lifetime mood disorder or any past-year anxiety disorder relative to heterosexual women.

Not only do significant differences in anxiety and mood disorders exist among SMW and heterosexual women but posttraumatic stress disorder (PTSD) is also higher among SMW relative to heterosexual women (Roberts et al., 2012). Roberts et al. (2012) found that a probable PTSD diagnosis was significantly higher among SMW than their

heterosexual counterparts. While heterosexual women had a 6.6% prevalence rate of PTSD, 26.6% of bisexual women and 18.6% of lesbian women reported prevalence rates of PTSD.

Among SMW, there are additional differences in mental health symptoms among lesbian and bisexual women. For example, bisexual women reported higher levels of perceived stress, self-harm, binge drinking, and use of illicit drugs relative to lesbian women (Hughes, Szalacha, et al., 2010). Consistent with this finding, Kerr et al. (2013) found that bisexual women reported more anxiety (i.e., overwhelming anxiety in the past 12 months), anger (i.e., overwhelming anger in the past 12 months), symptoms of depression (e.g., hopelessness, feeling sad), and suicide attempts compared to lesbian women. These differences among heterosexual and SMW, as well as among SMW regarding mental health symptoms point to clear mental health disparities among SMW.

The Centers for Disease Control and Prevention (CDC) divides mental health disparities into three categories: (1) disparities between the attention given to mental health and attention given to other public health issues of comparable magnitude; (2) disparities between the health of persons with mental illness as compared with that of those without; and (3) disparities between populations with respect to mental health and the quality, accessibility, and outcomes of mental health care. Additionally, social determinants, such as employment, income, and social context (e.g., the context in which people live, learn, work, and play) can influence mental health and access to care can further impact mental health disparities (CDC, 2013). Public health initiatives, such as Healthy People 2020 (US Department of Health & Human Services, 2016), have called

for the reduction of sexual identity-related disparities across a range of health and behavioral outcomes in SMW (US Department of Health & Human Services, 2016).

In addition to higher rates of mental health symptoms, research suggests that SMW are more likely to experience traumatic events (e.g., sexual assault) compared to heterosexual women, which might contribute to the mental health disparities evidenced between SMW and heterosexual women (Heidt et al., 2005; Hughes, Szalacha, et al., 2010; Jorm et al., 2002). Lesbian and bisexual women who report experiencing sexual victimization also report more mental health symptoms relative to lesbian and bisexual women who do not report victimization (Heidt et al., 2005). Heidt et al. (2005) found that lesbian and bisexual women who experienced any type of sexual victimization (i.e., child sexual abuse, adult sexual victimization, being sexually victimized more than once) reported significantly more depression, PTSD symptoms, and general distress compared to lesbian and bisexual women who did not report victimization. In other words, experiencing sexual victimization seems to be associated with even larger differences in mental health symptoms reported by SMW.

Theoretical Framework for Mental Health Disparities

Minority stress, or chronic stress due to the stigmatization of having a minority identity, has been used as a theoretical framework to understand the disproportionately higher rates of mental and physical health disparities among sexual minorities (Cohen & Byers, 2015; Hatzenbuehler, 2009; Herek et al., 2009; Heron et al., 2018; Meyer, 2003; Sutter et al., 2018). Applying the minority stress framework to lesbian and bisexual women's health suggests that SMW are at greater risk for mental health problems due to experiences related to marginalization and stigmatization of their sexual minority identity

(Hatzenbuehler, 2009; Heron et al., 2018; Nadal et al., 2011). For example, SMW may experience verbal/physical attacks (Heron et al., 2018; Swim et al., 2009), microaggressions [subtle forms of discrimination towards oppressed groups (Nadal et al., 2011)] (Heron et al., 2018), and expectations of having to "come out" repeatedly to different people in their social circle due to living in a heteronormative society (Heron et al., 2018; Meyer, 2003; Nadal et al., 2011; Nadal et al., 2016; Swim et al., 2009). The ongoing stress from anticipating or experiencing actual discrimination can result in chronic minority stress that can affect SMW's physical and mental health (Hatzenbuehler, 2009).

Minority Stress and Violence among Sexual Minorities

Minority stress has demonstrated effects on mental health (Heron et al., 2018; Meyer, 2003; Nadal et al., 2011; Nadal et al., 2016; Swim et al., 2009). For example, research posits that sexual minorities may be more likely to experience violence specific to their sexual identity (i.e., verbal abuse, verbal/physical threats, physical attacks, and sexual assault) (D'Augelli & Grossman, 2001). Edwards et al. (2015) examined incidence rates of sexual assault, physical dating violence, and unwanted pursuit (e.g., stalking) among sexual minority and heterosexual college students over a six-month period. Sexual minority students reported higher rates of interpersonal violence across all three types of victimization. Sexual minority students (30.3%) reported higher rates of physical dating violence relative to 18.4% of heterosexual students, 24.3% of sexual minority students reported sexual assault relative to 11.0% of heterosexual students, and 53.1% of sexual minority students reported unwanted pursuit relative to 36.0% of heterosexual students. Edwards et al. (2015) also found that female sexual minority

college students reported significantly higher rates of physical domestic violence relative to female heterosexual students.

Findings of higher rates of violence among sexual minorities relative to their heterosexual counterparts reported by Edwards et al. (2015) are not unique to college populations. Balsam et al. (2005) examined rates of lifetime victimization in a sample of lesbian, bisexual, and heterosexual siblings. Consistent with Edwards et al. (2015), they found that lesbian, gay, and bisexual participants reported more childhood abuse and more sexual assault experiences in adulthood relative to their heterosexual siblings. Hughes, Szalacha, Johnson, Kinnison, Wilsnack, and Cho (2010) also found that SMW reported more CSA and sexual revictimization than exclusively heterosexual women. These findings have significant implications for sexual minorities given their higher rates of interpersonal violence, as being the victim of violence is associated with the risk of experiencing negative mental health symptoms (e.g., depression, anxiety, posttraumatic stress disorder, alcohol abuse) (Acierno et al., 2002; Faravelli et al., 2004; Resnick et al., 2012).

Epidemiology of Sexual Victimization among Sexual Minority Women

Sexual victimization is a gendered problem given that women report higher rates of sexual victimization relative to men (Black et al., 2011). Among women, sexual victimization seems to occur at higher rates among SMW relative to heterosexual women. Findings from several studies indicate that SMW report rates of child sexual abuse exceeding those of heterosexual women (Balsam et al., 2011; Heidt et al., 2005; Hughes et al., 2001; Hughes, McCabe, et al., 2010; Wilsnack et al., 2012). Less is known about their rates of adult sexual victimization; however, The U.S. National Intimate

Partner and Sexual Violence Survey (NISVS), conducted in 2010, found that 13.1% of lesbian women and 46.1% of bisexual women, compared with 17.4% of heterosexual women reported that they had been raped (i.e., forced penetration). Moreover, 46.6% of lesbian women, 74.9% of bisexual women, and 43.3% of heterosexual women reported other types of sexual violence (e.g., sexual coercion, unwanted sexual contact, and non-contact unwanted sexual experiences) (Walters et al., 2010). The NISVS findings are consistent with findings from previous work. Heidt et al. (2005), Hequembourg et al. (2013) and Szalacha et al. (2017) all found that bisexual women experienced higher rates of rape than either heterosexual or lesbian women, while both lesbian and bisexual women reported higher rates of sexual victimization (e.g., sexual violence) relative to heterosexual women.

Child Sexual Abuse and Revictimization

Researchers have demonstrated that child sexual abuse (CSA) disproportionately burdens SMW relative to heterosexual women (Balsam et al., 2011; Heidt et al., 2005; Hughes et al., 2001; Hughes, McCabe, et al., 2010; Wilsnack et al., 2012). For example, Wilsnack et al. (2012) found that CSA is more prevalent and more severe among lesbian women than among heterosexual women. Notably, more severe experiences of CSA (e.g., penetration, using threat or force) among SMW are associated with a higher likelihood of being revictimized in adulthood (Heidt et al., 2005).

Sexual revictimization is defined as being victimized during childhood (i.e., CSA) and then again in adolescence or adulthood (after the age of 14); alternatively, it can also include being victimized more than once during adolescence/adulthood (after the age of 14). Revictimization is not well understood; however, once women have been

victimized, either in childhood or emerging adulthood, their chances of being revictimized are higher relative to women who have never been victimized (Banyard et al., 2001; Claussen et al., 2005; Gidycz et al., 1993; Messman-Moore et al., 2000).

SMW have higher rates of sexual revictimization relative to their heterosexual counterparts (López & Yeater, 2018; Martin et al., 2011), and bisexual women are more likely to report revictimization than lesbian women (Heidt et al., 2005; Hequembourg et al., 2013). It is important to note that most perpetrators of sexual victimization are likely to be a male person/partner known to the victim (López & Yeater, 2018), which could explain the higher rates of victimization observed in bisexual women. In other words, bisexual women's higher risk for victimization might be partially accounted for by their higher likelihood of having male partners in adulthood relative to lesbian women (Heidt et al., 2005).

Sexual Victimization and Mental Health

Women who have been sexually victimized report negative mental health symptoms and consequences resulting from their sexual victimization, including depression (Acierno et al., 2002), drug and alcohol use (Resnick et al., 2012), posttraumatic stress disorder (PTSD) (Littleton & Ullman, 2013), and sexual dysfunction (Faravelli et al., 2004). Research also indicates that any type of victimization in childhood is associated with poorer mental health outcomes in adulthood among heterosexual and SMW (Balsam et al., 2011). Balsam et al. (2011) examined differences in mental health symptoms in LGB women and men and heterosexual women who had experienced CSA only, adult sexual victimization only, and revictimization. Participants who reported revictimization had higher levels of mental health symptoms (e.g.,

psychological distress, suicidality, alcohol use, and self-harm behaviors) relative to participants who only reported one type of victimization or to participants who did not report any victimization. Lesbian women in this study had higher rates of CSA and adult rape relative to heterosexual women and gay men. Lesbians' higher rates of sexual victimization in adulthood were associated with having experienced CSA.

Given the higher rates of CSA in SMW, it might be expected that SMW would report higher rates of mental health sequelae resulting from CSA. Coles et al. (2015) found that women who reported CSA were 1.4 times more likely to experience bodily pain, 1.3 times more likely to have poorer general health, and 1.4 times more likely to be depressed in the past three years compared to women who did not report CSA.

Like the association between CSA and mental health symptoms research has also found a positive association between adult sexual victimization and mental health symptoms. Morris and Balsam (2003) found that CSA and adult sexual victimization were significant in predicting current psychological distress (i.e., a variety of psychological symptoms) for lesbian and bisexual women. They also found that the more types of victimization a participant reported (i.e., CSA, adult sexual victimization, child physical abuse, adult physical abuse) the greater the participants' current psychological distress. Findings from this and other studies (e.g., Hughes et al., 2014) suggest that there is a strong association between adult sexual victimization and psychological distress, and that there may be a dose-response relationship between victimization and psychological distress; the more victimization women experience, the higher their psychological distress. Again, given the higher rates of adult sexual victimization and revictimization in SMW, we might expect higher rates of mental health sequelae.

Possible Explanations for Increased Risk of Sexual Victimization for Sexual Minority Women

Sigurvinsdottir and Ullman (2016) posit two possible explanations for the disproportionately high rates of sexual victimization and revictimization experienced by SMW. These include: (1) being at risk for homophobic harassment and violence (e.g., sexual victimization) because of their sexual identity; and (2) being part of a sexual minority group associated with stressors (i.e., discrimination and systematic oppression) above and beyond those experienced by people in the general population. These stressors contribute to psychological distress and can lead to greater engagement in risk behaviors. Such factors, in turn, may predispose SMW to sexual victimization.

Potential Protective Factors

Although SMW experience sexual victimization at very high rates, they are also hypothesized to have protective factors that play a role in their post victimization recoveries (Balsam et al., 2015). Protective factors are positively associated with resilience and posttraumatic growth and can help mitigate the effects of trauma. Examples of protective factors include religiosity, spirituality, and social support (i.e., friends, family, and significant other). In a meta-analysis, Ano and Vasconcelles (2005) reported an association between positive religious coping (e.g., forgiveness, religious direction, active religious surrender, spiritual connection) and positive psychological adjustment (e.g., spiritual growth, acceptance, resilience). Religiosity has also been associated with higher levels of initial positive change following a sexual victimization experience (Frazier et al., 2004). Schaefer et al. (2018) examined protective factors (e.g., social support from friends and family, optimism, positive and negative religious coping)

associated with resilience in college students who experienced physical violence and/or sexual abuse during childhood and found an association between higher resilience and more family support, optimism, and positive religious coping (e.g., looking to God for support).

In addition to religiosity and spirituality, social support systems serve as a protective factor against the effects of trauma or stressful life events (Carlson & Dalenberg, 2000). Having greater positive social support strengthens the victim's ability to cope with sexual assault and report more initial positive life changes (Frazier et al., 2004) which leads to better post-victimization recoveries. Social support systems can also serve as moderators of the negative impact of sexual assault both in childhood and adulthood (Bryant-Davis et al., 2012; Carlson & Dalenberg, 2000; Smith et al., 2011). Race/ethnicity has the potential to influence the way in which people cope (e.g., turning to religion or spirituality) or seek social support (Ahrens, Abeling, et al., 2010). For example, in a sample of sexual assault survivors who were religious, Black women were more likely to use positive (e.g., spirituality-based coping) and negative (e.g., religious avoidance) religious coping relative to White women (Ahrens, Abeling, et al., 2010). Thus, it presumably is important to consider all of women's identities when understanding protective factors that might be helpful in their post-victimization recoveries.

Intersectionality Framework

Dr. Kimberlé Crenshaw's (1989) intersectionality framework helps identify how various forms of social stratification (i.e., race/ethnicity, gender, social class, cultural background, religion, and disabilities) interlock to marginalize members of society. In

addition, according to Ransford (1980), people's intersecting identities create a "unique social space," and thus, all identities need simultaneous conceptualization. Women who are both sexual and racial/ethnic minorities can be conceptualized as multiply marginalized. For example, asking a Black lesbian woman which one of her marginalized identities causes the most discrimination in her daily life may be difficult for her to answer because her identities interact with one another, cannot be disentangled, and all create her unique life experiences (Bowleg, 2008).

Intersectionality (Race/Ethnicity and Gender) and Prevalence Rates of Sexual Victimization

Intersectionality framework is helpful for understanding similarities or differences in rates of victimization across race/ethnicity for women. Research comparing racial/ethnic (e.g., Black, Latinx) women's rates of adult sexual victimization to those of White women is mixed (Abbey et al., 2010; Bryant-Davis et al., 2009). Temple et al. (2007) found differences in victim and perpetrator relationships across race/ethnicity. Participants from this study were from Project HOW: Health Outcomes of Women, and the study recruited women from low-income areas of the Dallas metroplex. Temple's study used the Severity of Violence Against Women Scale (SVAWS; Marshall, 1992) which assesses for frequency of sexual aggressions committed by the women's current and past partners. Temple and colleagues (2007) found black women were more likely to experience sexual victimization by a current partner than Mexican-American women. White women did not differ from Black or Mexican American women with respect to sexual victimization rates by a current partner (Temple et al., 2007). However, White

women were more likely to report being sexually victimized by a non-partner relative to Black and Mexican American women (Temple et al., 2007).

Kilpatrick et al. (2007) found differences in rates of forcible rape across race/ethnicity. Black women had prevalence rates of forcible rape that were 50% higher than those of White and Latinx women. Kilpatrick et al. (2007) recruited two groups of women; the first group was recruited through a national telephone sample (using random-digit-dial) (n = 3,001) while the second group consisted of college women (n = 2,000) recruited from a representative national list (American Student List) of women attending four-year colleges and universities. The women were asked questions about rape, different types of forcible rape, drug or alcohol-facilitated rape, and incapacitated rape.

Rates of victimization are even more unclear in Hispanic/Latinx women populations. Using the National Intimate Partner and Sexual Violence Survey (NISVS; Black et al., 2011), a national representative survey that assessed experiences of sexual violence and intimate partner violence among adult women in the United States, Black et al. (2011) found the following rates of rape in women: 14.6% of Latinx women, 22.0% of Black women, and 18.8% of White women. Moreover, Black et al. (2011) found that 36.1% of Latinx women reported other types of sexual violence, while 41% of Black and 47.6% of White women reported sexual violence. Based on these findings, it appears that Latinx women experience rape and other sexual violence at lower rates than Black and White women. Sabina et al. (2015) posit that it is important to consider additional sociocultural factors when conducting work with Latinx women including immigration status and acculturation. Ahrens, Rios-Mandel, Isas, and del Carmen López (2010) suggested that cultural beliefs (e.g., male privilege, subordinate position of women,

familism, acculturation) have an impact on the way that Latinx women perceive sexual assault (and other interpersonal violence). They also hypothesized that differences in disclosure (i.e., willingness of Latinx women to disclose their sexual victimization experiences) drive rates of sexual assault in Latinx women (Ahrens, Rios-Mandel, et al., 2010).

Of note, methodological inconsistences plague the field of sexual assault, including sample differences, (e.g., SES, age, education), differences in sampling (i.e., probability, nonprobability), but most importantly, the definitions for sexual assault and child sexual abuse are inconsistent across studies (Campbell et al., 2011; DiLillo, 2001). Moreover, some studies consider severity of sexual assault while others only assess for rape. These differences make it difficult to draw comparisons across studies, and each study's findings should be interpreted with caution. Given the methodological limitations of the three research studies reviewed, it is unclear whether membership in a racial/ethnic minority group increases or decreases rates of sexual victimization. However, certain types of sexual violence (i.e., forcible rape) seem to occur at higher rates in Black women relative to White and Latinx women. This suggests possible differences in prevalence rates of sexual victimization across race/ethnicity.

Intersectionality (Race/Ethnicity and Sexual Identity), Sexual Victimization, and Mental Health

Intersectionality framework is also useful for understanding similarities and differences in rates of victimization in multiply marginalized women (i.e., racial/ethnic minorities, sexual identity, female). Due to due to the elevated rates of sexual victimization among lesbian and bisexual women and higher rates of forcible rape in

Black women, multiply marginalized women might be at increased risk of adult sexual victimization. Research on multiply marginalized women (i.e., SMW of color) and their experiences of adult sexual victimization and its associations to mental health is nascent. Balsam et al. (2015) surveyed SMW aged 18-25 and found the following rates of adult sexual victimization: 43.5% of African American (i.e., Black), 56% of Latina/Latinx, 60.5% of Asian American, and 51.4% Non-Hispanic White. Although the differences in rates of sexual assault in the Balsam et al. (2015) study were not statistically different from each other, they point to possible racial/ethnic differences in rates of sexual assault exist among SMW.

Sigurvinsdottir and Ullman (2016) conducted one of the few longitudinal studies on multiply marginalized women, comparing heterosexual and bisexual women across race/ethnicity and symptoms of PTSD. When comparing Black heterosexual women to non-Black heterosexual women, they found no significant differences in PTSD symptoms over time. However, Black bisexual women had consistently higher PTSD symptoms followed by non-Black bisexual women. The authors hypothesized that the additional stress from multiple marginalization could explain the heightened PTSD symptoms. Although the significant interaction between race/ethnicity and sexual identity cannot elucidate the mechanisms responsible for heightened rates of PTSD symptoms, it suggests that examining the intersection between race/ethnicity and sexual identity across groups is important for understanding women's mental health recovery from sexual assault.

Bostwick et al. (2019) used data from the Chicago Health and Life Experiences of Women Study (CHLEW) to examine group differences in lifetime depression and

lifetime victimization experiences (i.e., childhood and adult sexual victimization) among White, Latinx, and Black SMW. They found that although there were no statistically significant differences for lifetime depression by sexual identity, there were significant differences by sexual identity in comparisons across race (Bostwick et al., 2019). Specifically, Black bisexual and lesbian women were the least likely to meet criteria for lifetime depression, and White bisexual and lesbian women were the most likely to meet criteria for lifetime depression. Bostwick et al. (2019) also found that rates of childhood and adult victimization were higher among SMW of color relative to White SMW. For example, 90.2% of Black lesbian women and 84.0% of Latinx lesbian women reported any childhood victimization relative to 68.3% of White lesbian women. Together, these findings suggest that although Black and Latinx SMW report higher rates of lifetime victimization relative to White SMW, they report less or similar rates of depression.

Bostwick et al. (2019) suggest that future research should examine individual protective factors (e.g., social support, religiosity) that may moderate the relationship between the intersection of race/ethnicity, sexual identity, and mental health. They also suggest taking a more qualitative approach that factors in the severity of the victimization or the relationship of the perpetrator to the victim, as this might be differentially associated with the mental health outcomes of sexual minority women of color (SMWOC; i.e., Black lesbian and bisexual and Latinx lesbian and bisexual women). López and Yeater (2018) asked SMW and heterosexual women to describe their most distressing and/or most severe sexual victimization experience. Women were asked about situational (e.g., alcohol, drug use) and interpersonal (e.g., relationship to perpetrator) features of their experience. Although López and Yeater (2018) found no

differences in relationship to the perpetrator among SMW and heterosexual women, they highlighted that combining lesbian and bisexual women into one group (this was necessary due to small sample sizes and statistical power) possibly obscured potential differences. They suggested future research recruit more lesbian and bisexual women and examine them independently to look at these associations.

Balsam et al. (2015) examined rates of sexual victimization in a sample of young (18-25) racial/ethnic and SMW and found no significant differences in mental health symptoms and substance use (i.e., smoking and marijuana) among four racial/ethnic groups (e.g., White, Black, Latinx, Asian). However, they found statistically significant differences across racial and ethnic groups for socioeconomic variables, degree of "outness" to family, CSA and forcible rape. For example, they found that Black SMW had increased odds of being homeless relative to White SMW. Furthermore, Black SMW had increased odds of reporting CSA relative to their White SMW counterparts. White SMW reported more sexual identity-based discrimination (e.g., being threatened or harassed based on sexual identity) relative to Black SMW. When comparing the different racial/ethnic groups based on average PTSD symptoms to the White SMW reference group (M = 37.41; SD = 17.22), Latinx SMW reported the highest rates of PTSD symptoms (M = 41.18; SD = 18.43), followed by Black SMW (M = 37.86; SD = 17.20), and Asian American SMW (M = 28.91; SD = 12.76). Most women in the study reported subthreshold PTSD. Only Asian American SMW had significantly lower PTSD symptoms relative to White American SMW. These findings are the opposite of what one would expect from the minority stress framework, especially given the statistically significant differences in psychosocial stressors (e.g., rates of homelessness). Given the

high rates of sexual victimization in the Balsam et al. (2015) study, the authors expected that multiply marginalized women would have more negative mental health symptoms relative to their White counterparts. The authors suggested protective factors might be important to consider in multiply marginalized women with histories of sexual victimization.

Intersectionality (Race/Ethnicity and Sexual Identity) and Protective Factors

Women's utilization of protective factors following sexual victimization differ by race and ethnicity. For example, female Latinx sexual assault survivors who turn to religion to cope with assault reported higher levels of psychological well-being (Ahrens, Abeling, et al., 2010). On the other hand, Black sexual assault survivors reported the most positive changes from spirituality, followed by Latinx and White female sexual assault victims (Kennedy et al., 1998). One study found that Black women are more likely than Latinx and White women to turn to spirituality to cope with sexual assault (Ahrens, Abeling, et al., 2010). Additionally, spirituality appears to be more common than religiosity among SMW (Drabble et al., 2017; Halkitis et al., 2009; Sherry et al., 2010). A possible explanation for SMW's greater endorsement of spirituality than religiosity is that many traditional religions (e.g., Catholicism) are not accepting of same-sex relationships. Spirituality, with its inherent focus on finding meaning and connection, may be more appealing to many SMW. They may also favor spiritual traditions, such as Buddhism, that are more spirituality based and accepting of same-sex relationships and behaviors (Escher et al., 2018).

Although they did not assess sexual victimization, Drabble et al. (2017) found that Black SMW endorsed higher levels of both spirituality and religiosity relative to White

SMW. However, religiosity and spirituality did not have a protective effect in relation to hazardous drinking, drug use, or depression in Black SMW. This finding is consistent with previous findings in the literature regarding religiosity being less helpful for post-victimization mental health recovery in victimized Black women (El-Khoury et al., 2004) relative to White women (Ahrens, Abeling, et al., 2010). A possible explanation for this discrepancy is that Black women already report high levels of posttraumatic growth following a sexual victimization experience so there is not much room for improvement; thus, religious coping did not improve this growth, as they are experiencing it at very high levels relative to their White counterparts (Ahrens, Abeling, et al., 2010). Another possible explanation for religiosity being less helpful for Black SMW is that some religions or churches might not be supportive of same-sex relationships or behaviors, and this lack of support could create conflict in SMW's lives, including their familial support (Bryant-Davis et al., 2009).

Intersectionality, Sexual Victimization, Mental Health, and Protective Factors

Although research on SMW is growing, SMWOC require more attention to understand how their experiences and associated correlates of sexual violence differ from White SMW (Aranda et al., 2014; Balsam et al., 2015). LGB people of color's coping strategies have been interpreted as evidence of resilience in the face of stigma related to their non-heteronormative identity. For example, Balsam et al. (2015) found that young (18-25 years old) SMW of color who had experienced child sexual abuse reported equal or higher rates of depression and PTSD symptoms relative to White SMW. Moreover, they found that young SMWOC reported more socioeconomic stressors and discrimination, yet their mental health symptoms were not statistically different from

young White SMW. Black SMW were more likely to have children, more likely to be living with parents or relative, and have a history of being homeless compared to White SMW. Latinx SMW also had increased odds of living with parents or relatives compared to White SMW. Both Black and Latinx SMW were more likely to report not having insurance relative to White SMW. When mental health indicators are compared across heterosexual women of color and SMWOC, the latter often reports worse mental health symptoms (e.g., depression, PTSD) relative to their heterosexual counterparts (Jorm et al., 2002).

Findings suggest that although SMWOC report worse mental health symptoms than their heterosexual counterparts, they do not report more mental health symptoms than White SMW despite their higher rates of trauma. These findings suggest the importance of examining racial/ethnic differences in mental health in SMW as there might be protective factors in play among SMWOC; SMWOC are thought to be a group protected from the effects of the negative psychological sequelae of trauma exposure relative to White SMW with similar rates of trauma exposure. To date, research has not explored protective factors and their associations to mental health symptoms in SMWOC with histories of sexual victimization.

Limitations of Past Research

Several avenues remained unexplored with respect to women with multiple marginalized statuses and their experiences of sexual victimization. Researchers often have restricted inclusion in their studies to heterosexual participants. This has led to a dearth of knowledge on SMW's experiences of sexual assault as it excludes them from some studies. Since lesbian and bisexual women are a high-risk group for sexual

victimization (Hughes, McCabe, et al., 2010) and revictimization (Hughes, Szalacha, et al., 2010), additional work in this area is warranted (Long et al., 2007).

Additionally, research on women with multiple marginalized statuses, their experiences of sexual victimization, and potential protective factors is scarce. At present, there appears to be no published literature on women with multiple marginalized statuses that examines the interactions of race/ethnicity, sexual identity, and sexual victimization on both protective factors and mental health symptoms.

Current research suggests that the interaction between race/ethnicity and sexual identity is important for understanding sexual victimization and mental health in lesbian and bisexual women (Bostwick et al., 2019; Sigurvinsdottir & Ullman, 2016). This interaction is important because it will help us understand how intersecting identities are associated with mental health and protective factors among women who have been sexually victimized. Cole (2009) argues that intersectionality is not necessarily about a particular data analysis technique but rather, the concept of intersectionality entails a conceptual shift in the way that researchers can begin to understand social categories. In line with Cole (2009), Else-Quest and Hyde (2016) posit that testing for interactions is important when using the intersectionality framework as long as the researchers engage in an intersectional interpretation of power and inequality when disseminating the study findings. That is, placing the study findings in our larger sociopolitical context. The current study was the first to utilize multiple group structural equation modeling (MG-SEM) to make simultaneous estimates across groups to test for group differences in protective factors and mental health symptoms. This statistical method of analyzing data

from groups of women that incorporates their identities is consistent with the intersectionality framework and is supported theoretically (Bowleg, 2008).

Overview of the Current Study

Aim 1.

Compare mental health outcomes (i.e., depression, anxiety, PTSD) and protective factors (i.e., spirituality, religiosity, social support) in White SMW, Black SMW, and Latinx SMW (across the three racial/ethnic groups).

Aim 2.

Compare mental health outcomes and protective factors in White SMW, Black SMW, and Latinx SMW (across the three racial/ethnic groups) with histories of adult sexual victimization.

Aim 3.

Compare mental health outcomes and protective factors in SMW who are Black lesbian or bisexual, Latinx lesbian or bisexual, or White lesbian or bisexual (across the three racial/ethnic by sexual identity groups).

Aim 4.

Compare mental health outcomes and protective factors in women with histories of adult sexual victimization who are Black lesbian or bisexual, Latinx lesbian or bisexual, and White lesbian or bisexual (across the three racial/ethnic by sexual identity groups).

Aim 5.

To further understand the role of different subtypes of social support (i.e., friend, family, significant other) and sexual victimization in SMW who are Black lesbian or bisexual, Latinx lesbian or bisexual, or White lesbian or bisexual.

Specific Hypotheses

Given the paucity of research related to multiple marginalized statuses, the study hypotheses were novel but limited in scope. Specifically, it was expected that: (1) participants with three marginalized statuses (i.e., being female, sexual minority, and Black or Latinx) would report more protective factors (i.e., spirituality, religiosity, friend and family social support) than those who have two marginalized statuses (i.e., being female, sexual minority, and White); (2) mental health (i.e., depression, anxiety, PTSD) would not differ between White SMW and SMW of color; (3) bisexual women of color, relative to lesbian women of color, would be more likely to report adult sexual victimization; and (4) bisexual women of color, relative to lesbian women of color, would report a greater number or more severe PTSD symptoms, depression, and anxiety.

Source of Secondary Data

Data for this study was from Wave 3 of the Chicago Health and Life Experiences of Women Study (CHLEW), a longitudinal study of SMW's health. The major focus of the CHLEW was on understanding risk and protective factors for hazardous drinking. It aimed to identify how individual, interpersonal, and structural factors influence hazardous drinking among SMW, as well as to inform the development of intervention and prevention strategies specifically tailored to this marginalized group of women. Although the CHLEW study has collected four waves of data, this study used data from Wave 3 only, which included participants from the original CHLEW sample and a

supplemental sample added in Wave 3. The original sample, Wave 1, recruited in 2000-2001, included 447 women who self-identified as lesbian, were English-speaking, 18 years or older, and resided in Chicago or surrounding suburbs. About four years after Wave 1 data were collected, women in the study were invited to participate in the follow-up interview (i.e., Wave 2), conducted in 2002-2005. Wave 3, conducted in 2010-2012, included a supplemental sample of women 18-25 years old, bisexual women, and women of color (i.e., Black and Latinx). The procedure section discusses the recruitment details in depth. The third wave of the study included the largest and most diverse sample regarding race and ethnicity and sexual identity.

Chapter 2

Methods

Participants

Wave 3 of CHLEW included 723 participants. Women in Wave 3 identified as only lesbian (*n* = 398), mostly lesbian (*n* = 119), bisexual (*n* = 181), mostly heterosexual (*n* = 8), only heterosexual (*n* = 6), other (*n* = 7), and transgender (*n* = 4). In this study, only women who identified as only lesbian, mostly lesbian, or bisexual (*n* = 698) were included.

Wave 3 CHLEW participants were racially and ethnically diverse, with slightly more women identifying as White (37.4%, *n* = 261), than Black (36.0%, *n* = 250). About one quarter of the sample identified as Latinx (23.2%, *n* = 162). Twenty-four (3.4%) women who identified their race/ethnicity as Asian, Pacific Islander, Native American, Alaskan Native were excluded from the analyses given their small numbers. Thus, the final sample included 673 Black, Latinx and White SMW. Participants' mean age was 40.03 (range = 18-82; *SD* = 14.25). With respect to relationship status, 38.6% (*n* = 260) reported living with a partner in a committed relationship, 33.6% (*n* = 226) reported not being in a committed relationship, 22.3% (*n* = 150) reported being in a committed relationship but not living with a partner, 4.2% (*n* = 28) reported being separated from a partner, and 1.3% (*n* = 6) reported being in a past relationship in which the partner had died.

The majority of CHLEW participants completed some college (31.2%, *n* = 210), followed by graduate or professional school (26.6%, *n* = 179), a bachelor's education (21.1%, *n* = 143), high school education or GED (12.6%, *n* = 85), some high school

(7.3%, *n* = 49), and 8th grade education or less (1.0%, *n* = 7). Total household income was distributed as follows: 0 - 14,999 (27.0%, *n* = 182), 15,000 – 29,999 (12.5%, *n* = 84), 30,000 - 49,999 (18.1%, *n* = 122), 50,000 – 59,999 (6.7%, *n* = 45), 60,000 – 74,999 (8.6%, *n* = 58), 75,000 – 99,000 (6.8%, *n* = 46), 100,000 – 199,000 (12.8%, *n* = 86), and $200,00 or more (3.0%, *n* = 20). Table 1 summarizes participants' demographic information.

Measures

Adult sexual victimization

(Appendix G). Questions about adult sexual victimization included: "Since age 18, have you ever been raped, that is, someone had sexual intercourse with you, when you did not want to, by threatening you or using some degree of force (yes/no)"? and "Have you ever experienced any other kind of sexual assault (yes/no)"? If yes to either of the questions above, participants were asked: (1) how many times did this happen since you were 18 years old?

Child sexual abuse. (Adapted from Wyatt, 1985) (See Appendix F). Childhood sexual abuse was assessed using a battery of questions about eight types of sexual activities before the age of 18, ranging from exposure and fondling to anal and vaginal penetration (e.g., "Before you were 18, did someone ever ask you or force you to show them any of your private or sexual parts)?" The measure was modified to include experiences of child sexual abuse prior to the age of 14, only. This age cutoff was selected in order to differentiate adolescent and adult experiences from child sexual abuse. Livingston et al. (2007) found that sexual victimization incidents that occurred between ages 14 and 17 had characteristics that were more similar to unwanted

experiences involving peers (40% of the adolescents reported sexual aggression by an intimate romantic partner) than to child sexual abuse. Women who endorsed child sexual abuse using Wyatt's criteria (Wyatt, 1985) from the age of 14-18 were recoded into adult sexual victimization. Using the modified criteria established by Wyatt (1985), a dichotomous (i.e., no CSA = 0, CSA = 1) variable was computed. The modified criteria for CSA was then used to create the revictimization variable for each woman.

Revictimization. This variable was used to indicate participants who (1) met criteria for CSA and reported adult sexual victimization, or (2) reported more than one experience of adolescent/adult sexual victimization.

Mental Health Outcomes

National institute of mental health diagnostic interview schedule current depression

(DIS; Robins et al., 1981) (See Appendix A). The DIS is a 14-item measure from the Major Depressive Episode section of the National Institute of Mental Health Diagnostic Interview Schedule (DIS; Robins et al., 1981). The DIS includes questions to permit assessment of symptoms of depression that have ever occurred for two weeks or longer . The initial question includes, "Have there ever been two weeks or more during which you felt (1) sad, blue, depressed, or when you lost all interest and pleasure in things you usually cared about?" If yes, participants are asked eight follow-up questions such as, "Were there ever two weeks or more when nearly every night you had trouble with sleeping: waking too early, or sleeping too much, not staying asleep, or trouble falling asleep-any trouble sleeping?" Questions address changes in appetite, trouble sleeping, feeling tired out, feeling restless or slow, loss of interest in sex, feelings of worthlessness, difficulty thinking, and thoughts of death, establishes whether participants

experienced a depressive episode, and provides a total symptom count of depression. Participants responded "yes" or "no" to each question and "yes" responses were coded (yes = 1). A total symptom count (total score) was calculated by tallying the number of yes responses for the total number of symptoms of depression (range = 0-8) (Everett et al., 2016). In the current study, the internal consistency of the DIS was .77.

Anxiety

(Wilsnack et al., 1997) (See Appendix B). Anxiety was assessed using one item, "Have you ever considered yourself to be a 'nervous or anxious' person about things other people would not usually worry about?" (yes/no) (yes = 1, no = 0). There are no psychometrics for this item.

Short screening scale for posttraumatic stress disorder

(Breslau et al., 1999) (See Appendix C). This 7-item measure was used to screen for potential lifetime PTSD in participants exposed to traumatic events as defined in DSM-IV. Participants were first asked a series of questions to determine which traumatic experiences they endorsed. They were then asked which of these experiences was most traumatic. This experience served as the reference for seven follow-up questions about their responses (e.g., avoiding being reminded of incident and/or places and people, feeling isolated from others, losing interest in activities, hard to love or affection for others, trouble planning for the future, difficulty sleeping, easily started or jumpy). An example item includes, "Did you avoid being reminded of this experience by staying away from certain places, people or activities" with a dichotomous yes/no response. A total score was calculated by tallying the number of yes responses. A score of 4 or greater on this scale indicated a "positive case" (i.e., meeting DSM-IV criteria) of PTSD

with an 80% sensitivity, 97% specificity to a structured diagnostic interview (Breslau et al., 1999). In the current study, the internal consistency of this scale was .81.

Protective Factors

Religiosity and spirituality

(adapted from Jessor et al., 1968) (See Appendix D). This measure included three questions pertaining to religiosity, spirituality, and frequency of prayer. Participants were asked "Would you say that you currently are" very religious, somewhat religious, not at all religious (range = 0-2). The spirituality question was worded as "We would also like to know about your spirituality. By 'spirituality' we mean how often you spend time thinking about the ultimate purpose of life or your own relationship to a higher power in life. In this sense, would you say that you currently are:" very spiritual, somewhat spiritual, not at all spiritual (range = 0-2). The prayer question asked, "About how often do you pray?" and included a Likert response scale from (5) several times a day to (0) never (range = 0-5). The religiosity items were adapted from other national surveys (Michalak et al., 2007; Wilsnack et al., 1984), and the spirituality items were created to be similar to the religiosity items. The items were adapted with the consultation of survey research experts at NORC (National Opinion Research Center). No psychometric data exist for the selected items. In the current study, the internal consistency of these items was .54.

The multidimensional scale of perceived social support

(MSPSS; Zimet et al., 1988) (See Appendix E). MSPSS is a 12-item measure of perceived social support. The measure assessed levels of perceived social support from (1) significant other, (2) family, and (3) friends. The responses were on a 7-point Likert-

scale and ranged between 1 (very strongly disagree) to 7 (very strongly agree). Total social support was calculated by adding all of the Likert responses. Subscales scores were calculated by adding up the Likert responses for each of the four items (for each subscale). An example item for the significant other subscale includes "there is a special person who is around when I am in need." An example item for the family subscale is "I get the emotional help and support I need from my family." An example for the friend support subscale is "I can talk to my friends when things go wrong." This measure, as a whole, has good internal reliability with alphas ranging from .84 to .92 (Zimet et al., 1990). Additionally, a confirmatory factor analysis showed strong factorial validity confirming the three-subscale structure of the instrument. The subscales' (i.e., significant other, family, friends) individual reliability alphas were adequate and ranged from .81 to .98 (Zimet et al., 1990). In the current study, the internal consistency of the MSPSS was .90.

Sexual identity

(Skrocki, 1996). Sexual identity was assessed using an item that asked participants, "Recognizing that sexual identity is only one part of your identity, how would you define your sexual identity? Would you say that you are: 'only lesbian/gay,' 'mostly lesbian/gay,' 'bisexual,' 'mostly heterosexual,' 'only heterosexual/straight' or 'other.'" Because women who identified as only lesbian and mostly lesbian had few to no differences on major study variables, they were combined into one group in the current study (see Tables 2 and 3).

Socio demographic covariate variables

The social demographic variables below were controlled for in the analyses because they were presumed to influence the latent constructs of mental health symptoms and protective factors.

Age. Age at the time the participant completed Wave 3 was used as a continuous variable.

Education. Education reported in the demographics section was coded categorically as follows: (1) no formal schooling, (2) 8th grade or less, (3) some high school, (4) high school diploma or GED, (5) some college, (6) bachelor's degree, and (7) graduate or professional school.

Children. Women were asked if any children were currently living with them in their household and 139 women reported that they did have children living in their household. This was a continuous variable.

Procedure

The first wave of CHLEW included 447 women who were recruited through the use of fliers, list servs and announcements at LGB community meetings during 2000 - 2001 (Martin et al., 2015). Specifically, recruitment occurred through social networks, formal community-based organizations, informal community social groups, and individual social networks. Efforts were made to reach women who had been previously underrepresented in studies of lesbian women's health, including women of color, older lesbian women, and lesbian women of low socioeconomic status. About 4 years after the initial baseline data were collected, women in the study were invited to participate in a follow-up interview. Wave 2 of the study included a total 384 women (85.9% retention rate).

In Wave 3, the supplemental sample was recruited using a substantially modified version of respondent-driven sampling (Martin et al., 2015). Respondent-driven sampling is similar to chain-referral in that participants refer additional participants. CHLEW modified this sampling method by eventually allowing all participants who were already longitudinal participants (original sample n = 354) to recruit participants into the supplemental sample. Women were invited to recruit up to three peers from their social networks with the desired sample characteristics. The new participants were then invited to recruit up to three additional peers from their social networks. Participants were compensated for each eligible woman they recruited ($20 for each person recruited who met criteria and completed an interview). Face-to-face interviews were conducted by female interviewers lasting 60 to 90 minutes.

Data Analytic Strategy

SPSS 25 was used to generate descriptive statistics and conduct group comparisons (i.e., chi-squares, t-tests, and MANCOVA's). Mplus version 8.0 (Muthén & Muthén, 2017) was used to conduct the study analyses and expectation maximization (EM) algorithm was used to obtain maximum likelihood estimation with robust weighted least squares WLS (WLSMV). WLSMV is a robust estimator that does not assume normally distributed variables and provides the best option for modelling categorical or ordered data (Brown, 2015). Although confirmatory factor analysis (CFA) models using categorical indicators need larger samples than comparably sized models using continuous indicators, the sample sizes of WLSMV are less restrictive. For example, Muthén conducted unpublished simulation studies and found that Ns of 150 to 200 may be sufficient for medium-sized models (e.g., 10-15 indicators). This finding was

confirmed by Flora and Curran (2004) who showed that WLSMV produced accurate test statistics, parameter estimates, and standards errors of CFA models under a variety of conditions (e.g., sample sizes ranging from 100 to 1,000).

Confirmatory factor analysis (CFA), structural equation modeling (SEM), and multiple-group SEM (MG-SEM) were used to test this study's hypotheses. Goodness of fit indices were used to assess model fit. Overall, chi-square was evaluated but models were not considered to have poor fit if the chi square was significant given the large sample size, since in data sets with more than 400 cases, the chi square test is almost always statistically significant, and if significant, does not necessarily mean that the data has poor fit (Kline, 2011). Given the large differences in group size the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993) and the Comparative Fit Index (CFI; Bentler, 1990) were primarily used to assess model fit. Model fit was determined as having acceptable fit if RMSEA values were than .10 and CFI values were greater than 0.90 (Hu & Bentler, 1999; MacCallum et al., 1996).

Multi-group structural equation modeling (MG-SEM) was used to make simultaneous estimates across groups to test for group differences in protective factors and mental health. The MG-SEM approach can be used to examine whether the relationships among the variables vary based on known classes, such as racial/ethnic groups. This known grouping variable can be incorporated into the model as a moderator, allowing model parameters to vary as a function of membership in the identified group. When statistically appropriate, the multi-group approach is preferable to treating race/ethnicity as an exogenous predictor, as the latter approach imposes

equality between groups that may not be valid and could obscure differences when including interaction terms in the model (Bradshaw et al., 2010).

Prior to testing for MG-SEM, measurement invariance was used to test whether the model measured the same constructs across race/ethnicity and sexual identity. Configural invariance was assessed by examining the overall fit of the model when the model structure is constrained to be equal across groups, but factor loadings, intercepts, and residual variances are freely estimated for each group. Metric invariance was assessed by adding an additional model constraint of equivalent factor loadings across groups for all indicators. The metric model fit was compared to the configural model fit to determine whether there was a significant decrement in model fit with the additional model constraint. For measurement invariance analyses, change in CFI and RMSEA were used to interpret whether the fit of the models was substantially different, with change in CFI equal to or less than -.01 and change in RMSEA less than 0.015 indicating that the invariance hypothesis should not be rejected (Chen, 2007). Although the chi-square difference test often is used to compare fit between nested models, this test is sensitive to large samples sizes (Cheung & Rensvold, 2002); thus, this test was evaluated but the Chen (2007) criteria ultimately guided the current work. Scalar invariance was evaluated by adding an additional model constraint of equivalent item intercepts across groups for all indicators, which is then compared to the metric model. Although there is no definitive rule for the number of intercepts that researchers are allowed to free during each step of the measurement invariance testing (Putnick & Bornstein, 2016), Steenkamp and Baumgartner (1998) suggested that more than half of the items on a factor should be invariant. In other words, freeing more than half of the items on a factor would suggest

that data is not invariant; meaning the data do not meet measurement invariance across groups.

To test relationships found in prior work, chi-square analyses were used to explore associations between sexual minority status and sexual victimization. In addition, t-tests analyses were used to examine differences among lesbian and bisexual women of color and their symptoms of PTSD and depression. Finally, chi-square analyses were used to examine differences among lesbian and bisexual women of color and their anxiety symptoms.

Chapter 3

Results

Preliminary Analyses

All variables were assessed for missing values, normality of distributions, and outliers. Variables that were expected to be normally distributed were checked for distributional properties to ensure that none departed substantially from normality. However, some variables were expected to be skewed (e.g., prior victimization).

Measurement Model

The initial CFA analysis, also referred to as the preliminary measurement model, included two latent constructs: protective factors and mental health (see Figure 1). The indicators for protective factors were spirituality, prayer, religiosity, and social support. The indicators for mental health were PTSD symptoms, depression symptoms, and anxiety. Since the anxiety variable was dichotomous, it was dummy coded as 0 = no anxiety and 1 = anxiety. The latent constructs, protective factors and mental health were allowed to covary. As seen in Figure 1, unit loading identification was used to scale the latent factors (i.e., protective factors, mental health), and all other parameters were freely estimated. The results from the preliminary measurement model indicated that the model provided poor fit to the data, (χ^2 (13) = 90.70, $p < .001$, RMSEA = .094 (90% CI [.076-.113]), CFI = .842). The RMSEA was less than .10, which indicated acceptable fit. However, the CFI was not greater than .90, indicating poor fit. Given that the preliminary measurement model did not provide good fit to the data, different measurement models driven by theory (e.g., supported by literature for constructs that fit together) were tested, and the best fitting one selected. For example, one of the models

tested included removing social support from the model because it was theoretically different than religiosity, spirituality, and frequency of prayer.

Final measurement model

The final measurement model (Figure 2) is similar to the initial measurement model (see Figure 1) with the exception of social support being dropped from the model. Social support was the most theoretically different from the other items and dropping social support improved model fit. The results from the measurement model indicated that the model provided adequate fit to the data, χ^2 (8) = 38.39, $p < .001$, RMSEA = .075 (90% CI [.052-.100]), CFI = .958. Given that the measurement model provided acceptable fit to the data, exogenous predictors were then added to the measurement model to create a structural equation model. The models (see Figure 3 and Figure 4) were revised to reflect the changes of the final measurement model.

Final measurement model with adult victimization as an exogenous predictor

The results from this model (Figure 5) indicated that the model provided good fit to the data, χ^2 (12) = 50.55, $p < .001$, RMSEA = .069 (90% CI [.050-.089]), CFI = .949. Adult sexual victimization (0 = no victimization, 1 = victimization) was associated significantly with protective factors (B = 0.16 [*S.E.* 0.06], $p < .01$) and with mental health symptoms (B = 0.25 [*S.E.* 0.07], $p < .001$). Specifically, for all SMW, sexual victimization was associated with more protective factors and greater mental health symptoms.

Measurement Invariance across Groups

Results from the measurement invariance analyses are presented in Tables 4, 5 and 6. Overall, measurement invariance was not established across race/ethnicity and

race/ethnicity by sexual identity. Partial scalar invariance was established across sexual identity. Support for these conclusions follow.

Race/Ethnicity

The configural model fit well across race/ethnicity groups (χ^2 [24] = 41.47, $p <$ .05, RMSEA = 0.057 [90% CI = 0.025-0.086], and CFI = 0.968) (see Table 4). Change in model fit was not substantial when comparing configural and metric models (Δ CFI = -0.002, Δ RMSEA= -0.007). However, change in model fit was substantial when comparing metric and scalar models (Δ CFI = -0.092). Evaluation of fit indices for each variable intercept were constrained separately across race/ethnicity, and the largest reduction in fit was associated with constraints on PTSD, depression, and prayer for Black and Latinx women. When almost all of the PTSD, depression, and prayer intercepts were unconstrained for both Black and Latinx women, and the anxiety intercept was unconstrained for Black women, the change in model fit was no longer substantial (Δ CFI = -0.013, Δ RMSEA= 0.000). However, more than half of the intercepts for each variable had to be unconstrained to meet partial scalar invariance. Thus, following Steenkamp and Baumgartner (1998) guidelines for establishing measurement invariance in order to proceed with multiple group SEM, multiple group SEM analyses would not be appropriate to conduct across race/ethnicity.

Sexual identity

The configural model fit well across sexual identity groups (χ^2 [16] = 45.88, $p <$ .05, RMSEA = 0.074 [90% CI = 0.050-0.100], and CFI = 0.950) (see Table 5). Change in model fit was substantial when comparing configural and metric models (Δ CFI = -0.02). Evaluation of fit indices for factor loadings were constrained separately, and the

largest reduction in fit was associated with constraints on prayer for bisexual women. When the factor loading for prayer was unconstrained for bisexual women, the change in model fit was no longer substantial (Δ CFI = -0.014, Δ RMSEA= -0.005). Similar to results demonstrated across racial/ethnic groups, change in model fit was substantial when comparing partial metric and scalar models (Δ CFI = -0.005, Δ RMSEA= 0.023). Partial scalar invariance was achieved after freeing some intercepts (e.g., less than half) for PTSD, depression, and prayer (Δ CFI = -0.011, Δ RMSEA= 0.015).

Race/Ethnicity by sexual identity

The configural model fit well across race/ethnicity by sexual identity groups (χ^2 [48] = 86.36, $p < .001$, RMSEA = 0.084 [90% CI = 0.055-0.113], and CFI = 0.928) (see Table 6). Change in model fit was not substantial when comparing configural and metric models (Δ CFI = -0.008, Δ RMSEA= 0.009). However, fit indices suggested freeing the factor loading for spirituality, and this change in model fit was not substantial when comparing configural and partial metric models (Δ CFI = -0.004, Δ RMSEA= 0.008). Similar to the results demonstrated across racial/ethnic groups and across sexual identity, change in model fit was substantial when comparing partial metric and scalar models (Δ CFI = -0.080, Δ RMSEA= 0.009). More than half of the intercepts for multiple variables (i.e., PTSD, spirituality, prayer, and anxiety) had to be unconstrained to meet partial scalar invariance (Δ CFI = -0.004, Δ RMSEA= 0.014). Thus, following Steenkamp and Baumgartner (1998) guidelines necessary for establishing measurement invariance so as to proceed with multiple group SEM, multiple group SEM analyses were not appropriate to conduct across race/ethnicity by sexual identity.

Aim 1. Compare mental health outcomes (i.e., depression, anxiety, PTSD) and protective factors (i.e., spirituality, religiosity) in White SMW, Black SMW, and Latinx SMW.

Multiple Group SEM across Race/Ethnicity

Given that measurement invariance was not established across race/ethnicity, multiple group SEM was not used to test this aim.

Follow-up analyses

To compare for differences among White, Black, and Latinx SMW, a multivariate analysis of covariance (MANCOVA) was conducted to further understand the role of protective factors and mental health outcomes across race/ethnicity. The practice of using factors scores from structural equation modeling is a longstanding and accepted practice (DiStefano et al., 2009). Based on this practice, individual factor scores for each of the two latent variables, protective factors and mental health, were extracted from Mplus using the WLSMV estimator and used to run the MANCOVA in SPSS. Factor scores are composite scores of each of the latent variables. Age, education, and number of children were included as covariates in the model, and race/ethnicity groups were included as a grouping variable (i.e., independent variable). The factors scores for protective factors and mental health were included as dependent variables. In order to minimize repetition in the following results, this statistical procedure was used for subsequent MANCOVA analyses (i.e., the same covariates were included as well as the same dependent variables), and only the independent variables varied by analysis.

Results from the MANCOVA indicated that there were statistically significant differences between race/ethnicity groups on protective factors and mental health after

controlling for age, education, and number of children, $F(2, 663) = 38.83$, $p < .001$, Wilk's $\Lambda = .801$, partial $\eta^2 = .105$. Tests of between-subject effects revealed that protective factors varied across race/ethnicity, $F(2, 669) = 78.27$, $p < .001$ but not across race/ethnicity for mental health symptoms, $F(2, 669) = 2.14$, $p = .118$. Bonferroni corrections were utilized to adjust the alpha value to .025 in order to account for the number of comparisons and reduce Type 1 errors. Univariate tests confirmed that there was a main effect for race/ethnicity in comparisons of protective factors, $F(2, 664) = 78.27$, $p < .001$.

Follow-up pairwise comparisons with Bonferroni corrections indicated that the protective factors mean for White women ($M = -0.23$, $SD = 0.45$), $p < .001$ was significantly lower than the mean of Black women ($M = 0.26$, $SD = 0.37$), $p < .001$, and Latinx women ($M = -0.06$, $SD = 0.40$), $p < .001$. Black women's protective factors mean ($M = 0.26$, $SD = 0.37$), $p < .001$ was significantly higher from Latinx women's mean ($M = -0.06$, $SD = 0.40$), $p < .001$. Overall, Black women reported the highest level of protective factors, Latinx women reported the second highest, and White women reported the lowest level of protective factors. The average mean for all women was ($M = -0.01$, $SD = 0.46$).

Multiple Group SEM across Sexual Identity

The results from the multiple group-SEM across sexual identity, indicated that the model provided good fit to the data, $\chi^2 (36) = 89.61$, $p < .001$, RMSEA = .067 (90% CI [.049-.084]), CFI = .925 (see Table 7 and Figure 6).

Lesbian and Bisexual women

Standardized results indicated that lesbian women reported lower frequency of prayer (B = 0.83 [*S.E.* 0.05], $p < .001$) relative to bisexual women (B = 0.93 [*S.E.* 0.07], $p < .001$). No other sexual identity comparisons were statistically different. For lesbian women, protective factors and mental health outcomes (i.e., anxiety, depression, PTSD symptoms),were positively correlated (B = 0.16 [*S.E.* 0.07], p = .015), such that as mental health symptoms increased so did protective factors. For bisexual women, protective factors and mental health were negatively correlated, but the association was not statistically significant (B = -.12 [*S.E.* 0.12], p = .294).

Aim 2. Compare mental health outcomes and protective factors in White SMW, Black SMW, and Latinx SMW with histories of adult sexual victimization

Multiple group SEM across Race/Ethnicity with sexual victimization as an exogenous predictor

Given that measurement invariance was not established across race/ethnicity, multiple group SEM was not used to test this aim.

Follow-up analyses

A MANCOVA was conducted to further understand the role of protective factors and mental health in the context of sexual victimization. Race/ethnicity groups were included as grouping variables (i.e., independent variable), and adult sexual victimization was also included as an independent variable.

Results from the MANCOVA indicated that there was no statistically significant interaction between race/ethnicity groups and sexual victimization on protective factors and mental health after controlling for age, education, and number of children, $F(4, 1208) = 0.38$, p = .821, Wilk's Λ = .997, partial η^2 = .001. The MANCOVA indicated that there

were statistically significant main effects for adult sexual victimization on the combined dependent variables (i.e., protective factors and mental health), $F(2, 604) = 13.43$, $p < .001$, Wilk's $\Lambda = .957$, partial $\eta^2 = .043$. There were statistically significant main effects for race/ethnicity on the combined dependent variables (i.e., protective factors and mental health), $F(4, 1208) = 36.03$, $p < .001$, Wilk's $\Lambda = .798$, partial $\eta^2 = .107$.

Adult victimization. Tests of between-subject effects indicated significant differences for adult sexual victimization (0 = no victimization, 1 = victimization) on protective factors and mental health after controlling for age, education, and number of children, $F(1, 613) = 18.56$, $p < .001$, partial $\eta^2 = .030$ and $F(1, 613) = 10.09$, $p = .002$, partial $\eta^2 = .016$, respectively. Follow-up pairwise comparisons indicated that protective factors for women who did not report sexual victimization were significantly different from women who did report sexual victimization, $p = .001$. Mental health for women who did not report sexual victimization was statistically significantly different from women who did report sexual victimization $p < .001$.

A one-way ANOVA was conducted to compare mental health and protective factors in women who did not report sexual victimization ($n = 382$) and women who reported sexual victimization ($n = 235$) and to understand the direction of the effect. Women that did not report sexual victimization reported lower levels of mental health symptoms ($M = -.06$, $SD = 0.39$) relative to women who reported sexual victimization ($M = 0.05$, $SD = 0.36$); $F(1, 616) = 11.98$, $p = .001$. Additionally, women that did not report sexual victimization reported lower levels of protective factors ($M = -.05$, $SD = 0.45$) relative to women who reported sexual victimization ($M = 0.05$, $SD = 0.47$); $F(1, 616) = 7.34$, $p < .01$.

Race/Ethnicity. Tests of between-subject effects indicated significant differences for race/ethnicity on protective factors, $F(2, 613) = 72.92$, $p < .001$, partial $\eta^2 = .194$. The follow-up comparisons for race/ethnicity have already been discussed under Aim 1 and will not be reviewed here.

Multiple Group SEM Across Sexual Identity with Sexual Victimization as an Exogenous Predictor.

The results from the multiple group-SEM across sexual identity with sexual victimization as an exogenous predictor, indicated that the model provided good fit to the data, $\chi^2 (44) = 99.09$, $p < .001$, RMSEA = .061 (90% CI [.045-.077]), CFI = .926 (See Table 8 and Figure 7).

Lesbian and Bisexual women

Standardized results indicated that lesbian women reported lower frequency of prayer ($B = 0.83$ [*S.E.* 0.05], $p < .001$) relative to bisexual women ($B = 0.93$ [*S.E.* 0.07], $p < .001$). Other differences were not substantially different. For lesbian women, protective factors and mental health were positively correlated ($B = 0.16$ [*S.E.* 0.07], $p < .01$); as mental health symptoms increased so did protective factors. For bisexual women, protective factors and mental health were negatively correlated, but the association was not statistically significant ($B = -.11$ [*S.E.* 0.12], $p = .348$). For lesbian women, sexual victimization was not associated with protective factors ($B = 0.10$ [*S.E.* 0.07], $p = .158$) but was positively associated with mental health symptoms ($B = 0.22$ [*S.E.* 0.08], $p < .01$). For bisexual women, sexual victimization was associated positively with protective factors ($B = 0.33$ [*S.E.* 0.11], $p < .01$) and mental health symptoms ($B = 0.46$ [*S.E.* 0.12], $p < .001$).

Aim 3. Compare mental health outcomes and protective factors in women who are Black lesbian or bisexual, Latinx lesbian or bisexual, and White lesbian or bisexual

Multiple group SEM across Race/Ethnicity by sexual identity (intersectionality model)

Given that measurement invariance was not established across race/ethnicity by sexual identity, multiple group SEM was not used to test this aim.

Follow-up analyses

To compare differences among White SMW, Black SMW, and Latinx SMW, a multivariate analysis of covariance (MANCOVA) was conducted to further understand the role of protective factors and mental health across race/ethnicity by sexual identity. Race/ethnicity by sexual identity groups were included as grouping variables (i.e., independent variable).

Results from the MANCOVA indicated that there were statistically significant differences between race/ethnicity by sexual identity groups on protective factors and mental health, $F(10, 1320) = 16.69$, $p < .001$, Wilk's $\Lambda = .788$, partial $\eta^2 = .112$. Tests of between-subject effects revealed that protective factors varied across race/ethnicity by sexual identity groups, $F(5, 669) = 32.08$, $p < .001$ but not across race/ethnicity by sexual identity groups for mental health symptoms $F(5, 669) = 2.22$, $p = .051$. Bonferroni corrections were utilized to adjust the alpha value to .025 in order to account for the number of comparisons and reduce Type 1 errors. Univariate tests confirmed that there was a main effect for race/ethnicity by sexual identity when looking at protective factors $F(5, 661) = 32.08$ $p < .001$.

Follow-up pairwise comparisons with Bonferroni corrections indicated that the protective factor mean for White lesbian women ($M = -0.19$, $SD = 0.46$) was significantly

lower from the means of Black lesbian women (M = 0.28, SD = 0.37), p < .001, Latinx lesbian women (M = -0.06, SD = 0.40), p = .003, and Black bisexual women (M = 0.21, SD = 0.37), p < .001. Black lesbian women's protective factors mean (M = 0.28, SD = 0.37) was significantly higher from Latinx lesbian women's mean (M = -0.06, SD = 0.40), p < .001, White bisexual women's mean (M = -0.36, SD = 0.39), p < .001, and Latinx bisexual women's mean (M = -0.08, SD = 0.41), p < .001. Latinx lesbian women protective factors mean (M = -0.06, SD = 0.40) was significantly higher from White bisexual women's mean (M = -0.36, SD = 0.39), p < .001, but lower than Black bisexual women's mean (M = 0.21, SD = 0.36), p = .006. White bisexual women's protective factors mean (M = -0.36, SD = 0.39) was significantly lower from Black bisexual women's mean (M = 0.21, SD = 0.36), p < .001, and Latinx bisexual women's mean (M = -0.08, SD = 0.41), p = .020. Black bisexual women's protective factors mean (M = 0.21, SD = 0.36) was significantly higher from Latinx bisexual women's mean (M = -0.08, SD = 0.41), p = .032. The average mean for all women was (M = -0.01, SD = 0.46) (See Table 9 for descriptive data).

Aim 4. Compare mental health outcomes and protective factors in women with histories of adult sexual victimization who are Black lesbian or bisexual, Latinx lesbian or bisexual, and White lesbian or bisexual

Multiple group SEM across Race/Ethnicity and sexual identity with sexual victimization as an exogenous predictor

Given that measurement invariance was not established across race/ethnicity by sexual identity, multiple group SEM was not used to test this aim.

Follow-up analyses

A MANCOVA was conducted to further understand the role of protective factors and mental health in the context of sexual victimization. Race/ethnicity by sexual identity groups were included as grouping variables (i.e., independent variable), and adult sexual victimization was also included as an independent variable.

Results from the MANCOVA indicated that there was no statistically significant interaction between race/ethnicity by sexual identity groups and sexual victimization on protective factors and mental health, $F(10, 1196) = 0.48$, $p = .903$, Wilk's $\Lambda = .992$, partial $\eta^2 = .004$. There was a statistically significant main effect for sexual victimization groups on the combined dependent variables (i.e., protective factors and mental health), $F(2, 598) = 11.78$, $p < .001$, Wilk's $\Lambda = .962$, partial $\eta^2 = .038$. The MANCOVA indicated that there was a statistically significant main effect for race/ethnicity by sexual identity on the combined dependent variables (i.e., protective factors and mental health), $F(10, 1196) = 15.62$, $p < .001$, Wilk's $\Lambda = .782$, partial $\eta^2 = .115$.

Adult victimization. Tests of between-subject effects revealed that both protective factors $F(1, 613) = 11.62$, $p = .001$ and mental health $F(1, 613) = 13.69$, $p < .001$ varied across sexual victimization groups, confirming a main effect for both.

Follow-up pairwise comparisons indicated that protective factors for women who did not report sexual victimization were significantly different from women who did report sexual victimization, $p < .01$. Mental health for women who did not report sexual victimization was statistically significantly different from women who did report sexual victimization $p < .001$. A one-way ANOVA was conducted to compare mental health and protective factors in women who did not report sexual victimization (n= 382) and women who reported sexual victimization (n= 235) and to understand the direction of the

effect. Women who did not report sexual victimization reported lower levels of mental health symptoms (M = -.06, SD = 0.39) relative to women who reported sexual victimization (M = 0.05, SD = 0.36); F(1 616) = 11.98, p < .01. Additionally, women that did not report sexual victimization reported lower levels of protective factors (M = -.05, SD = 0.45) relative to women who reported sexual victimization (M = 0.05, SD = 0.47); F(1 616) = 7.34, p < .01.

Race/Ethnicity by Sexual Identity. Tests of between-subject effects indicated a significant main effect for race/ethnicity by sexual identity on protective factors, F(5, 613) = 30.16 , p < .001. The follow-up comparisons for race/ethnicity by sexual identity on protective factors have already been discussed under Aim 3 and will not be reviewed here.

Aim 5. To understand further the role of different subtypes of social support (i.e., friend, family, significant other) and sexual victimization in SMW who are Black lesbian or bisexual, Latinx lesbian or bisexual, or White lesbian or bisexual

Social support.

A MANCOVA was conducted to further understand the role of social support including friend, family, and significant other support. Race/ethnicity by sexual identity groups were included as grouping variables (i.e., independent variable) and adult sexual victimization was also included as an independent variable. The different types of social support were included as dependent variables.

Race/Ethnicity by sexual identity and adult sexual victimization. Results from the MANCOVA indicated that there was no statistically significant interaction between race/ethnicity by sexual identity groups and sexual victimization on the

combined dependent variables (i.e., social support, friend, family, significant other support), $F(20, 1977) = 0.72$, $p = .809$, Wilk's $\Lambda = .976$, partial $\eta^2 = .006$.

Adult sexual victimization. The MANCOVA indicated no significant main effect for adult sexual victimization (0 = no victimization, 1 = victimization) on the combined dependent variables (i.e., social support, friend, family, significant other support), $F(4, 596) = 2.66$, $p = .468$, Wilk's $\Lambda = .994$, partial $\eta^2 = .006$.

Race/Ethnicity by sexual identity. The MANCOVA indicated a main effect for race/ethnicity by sexual identity on the combined dependent variables (i.e., social support, friend, family, significant other support), $F(20, 1977) = 2.66$, $p < .001$, Wilk's $\Lambda = .916$, partial $\eta^2 = .022$. Bonferroni corrections were utilized to adjust the alpha value to .0125 in order to account for the number of comparisons and reduce Type 1 errors. Tests of between-subject effects revealed that there were main effects for total social support $F(5, 613) = 4.46$, $p = .001$, friend social support $F(5, 613) = 7.20$, $p < .001$, and significant other support $F(5, 613) = 4.28$, $p = .001$ across race/ethnicity by sexual identity groups (see Table 10).

Follow-up pairwise comparisons with Bonferroni corrections indicated that the total social support mean for White lesbian women ($M = 69.52$, $SD = 10.38$) was significantly higher from the means of Black lesbian women ($M = 63.33$, $SD = 12.44$), $p < .001$, Black bisexual women ($M = 63.58$, $SD = 11.15$), $p < .001$, and Latinx bisexual women ($M = 63.58$, $SD = 11.15$), $p < .001$. The overall mean for social support was ($M = 66.17$, $SD = 12.51$).

Follow-up pairwise comparisons with Bonferroni corrections indicated that the friend social support mean for White lesbian women ($M = 24.24$, $SD = 3.69$) was

significantly higher from the means of Black lesbian women (M = 21.93, SD = 5.18), p < .001, Black bisexual women (M = 21.60, SD = 4.21), p < .001, and Latinx bisexual women (M = 20.55, SD = 6.01), p < .001. Latinx lesbian women friend social support mean (M = 22.99, SD = 4.44) was significantly higher from Latinx bisexual women's friend social support mean (M = 20.55, SD = 6.01), p = .030. White bisexual women's friend social support mean (M = 23.20, SD = 4.28) was also significantly higher than Latinx bisexual women's mean for friend social support (M = 20.55, SD = 6.01), p = .044. The overall mean for friend social support was (M = 22.80, SD = 4.66)

Follow-up pairwise comparisons with Bonferroni corrections indicated that the significant other social support mean for White lesbian women (M = 23.71, SD = 4.10) was significantly higher than the means of Black lesbian women (M = 21.58, SD = 4.62), p = .002, Black bisexual women (M = 21.45, SD = 3.98), p = .022, and Latinx bisexual women (M = 21.60, SD = 5.36), p = .052. There were no other significant differences between groups on significant other social support. The overall mean for significant other social support was (M = 22.50, SD = 4.47).

Results of Comparisons between Bisexual and Lesbian Women of Color

To test whether bisexual women of color were more likely than lesbian women of color to report adult sexual victimization (yes/no), White lesbian and bisexual women were excluded from the analyses. Bisexual women of color (n=103) and lesbian women of color (n=271) were compared on rates of sexual victimization using chi-square analyses. Results indicated that there were no statistically significant differences among bisexual women of color and lesbian women of color in experiences of adult sexual victimization, χ^2 (1) = 0.16, p = .690.

Analyses were conducted to examine whether bisexual women of color (n=110) were more likely than lesbian women of color (n=302) to report sexual revictimization (yes/no). Results indicated that there were no statistically significant differences among bisexual women of color and lesbian women of color in experiences of sexual revictimization, χ^2 (1) = 0.09, p = .801.

To test whether bisexual women of color, relative to lesbian women of color, reported more severe PTSD symptoms, depression symptoms, and anxiety, White lesbian and bisexual women were excluded from the analyses. T-tests and chi-square analyses were used to examine whether bisexual women of color (n=110), relative to lesbian women of color (n=302), reported more severe PTSD symptoms, depression symptoms, and anxiety. There were no significant differences in PTSD symptoms for bisexual and lesbian women of color (M = 3.06, SD = 2.29) versus (M = 2.79, SD = 2.25), t(389) = -1.04, p = .301, respectively. There also were no significant differences in depression symptoms for bisexual women of color and lesbian women of color, (M = 3.95, SD = 2.27) versus (M = 3.77, SD = 2.30), t(410) = -0.72, p = .475, respectively. There were no significant differences in anxiety for bisexual women of color (no anxiety = 84; anxiety = 24) and lesbian women of color (no anxiety = 238; anxiety = 63), χ^2 (1) = 0.08, p = .785. Based on the measures used in this study, bisexual women of color did not report more symptoms of PTSD, depression, and anxiety.

Chapter 4

Discussion

The current study adds to the growing body of literature of racially/ethnically diverse bisexual and lesbian women with histories of adult sexual victimization (Balsam et al., 2015; Sigurvinsdottir & Ullman, 2015) by comparing the mental health symptoms (i.e., depression, anxiety, PTSD) and protective factors (i.e., spirituality, religiosity) in a community-based sample of Black, Latinx, and White bisexual and lesbian women (i.e., multiply marginalized women) with histories of adult sexual victimization. Given that sexual victimization affects women from different races/ethnicities at different rates (Black et al., 2011; Kalof, 2000; Kilpatrick et al., 2007), it is important to tease apart differences by race/ethnicity and sexual identity in order to move towards preventative interventions to reduce risk for sexual victimization. This study's theoretical foundations were grounded in intersectionality (Crenshaw, 1989) and minority stress (Meyer, 2003) framework to help place multiply marginalized women's experiences of sexual victimization within a larger context. This study's findings extend the current literature by facilitating a better understanding of how intersecting identities may contribute to differences in protective factors, mental health symptoms, and social support, and how they may vary in multiply marginalized women with and without histories of adult sexual victimization.

The first aim of the study was to compare mental health outcomes and protective factors in White SMW, Black SMW, and Latinx SMW. Multiple group SEM analyses were not completed due to the lack of measurement invariance of the self-report measures across race/ethnicity. The measure used to assess depression (DIS) was

developed by the National Institute of Mental Health (NIMH) and was validated on 216 people for whom race/ethnicity, gender, sexual identity, or age were not reported (Robins et al., 1981). Reported instead was information regarding the source of recruitment (i.e., 118 were current psychiatric patients, 39 were psychiatric outpatient patients, 24 participants were enrolled at the Washington University Medical Care group with no known psychiatric disorder, 10 participants were recruited from Gamblers Anonymous, and 26 were former patients). It is unclear if the study participants held racial/ethnic minority identities and thus, it is possible that measurement invariance was not established because racial/ethnic minorities were not included in the validation of the measure.

Given the lack of measurement invariance, the following results should be interpreted with caution. However, follow up analyses indicated that there may exist differences in protective factors across race/ethnicity but no differences for mental health symptoms. Specifically, White SMW reported the least protective factors relative to Black SMW and Latinx SMW while Black SMW reported higher protective factors relative to Latinx SMW. Thus, Hypothesis 1 was supported; participants with three marginalized statuses (SMW of color) did report more protective factors than those with two marginalized statuses (White SMW). The latent construct, protective factors, was compiled of religiosity and spirituality items, implying that Black and Latinx women reported more prayer, and more religiosity relative to White SMW women. Although one composite score was used to measure protective factors in the analyses, this finding is consistent with Drabble et al. (2017) who found that Black SMW endorsed higher levels of both spirituality and religiosity relative to White SMW. It is also likely that

White SMW have other protective factors, such as access and engagement with mental health resources, which would be important to account for in future work as well as to compare across marginalized statuses. Findings from related work point to this possibility. For instance, Alvidrez et al. (2011) offered free mental health services to a sample of White, Black and Latinx women who had experienced sexual victimization. They found that White women had the highest level of engagement (attending four or more sessions) and Black women had the lowest level of engagement despite everyone having the same level of access. Latinx women also had lower odds of treatment engagement than White women, but the difference was only marginally significant. This implies that it is not solely access to mental health resources that is important but also engagement in those services. The protective factors included in this study were by no means exhaustive, but they are a good starting point.

Moreover, Hypothesis 2 was also supported; mental health symptoms did not differ between White SMW and SMW of color. The latent construct, mental health symptoms, was comprised of PTSD, depression, and anxiety symptoms. In the current study, 23.5% of women in the sample endorsed experiencing anxiety in the past year while 76.5% of the sample reported they had not experienced anxiety. Moreover, the average number of symptoms for PTSD was $M = 2.68$ ($SD = 2.26$) and for symptoms of depression it was $M = 3.76$ ($SD = 2.35$). This means that, on average, the entire sample reported sub-clinical symptoms of depression and PTSD. However, 37.15% of the study's sample reported four or more symptoms of PTSD. A score of 4 or greater on this scale indicates a possible PTSD diagnosis (i.e., meeting DSM-IV criteria for a PTSD

diagnosis) (Breslau et al., 1999). Rates of PTSD in the general population are approximately 1.0% (Helzer et al., 1987).

In addition to high rates of possible PTSD, the current sample also reported elevated symptoms of depression. In the current sample, 43.83% of participants endorsed five or more symptoms of depression in the previous two weeks. Approximately 56.16% of the sample reported four or fewer symptoms of depression, and only 12.33% of participants endorsed no depression symptoms. Using the DSM-5 criteria for current depression, at least five symptoms of depression are needed to meet the diagnosis. Altogether, these findings highlight that many of the women in the current sample were experiencing a significant amount of distress that would meet criteria for clinically significant PTSD and/or depression.

The finding that mental health symptoms did not differ between White SMW and SMW of color is consistent with previous work using the CHLEW data comparing lifetime depression among Black, Latinx, and White lesbian and bisexual women (Bostwick et al., 2019). Black bisexual women were least likely to meet criteria for lifetime depression (i.e., report 5 or more symptoms of depression) relative to their White lesbian counterparts (Bostwick et al., 2019). Of note, 58.2% of women in the sample met criteria for lifetime depression. Lifetime depression was assessed using the same measure of depression used in this current study the DIS (Robins et al., 1981). In their study, Bostwick et al. (2019) dichotomized lifetime depressive episodes into any episodes (i.e., one or more) or no episodes. The finding of Black bisexual women being less likely to meet criteria for lifetime depression is consistent with conceptual discussions suggesting the potential resilience of LGB (lesbian, gay, bisexual) people of color

(Bowleg et al., 2003; Moradi et al., 2010). Researchers have suggested that LGB people of color have potential resources, strengths, and coping skills that help them buffer against the deleterious consequences of heterosexist stigma and, as a result, they experience less negative mental health consequences relative to their White LGB counterparts. Placing this within a larger context, communities of color's experiences of racial discrimination are posited to foster survival skills and coping skills to navigate having a minority identity in majority cultures (Constantine & Sue, 2006). It might be fruitful for researchers to consider a mixed-methods approach, and capture both quantitatively and qualitatively, whether SMW of color perceive any benefits to carrying multiple minority identities as a protective factor to their mental health. A mixed-methods approach has been conducted previously with SMW and their experiences of sexual assault (López & Yeater, 2018).

Multiple Group SEM was used to examine lesbian and bisexual women separately, and findings indicated that for lesbian women, as protective factors increased, so did their mental health symptoms. For bisexual women, protective factors and mental health were not significantly associated with each other. Given that the sample size of bisexual women was significantly smaller relative to lesbian women, it is possible that the smaller sample size lacked sufficient power to detect an association. Some researchers have suggested a minimum sample size of 100 cases (Nasser & Wisenbaker, 2003) while others have recommended a minimum of 200 cases (Kline, 2011). This multiple group SEM should be replicated with a minimum of 200 cases in an attempt to replicate these findings. The mechanisms for why protective factors and mental health are positively associated in lesbian women are unclear. However, Minority stress theory

(Meyer, 2003) would suggest that it is possible that lesbian women are turning to religiosity and spirituality at higher rates to cope with their increased mental health symptomatology. In other words, it is possible that their mental health symptoms are high, and they are engaging in more religiosity and spirituality as a coping mechanism.

The second aim of the study was to compare mental health outcomes and protective factors in White SMW, Black SMW, and Latinx SMW with histories of adult sexual victimization. Multiple group SEM analyses were not completed due to the lack of measurement invariance of the measures across race/ethnicity. Results of multivariate analyses of covariance indicated that there was no significant interaction between race/ethnicity and histories of adult sexual victimization on mental health and protective factors. However, there was a main effect for sexual victimization, such that women who reported histories of adult sexual victimization also reported higher mental health symptoms (i.e., more PTSD, anxiety, and depression) and higher self-report of protective factors (i.e., more religiosity, frequency of prayer, and spirituality). This finding is consistent with the sexual assault literature that has shown victimization to be associated with mental health symptoms such as PTSD (Littleton & Ullman, 2013), depression (Acierno et al., 2002), and anxiety (Kimerling et al., 2007).

Moreover, the association between sexual victimization and protective factors is consistent with a phenomenon called posttraumatic growth. Posttraumatic growth refers to any positive psychological change (e.g., new possibilities, relating to others, personal strength, spiritual change, appreciation of life) that happens following a traumatic event (e.g., sexual assault, being the victim of a violent crime) (Tedeschi & Calhoun, 2004). Frazier et al. (2001) assessed for positive and negative life changes among female adult

sexual victimization survivors. They found that most survivors started to report positive changes (e.g., changes in self, relationships, life philosophy or spirituality, and empathy) as early as two weeks following the assault. Reporting more positive life changes at both two weeks and twelve months post-assault was associated with lower levels of distress (i.e., symptoms of depression and PTSD). In the follow-up study, Frazier et al. (2004) found that factors that were most related to reporting positive life changes following a sexual assault were social support, religious coping, and perceived control over the recovery process. This study's protective factors were mostly comprised of religiosity and spirituality items. Thus, the main effect finding of sexual victimization and protective factors is consistent with the literature.

Multiple group SEM also was used to compare mental health and protective factors in lesbian and bisexual women with histories of adult sexual victimization. Findings indicated that for lesbian women, as protective factors increased so did their mental health symptoms. For lesbian women who reported histories of adult sexual victimization, this was associated with greater mental health symptoms which is what would be expected. On the other hand, for bisexual women, findings indicated that protective factors and mental health symptoms were not associated significantly with each other. For bisexual women who reported histories of adult sexual victimization, such victimization was associated with reporting higher mental health symptoms and protective factors. In general, these findings indicated that for bisexual women who report adult sexual victimization, sexual victimization is associated with reporting more protective factors and mental health symptoms. This is important, as the literature has established that bisexual women experience both adult sexual victimization and other

types of sexual violence (e.g., sexual coercion, unwanted sexual contact, non-contact unwanted sexual experiences) at higher rates than lesbian women (Walters et al., 2010). On the other hand, lesbian women who reported adult sexual victimization only reported higher mental health symptoms.

Across these comparisons, the findings for mental health symptoms should be interpreted with caution since measurement invariance was established at the partial scalar level (i.e., no particular statements can be made about the prayer item). These findings still suggest that there are significant differences in protective factors among lesbian and bisexual women regardless of their racial/ethnic identity. Bisexual women reported more spirituality and religiosity, which is consistent with rates of religiosity reported in Drabble et al. (2016) who examined religiosity as protective factor for hazardous drinking and drug use among SMW and heterosexual women. Drabble et al. (2016) found that 34.2% of bisexual women reported high religiosity while 31.3% of lesbian women reported high religiosity. The authors did not compare religiosity among SMW but noted that religiosity was the highest among exclusively heterosexual women relative to lesbian, bisexual, and heterosexual women who reported having same-sex partners.

However, this finding is not consistent with previous work on religiosity among female veteran sexual assault survivors that showed religiosity was associated with lower levels of depression (Chang et al., 2001). Religious involvement has multiple positive aspects including social support, improved meaning, purpose, and direction in life (Ano & Vasconcelles, 2005; Brewster et al., 2015). This current study did not assess for positive versus negative religious coping in sexual assault victims. Future work might

consider evaluating the different forms of coping and its impact on mental health. Negative religious coping would not be expected to be a protective factor for mental health. Negative coping would entail believing that a negative event (such as sexual victimization) is an indication that God is punishing her. Because of this belief, praying might become a form of avoidance (Harris et al., 2008). Since bisexual women reported more protective factors and mental health symptoms, one hypothesis that can be explored in future work is whether bisexual women, relative to lesbian women, use negative religious coping, as well as whether that coping is associated with more mental health symptoms. This is important, as positive religious coping includes turning to God for support. The different purposes in religious coping could in turn be differentially associated with mental health symptoms. For instance, it is known that positive religious coping moderates the relationship between internalized heterosexism on psychological well-being among sexual minority individuals (Brewster et al., 2015).

The third aim of the study was to compare mental health and protective factors in SMW who are Black lesbian or bisexual, Latinx lesbian or bisexual, or White lesbian or bisexual. Multiple group SEM analyses were not completed due to the lack of measurement invariance across race/ethnicity by sexual identity. Follow-up MANCOVA analyses suggest that protective factors vary across race/ethnicity by sexual identity. Black lesbian women reported the highest levels of protective of five intersectionality groups, while White bisexual women reported the lowest levels of protective factors. This study's findings are a unique contribution to the literature, as previous work has generally grouped lesbian and bisexual women together to draw comparison across racial/ethnic minority women. Study findings highlight differences not just across

racial/ethnic groups but also across sexual identity groups—and illustrates the importance of intersectional perspectives in studies of SMW's health. These findings are consistent with Drabble et al. (2017), who found that Black SMW reported higher levels of religiosity and spiritually relative to Latinx and White SMW. Drabble et al. (2017) examined religiosity and spirituality as a protective factor against hazardous drinking, drug use, and symptoms of depression, but they did not find any protective effect of religiosity or spiritualty for hazardous drinking or drug use among SMW.

The fourth aim of the study was to compare mental health and protective factors in women with histories of adult sexual victimization who are Black lesbian or bisexual, Latinx lesbian or bisexual, and White lesbian or bisexual. Follow-up MANCOVA analyses indicated there was no statistically significant interaction by race/ethnicity by sexual identity intersectionality groups for adult sexual victimization on protective factors and mental health. However, there was a statistically significant main effect for adult sexual victimization on protective factors and mental health. For all women, reporting adult sexual victimization was associated with higher levels of protective factors (i.e., greater religiosity, frequency of prayer, and higher levels of spirituality) and higher mental health symptoms (i.e., more PTSD, anxiety, and depression).

The fifth aim of the study was to further understand the role of different subtypes of social support (i.e., friend, family, significant other) and sexual victimization in women who are Black lesbian or bisexual, Latinx lesbian or bisexual, or White lesbian, or bisexual. Findings indicated no significant interaction for social support subtypes and histories of adult sexual victimization across the intersectionality groups. Moreover, there was no significant main effect for adult sexual victimization. However, there was a

main effect for social support across the intersectionality groups (i.e., race/ethnicity by sexual identity). Findings indicated that overall social support, friend, and significant other social support varied across race/ethnicity by sexual identity groups. A consistent pattern emerged for social support that included White lesbian women reporting more social support, friend support, and significant other support. It is possible that White lesbian women are not turning to religiosity and spirituality because they are turning to their friends and significant others for support. Having positive social support (e.g., being listened to by others, being believed) is posited to be associated with better post victimization recoveries (Ullman, 1996). The MSPSS, social support measure used in this study, only assesses for perceived social support and does not assess for positive versus negative social reactions (Zimet et al., 1988). Thus, the conclusions that can be draw from White lesbian women's social support is limited. However, when disclosing their sexual victimization to friends or significant others, the type of reaction that women receive is meaningful for their recoveries. For example, positive reactions are helpful but being turned against by someone in their social network is associated with social withdrawal, more self-blame, and decreased sexual assertiveness (Ullman & Relyea 2016).

In the current study, bisexual Latinx and Black women consistently reported the lowest rates of social support, friend support, and significant other support. This suggests that social support, specifically friend and significant other social support is not evenly distributed across intersectionality groups. The implications for differences in rates of social support are important when considered within the sexual victimization literature. For example, in a sample of Black female sexual assault survivors, women who endorsed

greater social support were less likely to endorse symptoms of depression and PTSD (Bryant-Davis et al., 2012). Social support is an important factor that can be utilized as an adaptive coping mechanism among survivors of sexual assault (Ullman, 1996). Altogether, this is an interesting finding as, White SMW and Black and Latinx SMW did not report differences in mental health symptoms, but there were significant differences in social support. Little is known about Black and Latinx SMW's rates of social support and its association to mental health symptoms; thus, this relationship should be explored more closely among SMWOC. Meyer et al. (2008) found that racial/ethnic minority LGBs report having smaller social support networks than do White LGBs. Having a smaller social support network does not necessarily mean that there are less opportunities to receive social support but it could indicate that there are less people that racial/ethnic minority LGBs can go to for support.

The study also aimed to examine whether bisexual women of color, relative to lesbian women of color, reported more adult sexual victimization. Results did not support the study's hypothesis; bisexual women of color did not report more adult sexual victimization or sexual revictimization relative to lesbian women of color. These findings should be interpreted with caution as the measure used to assess for adult sexual victimization is limited in scope. However, this is a novel finding, as research has established that bisexual women are more likely to experience rape (Canan et al., 2019), report more lifetime victimization (Hughes, McCabe, et al., 2010) and revictimization (Hequembourg et al., 2013) relative to lesbian women. Less is known about bisexual women's rates of adult sexual victimization and even less is known about bisexual women of color rates of adult sexual victimization. Although it is possible that lesbian

and bisexual women of color experience sexual victimization at similar rates due to their racial/ethnic minority identities, future work will need to replicate these findings across intersectionality groups. It is also important to note that this group of women was recruited from the community and were substantially more racially/ethnically diverse than many studies that have conducted similar research with sexual minorities (Balsam et al., 2011; Balsam et al., 2015; Heidt et al., 2005).

A final goal of the study was to test whether bisexual women of color, relative to lesbian women of color, reported more severe PTSD symptoms, depression symptoms, and anxiety. This hypothesis was not supported; bisexual women of color did not report greater number or more severe PTSD symptoms, depression, and anxiety. This finding is a novel contribution to the literature as most comparisons among bisexual and lesbian women have primarily included White participants and only a small portion of participants of color (Balsam et al., 2011; Balsam et al., 2015; Heidt et al., 2005). For example, Balsam et al. (2015) had a sample that was 76% White women, Balsam et al. (2011) consisted of 92.5% European American participants, and Heidt et al. (2005) sample was 62.3% White. In a longitudinal study that included more racial/ethnic diversity, Sigurvinsdottir and Ullman (2015) compared symptoms of depression and PTSD in a sample of Black and Non-Black heterosexual and bisexual women. They found that both depression and PTSD symptoms were significantly higher for bisexual women than heterosexual women. They also found that although baseline symptoms of depression were similar among Black and non-Black women, symptoms of depression decreased faster among Black women but not for non-Black women. Sigurvinsdottir and Ullman (2015) reported a significant interaction between race and sexual orientation for

PTSD symptoms, such that Black bisexual women had the highest symptoms followed by non-Black bisexual women. Black heterosexual and non-black heterosexual women had similar rates of PTSD symptoms. Overall, this study found that sexual minority status was associated with increased PTSD and depression symptoms. However, Black women improved faster over time on symptoms of depression and PTSD than non-Black women. In the current study, it is likely that the Black lesbian and bisexual women in each of the comparison groups (i.e., women of color) brought down the average level of PTSD and depression symptoms. This could be an explanation for the lack of differences seen among lesbian and bisexual women of color. Future work could separate women of color and assess whether racial/ethnic differences exist in the context of mental health among all SMW.

Study Limitations

There are limitations that are expected given that this study involved a secondary data analysis. For example, the measure used for sexual victimization was sufficient to determine whether women had experienced any sexual victimization (i.e., rape or any other kind of sexual assault), but it was not behaviorally specific and did not allow for a measure of the severity of the sexual victimization. Not using behaviorally specific questions lends itself to the possibility that some participants might not endorse being sexually assaulted because they do not have an accurate understanding of what sexual assault means, or they might fail to acknowledge sexual victimization because they are adhering to stereotypical rape scripts (e.g., sexual assault typically occurring by a stranger) (Koss et al., 1987; Leiting & Yeater, 2017; Littleton et al., 2009). Approximately half of women who experience a rape fail to acknowledge their

experience as a rape (Kahn et al., 2003). Factors that increase women's likelihood of not labeling the situation as rape include if the perpetrator was a boyfriend, if the victim was impaired by alcohol or drugs, or if the act involved only oral or digital sex (Kahn et al., 2003).

In sexual victimization literature, the Sexual Experiences Survey (SES; Koss et al., 1987) is considered the gold standard for assessing behaviorally specific definitions of sexual victimization as well as measuring the degree of severity (i.e., unwanted sexual contact, sexual coercion, attempted rape, and rape) of the victimization. It also assesses for sexual victimization since the age of 14. However, given the length of the CHLEW survey, and in order to lessen participant fatigue, it is understandable that two brief questions were utilized to inquire about sexual victimization. In line with the limitations of measuring sexual victimization, the current study's child sexual abuse measure included sexual abuse up until the age of 18. The measure was recoded to only include sexual assault until the age of 14; any sexual assault experiences after the age of 14 were recoded to be part of adult sexual victimization. This approach was utilized to be consistent with the sexual victimization literature and the SES, yet it limits the generalizability of the study's findings, as this is not how the child sexual abuse measure was intended to be used. Additionally, the dichotomous item used to measure anxiety was sufficient to understand whether women were experiencing anxiety, but it did not lend itself to clarifying how severe the anxiety was. Moreover, the items included for protective factors are by no means exhaustive of other additional protective factors that people may have, and they heavily focused on religiosity and spirituality.

The lack of measurement invariance with respect to the measures limits the conclusions that can be drawn from the study's findings. Although pulling factor scores is a common practice, it is less than ideal and, suggests that researchers should utilize measures that have been developed for and validated with racial and ethnic minorities. Moreover, the convenience sampling of this study implies that the study's findings may not generalize to other populations. However, given the problems with recruiting SMW, the current method of sampling may be the most feasible way to recruit a larger and more diverse sample size. While this study does have several limitations, the diversity in the study's sample is an undeniable strength and a necessary step towards further understanding sexual victimization, mental health, and protective factors in racially/ethnically diverse SMW.

Future Directions

Violence towards sexual minorities continues to be a major public health concern, and although this study provided an understanding of mental health and protective factors and their associations with adult sexual victimization in multiply marginalized women, more research needs to be conducted with SMWOC. It would be useful to follow women across time and conduct a trajectory analyses to further understand how protective factors and mental health symptoms vary more closely in time to when the adult sexual victimization experiences occur. It would also be useful to recruit more bisexual women, as the sample size for this group was smaller than for the lesbian group. Larger samples sizes would allow for more statistical power in detecting effects in analyses such as structural equation modeling.

To increase the possibility of disseminating the study's findings, it would be important to use mental health tools that reflect the measures that are used by mental health professionals in real clinical practice. For example, the PCL-5 [Posttraumatic stress disorder Checklist for DSM-5 (Diagnostic and Statistical Manual of Mental Disorder)] measure is widely used as a screening tool for posttraumatic stress disorder and maps on to the DSM-5 criteria for PTSD (Blevins et al., 2015). It is often used in clinical populations to track the severity of individual symptoms of PTSD. The Generalized Anxiety Disorder Screen (GAD-7) is a short screening tool to understand the severity of symptoms of anxiety and it maps on well to the clinical diagnoses of generalized anxiety disorder (Löwe et al., 2008; Spitzer et al., 2007) and has been validated in the general population (Löwe et al., 2008) and a primary care setting (Kroenke et al., 2007). For symptoms of depression, the Patient Health Questionnaire Depression Scale (PHQ-9) is a brief measure of depression used to rate the severity of current symptoms of depression and maps on to a clinical diagnosis of depression (Kroenke et al., 2001).

Collecting more information on women's racial/ethnic identities would allow for analyses informing whether racial identity can also serve as a protective factor in the context of mental health symptoms following a sexual victimization. This is particularly important for SMW as racial/ethnic social support could protect from the effects of trauma. Further work in sexual victimization among women with multiple marginalized statuses could help inform post-victimization treatment. Helping inform post-victimization treatment would allow for mental health providers to assess for important protective factors in women's post-victimization recoveries. Assessing protective factors

in victims of sexual assault would allow for a strengths-based approach that considers women's cultural identities. Encouraging mental health providers to focus on protective factors in the context of sexual victimization is vital to preventing women who are marginalized in our current society from being further disenfranchised.

Figure 1. Preliminary Measurement Model

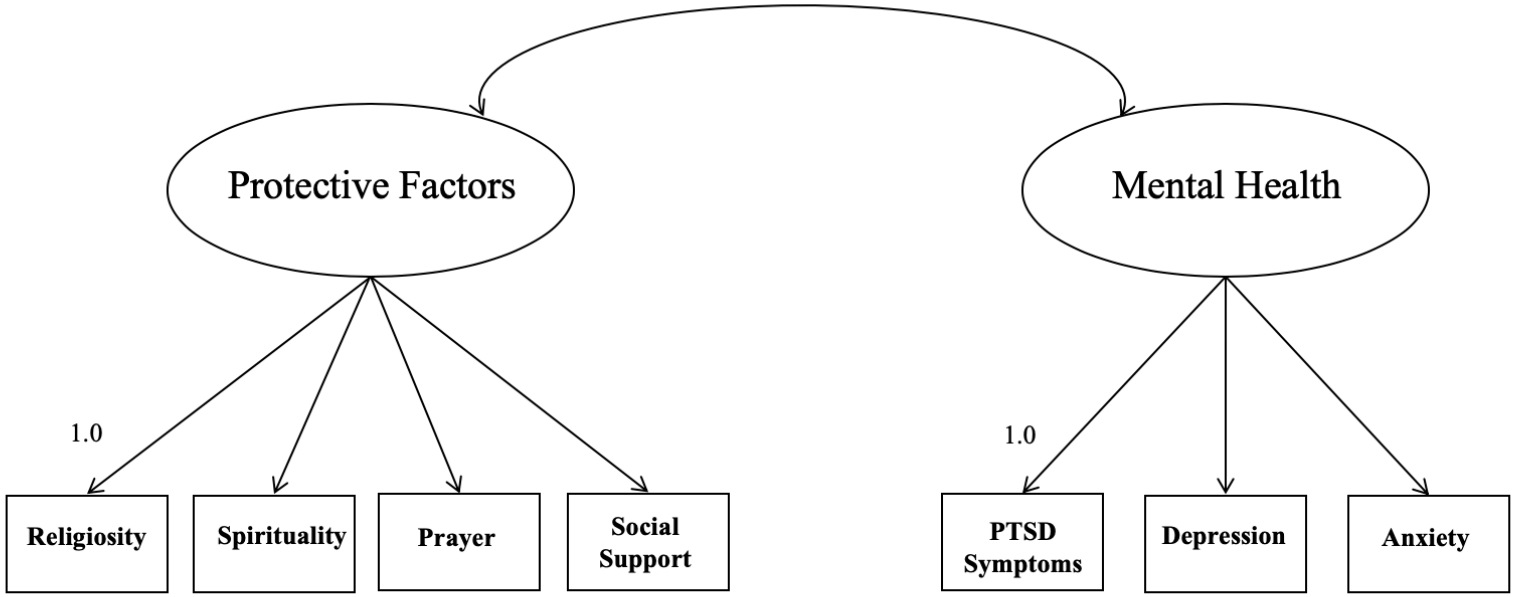
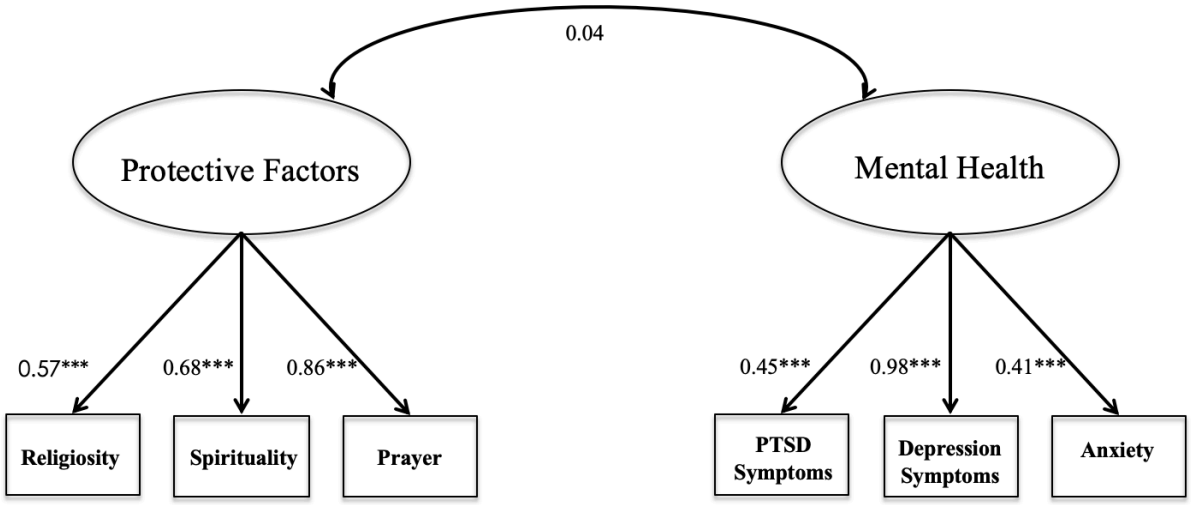


Figure 2. Final Measurement Model



Fit Indices
RMSEA: 0.075
CFI: 0.958
X^2 (8)= 38.39, p = <.001

p < .01**
p < .001***

Figure 3. Multiple Group Models 1a, 2a, and 3a

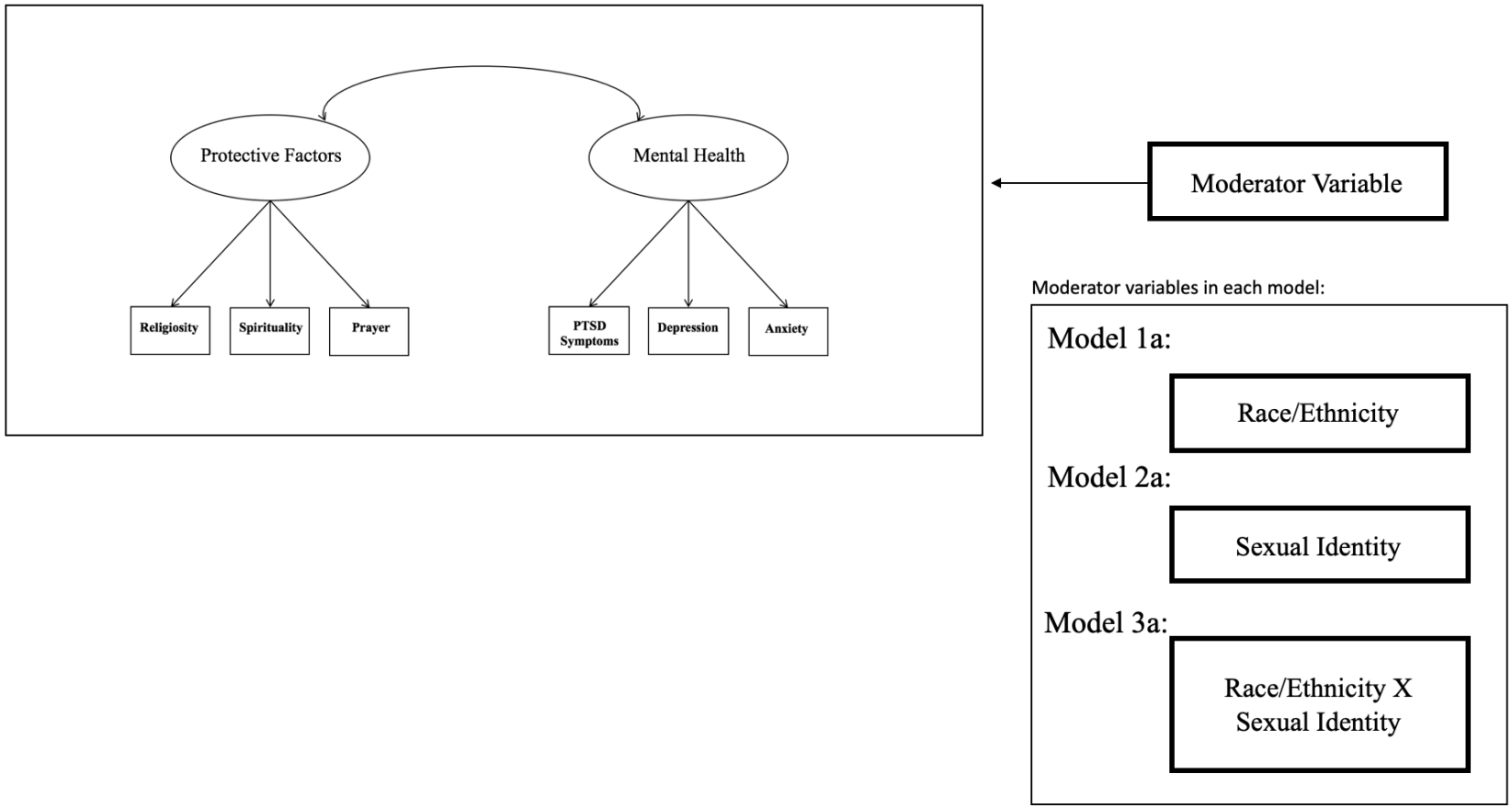


Figure 4. Multiple Group Models 4a, 5a, and 6a with Adult Sexual Victimization Included as an Exogenous Predictor

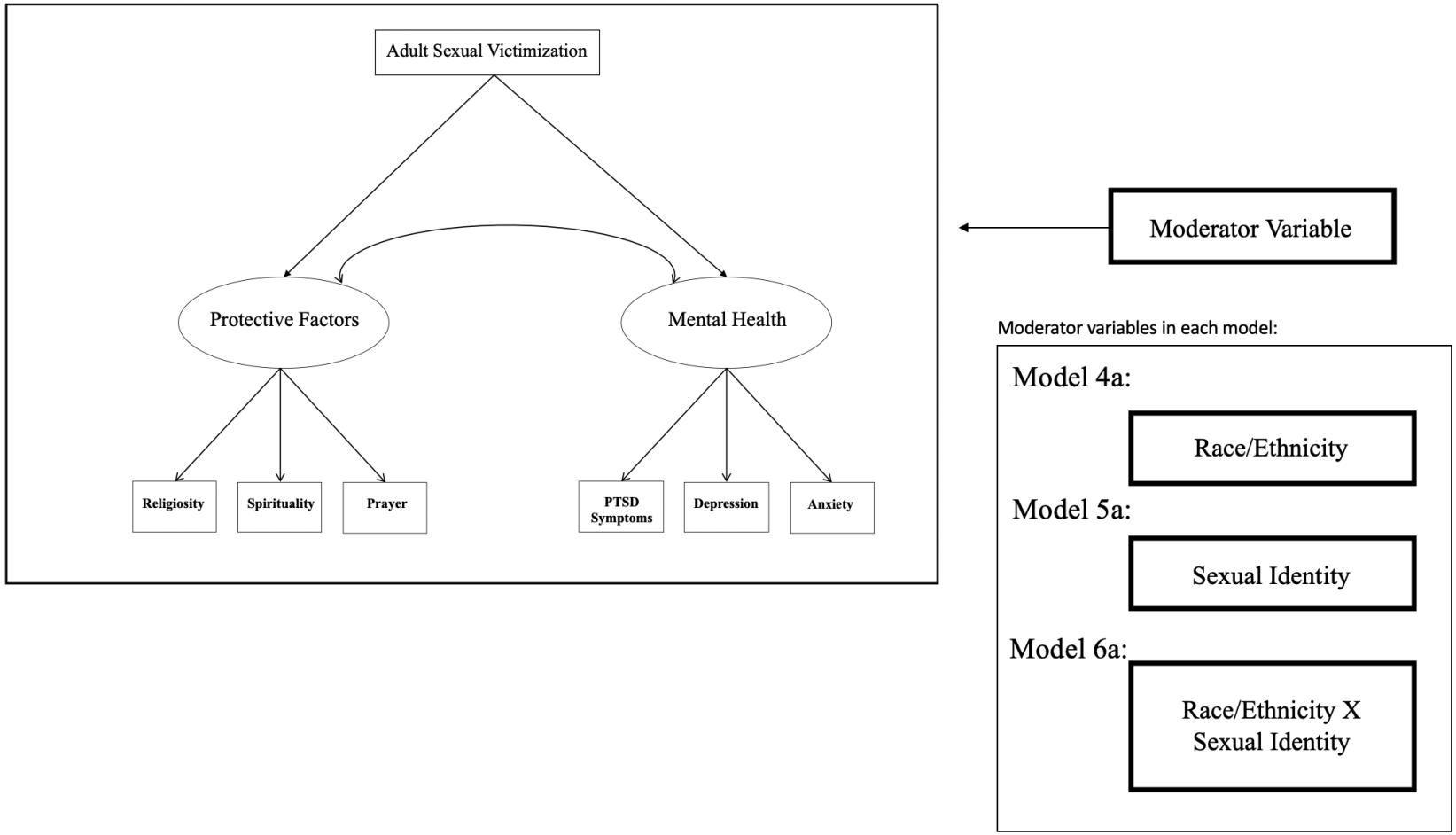


Figure 5. Final Measurement Model with Adult Sexual Victimization as an Exogenous Predictor

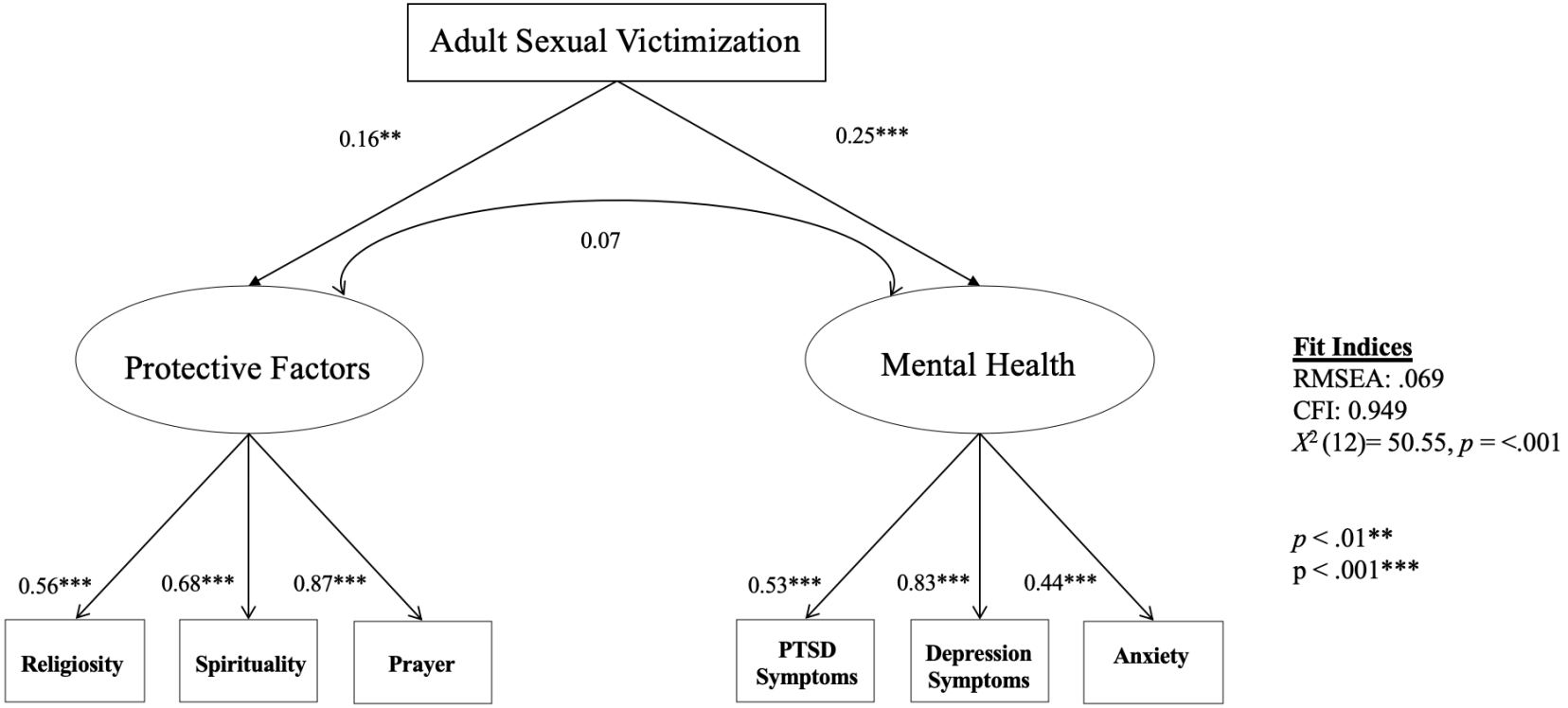


Figure 6. Multiple-Group Structural Equation Modeling Across Sexual Identity Subgroups (Model 2a)

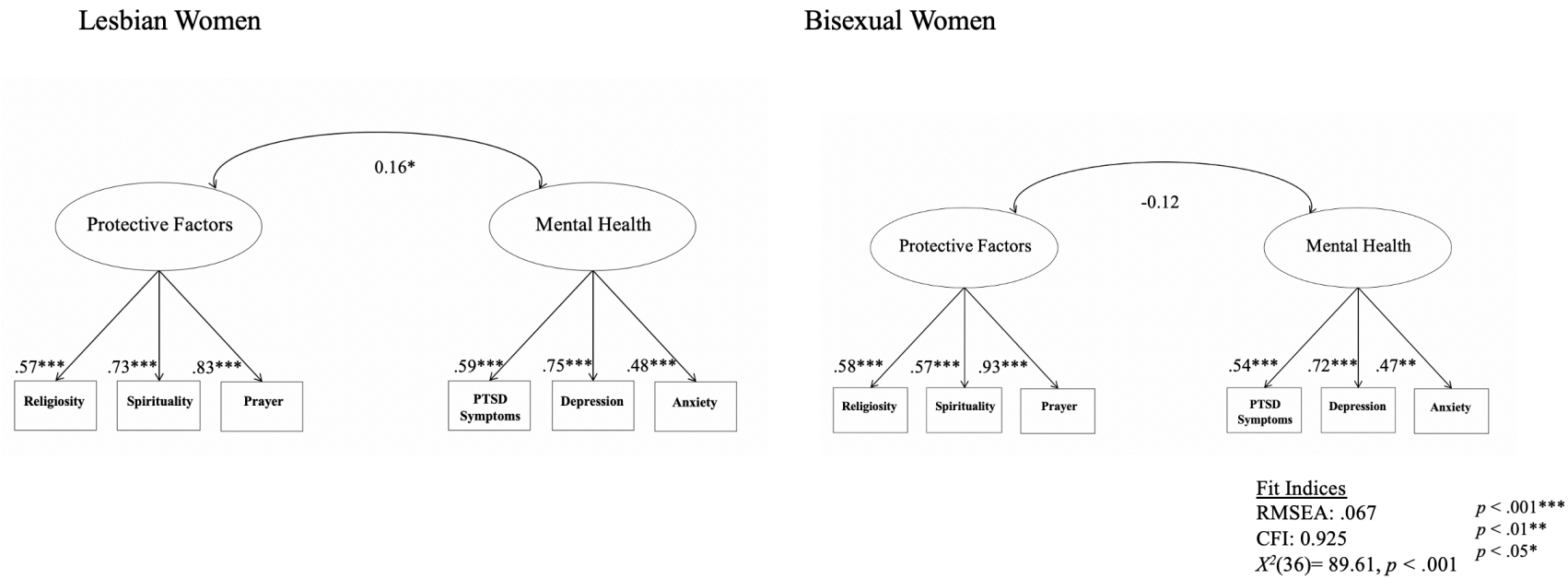


Figure 7. Multiple-Group Structural Equation Modeling Across Sexual Identity Subgroups with Adult Sexual Victimization (Model 5a)

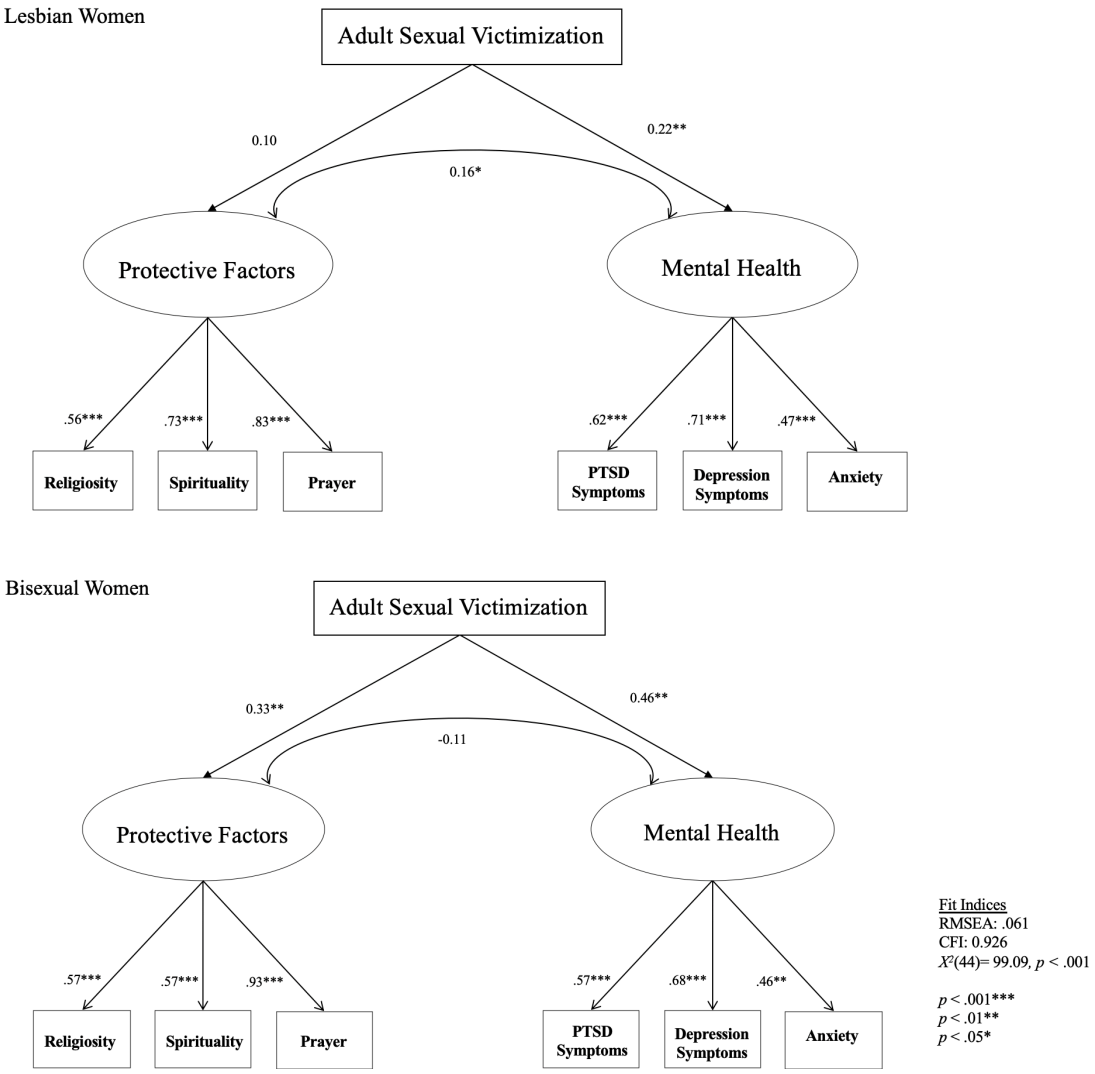


Table 1.

Participant Demographics

Self-Report Measure	Lesbian Women		Bisexual Women		Total	
	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
Relationship Status						
Single/dating	148	29.5%	78	45.3%	226	33.6%
In a relationship	105	21.0%	45	26.2%	150	22.3%
Living w/partner	220	43.9%	40	23.3%	260	38.6%
Separated	23	4.6%	5	2.9%	28	4.2%
Partner died	4	0.8%	2	1.2%	6	1.3%
Race/Ethnicity						
White	199	39.7%	62	36.0%	261	38.8%
Black	184	36.7%	66	38.4%	250	37.1%
Latinx	118	23.6%	44	25.6%	162	24.1%
Education						
8th grade or less	2	0.4%	5	2.9%	7	1.0%
Some HS	29	5.8%	19	11.0%	48	7.1%
HS Diploma	57	11.4%	28	16.3%	85	12.6%
Some College	158	31.4%	52	30.2%	210	31.2%
Bachelor's	110	22.0%	33	19.2%	143	21.2%
Graduate school	144	28.7%	35	20.3%	179	26.6%

Self-Report Measure	Lesbian Women		Bisexual Women		Total	
	Freq.	Percentage	Freq.	Percentage	Freq.	Percentage
Household income						
$0 - $14,999	111	22.2%	70	40.1%	181	26.9%
$15K - $29,999	58	11.6%	26	15.1%	84	12.5%
$30K - $49,999	86	17.2%	36	20.9%	122	18.1%
$50K - $59,999	39	7.8%	6	3.5%	45	6.7%
$60K - $74,999	49	9.8%	9	5.2%	58	8.6%
$75K - $99,999	38	7.6%	8	4.6%	46	6.8%
$100K - $199,999	78	15.6%	8	4.6%	86	12.8%
$200K+	20	4.0%	0	0.0%	20	3.0%

**Note*- Single/dating = not in a committed relationship. In a relationship = in a committed relationship not living with a partner. Living with a partner = living with a partner in a committed relationship. Partner died = in a past relationship in which the partner had died.

Table 2.

Participant's Self-Report Measures for only Lesbian and Mostly Lesbian Women ANOVA Results

	Only Lesbian		**Mostly Lesbian**				
Self-Report Measure	Mean	SD	Mean	SD	*F*	df	*p-value*
Social Support	66.02	12.84	68.27	10.60	2.91	(1,500)	0.09
PTSD	2.48	2.22	2.65	2.30	0.49	(1,500)	0.49
Depression	3.57	2.38	3.78	2.40	0.68	(1,500)	0.41

Note. PTSD = posttraumatic stress disorder. Self-report measure for social support is the multidimensional scale of perceived social support. Self-report measures for PTSD is the short screening scale for posttraumatic stress disorder. Self-report measure for depression is the national institute of mental health diagnostic interview schedule current depression.

Table 3.

Chi-Square Results for Differences in Self-Report Measures for Only Lesbian and Mostly Lesbian Women

Self-Report Measure	*X*	*df*	*p-value*
Adult Sexual Victimization	2.67	1	0.10
Child Sexual Abuse	0.01	1	0.92
Religiosity	2.40	4	0.67
Spirituality	7.36	2	0.03
Prayer	7.14	5	0.21
Anxiety	0.29	1	0.60

Table 4.

Goodness-of-Fit Indices for the Invariance Models for the Factor Model across Race/Ethnicity

Model	χ^2	df	CFI	RMSEA (90% CI)	Model comp	ΔCFI	ΔRMSEA	Decision
M1: Configural Invariance	41.47*	24	0.968	0.057 (.025- .086)				Accept
M2: Metric Invariance	50.28*	32	0.966	0.050 (.020-.076)	M1	-0.002	-0.007	Accept
M3: Scalar Invariance	144.03**	76	0.874	0.063 (.047- .079)	M2	-0.092	-0.013	Reject
M3a: Partial Scalar Invariance	71.36**	46	0.953	0.050 (.025-.071)	M2	-0.013	0.000	**Reject**

Note. $N = 673$; group 1 (White women) $n = 261$; group 2 (Black women) $n = 250$; group 3 (Latinx women) $n = 162$. *$p < .05$, **$p < .01$.

Table 5.

Goodness-of-Fit Indices for the Invariance Models for the Factor Model across Sexual Identity

Model	χ^2	df	CFI	RMSEA (90% CI)	Model comp	ΔCFI	ΔRMSEA	Decision
M1: Configural Invariance	45.88*	16	0.950	0.074 (.050-.100)				Accept
M2: Metric Invariance	62.08**	20	0.930	0.079 (.057-.102)	M1	-0.020	-0.005	Reject
M2a: Partial Metric Invariance	57.53**	19	0.936	0.078 (.055-.101)	M1	-0.014	-0.005	Accept
M3: Scalar Invariance	82.133*	41	0.931	0.055 (.037-.072)	M2a	-0.005	0.023	Reject
M3a: Partial Scalar Invariance	79.08**	34	0.925	0.063 (.045-.081)	M2a	-0.011	0.015	**Accept**

Note. $N = 673$; group 1 (Lesbian women) $n = 501$; group 2 (bisexual women) $n = 182$. *$p < .05$, **$p < .01$.

Table 6.

Goodness-of-Fit Indices for the Invariance Models for the Factor Model across Race/Ethnicity by Sexual Identity

Model	χ^2	df	CFI	RMSEA (90% CI)	Model comp	ΔCFI	ΔRMSEA	Decision
M1: Configural Invariance	85.36*	48	0.928	0.084 (.055-.113)				
M2: Metric Invariance	110.83**	68	0.920	0.075 (.048-.100)	M1	-0.008	-0.009	Accept
M2a: Partial Metric Invariance	103.93**	63	0.924	0.076 (.049-.102)	M1	-0.004	-0.008	Accept
M3: Scalar Invariance	252.901**	169	0.844	0.067 (.049-.083)	M2a	-0.080	-0.009	Reject
M3a: Partial Scalar Invariance	141.99*	99	0.920	0.062 (.037-.084)	M2a	-0.004	-0.014	**Reject**

Note. N = 673; group 1 (White Lesbian women) *n* = 199; group 2 (Black Lesbian women) *n* = 184; group 3 (Latinx Lesbian women) *n* = 118; group 4 (White bisexual women) *n* = 62; group 5 (Black bisexual women) *n* = 66; group 5 (Latinx bisexual women) *n* = 44. **p*< .05, ***p*<.01.

Table 7.

Standardized Factor Loadings for Multiple-Group Structural Equation Modeling Across Sexual Identity Subgroups (Model 2a)

		Lesbian Women	Bisexual Women
Latent Construct	Factor	*B* [S.E.]	*B* [S.E.]
Mental Health	PTSD	0.59 [*S.E.* 0.07]	0.54 [*S.E.* 0.08]
	Depression	0.75 [*S.E.* 0.08]	0.72 [*S.E.* 0.10]
	Anxiety	0.48 [*S.E.* 0.06]	0.47 [*S.E.* 0.10]
Protective Factors	Religiosity	0.57 [*S.E.* 0.05]	0.58 [*S.E.* 0.06]
	Spirituality	0.73 [*S.E.* 0.05]	0.57 [*S.E.* 0.06]
	Prayer	0.83 [*S.E.* 0.05]	0.93 [*S.E.* 0.07]
Protective and Mental Health		0.16 [*S.E.* 0.07]	-0.12 [*S.E.* 0.12]

Note. $N = 673$.

Table 8.

Standardized Factor Loadings for Multiple-Group Structural Equation Modeling Across Sexual Identity with Adult Sexual Victimization as an Exogenous Predictor (Model 5a)

		Lesbian Women	Bisexual Women
Latent Construct	Factor	*B* [S.E.]	*B* [S.E.]
Mental Health	PTSD	0.62 [*S.E.* 0.06]	0.57 [*S.E.* 0.07]
	Depression	0.71 [*S.E.* 0.06]	0.68 [*S.E.* 0.08]
	Anxiety	0.47 [*S.E.* 0.06]	0.46 [*S.E.* 0.09]
Protective Factors	Religiosity	0.56 [*S.E.* 0.05]	0.57 [*S.E.* 0.07]
	Spirituality	0.72 [*S.E.* 0.04]	0.57 [*S.E.* 0.06]
	Prayer	0.84 [*S.E.* 0.05]	0.93 [*S.E.* 0.07]
Protective and Mental Health		0.16 [*S.E.* 0.07]	-0.11 [*S.E.* 0.12]
Sexual Vic and Protective		0.11 [*S.E.* 0.07]	0.33 [*S.E.* 0.11]
Sexual Vic and Mental Health		0.22 [*S.E.* 0.08]	0.46 [*S.E.* 0.12]

Note. $N = 673$. Adult Sexual Victimization entered in the model as an exogenous predictor.

Table 9.

Adjusted Means for Protective Factor Scores across Race/Ethnicity by Sexual Identity Groups

Intersectionality Group	Mean	SD	*N*
Black lesbian women	0.28	0.37	189
Black bisexual women	0.21	0.36	65
Latinx lesbian women	-0.06	0.40	118
Latinx bisexual women	-0.08	0.41	44
White lesbian women	-0.19	0.46	199
White bisexual women	-0.36	0.39	62
All SMW	-0.01	0.46	670

Table 10.

Adjusted Means for Social Support Variables across Race/Ethnicity by Sexual Identity

	Social Support		**Friend Support**		**Sig. Other**	
Intersectionality Group	*Mean*	*SD*	*Mean*	*SD*	*Mean*	*SD*
White lesbian women	69.52	10.38	24.24	3.69	23.71	4.10
Black lesbian women	63.33	12.44	21.93	5.18	21.58	4.62
Latinx lesbian women	66.57	12.64	22.99	4.44	22.45	4.42
White bisexual women	67.34	12.29	23.20	4.28	23.13	4.19
Black bisexual women	63.58	11.15	21.60	4.21	21.45	3.98
Latinx bisexual women	63.72	15.80	20.55	6.01	21.60	5.36
All SMW	66.17	12.51	22.80	4.66	22.50	4.47

**Note*: Sig. Other = Significant other social support

Appendix A: National Institute of Mental Health Diagnostic Interview Schedule Current Depression

The next questions are about how you've been feeling

Have there been two weeks or more during which you felt sad, blue, depressed, or when you lost all interest and pleasure in things you usually cared about?

a. Yes (1) (If yes, Q1)
b. No (0) (If no, skip measure)
c. Don't know

1. Has there ever been two weeks or more when you lost your appetite, whether or not your continued to eat the same amount of food?
    a. Yes (1)
    b. No (0)
    c. Don't know

2. Have you ever lost weight without trying- as much as two pounds a week for several weeks, or as much as ten (10) pounds or more altogether?
    a. Yes (1)
    b. No (0)
    c. Don't know

3. Was there ever a time when your eating increased so much that you gained as much as two pounds a week for several weeks, or (10) pounds or more altogether?
    a. Yes (1)
    b. No (0)
    c. Don't know

4. Were there ever two weeks or more when nearly every night you had trouble with sleeping: waking too early, or sleeping too much, not staying asleep, or trouble falling asleep—any trouble sleeping?
    a. Yes (1)
    b. No (0)
    c. Don't know

5. Were there ever two weeks or more when you felt tired out all the time even when you had not been working very hard?
    a. Yes (1)
    b. No (0)
    c. Don't know

6. Were there ever two weeks or more when nearly every day you had to be moving all the time, that is, you couldn't sit still, and paced up and down?
    a. Yes (1)
    b. No (0)

c. Don't know

7. Have there ever been two weeks or more when nearly every day you talked or moved more slowly than is normal for you?
    a. Yes (1)
    b. No (0)
    c. Don't know

8. Has there ever been a period of several weeks when your interest in sex was a lot less than usual?
    a. Yes (1)
    b. No (0)
    c. Don't know

9. Were there ever two weeks or more when you felt worthless, sinful, or guilty?
    a. Yes (1)
    b. No (0)
    c. Don't know

10. Were there ever two weeks or more when nearly every day your thoughts came much slower than usual, or seemed mixed up OR you had a lot more trouble concentrating than is usually for you?
    a. Yes (1)
    b. No (0)
    c. Don't know

11. Were there ever two weeks or more when you thought a lot about death, either your own, someone else's or death in general
    a. Yes (1)
    b. No (0)
    c. Don't know

12. Or wo weeks or more when you felt like you wanted to die?
    a. Yes (1)
    b. No (0)
    c. Don't know

13. Have you ever felt so low that you thought of committing suicide?
    a. Yes (1)
    b. No (0)
    c. Don't know

14. Have you ever attempted suicide?
    a. Yes (1)
    b. No (0)
    c. Don't know

Appendix B: Anxiety

1. During your lifetime how much has nervousness or anxiety interfered with your everyday life or activities? 1 corresponds to “not at all” and 5 corresponds to “a great deal.” Give me a number.

   Not at all 1 --- 2 --- 3 --- 4 --- 5 A great deal

2. Now, I would like you think about the last 12 months. During the last 12 months, how much has nervousness or anxiety interfered with your everyday life or activities? Using the same scale, with 1 corresponding to “not at all” and 5 corresponds to “a great deal.” Give me a number.

   Not at all 1 --- 2 --- 3 --- 4 --- 5 A great deal

3. Have you ever considered yourself a nervous or anxious person about things that others would not usually worry about?
   a. Yes (1) (ask question 3A)
   b. No (0) (skip to next section)

   3A. IF YES: Do you consider yourself a nervous or anxious person in that way now?

   Yes (1)
   No (0)

Appendix C: Short Screening Scale for DSM-IV Posttraumatic Stress Disorder

Now, I would like to ask you some questions about extremely stressful or upsetting events that sometimes happen to people ***(the question below are provided for understanding the context in which the measure was asked).***

1.	Did you ever have direct combat experience in a war?
2.	Have you even been shot or stabbed or attacked with a gun, knife, or some other weapon, whether you reported it or not?
3.	Have you even been raped, that is, someone had sexual intercourse with you, when you did not want to, by threatening you or using some degree of force?
4.	Have you ever experienced any other kind of sexual assault?
5.	Have you ever been mugged, held up, or threatened with a weapon?
6.	Has anyone ever attacked you without a weapon but with the intent to kill or seriously injure you?
7.	Have you ever been held captive, tortured, or kidnapped?
8.	Have you ever been badly beaten up?
9.	Have you ever been in a serious car or motor vehicle crash?
10.	Have you ever had any other kind of serious accident or injury?
11.	Have you ever been in a fire, flood, earthquake, or some other type of natural disaster?
12.	Have you ever been diagnosed with a life-threatening illness?
13.	Have you ever had a child diagnosed with a life-threatening illness?
14.	Have you ever witnessed someone being killed or seriously injured?
15.	Have you ever unexpectedly discovered a dead body?
16.	Have you ever learned that a close friend or relative was raped or sexually assaulted?
17.	Have you ever learned that a close friend or relative was seriously physically attacked?
18.	Have you ever learned that a close friend or relative was seriously injured in a motor vehicle crash?
19.	Have you ever learned that a close friend or relative was seriously injured in any other accident?
20.	Have you ever experienced the sudden, unexpected death of a close friend or relative?
21.	Have you ever experienced any other extremely stressful or upsetting event? (If yes, Q22)
22.	Briefly, what was the most stressful or upsetting even of this sort that ever happened to you?

Now I am going to ask you a few more questions about your experience. You said that you had been/had experienced (fill in event) Got to Question 1.

1. Did you avoid being reminded of this experience by staying away from certain places, people, or activities? (REMIND RESPONDENT OF LIFE EVENT IF NECESSARY.)
    a. Yes (1)
    b. No (0)

2. Did you lose interest in activities that were once important or enjoyable?
    a. Yes (1)
    b. No (0)

3. Did you begin to feel more isolated or distant from other people?
    a. Yes (1)
    b. No (0)

4. Did you find it hard to have love or affection for other people?
    a. Yes (1)
    b. No (0)

5. Did you begin to feel that there was no point in planning for the future?
    a. Yes (1)
    b. No (0)

6. After this experience were you having more trouble than usual falling asleep or staying asleep?
    a. Yes (1)
    b. No (0)

7. Did you become jumpy or get easily startled by ordinary noises or movements?
    a. Yes (1)
    b. No (0)

Appendix D: Religiosity and Spirituality Items

Next, I have a few questions about how you would describe yourself and your attitudes and beliefs.

We would like to know how religious you would say you are. By "religious" we mean how actively you currently follow the teachings of a specific religion and participant in activities of that religion.

1. Would you say that you currently are…?
    a. Very religious (2)
    b. Somewhat religious, or (1)
    c. Not at all religious (0)

2. We would also like to know about your spirituality. By "spirituality," we mean how often you spend time thinking about the ultimate purpose of life or your own relationship to a higher power in life. In this sense, would you say that you currently are…
    a. Very spiritual (2)
    b. Somewhat spiritual (1)
    c. Not at all spiritual (0)

3. About how often do you pray?
    a. Several times a day (5)
    b. Once a day (4)
    c. Several times a week (3)
    d. Once a week (2)
    e. Less than once a week (1)
    f. Never (0)

Appendix E: The Multidimensional Scale of Perceived Social Support

People often look to others for companionship, assistance and other types of support. Please tell me how much you agree or disagree with the following statement:

1 = very strongly disagree
2 = strongly agree
3 = disagree
4 = neither agree nor disagree
5 = agree
6 = strongly agree
7 = very strongly agree

Social Support:	1	2	3	4	5	6	7
1. There is a special person who is around when I am in need	1	2	3	4	5	6	7
2. There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
3. My family really tries to help me	1	2	3	4	5	6	7
4. I get the emotional help and support I need from my family	1	2	3	4	5	6	7
5. I have a special person who is a real source of comfort for me	1	2	3	4	5	6	7
6. My friends really try to help me	1	2	3	4	5	6	7
7. I can count on my friends when things go wrong	1	2	3	4	5	6	7
8. I can talk about my problems with my family	1	2	3	4	5	6	7
9. I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
10. There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
11. My family is willing to help me make decisions	1	2	3	4	5	6	7
12. I can talk about my problems with my friends	1	2	3	4	5	6	7

<u>Items broken down by subscales:</u>

Friend Items: 6, 7, 9, 12
Family Items: 3, 4, 8, 11
Significant Other Items: 1, 2, 5, 10

Appendix F: Child Sexual Abuse

Women's sexual experiences when they are young can affect their feelings about themselves and their relationship with other people later in life. For this reason, we need your help to learn more about what kinds of sexual experiences you may have had ***before you were age 18**** *and how you felt about these experiences.*

Some of these experiences may have troubled or upset you; some may have seemed OK at the time. You may feel differently about these experiences now than you did at the time they occurred.

We need to understand about ***all*** *types of sexual experiences – with a man or woman, boy or girl, of any age—even if they did not involve sexual intercourse and whether or not you participated willingly.*

These experiences could be with a person not in your family, or with a family member such as your brother, your uncle, or your father. They could have involved only touching someone's private parts or them touching yours; they might have involved other people looking at your private parts or showing you theirs, or asking you to do or to let them do sexual things.

We realize that some of these questions may not apply to you, but we need to ask same questions of ***all*** *our participants.*

Before you were 18, did someone ever:

1. Ask you or force you to show them any of your private or sexual parts (for example, genital area, breast, or buttocks)?
    a. Yes
    b. No

2. Show you their private or sexual parts?
    a. Yes
    b. No

3. Touch or fondle any of your private or sexual parts?
    a. Yes
    b. No

4. Have you touch or fondle any of their private/sexual parts?
    a. Yes
    b. No

5. Do sexual kissing with you (for example, deep kissing, or French kissing)?
    a. Yes

b. No

6. Do sexual things to you with their hands or mouth?
    a. Yes
    b. No

7. Have you do sexual things to them with your hands or mouth?
    a. Yes
    b. No

8. Have sexual intercourse with you, vaginal or anal?
    a. Yes
    b. No

**Note*- Wyatt's criteria takes into consideration the age of the participant when the experience happened and the age of the person who perpetrated the abuse (among other considerations). However, this variable was recoded to only includes instances of child sexual abuse from the ages of 0-13. Any sexual victimization after the age of 14 was recoded as adult sexual victimization.

Appendix G: Adult Sexual Victimization

Now, I would like to ask some questions about extremely stressful or upsetting events that sometimes happen to people.

1. Have you ever been raped, that is someone had sexual intercourse with you, when you did not want to, by threatening you or using some degree of force?
    a. Yes (1) (ask Q3)
    b. No (0) (skip to Q4)

2. Have you ever experienced any other kind of sexual assault?
    a. Yes (1) (ask Q4)
    b. No (0) (skip to Q)

3. You said that you had been raped, that is, someone had sexual intercourse with you, when you did not want to, by threatening you or using some degree of force. How many times did this happen?

4. You said that you had experienced some kind of sexual assault other than rape. How many times did this happen?

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