

**PERCEIVED DISCRIMINATION EXPERIENCES AND SOCIAL WELL-BEING
AMONG MIDLIFE AND OLDER ADULT MEN WHO HAVE SEX WITH MEN FROM
THE MULTICENTER AIDS COHORT STUDY**

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ABSTRACT

Many men who have sex with men (MSM) in midlife (40-64 years) and older adulthood (65+ years) have survived a lifetime fighting and advocating for equality given exposures to social discrimination attributed to stigmatized social identities (e.g., sexual orientation, racial/ethnic minority, and HIV-positive status). Few public health research efforts have given attention to how MSM's exposure and salience of social discrimination across the life course have shaped social well-being in midlife and older age. Three studies were conducted using a cross-sectional healthy aging sub-study of the Multicenter AIDS Cohort Study (MACS). Study 1 explored whether older adulthood, racial/ethnic minorities, and HIV+ serostatus were associated with higher prevalence of *any lifetime*, *any sexuality-related*, and *multifactorial* (number of discrimination types) *discrimination*. Non-Hispanic Blacks were associated with greater any lifetime discrimination ($aOR=1.42$, $p<0.001$) and associated with less sexuality-related discrimination ($aOR=0.56$, $p=0.001$) compared to Non-Hispanic Whites. There was a statistically significant interaction associated to multifactorial discrimination between Non-Hispanic Black identity and HIV serostatus ($aOR=0.46$, $p=0.019$). Interestingly, no statistically significant differences in discrimination were observed by age cohort. Study 2 examined current internalized homophobia by discrimination exposure and salience. We observed no statistically significant differences in internalized homophobia by any discrimination or salience variables.

Study 3 assessed differences in six indicators of social well-being (*attachment, social integration, guidance, reassurance of worth, reliable alliance, and opportunity for nurturance*) by discrimination exposure and salience. Though the mean scores for social well-being indicators were high overall, both any lifetime discrimination and multifactorial discrimination were negatively associated with indicator scores except *opportunity for nurturance*. Sexuality-related discrimination was negatively associated with *social integration* only. Across all discrimination salience variables, participants who reported discrimination and no/low salience exhibited lower scores on social well-being indicators than participants who reported no discrimination. Study 3 extended the public health literature on aging MSM, elucidating the role of salience on discrimination's relationship to social well-being and that despite social adversity, these men have been able to maintain or achieve high social well-being. Future research should continue exploring midlife and older adult MSM's resiliencies to identify factors that interrupt the deleterious impact of discrimination on health.

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PREFACE

As a PhD student at the University of Pittsburgh Graduate School of Public Health, I was privileged with an academic and professional opportunity much greater than I could have ever imagined. From the beginning of my journey and throughout the dissertation process, I have received the support of so many hard-working, intelligent, and inspiring individuals who deserve my utmost gratitude. First, I would like to thank the many brave and resilient men who gave their time to participating in the Multicenter AIDS Cohort Study (MACS). Their contributions to the study throughout the past few decades have helped shape healthcare for my generation as well as future generations of men who have sex with men (MSM).

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provided in keeping me company when working on school assignments and my dissertation from home.

1.0 INTRODUCTION

1.1 HEALTHY AGING IN THE UNITED STATES

One of the overarching goals launched by the Department of Health and Human Services (DHHS) in their Healthy People 2020 report was to promote quality of life, healthy development, and healthy behaviors across all life stages [1]. One of the priority populations suggested by DHHS is older adults, more specifically subpopulations like sexual minorities who have unique needs and challenges in regard to achieving and maintaining optimal health [2]. Research efforts that seek to understand healthy aging at the intersection of sexual minority status are recognized as critical approaches to reducing sexual orientation-related health disparities in old age given the potential influence of marginalization endured by many across modern U.S. history [3-5].

Though a diversity of healthy aging definitions exist in the literature, social and behavioral scientists have expanded the definition beyond changes in physiology and physical function [6-7]. The West Virginia Rural Healthy Aging Network defines healthy aging as “the development and maintenance of optimal mental, social, and physical well-being and function in older adults” [8]. They further suggest that these indicators are likely to be achieved in the context of community safety, health promotion, and engagement to health-related services. Though all of these characteristics are critical to understanding healthy aging at a population level, the increasing cultural diversification and intersections across sociodemographic indicators

(e.g., race/ethnicity, immigration, LGBT, religiosity) raises the need to contextualize the social contexts that shape healthy aging at the community and individual levels [9]. In acknowledging diversity in this priority population, it is important to address how subpopulations' abilities to capitalize on social and cultural resources are experienced heterogeneously across minority groups in the U.S [9-11].

1.2 DEMOGRAPHIC TRENDS IN AGING IN THE UNITED STATES

The need to address healthy aging within the context of public health research is becoming increasingly important as the age-specific, demographic landscape in the United States continues to shift upward. Recent estimates of adults aged 45 years and older is roughly 30% (midlife [45-64 years]: 16.5%; older adulthood [65+ years]: 13.2%) and is estimated to exceed 50% (midlife: 24.5%; older adulthood: 25.8%) by 2060 [12]. The literature in human development characterizes midlife as a time of greater social range, responsibility, engagement, and complexity compared to young and late adulthood as well as a time in which chronic illnesses and diseases begin to surface [13]. Older adulthood, on the other hand, is characterized as a stage of reflection on one's lifetime achievements, the opportunity to pursue personal interests in retirement, the consolidation of character strengths and resilience, a time of social role loss, death of loved ones, and threats to independence [14]. As people transition from midlife to older adulthood, increases in age suggests greater susceptibility to chronic health conditions, weakening physical functioning, and an overall lower quality of life [15]. These outcomes have important implications for the capacity and extent to which the U.S. health care system can provide optimal services for citizens aging into older life. Furthermore, efforts to

prevent disease and facilitate healthy aging as people transition into older age is needed given the rising costs of health care and due to the fact that 95% of health care costs among older adults are attributable to chronic diseases [16].

1.3 DEMOGRAPHIC STATISTICS AND TRENDS IN AGING AMONG SEXUAL MINORITIES

Age-specific, demographic trajectories in the U.S. population have implications for population growth among sexual minority adults in older age as well. Though surveillance estimates of sexual minority individuals warrant cautious scrutiny, the number of sexual minority (lesbian, gay, and bisexual [LGB]) older adults is expected to double by the year 2030, falling between two and six million people [17-18].

Recent public health research efforts have given attention to midlife and older adult men who have sex with men (MSM) because of this population's historical and disproportionate burden of HIV/AIDS [19]. Current estimates suggest that greater than 50% of individuals living with HIV 50 years of age or older [20]. Despite efficacious treatments that permit HIV-positive individuals to live long, healthy lives, HIV/AIDS continues to be a top 15 leading causes of death for adults in the general population between the ages of 45 to 54 years (11th), ages 55 to 64 years (14th) [22-22]. To our knowledge, no sexual orientation-stratified data exists on leading causes of death by gender or age; however, among men between 45 to 54 years, HIV is the 9th leading cause of death and among Black men, it is the 5th and 9th leading cause of death for those in the age groups 45-54 years and 55-64 years, respectively [23-24]. Lastly, one in ten new HIV diagnoses in the United States occur in people 50 years and older with Black and Hispanic

communities experiencing an incidence rate twelve and five times that of Non-Hispanic Whites, respectively [25-26]. Taken together, the role of marginalization across the sociodemographic characteristics including age, race/ethnicity, sexual orientation, and HIV status may have poor health, well-being, and mortality implications for MSM in midlife and older age.

1.4 LIFE COURSE PERSPECTIVE

Aging and human development, as an experience across the life course, is shaped and structured by social institutions, networks, roles, and norms; therefore, it is most appropriate to address social well-being as the social dimension of healthy aging from a life course perspective [27]. Social well-being is defined as the potential benefits of public life afforded to an individual through social integration and cohesion, a sense of belonging and interdependence, and a state of shared consciousness and collective fate [10]. With attention to social well-being, the life course perspective seeks to contextualize the aging process through five principles:

1. *The Principle of Life-Span Development* suggests that aging is influenced by social experiences that are developmentally meaningful and that great attention must be given to the ways in which social change impacts development.
2. *The Principle of Agency* indicates that an individual's circumstance is shaped by opportunities and constraints of one's social environment.
3. *The Principle of Time and Place* gives weight to the sociohistorical and geographic contexts that shaped how an individual's social environments manifested.

4. *The Principle of Timing* argues that social changes and events are experienced differentially depending on where one is situated across the life course (e.g., adolescence, young adulthood, midlife, and older adulthood).
5. *The Principle of Linked Lives* suggests that aging is an interdependent process that is structured by one's social history, environment, and resources [28].

The ways in which people live, behave, and interact within one's environment are shaped by the sociocultural and sociopolitical norms during their formative years [29]. Jacobs, Rasmussen & Hohman argue that the social needs (e.g., social support) and concerns (e.g., loneliness, health and income) in respect to aging are similar for sexual minorities as heterosexual older adults; however, sexual minorities experience these needs and concerns under the effect of homophobia [30]. As research and programmatic efforts seek to understand the lives and aging processes of sexual minorities, it is critical to acknowledge the ways in which one's historical contexts across the life course merges with one's social and psychosocial health experiences [4]. Given the turbulent history regarding LGBT progress in the United States, there is and has been great diversity in midlife and older adult individuals' security and capacity to engage or socialize openly as sexual minorities [31]. Sexual minority older adults grew up in a time of great stigmatization of same-sex relationships and often rejected or abandoned by biological family members. As a result, many older adults have had to form or seek out social networks (e.g., families of choice) to maintain a sense of family and belongingness [32].

Consistent in the epidemiology of aging literature, prior findings suggest that some identity groups of people have a greater chance for good health and longevity than others – that people with the least socially and economically privileged statuses have greater exposure to

health-related stressors [33]. First, in a recent essay, Bennett addresses that in considering the strengths and challenges of aging among sexual minorities, lesbian, gay, and bisexual identities represent distinct identity groups who possess differing needs and experiences [17]. Midlife and older adult MSM in the U.S. are becoming of great interest in the social sciences because they came of age (defined as fitting and navigating one's sexuality into evaluations of society and self) within a rigidly heteronormative society and a sociopolitical landscape much less progressive on sexuality-related issues than that of today [34]. Situating midlife and older adult MSM within a life course perspective may be instrumental to better understanding the contemporary needs of this community as they continue to age.

Midlife and older adult sexual minority men grew up in a time in which same-sex activity was criminalized and severely stigmatized as sinful, pathological, and immoral [35]. Those of the oldest generation bore witness to the lavender scare of the McCarthy Era (1950s), which sought to justify anti-gay discrimination by characterizing gay men as morally corrupt, psychologically immature, slaves to their same-sex attractions, and committed communists to soviet leadership [17,35]. In addition, the American Psychological Association included homosexuality as a sociopathic personality disorder in the first *Diagnostic and Statistical Manual* (DSM-I) in 1952 and was not removed until 1973 [36]. In the decades following, many midlife and older adult sexual minority men observed historical events and periods (e.g., gay rights movement, height of the AIDS epidemic, same-sex marriage bans/legalization) that shaped public attitudes on sexuality at interpersonal, community, and societal levels [17]. Having lived through these periods marked by invisibility and intense anti-gay stigmatization, for many midlife and older adult MSM, the ability to develop and build their lives through adulthood has been greatly limited by these adversities [37].

1.5 SOCIAL DISCRIMINATION

For marginalized communities like sexual minorities, among the stressors that predict one's social well-being across the life course includes pervasive stigma and experiences of social discrimination. Social discrimination is defined as the exclusion and unfair treatment against persons who belong to disadvantaged groups by members of advantaged groups [37]. Discriminatory experiences at the interpersonal level proliferate across the life course and may be encountered in multiple contexts including education, employment, the criminal justice system, health care, and in the provision of public services and accommodations [33,38]. In a recent review by Hatzenbuehler, Link, and Phelan, they argued that stigma and discrimination are fundamental causes of health inequality at a population level [39]. First, the fundamental causes theory suggests that some social factors, like stigma, persist to create health inequality despite changes in risk or prevalence of a given disease. These fundamental social causes are related to individuals' lack of access to critical resources (e.g., beneficial social connections) that may be extracted for health benefit. In this review, they outline how stigma has been examined as a fundamental social cause of health inequity among sexual minorities in the contexts of housing, employment, social relationships, and health care. To illustrate the roles of stigma and discrimination on health among sexual minorities, Hatzenbuehler and colleagues observed that living in communities with high levels of anti-gay prejudice was significantly associated with premature mortality [40].

Overall, stigma and discrimination operate in shaping health inequalities by depriving valuable social resources, creating and maintaining a hierarchy of social status based on characteristics that place groups (e.g., race/ethnicity, HIV status, and sexual orientation) vulnerable to social deprivation. A prior population-based study of older adults found that

perceived stigma was associated with a higher relative risk of death [41]. This relationship was found to be stronger among Black participants compared to Whites and stronger for participants who indicated a more demeaning (e.g., personal rejection) discriminatory experience compared to events that were related to unfair treatment. Stigma and experiences of discrimination is associated with increases in social isolation through fears of rejection, concealment of stigmatized statuses, and avoiding close relationships [42]. Socially isolated individuals are then in turn less likely to have access to critical sources of social support, a necessary component of healthy aging. In a recent study of sexual and gender minority older adults, experiences of marginalization was associated with fewer social resources and poor self-rated mental health (lower positive affect, higher negative affect, and depression); however, the extent to which within-group differences are observed are unknown and warrant further scrutiny given the distinctness of social identities by age cohorts, race/ethnicity, sexual identity, and HIV status for MSM [43].

2.0 STRESS THEORIES AND MSM'S EXPERIENCES OF SOCIAL DISCRIMINATION

Experiences of stress across the life course are especially relevant to processes of healthy aging given the abundance of literature that connects persistent, chronic stressors to poor psychological well-being, physical morbidity, and mortality [44]. Additionally, it is suggested that among the stressors closely related to health status across the life course is discriminatory experiences [33,41]. A number of stress theories have been developed and applied to sexual minority communities to better understand health disparities by sexual orientation.

2.1 SOCIAL STRESS THEORY

The social stress theory is an appropriate approach for addressing health inequalities experienced by MSM [44-46]. It extends stress theories to include the social environment in addition to personal events as sources of stress that may shape health [47]. This theory assumes a social hierarchy, giving weight to an individual's social position and acknowledges the degree of social disadvantage conferred by one's membership to one or more marginalized groups [45]. Social stress theory operates under the premise that being part of disadvantaged social positions influences the group as a whole, even if an individual within that group is not directly marginalized [45]. Social forces such as experiences of discrimination increase an individual's

average risk for psychological distress among disadvantaged groups; therefore, those who belong to disadvantaged groups have a greater likelihood of experiencing greater amounts of stress and worse health outcomes compared to advantaged groups [45-46].

To our knowledge, there have been very few empirical studies examining health and well-being from a social stress theoretical perspective in which they sought to describe disparities by sexual orientation. Given the inherent disadvantage of being a sexual and/or racial minority in the U.S., one study sought to determine if simply being part of these identity groups yielded greater experiences of stress compared to their heterosexual and White counterparts [45]. They found that identifying as a sexual minority was associated with greater expectations of stigma, number of prejudice-related stressful events, and the number of large magnitude stressful events. In addition to these outcomes, racial minorities were found to exhibit higher perceived everyday discrimination and chronic strains.

In another sample consisting solely of sexual minorities, one study sought to determine if disadvantaged social status including young age, racial/ethnic minority status, and bisexual identity exhibited poorer social and psychological well-being [48]. Their findings indicated that participants in their oldest age cohort (ages 45-59 years) exhibited the highest average social well-being compared to their younger cohorts (ages 18-29 and 30-44 years). The results on social and psychological well-being did not exhibit differences by racial/ethnic minority or bisexual identity statuses in adjusted models.

Social stress theory may provide critical insight regarding the experiences of social discrimination among midlife and older adult MSM in the U.S. As witnesses to an evolving national, sociopolitical structure in respect to sexual morality, midlife and older adult MSM have lived through decades of intense anti-gay stigma that may have shaped their exposures to

stressors such as social discrimination. To our knowledge, no efforts have sought to account for social discrimination from a social stress and healthy aging perspective among MSM. Efforts to identify those who have been heavily burdened by social discrimination across the life course given marginalized social positions may catalyze public health strategies that seek to develop individuals' positive adjustment into older age.

2.2 MINORITY STRESS THEORY

To better understand how social disadvantage, access to social resources, and social well-being are experienced among midlife and older adult sexual minority men, it is critical to ascertain how sexual orientation-specific stressors are experienced at the inter- and intrapersonal levels as well. Minority stress theory posits that sexual minority men experience psychological distress given the independent and compounding experiences of internalized homophobia (sexual minorities' inward assimilation of society's homophobic attitudes), expectations of rejection and discrimination (stigma), as well as actual events of discrimination and violence due to one's sexual minority orientation [49]. Recent literature has expanded sexual minority stress to include factors such as sexual identity concealment/disclosure [48]. Furthermore, the additive nature of minority stress above and beyond the general stressors experienced by the general population suggests that stigmatized people, especially people with multiple stigmatized identities (e.g., age, race/ethnicity, sexual orientation, and HIV status), require adaptation and levels of resilience greater than those of non-stigmatized groups [50].

Given this theory's popularity in examining the health and well-being of sexual minority individuals, a number of studies have been conducted measuring minority stressors among

various segments of sexual minority communities. The rationale behind incorporating the minority stress theory into sexual minority research is largely guided by the vast literature that suggests chronic stress as a robust predictor of poor health [51]. Those who possess a stigmatized, minority identity are greater exposed to stressful conditions and situations across the life course than those who do not possess a stigmatized identity [52]. Chronic exposures to stress in particular, are considered toxic because they are likely to result in long-term and sometimes permanent changes in emotional, physiological, and behavioral responses that elevate one's susceptibility to disease as well as disease progression [53]. This pathway is relevant to older sexual minority men given their disproportionate burden of HIV prevalence, history of social invisibility, and lingering, pervasive, anti-gay stigma at interpersonal and societal levels [54].

The prevalence of minority stressors among sexual minorities in the United States has been well documented. In a sample of sexual minority adults, Mays & Cochran observed that 42% of gay and bisexual individuals attributed lifetime and day-to-day discriminatory experiences to their sexual orientation [55]. In a recent survey, Herek found that gay men reported indicators of enacted sexual orientation-related stigma (e.g., violence, property crimes, threats of violence, verbal abuse, and job/housing discrimination) at greater percentages than bisexual men, lesbians, and bisexual women, respectively [56]. Interestingly, another study argued that not all gay men experience the same level of sexual minority stress, that those who hold greater identification with the gay community were more likely to report discrimination but less perceived stigma compared to those with lower identification [57].

At a more proximal level, through negative messages and enacted experiences in respect to sexual orientation, sexual minorities hold feelings of poor mental health and internalized homophobia across the life course [58]. Though recent findings indicate that sexual minority

men largely resolve issues of internalized homophobia over time, little is known about how disruptions in social health and well-being (e.g., experiences of discrimination) shape overall mental and physical health in older adulthood [59]. To further illustrate the role of sexual identity development under the pervasiveness of homophobia across the life course, chronic shame and guilt associated with concealing one's sexual identity accounted for age-related differences in experiences of depression in a cohort of young adult and midlife sexual minority men [58]. Furthermore, despite many midlife and older adult sexual minorities' abilities to resolve any experiences of internalized homophobia, many continue to express great concerns regarding disclosing their sexual orientation, especially within the contexts of utilizing older adult social services not targeted tailored to sexual minorities. As older adult care service provision provides critical platforms to address health concerns, culturally tailored efforts to reduce the impact of minority stressors may yield positive change in indicators of psychosocial health, well-being, and healthy aging in the lives of midlife and older adult sexual minority men [47].

As the field of healthy aging among sexual minorities has emerged as a public health priority topic in the U.S., the application of a minority stress perspective has provided insight into the challenges sexual minorities face across the life course and into old age [2]. An early study assessing minority stress variables with elder sexual minorities indicated that sexual minority men reported greater internalized homophobia than sexual minority women and that positive changes in mental health were associated with a higher percentage of people to whom participants disclosed their sexual orientation [60]. More recent studies have supported the role of sexual minority stressors on well-being as well. In a study of midlife and older gay men, an increase in internalized homophobia was related to greater experiences of loneliness. Expanding

on the minority stress model, another study found that internalized homophobia mediated the relationship between concealing one's sexual orientation and psychological distress in a sample of older adult sexual minorities [50]. In this structural model, concealment of one's sexual orientation was associated with greater internalized homophobia, which in turn was associated with greater psychological distress.

Placing sexual minority stress within a sociohistorical context, Wight et al. discussed the importance of acknowledging midlife and older adult MSM's connection to the height of the HIV epidemic and how it had a profound effect on the lives of these men [61]. As many of these men experienced the loss of partners and peers, HIV bereavement was included as an age-specific sexual minority stressor in addition to perceived gay-related stigma. In their sample of midlife and older adult MSM, perceived gay-related stigma and experiences of excessive HIV bereavements were positively associated to depressive symptoms and perceived gay-related stigma was negatively associated to positive affect.

Lastly, in addressing that different identities confer excess stress, researchers have acknowledged the idea of multiple minority stress; specifically, that unique stressors are experienced given one's identity to older age (ageism), sexuality (homophobia), and race/ethnicity (racism). In one study, Black older adult gay men reported higher levels of perceived ageism than their older White counterparts, higher levels of perceived racism than their younger Black counterparts, and higher levels of internalized homophobia than all groups [62]. Little is known regarding how these experiences as well as other relevant health experiences (e.g., HIV-positive serostatus) compound to shape health outcomes and well-being among MSM in midlife and older adulthood and warrant further research.

2.3 INTERSECTIONALITY THEORY

The public health literature on aging among sexual minorities consistently acknowledge that in the United States, these communities are diverse and therefore experience varying degrees of social adversity, health needs, resources, behaviors, and outcomes [63]. In fact, prior research indicates that individuals do commonly characterize themselves across a constellation of identities [64-65]. It has been suggested that much of gerontological research with sexual minority communities lack focus on within-group differences [66].

Intersectionality theory is an analytic perspective that acknowledges how social, cultural, and biological categories such as race, gender, class, sexual orientation, and other identities intertwine across levels of society to produce social inequality [63,66-67]. The principles of this theoretical framework emphasize two important themes. First, it is insufficient to reduce an individual's experiences of health and well-being to a singular identity given the complexities posed by other identities. Though it is commonplace for researchers to account for individual identities (age cohort, race/ethnicity, sexual identity, gender), some argue the need to address these identities as predictors that require explanation in their own right, especially in respect to how they are related to one another [66]. Secondly, institutions, organizations, and communities that commit acts of oppression via racism, sexism, ableism, and heterosexism interact interdependently to maintain systems of domination and subordination. These forms of oppression do not merit prioritization of one identity position over the other in order to recognize how multiple types of identity-related experiences contextualize well-being across the life course.

Stern argues that there is diversity in the extent to which individuals' sexual minorities identities are central to their conceptions of self and how they connect with their communities

[66]. Especially for older adults and those who identify with multiple marginalized identities, prior studies indicate that many reject being viewed simply by their sexual orientation [63,67-68].

Health disparities across several sociodemographic characteristics implicate a critical need to understand the role of intersectionality among individuals who encounter multiple forms of oppression along lines of age, race/ethnicity, sexual identity, and HIV status [37,69]. The employment of intersectionality theory argues that health must be tied to power-based relations among groups, particularly in the way social inequalities dictate fundamental social determinants of well-being [70]. For midlife and older adult sexual minority men, exploring the diversity of experiences related to age-defined cohorts, sexuality, race/ethnicity, HIV status, social class as well as indicators of health and well-being will provide critical insight needed to address healthy aging processes via social, community, and policy public health initiatives [70-71].

Though there have been prior studies that successfully fit intersectionality theory into a life course perspective of health, Calasanti notes that there is a dearth of research at the intersections of age, racial/ethnic minority, and sexual minority communities across the social ecological spectrum [71-72]. In one study, David and Knight found that older (age 55+ years), gay Black men experienced greater perceived racism and internalized homophobia compared to younger (ages 18-34 years), gay Black men [62]. This contrasts with prior findings that indicate internalized homophobia is resolved over time [58]. In a sub-analysis of Black MSM men in the Multicenter AIDS Cohort Study (MACS), Dyer and colleagues observed that Black MSM who had reported discrimination and marginalization in the past 12 months had a higher percentage of reporting at least two negative psychosocial health outcomes [73]. Continued efforts in applying an intersectional approach to the study of MSM in midlife and older age will serve to provide

insight into how multiple forms of stigma are experienced and exacerbated by being part of specific marginalized communities (e.g., HIV-positive) as well as how they shape facets of healthy aging (e.g., social well-being).

2.3.1 Multifactorial Discrimination

Concerns with this intersectional analytic lens have been posed in prior research suggesting that those who ascribe to this viewpoint often give more weight to identity or the idea of multiple social identities rather than compounding structural inequalities [67,74-75]. Since identities are either less or not at all modifiable, greater emphasis should focus on the structural context as a target for intervention; therefore, more research efforts that orient identities in a structural context are warranted.

Social stress theory embraces the role of intersectionality suggesting that individuals are at higher risk for prejudice-related stressors like as greater identification with multiple marginalized identities increases. Building on the strengths of social stress theories and intersectionality theory is the idea of multifactorial discrimination [76]. Multifactorial discrimination describes the number of types of discrimination experienced by an individual accounting for salient social identities including age, race/ethnicity, sexual identity, gender, disability/health status, and ableism. Intersectionality is embedded in analyses of multifactorial discrimination as it assumes that because of intersecting identities, experiences of oppression overlap; specifically, they are intrinsically linked and cannot be isolated from one another. In a recent sample of sexual minority adults, multifactorial discrimination consistently predicted high depressive symptoms, poor psychological well-being, and reporting a substance use disorder diagnosis. Though to our knowledge, we seek to be the first study that has explicitly sought to

examine multifactorial discrimination in a sample of sexual minorities within a healthy aging context; however, other studies have examined how compounding experiences of discrimination have had individual effects on health and well-being [77].

2.4 SALIENCE OF DISCRIMINATION EXPERIENCES

Schneiderman, Ironson, and Siegel argue that the relationship between stress and disease is affected by the nature, number, and persistence of the stressor as well as biological predispositions, psychosocial resources, and coping mechanisms [51]. In a prior report, it was suggested that examining experiences of social discrimination solely in terms of exposure (e.g., prevalence alone) and its relationships to health outcomes often yields counterproductive results [78]. By examining just exposure, there is no indication of the length of its effect on an individual [79]. Exposure alone reduces the duration of the exposure to the exposure itself, not accounting for the ongoing toll or trauma experienced by the exposure. Furthermore, one review found that studies that examine stress exposure alone do not fully account for the inverse relationship between social status and poor well-being [79]. Taken together, future research should seek to examine the extent to which experiences of discrimination are salient in marginalized communities into old age.

Prior reports indicate that how one processes experiences of social discrimination over time has implications for psychological well-being, particularly among individuals who identify with disadvantaged groups [80]. Disadvantaged individuals tend to project their experiences of discrimination internally and convey exclusion or devaluation of their social identities within a larger social structure. Additionally, disadvantaged individuals who experience discrimination

tend to perceive these events as uncontrollable given that their social identity-specific communities are afforded less power within the societal structure at large. Perceived uncontrollability of social adverse events has been associated to psychological distress in part due to the accompanied perceive futility of engaging efforts to improve, mitigate, or rectify these events [80-81]. Lastly, it has been suggested that individuals who experience discrimination attributed to specific social identities including race/ethnicity, sexual identity, and HIV status are left in a state of anticipation for future prejudicial experiences, which then further elevates psychological distress and thwarts one's capacity to overcome [33,82-84]. To our knowledge, however, there have been no studies that sought to explore how salience of discriminatory events, both identity-specific and based on multiple marginalized identities, have shaped the social and psychological well-being of MSM across the life course; therefore, research efforts assessing these relationships is warranted.

2.5 RESILIENCY THEORY

Though as a community MSM in midlife and older adulthood have had a greater potential for exposures to sexual minority stressors like discrimination, there has been an emerging body of literature that characterizes the resiliencies of MSM as they age. Based on studies that have employed stress exposure approaches (e.g., minority stress), there is clear evidence that MSM experience resiliency in the U.S. [85]. Generally-speaking, resilience is defined as the “successful adaptation or the absence of a pathological outcome following exposure to stressful or potentially traumatic life events or life circumstances” [86]. For example, a seminal study examining syndemic conditions (the co-occurrence of psychosocial health conditions that

compound to produce poor health outcomes above and beyond the effect of one condition on its own) on HIV risk outcomes indicated that nearly three-quarters of men who experienced poor psychosocial conditions were able to avoid sexual risk practices and maintain an HIV-negative serostatus [87]. Additionally, another study found that older adult sexual minorities largely engage in leisure and wellness activities, engage in moderate physical activities, feel good about belonging to social communities, and for many, regularly attend spiritual/religious services [88].

In prior research efforts of sexual minority populations, resilience has been examined through a number of different approaches. First, a number of prior work has sought to validate global indicators of resiliency to account for an MSM's individual capacities to overcome adversity as a means to inform health services provision for sexual minority patients/clients [89-90]. Importantly, the findings from these studies implicate the need to understand the various ways in which resilience manifests for sexual minority subgroups. For sexual minorities in old age, the ways in which this population may exhibit resilience have been summarized by a few characteristics in prior literature [91-92]. First, coping skills developed through navigating, reconciling, and accepting one's sexual identity within non-affirming times and environments may assist in their ability to accept processes of aging. Furthermore, navigating one's social networks as a result of biological family rejection, many sexual minorities in older age have created strong bonds with "families of choice" or "created families" that serve to provide critical social support.

For sexual minorities in midlife and older age, much attention has been given to resiliency factors; specifically, factors that seek to weaken the relationships between adversity and social marginalization on health and disease outcomes [84,93]. A number of social and community factors (e.g., social connectedness, social network and intimate partner support,

sexual minority affirming spaces) have been implicated to protect against exposures to social stress and enhance social and psychosocial well-being in samples of MSM across the life course [84,94]. For midlife and older adult MSM, the role of social networks and the potential support they are able to provide have been an area of focus in the resiliency literature for this population.

Social networks are an important facet of resiliency, especially in older age, because they provide potential and necessary social resources that can be beneficial to individuals at critical milestones across the lifespan [49,95]. Erosheva, Kim, Emlet, and Fredriksen-Goldsen found that smaller social networks in sexual minority older adults were observed among men, unemployment, low income, identity concealment, and less engagement in religious activities [96]. Diversity, another important component of social networks, was negatively associated with being male, identity concealment, religious activity, and service use. In another study, older adult sexual minorities reported greater satisfaction of social support from those in their social network, particularly from those in their friendship networks, who knew their sexual orientation, which in turn was associated with decreased loneliness [97]. This study also found that older adult sexual minorities who lived with a domestic partner were less likely to be lonely.

As previously noted, understanding differences in how resiliency is experienced in subgroups of sexual minorities, even within MSM, are critical to develop comprehensive resilience inspired public health strategies [91-92]. Prior research has found disparities in experiences of resiliency factors when accounting MSM's HIV serostatus. Compared to their HIV-negative counterparts, HIV-positive sexual minority men are more likely to report lower levels of social support, less likely to have children, more likely to live alone, and experience victimization and employment discrimination [98].

3.0 CURRENT DISSERTATION RESEARCH

This dissertation seeks to build on gaps in the literature in several ways. Building on prior sections, fitting resiliency into assessing social discrimination raises many research inquiries into the study of health aging processes from a social perspective among midlife and older adult MSM. As a community who has endured a lifetime of vulnerability to social adversity, research is needed to address the extent to which experiences of social discrimination shape midlife and older adult MSM's ability to achieve and maintain optimal social indicators of health. Additionally, because MSM in midlife and older adulthood identify with multiple social identities, it is important to account for the number of discrimination these men have experienced across the life course. In doing so, we may better understand these generation of men's experiences of both resiliency and vulnerability to poor health.

Additionally, if discrimination experiences impinge on this communities' abilities to achieve optimal indicators of health, do these relationships differ when accounting for multiple marginalized statuses? Among those who have experienced discrimination, to what degree, if at all, do MSM in midlife and older age continue to feel or live the distress imposed across the life course by these events? Does assigning no salience to one's discriminatory experiences implicate resilience in a population that came of age during non-affirming periods of modern U.S. history with the suggestion that these men have overcome experiences of social adversity?

Lastly, given that social well-being is a critical dimension of optimal aging into older adulthood, assessing indicators that identify the social needs of MSM in midlife and older adulthood may inform public health strategies that aim to improve, maintain, or achieve high quality of life. To better understand social well-being among these men, to what extent do they perceive themselves to have access to social networks that provide them with positive social support? Furthermore, how do experiences of social discrimination shape social well-being? Are MSM in midlife and older adulthood able to achieve high social well-being despite exposure to prejudicial events?

Taken together, this dissertation seeks to build on the literature regarding healthy aging processes of midlife and older adult MSM, giving attention to these areas of inquiry. The conceptual model (Figure 1) below outlines how this dissertation will address social well-being among midlife and older adult MSM. Addressing social factors at the structural (experiences of social discrimination), interpersonal (e.g., social network systems), and individual (e.g., social identities and internalized homophobia) level of the social ecological spectrum, this dissertation seeks to provide a better understanding of social well-being among midlife and older adult MSM in the U.S. to inform pragmatic strategies for community, social, and behavioral strategies for this population.

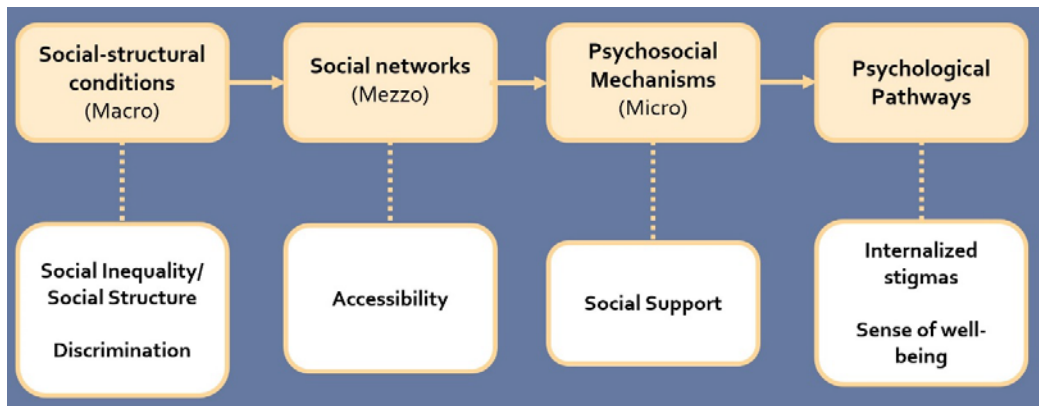


Figure 1. Dissertation Conceptual Model

3.1 STUDY 1: SPECIFIC AIMS AND HYPOTHESES

Aim 1: Determine the prevalence of lifetime social discrimination experienced by midlife and older adult MSM, with attention to any lifetime discrimination, any lifetime sexuality-related discrimination, and multifactorial discrimination.

Aim 2: Examine sociodemographic differences in discrimination experiences by age cohort, race/ethnicity, and HIV status among midlife and older adult MSM.

Hypothesis: Participants who identify with any marginalized group (e.g., older adulthood, racial/ethnic minority, and HIV-positive serostatus) will report greater experiences of social discrimination compared to those who do not identify with a marginalized group.

Aim 3: Test whether MSM in midlife and older adulthood who identify with multiple marginalized identities are exposed to greater experiences of social discrimination (effect modification), with attention to age cohort, race/ethnicity, and HIV status.

Hypothesis: Those who identify with multiple marginalized groups will exhibit a higher proportion of participants who experienced social discrimination compared to those who do not.

3.2 STUDY 2: SPECIFIC AIMS AND HYPOTHESES

Aim 1: Examine whether current experiences of internalized homophobia differ by marginalized groups among midlife and older adult MSM.

Hypothesis: Participants who report racial/ethnic minority identities and an HIV-positive serostatus will report greater internalized homophobia compared to their counterparts. Older adult MSM will report lower internalized homophobia compared to MSM in midlife.

Aim 2: Determine if lifetime experiences of social discrimination are associated to internalized homophobia among midlife and older adult MSM.

Hypothesis 1: Participants who report social discrimination (any lifetime, any sexuality-related) will report more internalized homophobia compared to those who report no discrimination.

Hypothesis 2: Participants who report at least types of social discrimination experienced across the life course (multifactorial discrimination) will report more internalized homophobia compared to those who report none or one type of discrimination.

Aim 3: Assess whether the salience of social discrimination are associated to internalized homophobia among midlife and older adult MSM.

Hypothesis: Participants who report greater salience of social discrimination (any, sexuality-related, and multifactorial) will exhibit greater internalized homophobia than participants with no prior discrimination experience and those who report experience discrimination, but indicate no or lower salience.

3.3 STUDY 3: SPECIFIC AIMS AND HYPOTHESES

Aim 1: Examine whether perceptions of social well-being differ by marginalized groups among midlife and older adult MSM.

Hypothesis: Participants who report racial/ethnic minority identities and an HIV-positive serostatus will report greater internalized homophobia compared to their counterparts. Older adult MSM will report lower internalized homophobia compared to MSM in midlife.

Aim 2: Determine if lifetime experiences of social discrimination are associated to social well-being among midlife and older adult MSM.

Hypothesis 1: Participants who report any exposure to social discrimination (any lifetime, any sexuality-related) will report lower social well-being compared to those who report no discrimination.

Hypothesis 2: Participants who report at least two types of social discrimination across their lifetime will report poorer social well-being compared to those who report zero or one type.

Aim 3: Assess whether the salience of social discrimination are associated to social well-being among midlife and older adult MSM.

Hypothesis: Participants who indicate a high degree of salience regarding their experiences of social discrimination will yield lower social well-being compared to participants who reported no social discrimination experiences or participants who report social discrimination, but also indicated no or low salience.

4.0 LIFETIME PREVALENCE AND SOCIODEMOGRAPHIC CORRELATES OF PERCEIVED DISCRIMINATION AMONG MIDLIFE AND OLDER ADULT MSM

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4.1 INTRODUCTION

Addressing perceptions of social discrimination is critical in the study of healthy aging, given that it is a fundamental predictor of health inequality and mortality among marginalized communities [99-102]. Throughout the past few decades, attitudes toward sexual minorities in the United States have vastly improved, consistently exhibiting positive trends across a diversity of communities [103-105]. Midlife and older adult men who have sex with men (MSM) have become of great interest in the social sciences because they came of age¹ during a time characterized by rigid heteronormativity and a sociopolitical landscape much less progressive on sexuality-related issues than that of today [41]. While many of these issues to a lesser extent remain today, older adult sexual minorities in particular bore witness to an era (prior to 1969) in

¹ Coming of age is defined as fitting and navigating one's sexuality into evaluations of society and self [41]

which anti-gay stigma was institutionalized through anti-sodomy laws, forced psychiatric treatment, employment discrimination, religious persecution, and pervasive public expression of homophobia [39]. Since the Stonewall riots (1969), a common marker for the start of the gay civil rights movement, pro-LGB (lesbian, gay, and bisexual) and anti-discrimination efforts have been met with varying degrees of successes and challenges across different sectors (e.g., employment and housing) at multiple levels of society (local, state, and federal) [106]. As midlife and older adult MSM sought to increase sexual minority visibility in the past few decades, the lack of protections across these sectors increased their risk for social discrimination, limiting their capacities to live full, productive lives. Assessing how these experiences are perceived is warranted to better understand how social discrimination has limited the lives of these men.

Social discrimination is defined as the exclusion and unfair treatment against persons who belong to disadvantaged social groups by members of advantaged groups [107]. These experiences are typically measured through subjective interpretations of an event and reflect threats to disadvantaged individuals' needs for inclusion and social acceptance [108]. Though healthy aging among the broader sexual minority community has emerged as a public health priority in the U.S. [2], greater attention is needed to ascertain the unique social needs and experiences of men who have sex with men (MSM) [17].

This is especially important for MSM given their historical and disproportionate burden of HIV, which persists as one of the most stigmatized diseases of today [19]. From the earlier stages of the epidemic, individuals living with HIV, particularly MSM, have been targets of HIV stigma [109]. Though to a lesser extent today, persisting fears and myths of how HIV is transmitted has subjected many MSM to being discriminated against in housing, employment,

and health care, as well as being rejected by their families, friends, and larger communities not only because of their sexual orientation, but also their HIV-positive serostatus [109-110]. Though seroconversion continues to be a health concern in midlife and older adulthood, many HIV-positive MSM in these cohorts are long-term HIV/AIDS survivors [111]. Therefore, many of these men bore witness to a time in which their vulnerability to HIV discrimination was high, but little is known about how exposure to HIV-related social stress across the life course shapes health in men from these age cohorts.

Efforts acknowledging how identifying with multiply marginalized communities intersect and shape experiences of discrimination are emerging [55-56,112-114]. Though few studies have begun to address social discrimination in older adult sexual minorities, to our knowledge, none have sought to explore disparities in multiply marginalized MSM in these age cohorts [93,115].

Social stress theory provides an appropriate theoretical framework to acknowledge the role of intersectionality and the unique stressors that arise from being part of minority communities; specifically, that inequalities are additive to produce a greater degree of potential and exposure to experiences of marginalization [47,63]. This framework recognizes that discrimination can be multifactorial, that individuals can experience multiple types of social discrimination, sometimes simultaneously, in various capacities or that these experiences can be attributed to more than one social identity [46]. MSM in midlife and older adulthood may have commonly experienced discrimination based on their age, race/ethnicity, gender expression, sexual identity, and HIV status [46-47,63,76,116]. With potential exposure to negative attitudes toward homosexuality in various classifications of heterosexual communities (e.g., age generations, racial/ethnic minority groups) as well as extant social prejudices (e.g., racism and

HIV stigma) within sexual minority communities, multiply marginalized individuals may experience double discrimination² from in-group and outgroup sources [117-118].

Taken together, we seek to contribute to the literature on aging MSM, elucidating how midlife and older adult MSM's social identities have exposed and increased their risk for social discrimination across their life course. In a sample of midlife and older adult MSM, the primary objectives of this paper are to: (1) Describe the lifetime prevalence of social discrimination (any discrimination, any sexuality-related discrimination, and multifactorial discrimination), (2) Identify sociodemographic differences in experiences of social discrimination, and (3) Assess whether experiences of social discrimination are more prevalent in multiple marginalized participants (sociodemographic interactions).

Though all MSM are vulnerable to social discrimination given their sexual minority status, we hypothesize that participants who report being 65 years or older (defined as older adulthood), a racial/ethnic minority, or HIV-positive will increase their odds of having experienced any discrimination as well as sexuality-related discrimination. Additionally, we expected older adulthood, racial/ethnic minority status, and HIV-positive serostatus to be positively associated with multifactorial discrimination.

We hypothesize significant two-way interactions between marginalized social identities; specifically, older adulthood by racial/ethnic minority, older adulthood by HIV+ status, and racial/ethnic minority by HIV+ status. Moreover, those who belong to the multiply marginalized groups defined by these interactions will yield a greater proportion of those who report any lifetime discrimination or sexuality-related discrimination, as well as a greater number of types discrimination experienced across the life course compared to those who belong to none or one

² Double discrimination are experiences of discrimination from outgroup (e.g., heterosexual communities) and in-group communities (LGB/queer communities) [117-118].

of their counterpart identities. This is based on the multiplicative interaction effect, which indicates that membership in one marginalized group may exacerbate the effect of belonging to another [118].

4.2 METHODS

4.2.1 Study Description – Multicenter AIDS Cohort Study (MACS)

The MACS is thirty-three-year old ongoing prospective study that aims to examine the natural trajectories of the HIV epidemic among gay and bisexual men in the U.S. The study design has been described in a number of prior studies [120-121]. Only the methods for the current analysis are described in this manuscript. A total of 6,972 men were recruited at four centers (1984-1985: $N = 4,954$; 1987-1991: $N = 668$ men; 2001-2003: $N = 1,350$). Participants return to their MACS centers every six months for a battery of assessments including detailed interviews, physical examinations, and collection of blood samples for laboratory testing and storage in a central repository. At each visit, participants are asked to report on their medical conditions and treatments and behavioral risk (e.g., sexual risk and substance use). Study instruments for the MACS can be obtained at <http://www.statepi.jhsph.edu/macs/forms.html>.

Participants were recruited from the MACS as part of the sub-study, *Understanding Patterns of Healthy Aging among Men Who Have Sex with Men*. To be eligible for the study, participants had to have been present at two consecutive MACS visits, report an age at or above 40 years, and report having had sex with another men at least once since enrolling into the MACS. Participants for this study provided data at two site visits at their respective MACS

clinics. Using both paper and computer-assisted survey instruments (CASI), baseline data were collected as part of an earlier sub-study of the MACS (the Methamphetamine Sub-Study) among participants who were present in Visit 49 or 50 (April 2008 to March 2009). Those who were not present at Visits 49 or 50 were offered the baseline survey at the first wave of data collection for the Healthy Aging sub-study (Visit 65, April through October, 2016). In total, we collected baseline data from 873 MSM.

4.2.2 Measures

4.2.2.1 Outcomes

Perceived Lifetime Social Discrimination. Participants were assessed on seven items describing different sectors in which they may have experienced discrimination (e.g., employment, housing, law enforcement, public accommodations; Table 1). If participants had experienced discrimination in any of these sectors, they were asked to indicate up to three reasons regarding why they believe the experienced occurred. The list of reasons included their age, gender, race, ethnicity or nationality, religion, height, weight, physical disability, sexuality, and HIV status. Dummy variables were created to indicate whether participants had experienced discrimination based on any of these characteristics (*Any Age-Related Discrimination*; 0 = No, 1 = Yes). A separate variable was created to distinguish participants who reported any perceived sexuality-related discrimination and those who had not (*Any Sexuality-Related Discrimination*; 0 = No, 1 = Yes). Given low variation, any discrimination based on race and ethnicity/nationality were combined into *Any Race/Ethnicity-Related Discrimination* and any appearance (10.1%), physical disability (1.9%), and religion-based discrimination (2.2%) were combined into *Any Discrimination for Other Reasons*.

Table 1. Perceived Social Discrimination Items in MACS Questionnaire

Discrimination Items	Perceived Reason(s) for Discrimination Experience
<p>Seven discrimination sectors items:</p> <ol style="list-style-type: none"> 1) Were you not hired for a job due to discrimination? 2) Were you fired due to discrimination? 3) Were you prevented from renting or buying a home or apartment in the neighborhood you wanted due to discrimination? 4) Were you ever hassled by the police due to discrimination? 5) Were you denied a bank loan due to discrimination? 6) Were you denied or provided inferior medical care due to discrimination? 7) Were you denied or provided inferior service by a plumber, car mechanic, or other service provider due to discrimination? 	<p>Please indicate which of the following best represents the top 3 reasons you were discriminated against.</p> <ul style="list-style-type: none"> _____ Your age _____ Your gender _____ Your race _____ Your ethnicity or nationality _____ Your religion _____ Your height or weight _____ Some other aspect of your appearance _____ A physical disability _____ Your sexual orientation _____ Your HIV status

To create the *Multifactorial Discrimination variable*, we developed a summation of the number of types of discrimination reported by participants. Given lower variation of participants who reported four or more discrimination types, we combined these participants with those who reported three types (*Multifactorial Discrimination*: 0 = 0 Types, 1 = 1 Type, 2 = 2 Types, 3 = 3+ Types). The final recoding of the independent variables for our analysis is described in Table 2.

Table 2. Description of Independent Variables

Independent Variables	Recoding	Response Values
Any Lifetime Discrimination	Discrimination types (Any discrimination based on age, gender, race/ethnicity, sexuality, HIV status, and other reason) were summed together and dummy coded.	0 = No lifetime discrimination 1 = Any lifetime discrimination
Any Sexuality-Related Discrimination	Participant marked “Your sexual orientation” as a reason discrimination experienced in any of the seven discrimination items.	0 = No lifetime sexuality-related discrimination 1 = Any lifetime sexuality-related discrimination
Multifactorial Discrimination	Summation of the number of discrimination types (age, gender, race/ethnicity, sexuality, HIV status, and other) experienced in one’s lifetime; Range 0 to 6 and recoded based on low variation in 3 to 6 range.	0 = 0 Types Experienced 1 = 1 Type Experienced 2 = 2 Types Experienced 3+ = 3 or More Types Experienced

4.2.2.2 Predictors and Covariates

Demographic Characteristics. Participants were asked to self-report standard sociodemographic variables to ascertain their birthdate (age), race/ethnicity, HIV status, and level of educational attainment. Lastly, participants’ unique study identifiers were recoded to indicate their wave of enrollment (pre-1987 and post-2001).

4.2.2.3 Missing Data Analysis

Thirty-nine participants provided incomplete responses to our independent variables; however, no significant differences ($p > 0.05$) were observed in any of our social discrimination variables between with missing responses and those without missing responses. We used listwise deletion to remove these participants from the analysis, giving us a final analytic sample of $N = 834$ midlife and older adult MSM.

4.2.2.4 Data Analytic Strategies

Descriptive statistics were generated for the sociodemographic and discrimination variables. All analyses were conducted using IBM SPSS Statistics for Windows, Version 24.0 [122]. To examine differences in lifetime experiences of social discrimination, we first conducted Poisson regressions with robust error variance to examine univariate associations between any lifetime and any sexuality-related discrimination age cohort, race/ethnicity, sexual identity, HIV status, level of educational attainment, and MACS enrollment wave. Subsequently, we developed multivariable Poisson regression models with robust error variance to predict the odds of any lifetime discrimination and any lifetime sexuality-related discrimination, respectively, with the inclusion of variables that were significant in univariate tests at $p < 0.20$ [123]. Given the ordinal nature of the multifactorial discrimination variable, we also examined univariate relationships with these demographic variables using proportional odds models. Because the HIV status variable violated the assumption of proportional odds, we developed a partial proportional odds regression model in SAS software Version 9.4 with the inclusion of variables that were significant at the univariate level ($p < 0.20$) as well [124-125]. A second model was created to include appropriate interaction terms (e.g., Non-Hispanic Black by HIV Serostatus).

4.3 RESULTS

4.3.1 Participants

Table 3 provides a description of the sociodemographic characteristics of our sample. The average age of participants in Wave 1 (V65) of this study was 59.6 ($sd = 8.5$) years. Roughly

71% of participants were classified as middle age (40-64 years; $N = 593$) and 29% (65+ years, $N = 241$) are in older adulthood. Our sample was predominantly Non-Hispanic White ($N = 585$, 70.1%) with small numbers of Non-Hispanic Black ($N = 163$, 19.5%), Hispanic of all races ($N = 71$, 8.5%), and Non-Hispanic other races ($N = 15$, 1.8%). An overwhelming majority of our sample identified as gay ($N = 731$, 87.6%). Bisexuals constituted 4.3% ($N = 36$) and those who reported another MSM identity made up 8.0% ($N = 67$) of our sample. There was an even split ($N = 417$, 50%) of HIV-negative and HIV-positive participants. Nearly nine in ten participants ($N = 730$, 87.5%) reported educational attainment above a high school level.

4.3.2 Prevalence of Perceived Lifetime Discrimination

We observed that among our sample of midlife and older adult MSM, nearly half of our participants ($N = 386$, 46.3%) reported at least one experience of lifetime discrimination (See Table 3). The most common sectors in which lifetime discrimination was experienced (Table 4) include discrimination within the contexts of law enforcement ($N = 237$, 28.4%), hiring practices in employment ($N = 159$, 19.1%), and being fired from one's job ($N = 105$, 12.6%). Of all the types of discrimination experiences, at least one lifetime experience of sexuality-related discrimination was reported the most ($N = 259$, 31.1%). Lastly, roughly 27.2% ($N = 227$) of our sample reported experiencing discrimination was attributed to at least two identities.

Table 3. Sociodemographic Variables and Lifetime Prevalence of Perceived Social Discrimination in Midlife and Older Adult MSM in the MACS, N = 834

Independent Variables	N (%)
Age Cohort	
<i>Midlife (40-64 years)</i>	593 (71.1)
<i>Older Adulthood (65+ years)</i>	241 (28.9)
Race/Ethnicity	
<i>Non-Hispanic White</i>	585 (70.1)
<i>Non-Hispanic Black</i>	163 (19.5)
<i>Hispanic/Latino All Races</i>	71 (8.5)
<i>Non-Hispanic Other Races</i>	15 (1.8)
Sexual Identity	
<i>Gay</i>	731 (87.6)
<i>Bisexual</i>	36 (4.3)
<i>Other MSM Identity</i>	67 (8.0)
HIV Status	
<i>Negative</i>	417 (50.0)
<i>Positive</i>	417 (50.0)
Level of Educational Attainment	
<i>High School or Less</i>	104 (12.5)
<i>More than High School/GED</i>	730 (87.5)
MACS Wave Enrollment	
<i>Pre-1987</i>	510 (61.2)
<i>Post-2001</i>	324 (38.8)
Any Lifetime Discrimination	
<i>No</i>	448 (53.7)
<i>Yes</i>	386 (46.3)
Any Lifetime Sexuality-Related Discrimination	
<i>No</i>	575 (68.9)
<i>Yes</i>	259 (31.1)
Multifactorial Discrimination	
<i>0 Types of Discrimination Experienced</i>	448 (53.7)
<i>1 Type of Discrimination Experienced</i>	159 (19.1)
<i>2 Types of Discrimination Experienced</i>	126 (15.1)
<i>3+ Types of Discrimination Experienced</i>	101 (12.1)

Table 4. Prevalence of Lifetime Social Discrimination: Types of Discrimination by Sector, N = 834

Discrimination Type	Sector, N (%)							Total N (%) [*]
	Hiring	Fired from Job	Housing	Law Enforcement	Bank Loan	Medical Care	Public Services	
Age	45 (5.4)	19 (2.3)	6 (0.7)	31 (3.7)	5 (0.6)	5 (0.6)	8 (1.0)	86 (10.3)
Gender	36 (4.3)	18 (2.2)	4 (0.5)	33 (4.0)	2 (0.2)	3 (0.4)	5 (0.6)	75 (9.0)
Race/Ethnicity	60 (7.2)	30 (3.6)	23 (2.8)	95 (11.4)	8 (1.0)	14 (1.7)	18 (2.2)	139 (16.7)
Religion	4 (0.5)	7 (0.8)	1 (0.1)	11 (1.3)	0 (0.0)	0 (0.0)	0 (0.0)	18 (2.2)
Appearance	35 (4.2)	9 (1.1)	2 (0.2)	41 (4.9)	1 (0.0)	7 (0.8)	14 (1.7)	84 (10.1)
Physical Disability	7 (0.8)	3 (0.4)	0 (0.0)	7 (0.8)	1 (0.0)	2 (0.2)	1 (0.1)	16 (1.9)
Sexuality	90 (10.8)	65 (7.8)	26 (3.1)	148 (17.7)	5 (0.6)	54 (6.5)	38 (4.6)	259 (31.1)
HIV Status	12 (1.4)	15 (1.8)	5 (0.6)	13 (1.6)	2 (0.2)	47 (5.6)	5 (0.6)	75 (9.0)
Total N (%)[*]	159 (19.1)	105 (12.6)	51 (6.1)	237 (28.4)	14 (1.7)	89 (10.7)	54 (6.5)	386 (46.3)

^{*}Note: Row and column totals do not add up to inside rows and columns given that some participants experienced discrimination in multiple sectors as well as multiple discrimination types.

4.3.3 Sociodemographic Correlates of Any Perceived Lifetime Discrimination

Among our sample, univariate logistic regression models (Table 5) indicated that Non-Hispanic Black identity ($OR = 1.32$, $95\% CI: 1.13, 1.55$, $p < 0.001$) was significantly associated with increased odds of having reported any lifetime discrimination experience. No differences were observed between any lifetime discrimination and age cohort, sexual identity, HIV status, education level, or wave of MACS enrollment. In our multivariable Poisson regression model with robust error variances, we observed that Non-Hispanic Black identity ($aOR = 1.41$, $95\% CI: 1.19, 1.67$, $p = 0.003$) persisted as being associated with increased odds of any lifetime discrimination. HIV-positive serostatus also emerged as a significant correlate in the multivariable model ($aOR = 1.40$, $95\% CI: 1.07, 1.81$, $p = 0.013$).

4.3.4 Sociodemographic Correlates of Any Perceived Lifetime Sexuality-Related Discrimination

After conducting univariate Poisson regression models with robust error variances (Table 5), we observed significant relationships between any lifetime sexuality-related discrimination and Non-Hispanic Black identity, education level, and wave of MACS enrollment. No differences were observed by age cohort or HIV status. Non-Hispanic Black identity ($OR = 0.56$, $95\% CI: 0.40, 0.78$, $p = 0.001$) and wave of MACS enrollment ($OR = 0.55$, $95\% CI: 0.44, 0.75$, $p < 0.001$) were associated with reduced odds of having reported any lifetime sexuality-related discrimination. Education level was associated with increased odds ($OR = 1.54$, $95\% CI: 1.04, 2.26$; $p = 0.029$) of reporting any lifetime sexuality-related discrimination. In our model, Non-

Hispanic Black identity ($aOR = 0.65$, 95% CI : 0.45, 0.93, $p = 0.018$) and wave of MACS enrollment ($aOR = 0.75$, 95% CI : 0.59, 0.96, $p = 0.023$) remained associated with a decreased odds of any lifetime sexuality-related discrimination. Education level was no longer associated to sexuality-related discrimination ($aOR = 1.23$, 95% CI : 0.82, 1.82, $p = 0.314$).

Table 5. Prevalence Odds Ratios for Any Lifetime Discrimination and Any Lifetime Sexuality-Related Discrimination among Midlife and Older Adult

MSM in the MACS

Variable	Any Lifetime Discrimination Experience				Any Sexuality-Related Discrimination			
	Univariate	p	Multivariable	p	Univariate	p	Multivariable	p
Age Cohort								
<i>Older Adulthood</i>	0.96 (0.81, 1.13)	0.587	1.02 (0.86, 1.21)	0.804	1.08 (0.87, 1.34)	0.490	0.89 (0.71, 1.12)	0.317
Race/Ethnicity								
<i>Non-Hispanic Black</i>	1.33 (1.13, 1.55)	<0.001	1.42 (1.19, 1.68)	<0.001	0.56 (0.40, 0.78)	0.001	0.62 (0.43, 0.89)	0.010
<i>All Other Races/Ethnicities</i>	1.03 (0.82, 1.30)	0.782	1.15 (0.89, 1.47)	0.288	0.85 (0.59, 1.22)	0.375	0.85 (0.58, 1.25)	0.405
HIV Status								
<i>HIV-Positive</i>	1.18 (1.02, 1.37)	0.027	1.15 (0.99, 1.33)	0.076	1.06 (0.80, 1.42)	0.708	1.18 (0.96, 1.46)	0.405
Educational Attainment								
<i>More than HS/GED</i>	1.20 (0.93, 1.54)	0.156	1.39 (1.07, 1.81)	0.014	1.54 (1.04, 2.26)	0.029	1.25 (0.84, 1.85)	0.270
MACS Enrollment Wave								
<i>Post-2001</i>	1.02 (0.88, 1.19)	0.771			0.65 (0.52, 0.82)	<0.001	0.70 (0.55, 0.90)	0.006

4.3.5 Sociodemographic Correlates of Perceived Lifetime Multifactorial Discrimination

Univariate proportional odds regression models (Table 6) indicated that Non-Hispanic Black identity ($OR = 1.97$, 95% CI : 1.43, 2.70, $p < 0.001$), bisexual identity ($OR = 1.93$, 95% CI : 1.05, 3.54, $p = 0.04$), and HIV-positive serostatus ($OR = 1.63$, 95% CI : 1.04, 1.79, $p = 0.026$) increased the odds of reporting a higher threshold of our multifactorial discrimination variable, respectively. However, the relationship to lifetime multifactorial discrimination by HIV serostatus violated the assumption of proportional odds (Test of Parallel Lines: $\chi^2_{df=2} = 17.39$, $p < 0.001$). No differences were observed by age cohort, educational attainment, and wave of MACS enrollment.

In our first partial proportional odds model (See Figure 2 and Table 6), we observed that Non-Hispanic Black identity ($aOR = 1.63$, 95% CI : 1.14, 2.32, $p = 0.007$) persisted as being associated with higher thresholds of multifactorial discrimination. The relationship between HIV status and multifactorial discrimination indicated that the odds of higher multifactorial thresholds being reduced ($aOR = 0.58$, 95% CI : 0.41, 0.81, $p = 0.002$) for HIV-positive participants who experienced one type of discrimination compared to those who experienced no discrimination and increased ($aOR = 1.40$, 95% CI : 1.05, 1.86, $p = 0.021$) for HIV-positive participants who experienced 3 or more types of discrimination compared to those who experienced none.

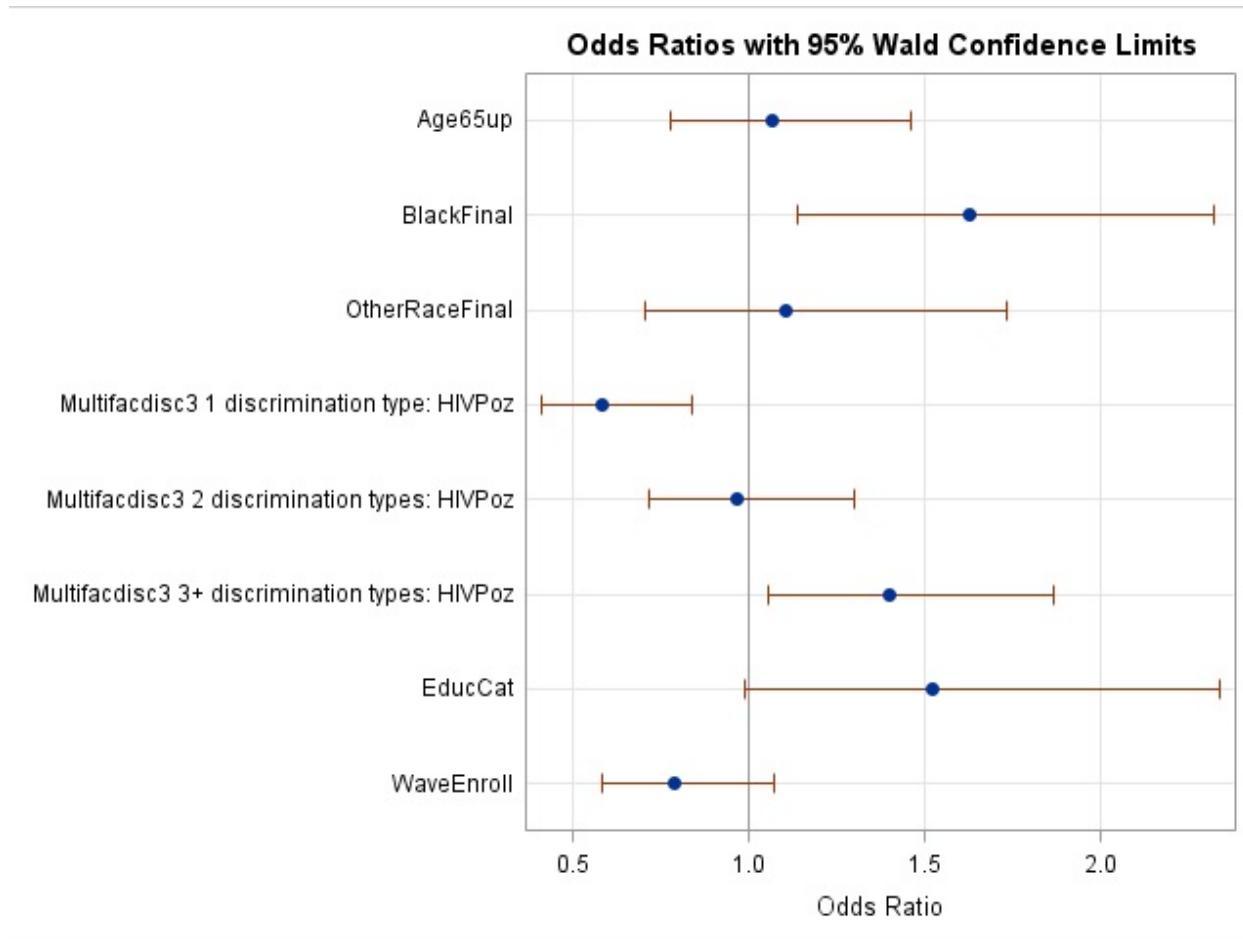


Figure 2. Adjusted Odds Ratios for Multifactorial Discrimination

We tested an interaction between Non-Hispanic Black identity and HIV serostatus in a second model (Figure 3 and Table 6). In addition to significant main effects of Non-Hispanic Black identity and HIV-positive serostatus for those who experienced at least three types of discrimination, there was a significant interaction between Non-Hispanic Black identity and HIV-positive serostatus. This interaction indicated that the association between Non-Hispanic Black identity and number of types of discrimination experienced was moderated by reporting an HIV-positive serostatus ($aOR = 0.46$, $95\% CI: 0.24, 0.88$, $p = 0.019$).

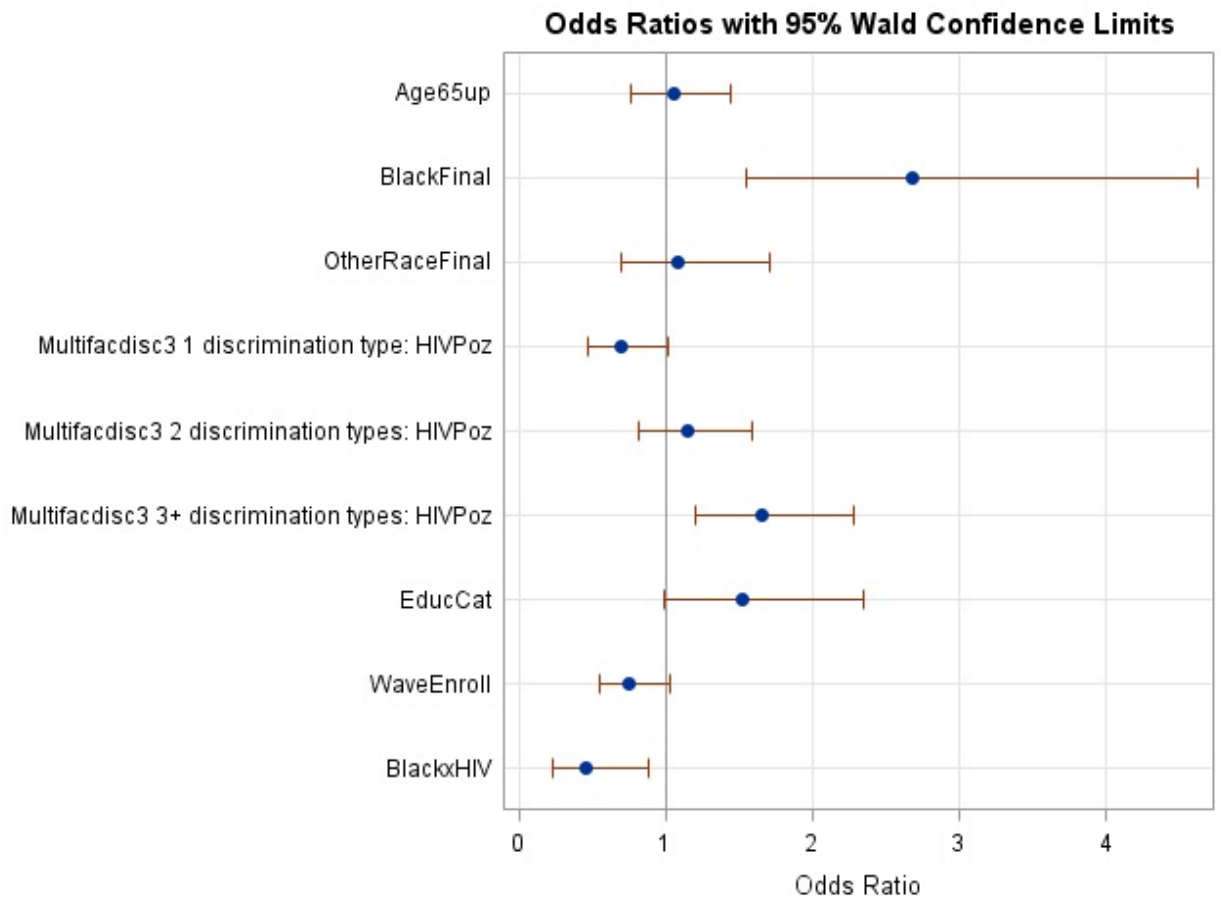


Figure 3. Adjusted Odds Ratios for Multifactorial Discrimination with Interaction

**Table 6. Partial Proportional Odds Model: Multifactorial Discrimination among Midlife and Older Adult MSM in the
MACS**

Variable	Univariate		Model 1		Model 2	
	(95% CI)	<i>p</i>	Multivariable (95% CI)	<i>p</i>	Multivariable (95%CI)	<i>p</i>
Age Cohort						
<i>Midlife (40-64 years)</i>	REF		REF		REF	
<i>Older Adulthood (65+ years)</i>	0.081 (0.61, 1.08)	0.151	1.06 (0.78, 1.46)	0.703	1.05 (0.77, 1.45)	0.742
Race/Ethnicity						
<i>Non-Hispanic White</i>	REF		REF		REF	
<i>Non-Hispanic Black</i>	1.97 (1.44, 2.70)	<0.001	1.63 (1.14, 2.32)	0.007	2.68 (1.55, 4.62)	<0.001
<i>All Other Races/Ethnicities</i>	1.28 (0.84, 1.94)	0.267	1.11 (0.71, 1.73)	0.660	1.09 (0.70, 1.71)	0.718
HIV Status						
<i>Negative</i>	REF					
<i>Positive</i>	1.63 (1.26, 2.12)*	<0.001				
<i>0 vs. 1 Discrimination Types</i>			0.58 (0.41, 0.81)	0.002	0.70 (0.47, 1.02)	0.062
<i>0 vs. 2 Discrimination Types</i>			0.97 (0.72, 1.30)	0.653	1.15 (0.82, 1.59)	0.418
<i>0 vs. 3+ Discrimination Types</i>			1.40 (1.05, 1.86)	0.021	1.66 (1.20, 2.28)	0.002
Education Level						
<i>HS or Less</i>	REF		REF		REF	
<i>More than HS/GED</i>	1.33 (0.89, 1.98)	0.166	1.52 (0.99, 2.34)	0.057	1.52 (0.99, 2.35)	0.056
Wave of MACS Enrollment						
<i>Pre-1987</i>	REF		REF		REF	
<i>Post-2001</i>	1.63 (0.92, 1.56)	0.182	0.79 (0.58, 1.07)	0.128	0.76 (0.55, 1.03)	0.075
Interaction Term						
<i>Black x HIV</i>					0.46 (0.24, 0.88)	0.019

Note: *Reject the assumption of proportional odds based on test of parallel lines ($p < 0.001$)

4.4 DISCUSSION

Our findings reflect the persisting concern of social discrimination reported in MSM populations, uncovering how these experiences for midlife and older adult MSM have been perceived across the life course. Nearly half of our sample reported any lifetime discrimination experience, more than 30% reported any sexuality-related discrimination, and greater than 1 in 4 indicated discrimination experiences attributed to more than one social identity. Prior studies indicated that nearly two-thirds of sexual minority adults perceived any lifetime discrimination experiences, roughly 1 in 4 reported sexuality-related discrimination, and nearly a third indicated discrimination attributed to at least two social identities [88,112,114]. Though perceptions of lifetime discrimination in our sample is lower in our sample than in prior findings, our sample reported a higher prevalence of perceived sexuality-related discrimination and multifactorial discrimination [112,114]. In addition, given prior literature that describes historically negative relationships between law enforcement and the LGB community as well as pervasive workplace-related discrimination against sexual minorities, it is both unfortunate and unsurprising that sexuality-related discrimination in the law enforcement and employment sectors (hiring and firing) were the most common among our sample [126-127].

Our findings support prior literature that suggests those who belong to disadvantaged communities are more likely to report experiences of social discrimination than those who do are not members of disadvantaged communities, especially Non-Hispanic Black and HIV-positive participants [46]. Non-Hispanic Black participants were nearly 1.5 times more likely than non-

Hispanic Whites and HIV-positive participants were close to 1.5 times more likely than HIV-negative participants to report any lifetime experience of discrimination.

Our multivariable models for multifactorial discrimination are supported by the literature on social stress theory, which suggests that marginalized statuses confer excess exposure to stressors among those who identify with multiply stigmatized communities [47]. Non-Hispanic Blacks in our study reported greater multifactorial discrimination in their lifetime compared to Non-Hispanic Whites. Additionally, those who reported at least three types of discrimination were significantly more likely to report being HIV-positive compared to those who reported zero types of discrimination.

Despite these findings, our analyses implicate a few counterintuitive relationships as well, suggesting a greater level of complexity in midlife and older adult MSM's exposure to or risk of discrimination. First, identifying as non-Hispanic Black identity was associated with a smaller proportion of any lifetime experience of sexuality-related discrimination. After adjusting for the interaction between Non-Hispanic Black identity and HIV serostatus in our multifactorial discrimination multivariable models, we observed that reporting an HIV-positive serostatus moderated the effect of Non-Hispanic Black racial identity on the number of discrimination types experienced in one's lifetime. This, therefore, challenges the literature that suggests multiply marginalized individuals have disproportionate exposure to discrimination compared to those who are not [125].

We postulate that one possible explanation for these findings is that these outcomes may be shaped by the degree in which midlife and older adult non-Hispanic Black participants disclose or live openly their concealable identities (e.g., sexuality and HIV status) [62]. In the minority stress literature, it is commonly suggested that concealing one's identity as a minority

stressor is both protective and detrimental [50,115]. Specifically, by not disclosing one's stigmatized identities to one's social networks, MSM are at greater risk for psychological distress associated to one's lack of connectedness to potentially affirming social support and resources as well as one's inability to live openly. For many, however, concealing one's identity also protects against experiences of discrimination and prejudice-related events.

Prior research has indicated that older adult non-Hispanic Black MSM report greater levels of perceived stigma than both their White and younger counterparts [129-130]. Furthermore, Black-identified people living with HIV were less likely to disclose their HIV status to individuals in their social networks (e.g., family, friends, and health care settings) than their racial/ethnic counterparts [129]. In a recent qualitative study, older adult Black MSM also described deliberate concealment of their sexual identity out of fear of rejection, abandonment, and prejudicial experiences [130]. As individuals who identify with a historically marginalized racial group, having had to process experiences of racism may be associated with concealment of other stigmatized identities to prevent one's risk of exposure to additional forms of discrimination. Given Black American communities' lagging progression on attitudes toward homosexuality, greater attention to HIV status and sexual identity concealment, specifically in how they shape exposure to discrimination may provide critical insight for approaches to improving the social well-being of midlife and older adult non-Hispanic Black MSM [99].

In addition, future research should continue to better understand the intersectionality of social identities on the salience or attributions of discrimination experiences. Based on intersectionality theory, social identities cannot be parsed out from one another in understanding adverse social experiences [76]. However, two additional hypotheses may account for the

differences observed by the Non-Hispanic Black identity and HIV-positive serostatus interaction, challenging the intersectionality approach.

First, we may be witnessing the primary-oppression hypothesis that argues the salience of one identity may be elevated or emphasized over another within social contexts such as discrimination. In other words, there may be an interplay of how one attributes discrimination motives given the level of salience of a specific social identity or type of social identity-specific marginalization previously experienced. This in turn, may shape the way one perceives their experiences [131]. The extent to which HIV+ Non-Hispanic, Black MSM attribute HIV-related discrimination to their Non-Hispanic Black identity in our sample may have an influence on underreporting the number of self-reported types of discrimination experienced across their life course [132].

Secondly, the interaction may exhibit the inurement hypothesis [133-134]. This hypothesis suggests that although individuals will psychologically adapt to adverse stimuli like discrimination to the extent that one will not react as strongly to additional similar adverse experiences [134]. Furthermore, the effect the original stimuli will start to fade over time. In our sample, given the greater risk of exposure to discrimination based on multiple marginalized identities, HIV+ Black MSM in midlife and older adulthood may have grown inured to discriminatory experiences in a way that they became conditioned to discrimination as a mainstream part of life and therefore less likely to classify an event as discrimination.

One last explanation for this finding is that there may be some untapped factor of resilience experienced by HIV-positive Non-Hispanic Black MSM [85,135]. Despite risk of exposure to adversity, there is a moderated effect of marginalized identity on multifactorial discrimination; however, this may reflect an underreporting of discrimination. Based on a recent

report [85], resilience factors for MSM that may shape exposure to discrimination experiences may include factors at the dyadic (e.g., understanding safe-spaces) and community (e.g., neighborhood affirmation and safety, policy protections, connection to affirming social communities) levels. If it is in fact less exposure as opposed to limitations in self-report, future research efforts with this community should seek to understand potential sources of resilience that may shape this community's ability to minimize exposure to discriminatory experiences.

Our hypothesis that older adult participants would report more experiences of discrimination across our three discrimination variables compared to those in midlife were unsupported. First, our null findings may reflect an assumption that MSM in older adulthood and midlife perceive or conceptualize experiences of discrimination in the same way. Given that prior research has shown advantaged and disadvantaged individuals perceive discrimination in different ways [136-137], understanding how these events are conceptualized by age cohorts may provide more accurate descriptions of perceived discrimination in midlife and older adult MSM.

Our prior argument related to non-Hispanic Black communities may be applicable to age generation specific communities, too; specifically, the ways in which an individual integrates and navigates concealable marginalized identities into one's social environment may shape one's risk and exposure to social discrimination [138]. A recent study observed differences in sexuality concealment across 5 age generation cohorts of MSM and exhibited that older generations reported a higher average age of sexual identity disclosure compared to younger cohorts [139].

With respect to sexual identity concealment or disclosure, our analysis presumed that older adult MSM have been open about their concealable identities (e.g., sexual minority status and for some, HIV+ serostatus) for a greater length of time than MSM in midlife and therefore

more vulnerable to exposure of discrimination. The null results may be shaped by how long individuals have been open about their concealable identities or the time period in which they disclosed these identities. Our findings may reflect that midlife and older adult MSM are part of generations that exhibit a significant proportion of people who hold negative views toward homosexuality in addition to many having lived through periods of intense, pervasive stigmatization (e.g., height of the AIDS epidemic) [103]. The social climates from prior decades may shape the extent to which participants navigate their identities within social contexts, particularly among their heterosexual counterparts of their respective generations. Midlife and older adult MSM may engage in behaviors (e.g., concealing identities or seeking queer-friendly safe spaces that cater specifically to older adults, people of color, or HIV-positive communities) that protect themselves from exposure to outgroup (e.g., homophobia, racism, and HIV stigma in heterosexual networks) or in-group (e.g., ageism, racism, or HIV stigma in LGB circles) discrimination [139-140]. Accounting for these factors may elucidate important differences in exposure to discrimination among midlife and older adult MSM. Additionally, research examining how social identities intersect with protective processes in midlife and older adult MSM may yield critical insight into strategies targeting healthy aging in this population.

Lastly, we hypothesize that the general null findings of age cohort and HIV serostatus on perceived experiences of discrimination may also be a reflection of stigma management strategies among older adult MSM and HIV-positive MSM [141-142]. Over time, older adult MSM including long-time survivors of HIV/AIDS may have reconciled experiences of stigma and/or achieved greater psychosocial health (e.g., personal control) that mitigate against perceptions of discrimination [129]. For midlife and older adult MSM who may have seroconverted after antiretroviral medications were made available, the lack of differences may

be related to the changing nature of the sociocultural and political contexts that has emerged since the height of the HIV/AIDS epidemic [143]. Men who seroconverted recently may have been able to build on the stigma management strategies developed by older adult men who have lived with HIV prior to the accessibility of antiretroviral medications. Additional research examining comparing the experiences of those who recently seroconverted and those who have lived with HIV since the height or early part of the epidemic may better inform differences in exposure to discrimination [144].

Taken together, the findings from our study implicate a great need for multilevel strategies to prevent and reduce the types and frequency of discrimination experienced by midlife and older adult MSM [145]. Though there are legislative pushes to end sexuality-related discrimination in the U.S., continued advocacy from academic research institutions, health organizations and systems, as well as grassroots organizations are needed to catalyze positive sociopolitical change, particularly in sectors (e.g., law enforcement and employment) that exhibited significant proportions of discrimination among our participants [146-147]. Additionally, anti-stigma efforts are necessary to target discriminatory practices by outgroup, in-group, and organizational (e.g., health care) sources. With respect to outgroup (heterosexual communities) discrimination, community-based efforts such as increasing and engaging individuals in dialogue regarding sexuality-related issues in communities that continue to lag in positive attitudes toward homosexuality (e.g., racial/ethnic minority communities, older adult communities) are needed [148-149]. To target in-group discrimination (queer communities), efforts that engage MSM in dialogue on the intersections of age, race, and HIV in spaces that cater to this community may be pragmatic as well [150]. The ability to reduce stigmatizing attitudes toward identities of which midlife and older adult MSM may in part facilitate this

community's capacity to openly navigate their social identities, taking advantage of social resources from their networks while mitigating one's risk or exposure to discrimination [151].

As studies seek to better understand experiences and perceptions of social discrimination in samples of midlife and older adult MSM, we acknowledge the limitations of our study design and analysis that warrant consideration for future efforts. First, given the objectives of this dissertation includes taking a life course perspective, our analysis is based on understanding how a lifelong accumulation of stressful experiences shapes the social well-being of midlife and older adult MSM. Our measurement tool for social discrimination may be limited because it does not comprehensively capture important facets of perceived discrimination. For example, our measure of perceived discrimination does not distinguish when experiences occurred across the life course. Prior work in measuring discrimination has aimed to capture acute (recent) versus chronic (lifetime) experiences [46]. Future measurements of discrimination may benefit from adaptations of instruments such as the *Schedule of Racist Events* to other social identities, which accounts for discrimination in the past year, lifetime, and the extent to which participants link discrimination to their experiences of stress [152]. Though MSM are at risk and have had great exposure to social discrimination, the mechanism by which these experiences shape health in midlife and older adulthood may depend on the degree to which these experiences persist as stressors across the life course [79]. Specifically, those who currently report being negatively affected by discrimination may fare worse in terms of health outcomes than those who do not. Therefore, assessing measures that expand analyses beyond stress exposure are warranted.

Secondly, though our measures of social discrimination provide critical insight into the various sectors and types of social discrimination experienced, we are unable to ascertain whether sources of discrimination are from outgroup communities or in-group communities

[153]. A comprehensive understanding of these sources of stress would provide information that could scale up strategies for community-specific anti-stigma strategies.

Thirdly, the validity of our discrimination measures, like in many other prior studies, is challenged by the subjectivity of self-report instruments [19,56,109-110,154]. Generally-speaking, prior literature suggests that experiences of discrimination are largely underreported [129,155]. The reliance of individuals' perceptions threatens the precision of discrimination prevalence estimates simply because many experiences of discrimination likely go undetected by the victim [153]. Prior findings also suggest that members of disadvantaged groups tend to minimize experiences of discrimination to better achieve a perceived sense of personal control or as previously mentioned, by accepting these experiences as a mainstreamed part of daily life [129,131]. We suspect that experiences of discrimination are less reported in HIV-positive men compared to HIV-negative men as well as in Non-Hispanic Black men compared to Non-Hispanic White men. Therefore, the true effect of marginalized and multiple marginalized social identity on perceptions of social discrimination may be understated in our findings.

Furthermore, it is argued that perceptions of discrimination are vulnerable to confounding, particularly in respect to an individual's current psychological state [154,156]; specifically, those who are identified as healthier react to social adversity in ways that elevate one's sense of control and reject the occurrence of the event [153]. Based on our sample of midlife and older adult MSM, the extent to which reporting experiences of discrimination is confounded by psychological distress or other debilitating factors associated with aging are unknown. Lastly, aligned with the inurement hypothesis argument above, bias may arise in the form of underreporting with members from disadvantaged groups being conditioned to social adversity into mainstream daily life.

Lastly, our findings may be limited by small sample sizes in subgroups among our participants, potentially increasing our chance of Type II error [157]. Our sample was predominantly Non-Hispanic White and given the distribution of race/ethnicities, we conflate the experiences of Hispanic/Latino participants with that of all other race/ethnicities. Given the abundance of literature regarding the social and cultural experiences regarding sexuality and HIV in Hispanic/Latino communities as well as other racial/ethnic communities (e.g., Native American, Asian/Pacific Islander), further research is needed to identify ethnic-related health disparities as well as risk and resiliency factors associated to healthy aging among these communities [158-162].

Despite these limitations, our study has notable strengths. To our knowledge, we are the first to focus on social discrimination experiences among midlife and older adult MSM as an indicator of social well-being within a healthy aging context. First, we acknowledge that there are unique social needs of MSM in midlife and older adulthood given the disproportionate burden of HIV in this community, which provides potential for additional stress-related experiences as a stigmatized disease [17]. Accounting for the role of stigma on health inequality across the life course, our analysis provided us with a platform to elucidate the magnitude of discrimination experienced by midlife and older adult MSM and recommend multilevel efforts to tackle this social issue [106]. Furthermore, we build on prior research efforts that urge a need to examine experiences of multifactorial discrimination, recognizing the social complexities of identifying with multiple stigmatized identities [63,76].

The increasing successes of sexual minority civil rights in the U.S. are in large part a reflection of positively shifting attitudes toward LGB communities [163-164]. Across the life course, men who are now midlife and older adult sexual minorities have contributed in paving

the path to these successes in enduring multiple forms of social adversity and fighting through social climates in various sectors to change hearts, minds, and attitudes [165]. As research efforts seek to better understand social determinants of healthy aging, exploring social experiences, particularly social adversity, are critical and provide a pragmatic direction to identify ways to improve the social, emotional, and mental health needs of marginalized communities in midlife and older age. Overall, our findings pave a scholarly path to better understand how experiences of discrimination via multiple theoretical approaches (any, type-specific, multifactorial) may shape health disparities in midlife and older age among MSM.

5.0 LIFETIME PREVALENCE OF SOCIAL DISCRIMINATION ON CURRENT EXPERIENCES OF INTERNALIZED HOMOPHOBIA IN MIDLIFE AND OLDER ADULT MSM

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5.1 INTRODUCTION

Social stressors such as stigma and discrimination have important implications for health among sexual minorities in old age given the psychological distress imposed on these communities across the life course [39-47]. In the U.S., the relationship between social discrimination, which is defined as the exclusion and unfair treatment of disadvantaged groups by advantaged groups [107], on psychological well-being among sexual minorities has been well-documented in prior literature [55,108,112-113,158]. Furthermore, in recent samples of older adult (age 65+ years) sexual minority (LGB) populations, lifetime victimization, which accounted for perceived prejudice and discrimination, was associated with a number of health issues including poor general health, physical and mental health quality of life, disability status, and depression [114-115].

The degree to which social stressors such as discrimination impinge on well-being across the life course may be shaped by how salient these experiences are to an individual. [80,166-169]. The salience of a stressor refers to a perceived enduring effect of the stressor individual; specifically, how individuals view stressors as negatively interfering with their lives [79]. Members of disadvantaged groups often internalize the exposure to discrimination, attributing the event to an important aspect of one's group membership (e.g., gender, race/ethnicity), view these events as uncontrollable, and anticipate the possibility of future similar events to occur across different sectors in society (e.g., workplace, housing, public accommodations) [80]. Furthermore, having a sense of control over one's social well-being is critical in how people project and internalize their experiences into their self-perceptions (e.g., self-worth) [80].

As a disadvantaged group, prior findings indicate that for MSM, anticipated stigma and discrimination are sexual minority stressors [42,170-171]. Vulnerable to sexuality-related discrimination, sexual minorities' lack of control over discrimination experiences attributed to a social identity that for many regard as immutable, may manifest into internalized homophobia, which is the internalization of society's heterosexist and homophobic views [172-173]. Furthermore, the chronicity of these stressors (e.g., enduring anticipation or perceived events) may persist as salient events that shape one's overall health and well-being across the life course. Because MSM in midlife and older adulthood came of age in a time characterized by greater homophobic stigma than that of today, it is important to better understand how prior experiences of discrimination, if at all, shape the current psychosocial functioning of these men and especially among those who report multiply marginalized social identities.

As the fight for sexual minority civil rights continues, sociopolitical successes tend to affirm and promote well-being among sexual minorities, whereas setbacks act to demoralize

[46,174]. A recent study found that prior to the U.S. Supreme Court Ruling permitting same-sex marriage nationwide, sexual minority youth in states with equal marriage policies reported less suicidality than those in states without equal marriage policies [174]. On the other hand, a recent study indicated that experiences of workplace discrimination among a sample of MSM in a state where sexual orientation was not a protected class in the employment sector, was associated with the number of days in which mental health was not good [175]. In a sample of sexual minority adults, perceived discrimination was indirectly associated with poor mental health through internalized homophobia and these relationships were stronger for participants who were not entirely out to their social networks compared to those who reported being entirely out; however, these findings were not powered to address variances by subgroups (e.g., age, race, and sexual identity) [176]. Lastly, recent studies indicated that internalized homophobia was significantly associated with experiences of loneliness among midlife and older adult MSM [177-178]. In general population studies of midlife and older adults, experiences of loneliness were higher among men than women and was associated with poor physical healthy symptoms, chronic social stress, and poor-quality social relationships; therefore, addressing social factors that shape internalized homophobia as a strong correlate of poor health in older age may reduce health disparities related to aging among sexual minorities [179].

Midlife and older adult MSM have been exposed to a lifetime of sociopolitical successes that were sexual identity affirming as well as setbacks that were sexual identity non-affirming [100]. In addition, MSM in midlife and older adulthood navigated their sexualities in a time shaped by the beginning and height of the HIV/AIDS epidemic [180]. At the height of the epidemic, pervasive beliefs of HIV continued to connect the disease to homosexuality given their disproportionate burden. Because of HIV stigma, MSM were commonly portrayed as threats to

society; therefore, MSM, regardless of HIV status, felt the effects of both homophobia and HIV stigma. The intersection of HIV stigma and homophobia is poorly understood in midlife and older adult MSM. Understanding how being HIV-positive has shaped negative self-evaluations regarding one's sexuality may inform the extent to which coming of age during this time persists today of MSM in midlife and older age.

Furthermore, older adult MSM continue to be part of age-specific generations that are less likely to endorse equality in respect to sexuality (e.g, same-sex marriage) and more likely to endorse anti-gay discriminatory policies [101,181-182]. Given these exposures, exploring the extent to which perceptions of lifetime social discrimination shape internalized homophobia among MSM as an indicator of participants' self-evaluations, may elucidate how social stressors have interfered with social adjustment into older age.

Prior research utilizing an aging framework in MSM and other sexual minority populations have suggested that internalized homophobia is an important correlate of social well-being in midlife and older adulthood [58,60]. In a prior study of older adult sexual minorities, internalized homophobia was a significant correlate of lifetime suicidal ideation and suicidal ideation in the prior year attributed to one's sexual orientation (e.g., thoughts of suicide because one is gay) [62,183]. Additionally, resolving experiences of internalized homophobia does occur across the life course and that those who are able to resolve negative self-evaluations are more likely to experience positive health outcomes [58]. From a stigma-competence point of view, MSM who learn to cope with and reconcile experiences of homophobia early in life are better equipped to deal with perceived stigma in other aspects of their life such as ageism in older age [100]. In another recent study consisting of HIV-positive midlife and older adult gay men,

internalized homophobia was negatively associated with resiliency, which they defined as an individual's capacity to adapt to and reduce experiences of stress [184].

In acknowledgment of the social stress and minority stress theories, minority identities such as race/ethnicity, sexual orientation, HIV serostatus, and socioeconomic status intersect, shaping one's access to social resources and exposure to social stressors. Stressors attributed to multiple stigmatized identities may then compound to elicit health risk behaviors and exacerbate poor health and disease outcomes [47,76,115,185]. These theories suggest that a consequence of individuals' intersecting identities is that the social stressors they experience are intrinsically linked and cannot be isolated from one another. Though chronic experiences or exposure to homophobia may serve to raise levels of internalized homophobia, experiences of other forms of stigma (e.g., racism and HIV stigma) may elicit re-evaluations of self with attention to the ways in which they intersect. Therefore, multifactorial discrimination, which refers to the number of types of discrimination experienced based on one's marginalized social identities may have a critical role in shaping mental health in MSM [76]. To our knowledge, no research efforts have been conducted that sought to examine the role of multifactorial discrimination, the extent to which these experiences are salient, and how they shape psychological well-being, in a sample of midlife and older adult MSM.

Taken together, the specific aims of this analysis are to assess differences in current internalized homophobia by marginalized social identities (e.g., age cohort, racial/ethnic minority, and HIV-positive serostatus) and examine the relationships between the salience of perceived social discrimination on current experiences of internalized homophobia among our sample of midlife and older adult MSM. Aligned with prior research [58], we hypothesize that older adult MSM will report less current internalized homophobia compared to midlife MSM.

On the other hand, we expect racial/ethnic minority participants and HIV-positive participants to report greater internalized homophobia compared to their counterparts. Beyond the expectation that participants with lifetime experiences of discrimination (any and sexuality-related) will yield higher internalized homophobia than those who report no discrimination, we anticipate that participants who assign greater salience to their perceived discrimination experiences will yield greater levels of internalized homophobia than those who report little or no salience. We also expect that those who report multifactorial discrimination will report higher levels of internalized homophobia. Furthermore, participants who report moderate or high salience will report the greatest level of internalized homophobia compared to participants who report no perceived experiences of discrimination and participants who report no or low discrimination salience.

5.2 METHODS

5.2.1 Study Description – Multicenter AIDS Cohort Study

The description for the Multicenter AIDS Cohort Study is provided in section 4.2.1

5.2.2 Measures

5.2.2.1 Outcomes

Current Internalized Homophobia. We included a ten-item scale assessing participants' positive (e.g., *I was happy to be gay/bisexual*) and negative (e.g., *I tried to stop being attracted to men in general*) attitudes regarding their sexual orientation and attraction to men. Items were scored on

a 5-point Likert scale (0 – Strongly disagree, 4 – Strongly agree) with high scores representing high levels of internalized homophobia. The internalized homophobia scale in our sample yielded high internal consistency (Cronbach’s alpha = 0.88) [186]. Consistent with a prior MACS analyses [34], participants internalized homophobia scores were recoded into a dichotomous variable (0 = No internalized homophobia, 1 = Any internalized homophobia). Participants who reported “Agree” or “Strongly Agree” to any of the scale items were classified as having any internalized homophobia.

5.2.2.2 Primary Predictors

Perceived Lifetime Social Discrimination. A description of lifetime discrimination variables (any, sexuality-related, and multifactorial) is provided in Section 4.2.2.

Salience of Discrimination. Participants were asked a single item regarding the extent to which their lifetime experiences of discrimination interfered with participants’ ability to live a full and productive life. This item was scored on a 4-point Likert scale and recoded to indicate that high scores representing greater salience of discrimination experiences (0 – Not at all [*No salience*], 1 – A little [*Low salience*], 2 – Some [*Moderate salience*] 3 – A lot [*High salience*]).

For salience of discrimination experience independent variables, this item was recoded with our discrimination variables from Section 4.0. (any lifetime discrimination experience, any sexuality-related discrimination, and multifactorial discrimination). Since there was low variation among no and low salience, these two responses were recoded into one category. Salience of any lifetime discrimination experience was recoded into 4 categories: 0 – No lifetime discrimination experience, 1 – Lifetime discrimination experience(s) with no/low salience, 2 – Lifetime discrimination experience(s) with moderate salience, 3 – Lifetime discrimination experience(s) with high salience. For salience of any lifetime sexuality-related discrimination

experiences, 4 categories were created: 0 – No lifetime sexuality-related discrimination experience, 1 – Lifetime sexuality-related discrimination experience(s) with no/low salience, 2 – Lifetime sexuality-related discrimination salience with moderate salience, and 3 – Lifetime sexuality-related discrimination with high salience.

For salience of multifactorial discrimination, we first recoded the multifactorial discrimination to reflect 3 groups – those who have experienced no lifetime discrimination, those who experienced 1 type of discrimination, and participants who reported experiencing at least 2 types of discrimination. Because of low variability within each group on discrimination salience, each discrimination group (1 versus 2+ types) was further distinguished to represent those who reported no/low salience and those who reported moderate/high salience, creating a 5-level categorical variable.

5.2.2.3 Primary Predictors

Demographic Characteristics. Participants were asked standard self-reported sociodemographic items to ascertain their birthdate (age), race/ethnicity, sexual identity, HIV status, and level of educational attainment. Lastly, participants unique study identifiers were recoded to indicate their wave of enrollment (pre-1987 and post-2001).

5.2.3 Study Sample

A total of 873 participants were recruited in their respective MACS Clinic at Visit 65 (Wave 1 of the aging sub-study; April-October 2016). Twenty-nine (3.3%) participants did not provide complete demographic information and were excluded. An additional 47 (5.4%) participants did not provide responses to our internalized homophobia scale. We conducted Chi-square tests to

examine differences between participants provided responses to the internalized homophobia scale with those who did not by sociodemographic characteristics and social discrimination variables. Those with missing data were more likely to be in midlife ($\chi^2_{df=1} = 6.31, p = 0.012$), Non-Hispanic Black identified ($\chi^2_{df=3} = 52.52, p = 0.003$), report any lifetime discrimination ($\chi^2_{df=1} = 11.47, p = 0.001$), report any sexuality-related discrimination ($\chi^2_{df=1} = 4.32, p = 0.038$), and report a greater number of discrimination types experienced across their lifetime ($\chi^2_{df=2} = 12.82, p = 0.002$). No statistically significant differences were observed by sexual identity, HIV status, education level, wave of enrollment, or any of the discrimination salience category variables ($p > 0.05$). Given the existing differences, we conducted a sensitivity analysis to compare associations using mean imputation and recoding missing responses with a new value and found no significant effect changes; therefore, we excluded participants with missing responses via listwise deletion in our final analysis. Our final analytic sample consisted of 787 MSM in midlife and older adulthood.

5.2.4 Data Analytic Strategies

We conducted bivariate tests of association (e.g., *Chi-square tests*) using IBM SPSS Statistics for Windows, Version 24.0 to identify sociodemographic differences as well as differences by our discrimination/salience variables in internalized homophobia among our sample of midlife and older adult MSM [122]. Univariate Poisson regression models with robust error variances were conducted to support bivariate analyses and determine which predictor and control variables to include in our multivariable analyses ($p < 0.05$). We also included variables that were theoretically relevant to our hypotheses (e.g., age cohort). We subsequently developed a series of

multivariable Poisson regression models with robust error variances to test the relationships between social discrimination and internalized homophobia [123].

5.3 RESULTS

5.3.1 Sample Description

Our sample (Table 7) was 70.1% in midlife (ages 40-64 years, $N = 552$) 29.9% in older adulthood (65+ years; $N = 235$, 29.9%). The distribution of race/ethnicity included 71.3% Non-Hispanic White ($N = 561$), 18.4% Non-Hispanic Black ($N = 145$, 18.4%), and 10.3% of participants reported an other races/ethnicity ($N = 81$). Most of the sample identified as gay ($N = 694$, 88.2%) and a small number identified as bisexual ($N = 33$, 4.2%) or an Other MSM sexual identity ($N = 60$, 7.6%). About half of participants reported being HIV-positive participants ($N = 390$, 49.6%). A large majority reported an education level beyond high school ($N = 693$, 88.1%) and enrollment into the MACS before 1987 ($N = 482$, 61.2%).

5.3.2 Salience of Social Discrimination

Forty-five percent of participants ($N = 353$) reported any lifetime experience of discrimination. Among those who reported any perceived lifetime discrimination, 39.4% indicated no or low salience, 31.7% reported moderate salience, and 28.9% indicated high salience of their discrimination experiences. Approximately 30.2% ($N = 238$) of the analytic sample reported any perceived sexuality-related discrimination in their lifetime. Of those who reported lifetime

sexuality-related discrimination, 41.2% indicated no or low salience, 30.6% reported moderate salience, and 28.2% indicated high salience of their discrimination experiences. Over half of participants ($N = 205$, 58.1%) who reported any lifetime discrimination also reported having experienced at least two different types of discrimination. Of those who reported only one type of discrimination experience, 31.8% reported no or low salience and 68.2% reported moderate or high salience of their discrimination experiences. A little under half (44.9%) of participants who reported at least two types of discrimination indicated no or low salience and 55.1% moderate to high salience.

5.3.3 Prevalence of Internalized Homophobia and Univariate and Bivariate Analyses

We determined that over a third ($N = 278$, 35.3%) of participants in our sample reported any current internalized homophobia. Being Non-Hispanic Black was associated with increased internalized homophobia (Table 8). Participants who were grouped in All other race/ethnicities reported a higher proportion of men reporting internalized homophobia compared to Non-Hispanic Whites ($\chi^2_{df=2} = 44.60$, $p < 0.001$) as well. Univariate Poisson regression models (Table 3) with robust error variances indicated that both Non-Hispanic Black ($OR = 1.79$, 95% CI : 1.48, 2.16, $p < 0.001$) and men of all other races/ethnicities ($OR = 1.47$, 95% CI : 1.14, 1.87, $p = 0.002$) in our sample were more likely to report internalized homophobia compared to our Non-Hispanic White participants, respectively. In our sample, bisexual and men who reported an Other MSM identity had a greater proportion who reported any current internalized homophobia compared to gay-identified participants ($\chi^2_{df=2} = 34.27$, $p < 0.001$). Univariate Poisson models demonstrated that bisexual ($OR = 1.68$, 95% CI : 1.23, 2.28, $p = 0.001$) and participants reporting an Other MSM identity ($OR = 1.98$, 95% CI : 1.60, 2.45, $p < 0.001$) were more likely to report

any internalized homophobia compared to gay-identified participants, respectively. HIV-positive men were more likely to report an internalized homophobia compared to HIV-negative men ($\chi^2_{df=1} = 6.61, p = 0.010; OR = 1.28, 95\% CI: 1.06, 1.55, p = 0.011$). Educational attainment above a high school level was associated with a decrease in the odds of reporting internalized homophobia ($\chi^2_{df=1} = 22.87, p < 0.001; OR = 0.56, 95\% CI: 0.46, 0.69, p < 0.001$). Participants who enrolled in the MACS post-2001 also had a higher proportion of men who reported any internalized homophobia ($\chi^2_{df=2} = 27.51, p < 0.001; OR = 1.65, 95\% CI: 1.37, 1.99, p < 0.001$). There were no statistically significant differences by age cohorts.

There were no statistically significant differences between those who reported any internalized homophobia and those who did not by any lifetime discrimination, lifetime discrimination salience, and any sexuality-related discrimination. There was, however, a significant difference by salience of sexuality-related discrimination experiences ($\chi^2_{df=3} = 9.77, p = 0.021$). Univariate Poisson regression models indicated that those who reported high salience of any sexuality-related discrimination were less likely to report any internalized homophobia as compared to those who reported no sexuality-related discrimination ($OR = 0.61, 95\% CI: 0.39, 0.97, p = 0.035$). There was a significant association between multifactorial discrimination variable and reporting any internalized homophobia ($\chi^2_{df=2} = 7.84, p = 0.020$). Participants who reported having experienced one type of discrimination in their lifetime were less likely than participants who reported no discrimination to report any internalized homophobia ($OR = 0.73, 95\% CI: 0.54, 0.96, p = 0.026$). Those who reported at least two types of discrimination experiences were more likely than those who reported none to report any internalized homophobia ($OR = 1.25, 95\% CI: 1.02, 1.53, p = 0.028$). Lastly, there was a statistically significant difference by multifactorial discrimination salience categories and reporting any

internalized homophobia ($\chi^2_{df=4} = 11.97, p = 0.018$). Univariate models indicated that those who reported one type of discrimination and moderate or high salience were less likely to report any internalized homophobia compared to those who experienced no discrimination in their lifetime ($OR = 0.58, 95\% CI: 0.40, 0.86, p = 0.006$).

5.3.4 Multivariable Models for Internalized Homophobia

We created a multivariable Poisson regression model (Table 9) for each of the discrimination variables that were significant at the bivariate/univariate level (salience of any lifetime sexuality-related discrimination, multifactorial discrimination, and salience of multifactorial discrimination). In our first model, none of the salience of sexuality-related discrimination categories were associated with internalized homophobia after adjusting for race/ethnicity, sexual identity, HIV status, education level, and Wave of MACS enrollment. Similarly, multifactorial discrimination was not associated with reporting any internalized homophobia after adjusting for the same variables in our second model. In our last model, however, participants who reported one type of discrimination and reported moderate to high salience were less likely to report any internalized homophobia compared to those who reported no discrimination after adjusting for race/ethnicity, sexual identity, HIV status, education level, and Wave of MACS enrollment ($aOR = 0.66, 95\% CI: 0.45, 0.96, p = 0.028$).

Table 7. Sample Characteristics

Variable	
Age Cohort, N (%)	
<i>Midlife (40-64 years)</i>	552 (70.1)
<i>Older Adulthood (65+ years)</i>	235 (29.9)
Race/Ethnicity, N (%)	
<i>Non-Hispanic White</i>	561 (71.3)
<i>Non-Hispanic Black</i>	145 (18.4)
<i>All other Race/Ethnicities</i>	81 (10.3)
Sexual Identity, N (%)	
<i>Gay</i>	694 (88.2)
<i>Bisexual</i>	33 (4.2)
<i>Other MSM Identity</i>	60 (7.6)
HIV Status, N (%)	
<i>Negative</i>	397 (50.4)
<i>Positive</i>	390 (49.6)
Education Level, N (%)	
<i>HS or Less</i>	94 (11.9)
<i>More than HS/GED</i>	693 (88.1)
Wave of Enrollment	
<i>Pre-1987</i>	482 (61.2)
<i>Post-2001</i>	305 (38.8)
Any Lifetime Discrimination, N (%)	
<i>No</i>	434 (55.1)
<i>Yes</i>	353 (44.9)
Any Lifetime Discrimination Salience, N (%)	
<i>No Discrimination</i>	434 (55.1)
<i>Lifetime Discrimination No/Low Salience</i>	139 (17.7)
<i>Lifetime Discrimination Moderate Salience</i>	112 (14.2)
<i>Lifetime Discrimination High Salience</i>	102 (13.0)
Any Sexuality-Related Discrimination, N (%)	
<i>No</i>	549 (69.8)
<i>Yes</i>	238 (30.2)
Any Lifetime Sexuality-Related Discrimination Salience, N (%)	
<i>No Sexuality-Related Discrimination</i>	549 (69.8)
<i>Lifetime Sexuality Discrimination No/Low Salience</i>	98 (12.5)
<i>Lifetime Sexuality Discrimination Moderate Salience</i>	73 (9.3)
<i>Lifetime Sexuality Discrimination High Salience</i>	67 (8.5)
Multifactorial Discrimination, N (%)	
<i>No Lifetime Discrimination Experienced</i>	434 (55.1)
<i>1 Type of Discrimination Experienced</i>	148 (18.8)
<i>2+ Types of Discrimination Experienced</i>	205 (26.1)
<i>1 Type of Discrimination Experienced No/Low Salience</i>	47 (6.0)
<i>1 Type of Discrimination Experienced Mod/High Salience</i>	101 (12.8)
<i>2+ Types of Discrim. Experienced No/Low Salience</i>	92 (11.7)
<i>2+ Types of Discrim. Experienced Mod/High Salience</i>	113 (16.2)
Any Current Internalized Homophobia, N (%)*	
<i>No</i>	509 (64.7)
<i>Yes</i>	278 (35.3)

Note: * % of participants who reported “agree” or “strongly” degree to any Internalized Homophobia scale item

Table 8. Bivariate Relationships with Internalized Homophobia

Variable	Internalized Homophobia		p
	No N, (%)	Yes N, (%)	
Age Cohort			0.253
<i>Midlife (40-64 years)</i>	350 (63.4)	202 (36.6)	
<i>Older Adulthood (65+ years)</i>	159 (67.7)	76 (32.3)	
Race/Ethnicity			<0.001
<i>Non-Hispanic White</i>	403 (71.8)	158 (28.2)	
<i>Non-Hispanic Black</i>	65 (44.8)	80 (55.2)	
<i>All Other Race/Ethnicities</i>	41 (30.6)	40 (49.4)	
Sexual Identity			<0.001
<i>Gay</i>	474 (68.3)	220 (31.7)	
<i>Bisexual</i>	14 (42.4)	19 (57.6)	
<i>Other MSM Identity</i>	21 (35.0)	39 (65.0)	
HIV Status			0.010
<i>Negative</i>	274 (69.0)	123 (31.0)	
<i>Positive</i>	235 (60.3)	155 (39.7)	
Education Level			<0.001
<i>HS or Less</i>	40 (42.6)	54 (57.4)	
<i>More than HS/GED</i>	469 (67.7)	224 (32.3)	
Wave of Enrollment			<0.001
<i>Pre-1987</i>	346 (71.8)	136 (28.2)	
<i>Post-2001</i>	163 (53.4)	142 (46.6)	
Any Lifetime Discrimination Experience			0.963
<i>No</i>	281 (64.7)	153 (35.3)	
<i>Yes</i>	228 (64.6)	125 (35.4)	
Any Lifetime Discrimination Salience			0.230
<i>No Discrimination</i>	281 (64.7)	153 (35.3)	
<i>Lifetime Discrimination No/Low Salience</i>	81 (58.3)	58 (41.7)	
<i>Lifetime Discrimination Moderate Salience</i>	75 (67.0)	37 (13.3)	
<i>Lifetime Discrimination High Salience</i>	72 (70.6)	30 (29.4)	
Any Sexuality-Related Discrimination			0.102
<i>No</i>	345 (62.8)	204 (37.2)	
<i>Yes</i>	164 (68.9)	74 (31.1)	
Any Lifetime Sexuality-Related Discrimination Salience			0.021
<i>No Sexuality-Related Discrimination</i>	345 (62.8)	204 (37.2)	
<i>Lifetime Sexuality Discrimination No/Low Salience</i>	58 (59.2)	40 (40.8)	
<i>Lifetime Sexuality Discrimination Moderate Salience</i>	54 (74.0)	19 (26.0)	
<i>Lifetime Sexuality Discrimination High Salience</i>	52 (77.6)	15 (22.4)	
Multifactorial Discrimination			0.020
<i>0 Types Experienced</i>	281 (64.7)	153 (35.3)	
<i>1 Type Experienced</i>	108 (73.0)	40 (27.0)	
<i>2+ Types Experienced</i>	120 (58.5)	85 (41.5)	
Multifactorial Discrimination Salience			0.018
<i>No Discrimination</i>	281 (64.7)	153 (35.3)	
<i>1 Type of Discrimination Experienced No/Low Salience</i>	29 (61.7)	18 (38.3)	
<i>1 Type of Discrimination Experienced Mod/High Salience</i>	79 (78.2)	22 (21.8)	
<i>2+ Types of Discrim. Experienced No/Low Salience</i>	52 (56.5)	40 (43.5)	
<i>2+ Types of Discrim. Experienced Mod/High Salience</i>	68 (60.2)	45 (29.8)	

Table 9. Poisson Regression Models for Internalized Homophobia among Midlife and Older Adult MSM in the MACS

Variables	Univariate Model			Multivariable Models								
	OR	95% CI	p	Model 1			Model 2			Model 3		
				OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Age Cohort												
<i>Midlife (40-64 years)</i>	REF			REF								
<i>Older adulthood (65+ years)</i>	0.88	0.71, 1.10	0.260	0.82	0.64, 1.04	0.097	1.24	0.98, 1.57	0.077	1.24	0.98, 1.57	0.073
Race/Ethnicity												
<i>Non-Hispanic White</i>	REF			REF			REF			REF		
<i>Non-Hispanic Black</i>	1.79	1.48, 2.16	<0.001	1.45	1.13, 1.85	0.003	1.45	1.13, 1.85	0.003	1.45	1.13, 1.86	0.003
<i>All Other Race/Ethnicities</i>	1.47	1.14, 1.87	0.002	1.50	1.14, 1.97	0.003	1.48	1.12, 1.96	0.006	1.48	1.12, 1.96	0.006
Sexual Identity												
<i>Gay</i>	REF			REF			REF			REF		
<i>Bisexual</i>	1.68	1.23, 2.28	0.001	1.39	0.98, 1.95	0.062	1.39	0.98, 1.96	0.062	1.40	1.00, 1.96	0.054
<i>Other MSM Identity</i>	1.98	1.60, 2.45	<0.001	1.45	1.15, 1.83	0.002	1.44	1.14, 1.81	0.002	1.44	1.14, 1.81	0.002
HIV Status												
<i>Negative</i>	REF			REF			REF			REF		
<i>Positive</i>	1.28	1.06, 1.55	0.011	1.10	0.91, 1.33	0.336	1.09	0.90, 1.32	0.393	1.10	0.90, 1.33	0.356
Education Level												
<i>HS or Less</i>	REF			REF			REF			REF		
<i>More than HS/GED</i>	0.56	0.46, 0.69	<0.001	0.79	0.63, 0.97	0.027	0.77	0.62, 0.96	0.018	0.78	0.62, 0.97	0.025
Wave of MACS Enrollment												
<i>Pre-1987</i>	REF			REF			REF			REF		
<i>Post-2001</i>	1.65	1.37, 1.99	<0.001	1.28	1.02, 1.60	0.077	1.29	1.03, 1.62	0.027	1.28	1.02, 1.61	0.030
Any Lifetime Discrimination												
<i>No</i>	REF											
<i>Yes</i>	1.00	0.83, 1.22	0.963									
Salience of Lifetime Discrimination												
<i>No Discrimination Experiences</i>	REF											
<i>No/Low Salience</i>	1.23	0.84, 1.54	0.071									
<i>Moderate Salience</i>	0.92	0.69, 1.23	0.590									
<i>High Salience</i>	0.81	0.59, 1.12	0.198									

Table 9 Continued

Any Sexuality-Related Discrimination									
<i>No</i>	REF								
<i>Yes</i>	0.837	0.67, 1.04	0.109						
Salience of Sexuality Discrimination									
<i>No Sexuality Discrim. Experiences</i>	REF			REF					
<i>No/Low Salience</i>	1.18	0.91, 1.53	0.208	1.18	0.91, 1.52	0.208			
<i>Moderate Salience</i>	0.72	0.48, 1.07	0.103	0.81	0.55, 1.20	0.296			
<i>High Salience</i>	0.61	0.39, 0.97	0.035	0.77	0.48, 1.22	0.268			
Multifactorial Discrimination									
<i>No Discrimination Experiences</i>	REF				REF				
<i>1 Type Experienced</i>	0.73	0.54, 0.96	0.026		0.79	0.60, 1.04	0.101		
<i>2+ Types Experienced</i>	1.25	1.02, 1.53	0.028		1.05	0.85, 1.28	0.626		
Salience of Multifactorial Discrimination									
<i>No Discrimination Experienced</i>	REF						REF		
<i>1 Type – No/Low</i>	1.08	0.75, 1.59	0.653				1.06	0.74, 1.54	0.733
<i>1 Type – Moderate/High</i>	0.58	0.40, 0.86	0.006				0.65	0.45, 0.94	0.025
<i>2 Types – No/Low</i>	1.27	0.98, 1.64	0.066				1.11	0.85, 1.43	0.430
<i>2 Types – Moderate/High</i>	1.15	0.90, 1.48	0.266				1.00	0.77, 1.30	0.984

Note: Primary Predictors: Model 1: Salience of sexuality-related discrimination; Model 2 – Multifactorial Discrimination; Model 3:

Salience of Multifactorial Discrimination

5.4 INTRODUCTION

The current study assessed the extent to which internalized homophobia is experienced among midlife and older adult MSM and how experiences of social discrimination have shaped these self-evaluations. Though it has been previously found that collectively, MSM resolve experiences of internalized homophobia over time [58], over one-third of our sample of midlife and older adult MSM reported any internalized homophobia in the past year. Furthermore, our findings support prior research that those who identify with marginalized identities such as racial/ethnic minorities and MSM with lower education levels report greater internalized homophobia compared to their counterparts [60, 183]. We did not, however, observe statistically significant differences in current internalized homophobia by age cohort or HIV-serostatus.

We found that a little less than half of participants reported any perceived discrimination, approximately one-third reported sexuality-related discrimination, and over a quarter of participants reported experiencing at least two types of social discrimination across their lifetime. Interestingly, we observed that among those who perceived any lifetime discrimination, the salience of these experiences was often reported as moderate to high across our three discrimination classifications (~60%).

Our multivariable models indicated that there was no statistically significant difference in internalized homophobia with discrimination exposure or discrimination salience variables as the primary predictor. Interestingly, at the univariate level, those who experienced at least two types of social discrimination were more likely to report internalized homophobia compared to those who only reported one and compared to those who reported none, respectively. Aligned with

intersectionality theory, this finding supports prior research that describes how social identities and experiences of social discrimination are intrinsically linked, and that experiences of social adversity may not be pulled apart from one another [76]. Additionally, in observing the distribution of internalized homophobia across salience categories and again across the three discrimination independent variables, participants with no or low salience exhibited a greater proportion of internalized homophobia compared to those with moderate or high salience. Given the intensities of moderate or high salience, it is possible that in the face of discrimination, participants who endorsed these weights may have had greater access to or sought out affirming social resources with greater effort across the life course compared to those who reported little or no salience. Prior reports suggest that members of disadvantaged groups often cope with prejudice by increasing their identification and participation with others who identify with their disadvantaged group [168]. Future research efforts should seek to explore how coping mechanisms are shaped by discrimination salience.

Despite the high prevalence of internalized homophobia in our sample, our hypotheses that experiences of social discrimination and higher discrimination salience would be associated with internalized homophobia were unsupported. Based on our findings, there are a number of possible reasons of why our hypotheses were rejected. First, our study did not account for minority stress predictors beyond social discrimination. Perhaps the inclusion of other social stressors such as violent victimization as well as perceptions of community stigma among our participants carry greater weight than discrimination and should be included in future analyses. Factors like identity concealment may moderate the relationship between experiences of discrimination and internalized homophobia in samples of midlife and older adult MSM, especially since these men belong to cohorts that historically have higher rates of concealment

and are part of age-specific generations that harbor greater amounts of homophobic attitudes compared to younger cohorts [138]. Secondly, we were unable to control for resiliency factors that may have played a part in counteracting the negative influence discrimination potentially has in shaping internalized homophobia. Prior reports on resilience indicate the potential role of developmental plasticity, which describes the strengthening of individuals' adaptive capacity in the face of social adversity [187]. Beyond greater identification with one's disadvantaged group, participants who experienced discrimination may have had access to social supports that provided mental and emotional resources that strengthened self-evaluations regarding their sexual identity [181, 187].

A lack of statistically significant differences in internalized homophobia by age cohort may reflect resolved negative self-evaluations over time [58]. As a community, midlife MSM may have had a lower internalized homophobia baseline given a less stigmatizing sociocultural context as they came of age compared to older adult MSM. Alternatively, these null findings may suggest that current internalized homophobia is shaped by the accessibility of sexual identity affirming resources (e.g., gay neighborhoods, social services, queer safe spaces, etc.) to MSM as a whole irrespective of age. On a more structural level, positive trends with respect to attitudes on homosexuality [103-105] may be catalyzing resolutions of internalized homophobia among younger generations and therefore minimizing differences by age cohorts/generations. With respect to HIV status, our null findings may reflect that despite being HIV-negative, HIV-negative men continue to share the burden of HIV stigma experienced in the MSM community [180]. Though HIV-positive men are vulnerable to HIV-related discrimination, HIV-negative MSM may experience felt stigma as a result of lingering attributions of HIV to MSM

communities from prior decades and thus minimizing differences in internalized homophobia [170].

Our findings have a number of implications for future directions in both research and practice. To our knowledge, our study is the first to address midlife and older adult MSM's subjective experiences on how their discrimination has affected their lives; however, our analysis falls short of describing any indication on how salience of these events have impacted health and well-being given the lack of association to internalized homophobia. Because a majority of participants endorsed moderate to high salience, we believe that future analyses should seek to test the relationship of saliency on an array of health and well-being indicators in order to provide better insight for tackling social discrimination through public health practice. Qualitative accounts of participants who report any internalized homophobia may elucidate a better understanding of how these negative evaluations persist as unresolved for some men in midlife and older age.

From a methodological standpoint, future research efforts may benefit from addressing the limitations of our study. First, our findings may be underestimated by the inherent subjectivity of measuring perceptions of discrimination [153]. Perceptions of discrimination experiences are largely underreported, especially for members of disadvantaged groups [154-155]. Often, advantaged individuals' motives for discriminating against a disadvantaged individual are hidden and therefore undetected. Additionally, our measure does not account for frequency or temporality of perceived discrimination events. Beyond salience, these factors may play an important role in moderating the relationship between exposure to discrimination and internalized homophobia [79].

Our current measurement of salience may be limited because it broadly addresses how perceptions of discrimination (regardless of type or in what capacity the event occurred) had a personal impact on participants' lives across the life course. Little is known in respect to whether the level of salience is related to type of discrimination, recent versus non-recent past, intensity and frequency of discrimination experiences; therefore, our current measure may not fully capture participants' experiences of discrimination saliency and warrants further scrutiny. We recommend the development and validation of improved measures of discrimination salience.

Since prior research indicates that internalized homophobia is largely resolved over time, future longitudinal research may elucidate whether perceived lifetime discrimination thwarts resolution processes across different stages across the life course (e.g., adolescence, young adulthood, midlife, and older adulthood). Addressing social discrimination and its impact on trends of internalized homophobia at different stages may further inform the relationship between age and internalized homophobia resolution. Because we only collected current experiences of internalized homophobia for this sample, we were unable to test these differences.

Additionally, our analysis may be limited by our assumption that any experience of internalized homophobia irrespective of severity was worse than no experience of internalized homophobia. Though dichotomizing current experiences of internalized homophobia is consistent with prior analyses conducted with a MACS sample [58], these categorizations may mask the complexities of navigating internalized homophobia in older age. To our knowledge, there is no defined clinical threshold that describes the point in which internalized homophobia becomes a pathology. As previously reported [58], internalized homophobia is reasonably considered a mental health concern given its relationships to individuals' self-evaluations. Further conducting psychometric assessments (e.g., validity and reliability) of measures that seek

to better conceptualize internalized homophobia in addition to ascertaining greater detail on how or why these self-evaluations persist in midlife or older adulthood may better serve clinicians and public health practitioners on efforts to reduce these negative attitudes in MSM.

We also acknowledge that our analysis was also limited by our sample design. Our findings indicated that those who did not provide any responses for internalized homophobia were more likely to report social discrimination (any, sexuality-related, and multifactorial) compared to those who provided responses. Additionally, our analyses may have reduced external validity since our sampling design included a convenient sample of MSM from the MACS. Therefore, our sample is not generalizable to all MSM in middle age and older adulthood in the U.S. Future efforts should seek to replicate our analyses in clinical or community-based samples. Increasing sample power for minorities by race/ethnicity and non-gay identified MSM may challenge or inform our results.

Despite our limitations, our analyses contribute to the growing body of literature that addresses healthy aging among MSM as a public health priority population in a number of ways [2]. Our study sought to expand prior literature regarding these relationships by giving weight to the salience of these discrimination experiences among MSM in our study; specifically, we addressed the degree to which perceived discrimination has impacted participants' abilities to live full and productive lives. In doing so, we attempted to better understand how midlife and older adult MSM, as part of marginalized communities, mentally process social adversity. Because a majority of participants endorsed moderate to high salience, we believe that future analyses should seek to test the relationship of saliency on an array of health and well-being indicators in order to provide better insight for tackling social discrimination through public health practice. Additionally, minority stressors such as internalized homophobia and social

discrimination persists as critical public health issues into midlife and older age. Both reflect pertinent factors related to mental and physical well-being in older adulthood [176-177].

6.0 THE SALIENCE OF SOCIAL DISCRIMINATION ON SOCIAL WELL-BEING IN MIDLIFE AND OLDER ADULT MSM

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6.1 INTRODUCTION

For the general population, healthy aging is as much of a social concern as it is a mental, physical, and biological process [6-8]. In fact, it has been suggested that the most imperative factors that influence individuals' experiences of healthy aging are social forces and environments [11]. Social and cultural environments shape how an individual connects, integrates, and participates with one's communities [189]. Furthermore, the social networks with whom people associate often promote health at the individual level through provision of social resources that shape quality of life across the life course.

Prior literature has frequently sought to define older adulthood across a continuum of positive and negative characteristics. Older adulthood is a time of loss of independence, increased social disengagement, a devalued presence in productive spaces like employment, and an increase in illness and disability [14, 189-190]. Loneliness in midlife and older age, as an

indicator of social isolation, has been found to be higher among men and has been associated with poor mental and physical health symptoms, chronic social stress, and poor-quality social relationships [179,191-192]. On the other side of the continuum, older adulthood is also an opportunity for many to pursue personal interests in retirement, consolidate character strengths and resilience, and reflect on one's lifetime achievements [14]. Older adults exhibit social resiliency, often participating in day-to-day interactive, community activities [193].

Enhancing social well-being is recognized by the World Health Organization (WHO) as a priority approach in addressing population aging because it is a critical aspect of human functioning, providing individuals with fulfilment and access to social resources in times of distress [194-196]. Social well-being is defined as the potential benefits of public life afforded to an individual through social integration and cohesion, a sense of belonging and interdependence, and a sense of shared consciousness and collective fate [10]. There is an abundance of literature examining the participation and quality of social relationships in the general midlife and older adult population [14,96,179,188-198]. As older adult sexual minorities have become a priority population in health disparity reduction efforts, greater efforts are needed to address the social well-being of these communities [2].

Sexual minority older adults share similar needs to heterosexual older adults in respect to social participation and well-being; however, sexual minorities' experiences to achieve these needs are challenged by social stigmas [30]. Prior research suggests that stigmatization may elevate individuals' perceptions of belonging uncertainty among their social connections, which is especially relevant for sexual minorities as a historically stigmatized group [198]. Furthermore, sexual minorities have been observed to report less socially integration, reducing

their access to social support systems, and ultimately elevating their risk for psychological distress [200].

A number of studies have emerged that underscore the importance of social well-being among sexual minority older adults. First, MSM have been found to have smaller social network sizes and experience less social support compared to sexual minority women [115,183]. Expectedly, social support, defined as the availability of social relationships that provide emotional, informational, tangible, or belong supports [201], is an important indicator of social well-being and is associated with higher indicators of mental and physical health in older adult MSM [115,202-205]. Older adult sexual minorities were also more satisfied with the support they received from network members who knew the participant's sexual orientation compared to those who did not [183].

Moreover, MSM in midlife and older adulthood living today reflect a community that is disproportionately affected by HIV. Irrespective of one's HIV status, many of these men came of age, navigating their sexualities in social spaces greatly affected by the HIV/AIDS epidemic [206]. In fact, many of these men are survivors of the height of the epidemic, which sought to further stigmatize the gay community [180]. During this time, MSM often saw their social networks decimated by HIV, losing friends, family members, and life partners [205]. Furthermore, many infected with HIV experienced rejection or abandonment from friends, family members, HIV-negative MSM, and other sources of critical social support [206-208]. One prior study characterized the social networks of HIV-positive people as fragile, with many depending on other HIV-positive friends as key sources for informal support [209]. Since HIV continues to be a stigmatized disease today despite advances in medical treatment that permits

HIV-positive individuals to live long, healthy lives [210], efforts are needed to address how HIV plays a role in MSM's capacity to achieve high social well-being.

Though these prior studies elucidate important findings regarding mental and physical health among older adult sexual minorities, little to no attention has been given to the perceived availability and quality of interpersonal relationships among aging sexual minority men. Prior research in the general population indicates that individuals' subjective evaluations of their social networks are more closely associated with indicators of social well-being above and beyond more objective measures such as network size [190]. These indicators of social well-being ascertain the quality of social networks in regard to their functionality by specifically identifying the extent to which networks provide the capacity for emotional sustenance, self-esteem building, informational and feedback support, and tangible/material assistance rather than emphasizing the value of large social networks [211]. To date, we have identified only one prior study that has sought to capture the quality of social networks among midlife sexual minorities; however, the objectives of this study were to examine a composite indicator of well-being with the inclusion of factors outside of social networks (e.g., individual autonomy, personal growth, and self-acceptance) by sexual orientation [204]. Though this study found that experiences of discrimination are related to lower overall well-being, it is unclear the extent to which support from social networks individually contributed to participants' experiences of well-being. Given pervasive stigma currently and historically experienced by sexual minorities, examining social well-being through subjective evaluations of network functionality requires social contexts; therefore, research is needed to test how experiences of social stigma like discrimination shapes access to critical social resources (e.g., social support) among midlife and older adult sexual minorities [200].

Perceived experiences of discrimination, defined as the unfair or differential treatment of disadvantaged groups by advantaged groups [107], seek to deprive marginalized communities of critical social resources, limiting individuals' social well-being. These social resources are important for mitigating the effects of mental and physiological stress on disease outcomes [46-48]. Research on older adults' social standing in relation to health maintenance has been well-documented [213-214]. For the general population, social network analyses have been contextualized in a framework that addresses social stress (e.g., discrimination) given their influence on network structure (e.g., social support systems) [188]; specifically, on individuals' capacities to socially integrate within their communities and access beneficial resources. For older adults, access to beneficial social resources has been associated with a decreased risk for a number of health conditions including cardiovascular disease, infectious diseases, cognitive impairment, physiological responses to stress, and mortality [213-214].

To our knowledge, there are no prior efforts that aimed to examine the role of perceptions of social discrimination on the subjective evaluations of social well-being among midlife and older adult MSM in the United States. Midlife and older adult MSM grew up in a society characterized by intense homophobia, decades of institutionalized sexuality-related discrimination, and for many, during the height of the HIV epidemic that demonized MSM communities [103-104]. Additionally, individuals who experience multiple forms of marginalized identities (e.g., old age, racial/ethnic minority, HIV-positive serostatus) may experience an even heavier burden than those with one stigmatized identity imposed by exposures to other types of discrimination [46-47,63,76,116]. Aligned with how social and cultural experiences and environments of formative years shape healthy aging-related processes,

lower potential to access social resources across one's lifetime may impact the ways midlife and older adult MSM currently participate and integrate within their communities [11].

In consideration of the ways in which disadvantaged populations process experiences of discrimination, there are two competing hypotheses that may emerge regarding one's social well-being in old age. Prior studies found that for members of disadvantaged populations, heightened salience of one's discrimination experience may increase identification with one's attributed marginalized identity group [80]. On the other hand, individuals who experience discrimination may be conditioned to anticipate stigma or prejudicial events within social contexts and therefore choose to disengage with their community networks [42,216].

Taken together, we aim to determine if perceptions of lifetime social discrimination experiences, assessed by any lifetime discrimination, any sexuality-related discrimination, and multifactorial discrimination are associated with social well-being among midlife and older adult MSM. Secondly, we seek to determine if the salience of these discrimination experiences also shape indicators of social well-being among this population. We expect that those who report any perceived social discrimination (any or sexuality-related) as well as more types of social discrimination (multifactorial) will report lower social well-being than those who reported no discrimination. Additionally, we hypothesize that greater salience of discrimination experiences will be associated with a decrease in social well-being.

6.2 METHODS

6.2.1 Study Description

The description for the Multicenter AIDS Cohort Study is provided in section 4.2.1.

6.2.2 Measures

6.2.2.1 Outcomes

Social Well-Being. To measure participants' social well-being, we included a validated scale called the *Social Provisions Scale*, which was developed to examine the degree to which participant's social relationships provide or are able to provide social support [211]. The *Social Provisions Scale* includes 24 items across six factors determined in prior confirmatory factor analyses. The first subscale, *Attachment*, describes the emotional closeness from which participants derive their sense of security (e.g., I have close relationships that provide me with a sense of emotional security and well-being). *Social Integration* is a subscale that measures participants' sense of belonging with others who share similar interests (e.g., I feel part of a group of people who share my attitudes and beliefs). *Reassurance of Worth* is defined as participants' beliefs that those in their network recognize their competence, skills, and value (e.g., I do not think other people respect my skills and abilities [reverse coded]). A participant's *Reliable Alliance* describes their assurance that others can be counted upon for tangible assistance (e.g., If something went wrong, no one would come to my assistance). The *Guidance* subscale is a participant's access to advice/information regarding problem solving (e.g., There is a trustworthy person I could turn to for advice if I really need it). Lastly, the *Opportunity for*

Nurturance subscale describes participants' sense that others rely upon them for their well-being (e.g., There are people who depend on me for help). All 24 items were scored on 4-point Likert scale (0 – Strongly Disagree, 3 – Strongly Agree) and averaged within each subscale. Higher scores represent greater social well-being with respect to their subscale. All six subscales exhibited adequate internal consistency in our sample (Cronbach's alpha range: 0.72-0.82).

6.2.2.2 Primary Predictors

Experiences of Social Discrimination. Items and variable construction for any lifetime discrimination, any sexuality-related discrimination, and multifactorial discrimination are outlined in section 4.2.2.

Saliency of Discrimination Experiences. Items and variable construction for saliency of discrimination experiences across three social discrimination variables are described in section 5.2.2.

6.2.2.3 Covariates

Demographic Characteristics. Participants were asked standard self-reported sociodemographic items to ascertain their birthdate (age), race/ethnicity, sexual identity, HIV status, and level of educational attainment. Lastly, participants study IDs were recoded to indicate their wave of enrollment (pre-1987 and post-2001).

6.2.3 Data Analytic Strategies

Using IBM SPSS Statistics for Windows, Version 24.0 we conducted chi-square tests to examine demographic and discrimination differences among participants who provided complete data for

the *Social Provisions* scale and those who did not. Additionally we ran a sensitivity analysis using mean imputation to determine potential differences in the effects of our predictors if participants with missing data were excluded or not. Subsequently, we conducted bivariate tests of association (e.g., *t-tests*, *One-way ANOVA*) to identify demographic differences as well as differences by our discrimination/salience variables across each of the social well-being subscales among our sample of midlife and older adult MSM [122]. We also conducted simple linear regression models to observe the independent main effects of each demographic and discrimination variable to support bivariate analyses and determine which variables to include subsequent multivariable models ($p < 0.05$). We developed a series of multivariable linear regression models for each social well-being subscale to test whether our discrimination variables that were significantly associated ($p < 0.05$) in the univariate and bivariate analyses persisted when adjusted for sociodemographic characteristics.

6.2.4 Study Sample

A total of 873 participants were recruited in their respective MACS Clinic at Visit 65 (Wave 1 of the aging sub-study; April-October 2016). Twenty-nine (3.3%) participants did not provide complete demographic information and were excluded. An additional 47 (5.4%) participants did not provide responses to our *Social Provisions Scale*. In comparing participants who provided responses with those who did not, those with missing data were more likely to be Non-Hispanic Black identified ($\chi^2_{df=2} = 19.74, p < 0.001$), identify as *Other MSM* in terms of sexual identity ($\chi^2_{df=2} = 12.85, p = 0.002$), report an education level of HS or less ($\chi^2_{df=1} = 21.42, p = 0.001$), and more likely to be enrolled in the MACS post-2001 ($\chi^2_{df=1} = 9.73, p = 0.002$). No differences were observed by age cohort, HIV status, or any of the discrimination/salience category variables ($p >$

0.05). Our sensitivity analysis yielded no significant effect changes in our primary predictor variables on social well-being scores; therefore, we excluded participants with missing responses in our final analysis. Our final analytic sample consisted of $N = 668$ midlife and older adult MSM.

6.3 RESULTS

6.3.1 Sample Characteristics

For this manuscript, we analyzed a sample predominantly in midlife (age 40-64 years; $N = 470$, 70.4%; Table 10). A large majority of our sample identified as Non-Hispanic White ($N = 491$, 73.5%), with small minorities of Non-Hispanic Black ($N = 109$, 16.3%) and men who identified with an Other Race/Ethnicity ($N = 68$, 10.2%). The sample was overwhelmingly gay-identified ($N = 596$, 89.2%) with 4.2% ($N = 28$) and 6.6% ($N = 44$) reporting a bisexual and other MSM identity, respectively. There was a near even split of HIV-negative ($N = 338$, 50.6%) and HIV-positive participants ($N = 330$, 49.4%). We analyzed a largely educated sample with 602 (90.1%) reporting education beyond a high school level. Lastly, a majority of participants were enrolled in the MACS prior to 1987 ($N = 424$, 63.5%).

6.3.2 Experiences of Social Discrimination

Roughly 44.5% ($N = 297$) reported any lifetime experience of discrimination. Among those who reported any discrimination, 63.0% ($N = 187$) rated the salience of their experiences as either

moderate or high. Nearly one-third ($N = 202$, 30.2%) reported any lifetime sexuality-related discrimination. Of these participants, 65.3% ($N = 122$) rated the salience of their experiences as either moderate or high. For our multifactorial discrimination variable, 18.6% ($N = 124$) reported experiencing one type of discrimination and 25.9% ($N = 173$) reported at least two types of discrimination across their lifetime. Among those who experienced one type, 68.5% rated the salience of their discrimination experiences as moderate or high and among those who experienced at least two types of discrimination, 58.9% rated the salience of their discrimination types as either moderate or high.

6.3.3 Social Well-Being

The distribution of scores for the subscales of the *Social Provision Scale* are provided in Figure 4 below.

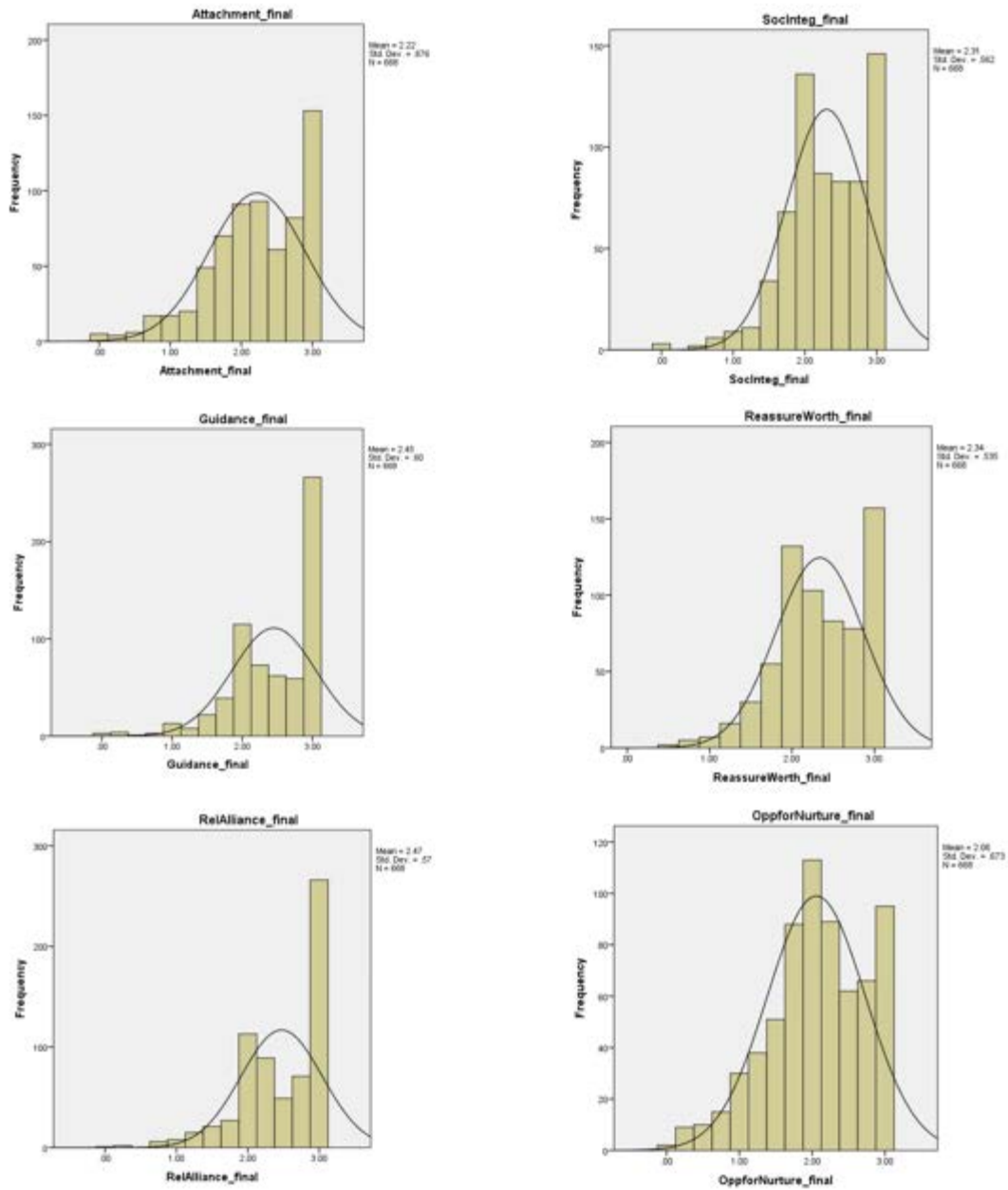


Figure 4. Distribution of Social Provision Subscale Scores among Midlife and Older Adult MSM in the MACS

6.3.3.1 Social Well-Being: Attachment

The average attachment score was $m = 2.22$ ($sd = 0.68$). Bivariate tests (Table 11) indicated statistically significant differences by sexual identity ($F_{(2,665)} = 9.79, p < 0.001$), any lifetime discrimination ($t_{(666)} = 3.20, p = 0.001$), lifetime discrimination salience ($F_{(2,665)} = 5.20, p < 0.001$), lifetime sexuality-related discrimination ($t_{(666)} = 2.43, p = 0.015$), sexuality-related discrimination salience ($F_{(2,665)} = 4.05, p = 0.007$), multifactorial discrimination ($F_{(2,665)} = 5.77, p = 0.003$), and multifactorial discrimination salience ($F_{(2,665)} = 4.26, p = 0.002$).

Simple linear regression models indicated that men who reported an Other MSM sexual identity reported on average lower attachment scores compared to gay-identified MSM ($\beta = -0.17, p < 0.001$). Those who experienced any lifetime discrimination ($\beta = -0.12, p < 0.001$) and any sexuality-related discrimination ($\beta = -0.09, p = 0.015$) also reported lower scores on the *Attachment* subscale. Participants who reported no or low salience for lifetime ($\beta = -0.13, p = 0.001$) and sexuality-related discrimination ($\beta = -0.12, p < 0.001$) also reported lower attachment, respectively, compared to those who reported no discrimination. Compared to those who experienced zero types of discrimination, MSM who reported two or more types scored lower attachment scores ($\beta = -0.11, p = 0.003$). Lastly, participants who reported no or low salience for one type of discrimination experienced ($\beta = -0.09, p = 0.023$) as well as for two or more types experienced ($\beta = -0.09, p = 0.024$) across the life course exhibited lower attachment scores than those who reported zero types, respectively. No statistically significant between-group differences existed by age cohort, race/ethnicity, HIV serostatus, education level, and wave of MACS enrollment.

In our first multivariable linear regression model (Table 12; $F_{(3, 664)} = 9.42, p < 0.001$), any perceived lifetime experience persisted as being associated with lower scores on the

Attachment subscale compared to those who reported no lifetime discrimination when adjusting for sexual identity ($\beta = -0.11, p = 0.004$). In the second multivariable model ($F_{(5, 662)} = 6.77, p < 0.001$), those who reported no or low salience of lifetime discrimination remained associated with lower scores of attachment with those who experienced no discrimination serving as the referent group ($\beta = -0.14, p < 0.001$).

Any lifetime sexuality-related discrimination (Model 3; $F_{(3, 664)} = 9.06, p < 0.001$) continued to be significantly associated with lower attachments scores after adjusting for sexual identity ($\beta = -0.10, p = 0.007$). Those who reported no or low salience among those who experienced lifetime sexuality-related discrimination (Model 4; $F_{(5, 662)} = 6.74, p < 0.001$) reported lower attachment scores compared to those who reported no discrimination ($\beta = -0.14, p = 0.001$). In Model 5 ($F_{(5, 662)} = 6.74, p < 0.001$), experiencing at least two types of discrimination was associated with lower attachment scores compared to those who experienced zero types ($\beta = -0.12, p = 0.004$). In the final model ($F_{(6, 661)} = 5.66, p < 0.001$), no or low salience of discrimination for those who experienced one type ($\beta = -0.10, p = 0.010$) and those who experienced at least two types ($\beta = -0.11, p = 0.006$) remained statistically associated with lower scores of the *Attachment* subscale after adjusting for sexual identity.

6.3.3.2 Social Well-Being: Social Integration

Among our participants, we observed an average social integration score of $m = 2.31$ ($sd = 0.56$). Our bivariate tests (Table 11) indicated statistically significant differences in social integration scores by sexual identity ($F_{(2,665)} = 3.83, p = 0.022$), education level ($t_{(666)} = -2.76, p = 0.006$), any lifetime discrimination ($t_{(666)} = 2.20, p = 0.028$), any lifetime discrimination salience ($F_{(3,664)} = 3.86, p = 0.009$), and multifactorial discrimination salience ($F_{(4,663)} = 3.01, p = 0.009$).

Simple linear regression models indicated that participants who reported an Other MSM identity reported lower social integration compared to gay-identified participants ($\beta = -0.11, p = 0.006$) and that those who reported more than a high school education level reported greater social integration than those who reported less ($\beta = 0.11, p = 0.006$).

Participants who reported any lifetime discrimination reported lower social integration than those who reported none ($\beta = -0.09, p = 0.028$), and when broken down by salience, participants who reported no or low salience reported lower social integration than those who reported no lifetime discrimination ($\beta = -0.12, p = 0.003$). Participants who reported perceived sexuality-related discrimination and no or low discrimination salience reported lower social integration than those who reported no sexuality-related discrimination ($\beta = 0.07, p = 0.046$). Participants who reported at least two types of discrimination (multifactorial) reported lower social integration compared to participants who reported zero types ($\beta = 0.09, p = 0.025$). When considering the role of salience, participants who reported no or low salience among those who indicated one type ($\beta = -0.08, p = 0.036$) and at least two types of discrimination ($\beta = -0.08, p = 0.047$), respectively, averaged lower social integration than participants who reported zero discrimination experiences. No statistically significant between-group differences were observed by age cohort, race/ethnicity, HIV status, and wave of MACS enrollment.

In our multivariable linear regression models (Table 13), we adjusted for sexual identity and education level. In model 1 ($F_{(4, 663)} = 4.22, p = 0.002$), any lifetime discrimination remained significantly associated with lower social integration scores ($\beta = 0.08, p = 0.037$). In Models 2 ($F_{(6, 661)} = 3.88, p = 0.001$) and 3 ($F_{(6, 661)} = 3.44, p = 0.002$), no or low salience for lifetime discrimination ($\beta = -0.12, p = 0.003$) and sexuality-related discrimination ($\beta = -0.08, p = 0.031$) were associated with lower scores on the *Social Integration* subscale, respectively. In respect to

multifactorial discrimination (Model 4; $F_{(5, 662)} = 3.53, p = 0.004$), participants who reported at least two types of discrimination associated with lower scores of social integration ($\beta = -0.09, p = 0.025$). Lastly (Model 5; $F_{(7, 660)} = 3.31, p = 0.002$), participants who reported no or low salience among those who indicated one type of discrimination ($\beta = -0.09, p = 0.024$) and at least two types of discrimination ($\beta = -0.09, p = 0.021$) averaged lower social integration than those who indicated zero types of discrimination experiences, respectively, across their lifetime.

6.3.3.3 Social Well-Being: Guidance

Among our sample, participants averaged a guidance score of $m = 2.45$ ($sd = 0.60$). Bivariate analyses (Table 11) indicated statistically significant differences in guidance scores by race/ethnicity ($F_{(2,665)} = 5.59, p = 0.004$), sexual identity ($F_{(2,665)} = 11.52, p < 0.001$), education level ($t_{(666)} = -2.40, p = 0.017$), any lifetime discrimination ($t_{(666)} = 2.89, p = 0.004$), lifetime discrimination salience ($F_{(3,664)} = 5.75, p = 0.001$), sexuality-related discrimination salience ($F_{(3,664)} = 3.48, p = 0.016$), multifactorial discrimination ($F_{(2,665)} = 5.03, p = 0.007$), and multifactorial discrimination salience ($F_{(4,663)} = 3.40, p = 0.009$).

Simple linear regression models indicated that Non-Hispanic Black MSM reported less guidance than Non-Hispanic Whites ($\beta = -0.11, p = 0.005$), men who reported an Other MSM sexual identity reported less guidance than gay-identified MSM ($\beta = -0.18, p < 0.001$), and those with an education above a high school level averaged higher guidance scores than those with less ($\beta = 0.09, p = 0.017$).

Participants who reported any lifetime discrimination averaged lower guidance than those who reported none ($\beta = -0.11, p = 0.004$). Reporting no/low ($\beta = -0.12, p = 0.002$) or moderate salience ($\beta = -0.08, p = 0.040$) of discrimination experiences were associated with less guidance compared to those who experienced no discrimination. Reporting no or low salience of

discrimination among those who reported sexuality-related discrimination was also associated with lower guidance scores compared to those reported no sexuality discrimination ($\beta = -0.09, p = 0.021$). Participants who experienced at least two types of discrimination reported lower guidance than those who reported zero types of discrimination. Lastly, those who reported at least two types of discrimination experiences as well as indicated no or low salience averaged lower guidance scores than those who reported zero types of discrimination ($\beta = -0.08, p = 0.007$). No between-group differences were observed by age cohort, HIV status, wave of enrollment into the MACS, and any lifetime sexuality-related discrimination.

All multivariable linear regression models (Table 14) for the *Guidance* subscale were adjusted for race/ethnicity, sexual identity, and education level. In Model 1 ($F_{(6,661)} = 5.70, p < 0.001$), any lifetime discrimination experiences were significantly associated with lower guidance scores ($\beta = -0.11, p = 0.004$). In Model 2 ($F_{(8,659)} = 5.30, p < 0.001$), participants in both the no/low ($\beta = -0.13, p = 0.002$) and moderate ($\beta = -0.08, p = 0.038$) salience categories for lifetime discrimination averaged lower scores on the *Guidance* subscale compared to participants who reported no discrimination. Similarly (Model 3; ($F_{(8,659)} = 5.07, p < 0.001$)), participants in both the no/low salience ($\beta = -0.10, p = 0.008$) and moderate ($\beta = -0.08, p = 0.046$) salience categories among participants who reported sexuality-related discrimination averaged lower guidance scores than participants who reported no sexuality-related discrimination. Men who reported at least two types of discrimination experiences averaged lower guidance than participants who reported zero types (Model 4; ($F_{(7,660)} = 4.97, p < 0.001; \beta = -0.10, p = 0.015$) and in Model 5 ($F_{(6,661)} = 4.30, p < 0.001$), men who experienced at least two types and indicated no or low salience averaged lower guidance than those who experienced zero types ($\beta = -0.11, p = 0.004$) as well.

6.3.3.4 Social Well-Being: Reassurance of Worth

The average score for reassurance of worth was $m = 2.34$ ($sd = 0.54$). Our bivariate tests (Table 11) indicate statistically significant differences in reassurance or worth scores by race/ethnicity ($F_{(2,665)} = 9.83, p < 0.001$), sexual identity ($F_{(2,665)} = 12.93, p < 0.001$), education level ($t_{(666)} = -4.88, p < 0.001$), wave of MACS enrollment ($t_{(666)} = 3.09, p = 0.002$), any lifetime discrimination ($t_{(666)} = 1.99, p = 0.047$), salience of lifetime discrimination ($F_{(3,664)} = 5.31, p = 0.001$), salience of sexuality-related discrimination ($F_{(3,664)} = 5.84, p < 0.001$), and salience of multifactorial discrimination ($F_{(2,665)} = 2.86, p = 0.023$).

Simple linear regression models exhibited Non-Hispanic Black ($\beta = -0.10, p = 0.008$) and men of all other races/ethnicities ($\beta = -0.12, p = 0.002$) to have lower reassurance of worth compared to Non-Hispanic White participants, respectively. Both bisexual ($\beta = -0.10, p = 0.009$) and men who reported an Other MSM sexual identity ($\beta = -0.16, p < 0.001$) reported lower reassurance of worth scores compared to gay-identified participants. Participants with an education above a high school level reported higher reassurance of worth than those with less ($\beta = 0.19, p < 0.001$). Participants who enrolled in the MACS post 2001 reported lower scores on the *Reassurance of Worth* subscale compared to those who enrolled before 1987.

Those who reported any lifetime discrimination experiences averaged lower reassurance of worth than those who did not ($\beta = -0.08, p = 0.047$). Those who reported no or low salience of lifetime discrimination ($\beta = -0.12, p = 0.002$) reported lower reassurance of worth whereas those who reported high salience ($\beta = 0.08, p = 0.035$) reported higher reassurance of worth compared to those who reported no experiences of discrimination. Similarly, participants who reported any sexuality-related discrimination as well as no or low salience ($\beta = -0.10, p = 0.010$) averaged lower reassurance of worth scores whereas those who reported high salience averaged higher

scores ($\beta = 0.13, p = 0.001$). In respect to multifactorial discrimination, participants who marked at least two types of discrimination had lower reassurance of worth scores compared to those who experienced zero types ($\beta = -0.09, p = 0.026$) and those who reported two or more types and no/low salience averaged lower scores compared to those who marked zero types as well ($\beta = -0.12, p = 0.002$). No statistically significant between-group differences were observed by age cohort and HIV status.

All multivariable linear regression models (Table 15) for the *Reassurance of Worth* subscale were adjusted for race/ethnicity, sexual identity, education level, and wave of MACS enrollment. In the first multivariable model (Model 1; $F_{(7,660)} = 7.67, p < 0.001$), any lifetime discrimination was no longer associated with participants' reassurance of worth scores ($\beta = -0.03, p = 0.441$). In Model 2 ($F_{(9,658)} = 7.10, p < 0.001$), however, participants who reported no or low salience of lifetime discrimination reported lower reassurance of worth scores compared to participants who reported no discrimination ($\beta = -0.11, p = 0.004$). In our third model ($F_{(9,658)} = 7.63, p < 0.001$), no or low salience of discrimination among those who reported any sexuality-related discrimination was associated with lower scores ($\beta = -0.11, p = 0.004$) whereas those who indicated high salience were associated with higher scores of worth reassurance ($\beta = 0.08, p = 0.032$). In Model 4 ($F_{(8,659)} = 7.73, p < 0.001$), multifactorial discrimination was no longer associated with scores of the *Reassurance of Worth* subscale; however in the last model ($F_{(10,657)} = 6.15, p < 0.001$), participants who reported at least two types of discrimination and marked no or low salience averaged lower reassurance of worth scores ($\beta = -0.12, p = 0.002$).

6.3.3.5 Social Well-Being: Reliable Alliance

The average reliable alliance score for the entire sample was $m = 2.47$ ($sd = 0.57$). Bivariate tests (Table 11) indicate statistical differences in reliable alliance scores by race/ethnicity ($F_{(2,665)} =$

7.09, $p = 0.001$), sexual identity ($F_{(2,665)} = 12.65$, $p < 0.001$), education level ($t_{(666)} = -2.86$, $p = 0.004$), wave of MACS enrollment ($t_{(666)} = 2.31$, $p = 0.021$), any lifetime discrimination ($t_{(666)} = -3.05$, $p = 0.002$), salience of lifetime discrimination ($F_{(2,665)} = 5.89$, $p = 0.001$), salience of sexuality-related discrimination ($F_{(2,665)} = 3.85$, $p = 0.010$), multifactorial discrimination ($F_{(2,665)} = 5.06$, $p = 0.007$), and salience of multifactorial discrimination ($F_{(2,665)} = 3.98$, $p = 0.003$).

Simple linear regression models indicate that Non-Hispanic Black participants average lower reliable alliance scores compared to Non-Hispanic Whites ($\beta = -0.12$, $p = 0.002$). Men who report an Other MSM sexual identity report lower reliable alliance scores compared to gay-identified men in our sample ($\beta = -0.16$, $p < 0.001$). Those who reported an education above a high school level averaged higher scores compared to those with less ($\beta = 0.11$, $p = 0.004$). Participants who enrolled in the MACS post 2001 averaged lower reliable alliance scores compared to those who enrolled before 1987 ($\beta = -0.09$, $p = 0.002$).

Any lifetime discrimination experience was negatively associated with reliable alliance ($\beta = -0.12$, $p = 0.002$). Participants who reported no or low salience of lifetime discrimination ($\beta = -0.13$, $p = 0.001$) as well as for sexuality-related discrimination ($\beta = -0.10$, $p = 0.007$) averaged lower reliable alliance compared to those who reported no lifetime discrimination. Participants who reported at least two discrimination types reported lower reliable alliance scores compared to participants who reported none ($\beta = -0.10$, $p = 0.008$). Lastly, participants who reported no/low salience of discrimination in addition to either one type of discrimination ($\beta = -0.09$, $p = 0.021$) or at least two types of discrimination ($\beta = -0.09$, $p = 0.019$) averaged lower reliable alliance compared to participants who reported zero. We observed no statistically significant between-group differences by age cohort and HIV status.

All multivariable linear regression models (Table 16) were adjusted for race/ethnicity, sexual identity, education level, and wave of MACS enrollment. In the first model ($F_{(7,660)} = 5.64, p < 0.001$), any lifetime discrimination persisted as being associated with lower reliable alliance scores ($\beta = -0.10, p = 0.010$). In Model 2 ($F_{(9,658)} = 5.21, p < 0.001$), those who indicated no or low salience of lifetime discrimination averaged lower reliable alliance scores compared to those who reported no lifetime discrimination ($\beta = -0.14, p = 0.001$). In Model 3 ($F_{(9,658)} = 5.21, p < 0.001$), participants who reported any sexuality-related discrimination and either no/low ($\beta = -0.12, p = 0.002$) or moderate salience ($\beta = -0.08, p = 0.047$) averaged lower reliable alliance scores than participants who reported no sexuality-related discrimination. Model 4 ($F_{(8,659)} = 4.93, p < 0.001$) indicated that those who reported at least two types of discrimination reported lower reliable alliance than those who experienced zero ($\beta = -0.09, p = 0.024$). Lastly, in Model 5 ($F_{(10,657)} = 4.50, p < 0.001$), we found that participants who reported no/low salience in both one ($\beta = -0.10, p = 0.009$) and at least two discrimination types ($\beta = -0.10, p = 0.012$) averaged lower reliable alliance than those who reported zero types.

6.3.3.6 Social Well-Being: Opportunity for Nurturance

The average *Opportunity for Nurturance* score was $m = 2.06$ ($sd = 0.67$). We observed no statistically significant bivariate relationships (Table 11) between any of our discrimination variables and opportunity for nurture; therefore, we did not develop any multivariable models for this subscale.

Table 10. Sample Characteristics

Variable	
Age Cohort, N (%)	
<i>Midlife</i> (40-64 years)	470 (70.4)
<i>Older Adulthood</i> (65+ years)	198 (29.6)
Race/Ethnicity, N (%)	
<i>Non-Hispanic White</i>	491 (73.5)
<i>Non-Hispanic Black</i>	109 (16.3)
<i>All Other Race/Ethnicities</i>	68 (10.2)
Sexual Identity, N (%)	
<i>Gay</i>	596 (89.2)
<i>Bisexual</i>	28 (4.2)
<i>Other MSM Identity</i>	44 (6.6)
HIV Status, N (%)	
<i>Negative</i>	338 (50.6)
<i>Positive</i>	330 (49.4)
Education Level, <i>m</i> (sd)	3.31 (1.37)
Wave of Enrollment	
<i>Pre-1987</i>	424 (63.5)
<i>Post-2001</i>	244 (36.5)
Any Lifetime Discrimination, N (%)	
<i>No</i>	371 (55.5)
<i>Yes</i>	297 (44.5)
Any Lifetime Discrimination Saliency, N (%)	
<i>No Discrimination</i>	371 (55.5)
<i>Lifetime Discrimination No/Low Saliency</i>	110 (16.5)
<i>Lifetime Discrimination Moderate Saliency</i>	98 (14.7)
<i>Lifetime Discrimination High Saliency</i>	89 (13.3)
Any Sexuality-Related Discrimination, N (%)	
<i>No</i>	466 (69.8)
<i>Yes</i>	202 (30.2)
Any Lifetime Sexuality-Related Discrimination Saliency, N (%)	
<i>No Sexuality-Related Discrimination</i>	466 (69.8)
<i>Lifetime Sexuality Discrimination No/Low Saliency</i>	80 (12.0)
<i>Lifetime Sexuality Discrimination Moderate Saliency</i>	65 (9.7)
<i>Lifetime Sexuality Discrimination High Saliency</i>	57 (8.5)
Multifactorial Discrimination, N (%)	
<i>No Lifetime Discrimination Experienced</i>	371 (55.5)
<i>1 Type of Discrimination Experienced</i>	124 (18.6)
<i>2+ Types of Discrimination Experienced</i>	173 (25.9)
Multifactorial Discrimination Saliency, N (%)	
<i>No Discrimination</i>	371 (55.5)
<i>1 Type of Discrimination Experienced No/Low Saliency</i>	39 (5.8)
<i>1 Type of Discrimination Experienced Mod/High Saliency</i>	85 (12.7)
<i>2+ Types of Discrim. Experienced No/Low Saliency</i>	71 (10.6)
<i>2+ Types of Discrim. Experienced Mod/High Saliency</i>	102 (15.3)

Table 11. Bivariate Statistics for Social Well-Being Subscales by Demographic and Discrimination Variables, N = 668

Variable	Attachment			Social Integration			Guidance		
	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>
Age Cohort		1.42	0.156		-0.36	0.723		1.15	0.252
<i>Midlife (40-64 years)</i>	2.44 (0.66)			2.30 (0.56)			2.47 (0.57)		
<i>Older Adulthood (65+ years)</i>	2.16 (0.71)			2.32 (0.57)			2.41 (0.66)		
Race/Ethnicity		0.56	0.570		1.91	0.149		5.59	0.004
<i>Non-Hispanic White</i>	2.23 (0.69)			2.33 (0.56)			2.50 (0.60)		
<i>Non-Hispanic Black</i>	2.16 (0.60)			2.22 (0.56)			2.31 (0.58)		
<i>All Other Races/Ethnicities</i>	2.22 (0.69)			2.26 (0.56)			2.36 (0.61)		
Sexual Identity		9.79	<0.001		3.83	0.022		11.52	<0.001
<i>Gay</i>	2.25 (0.67)			2.32 (0.58)			2.31 (0.56)		
<i>Bisexual</i>	2.26 (0.52)			2.33 (0.48)			2.48 (0.58)		
<i>Other MSM Identity</i>	1.79 (0.75)			2.08 (0.61)			2.38 (0.48)		
HIV Status		-0.22	0.830		1.30	0.195		-0.01	0.994
<i>Negative</i>	2.21 (0.71)			2.33 (0.55)			2.45 (0.62)		
<i>Positive</i>	2.22 (0.64)			2.28 (0.57)			2.45 (0.58)		
Education Level		-1.88	0.061		-2.76	0.006		-2.40	0.017
<i>HS or Less</i>	2.07 (0.60)			2.13 (0.56)			2.28 (0.54)		
<i>More than HS/GED</i>	2.23 (0.68)			2.32 (0.56)			2.47 (0.60)		
Wave of MACS Enrollment		0.35	0.727		1.31	0.190		1.93	0.054
<i>Pre-1987</i>	2.23 (0.68)			2.33 (0.55)			2.49 (0.58)		
<i>Post-2001</i>	2.21 (0.67)			2.27 (0.58)			2.39 (0.63)		
Any Lifetime Discrimination		3.20	0.001		2.20	0.028		2.89	0.004
<i>No</i>	2.29 (0.63)			2.34 (0.52)			2.51 (0.55)		
<i>Yes</i>	2.13 (0.72)			2.25 (0.61)			2.38 (0.65)		
Any Lifetime Discrimination Salience		5.20	0.001		3.86	0.009		5.75	0.001
<i>No Discrimination</i>	2.29 (0.63)			2.35 (0.52)			2.51 (0.55)		
<i>No/Low Salience</i>	2.03 (0.74)			2.16 (0.56)			2.29 (0.68)		
<i>Moderate Salience</i>	2.14 (0.68)			2.25 (0.62)			2.34 (0.62)		
<i>High Salience</i>	2.24 (0.71)			2.37 (0.64)			2.53 (0.61)		

Table 11 Continued

Any Sexuality-Related Discrimination		2.43	0.015		1.18	0.239		1.50	0.134
<i>No</i>	2.26 (0.64)			2.32 (0.53)			2.47 (0.57)		
<i>Yes</i>	2.13 (0.75)			2.27 (0.62)			2.40 (0.66)		
Sexuality-Related Discrimination Salience		4.05	0.007		2.45	0.062		3.48	0.016
<i>No sexuality discrimination</i>	2.26 (0.64)			2.32 (0.53)			2.47 (0.57)		
<i>No/Low Salience</i>	1.99 (0.78)			2.19 (0.60)			2.31 (0.70)		
<i>Moderate Salience</i>	2.15 (0.72)			2.23 (0.63)			2.35 (0.62)		
<i>High Salience</i>	2.28 (0.73)			2.42 (0.64)			2.59 (0.61)		
Multifactorial Discrimination		5.77	0.003		2.98	0.051		5.03	0.007
<i>0 Types Experienced</i>	2.29 (0.63)			2.35 (0.52)			2.51 (0.55)		
<i>1 Type Experienced</i>	2.18 (0.72)			2.29 (0.61)			2.43 (0.62)		
<i>2+ Types Experienced</i>	2.09 (0.71)			2.22 (0.61)			2.34 (0.67)		
Multifactorial Discrimination Salience		4.26	0.002		3.01	0.018		3.40	0.009
<i>0 Types Experienced</i>	2.29 (0.63)			2.35 (0.51)			2.51 (0.55)		
<i>1 Type – No/Low Salience</i>	1.98 (0.85)			2.12 (0.67)			2.32 (0.75)		
<i>1 Type – Mod/High Salience</i>	2.27 (0.64)			2.37 (0.57)			2.48 (0.54)		
<i>2+ Types- No/Low Salience</i>	2.05 (0.68)			2.18 (0.50)			2.27 (0.65)		
<i>2+ Types- Mod/High Salience</i>	2.12 (0.74)			2.25 (0.68)			2.38 (0.68)		

Table 11 Continued

Variable	Reassurance of Worth			Reliable Alliance			Opportunity for Nurture		
	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>	<i>m (sd)</i>	<i>t or F value</i>	<i>p</i>
Age Cohort		-1.04	0.297		-0.81	0.419		0.26	0.793
<i>Midlife (40-64 years)</i>	2.32 (0.54)			2.46 (0.58)			2.06 (0.66)		
<i>Older Adulthood (65+ years)</i>	2.37 (0.52)			2.50 (0.54)			2.05 (0.71)		
Race/Ethnicity		9.83	<0.001		7.09	0.001		1.90	0.151
<i>Non-Hispanic White</i>	2.39 (0.51)			2.52 (0.55)			2.08 (0.70)		
<i>Non-Hispanic Black</i>	2.21 (0.58)			2.32 (0.60)			1.94 (0.58)		
<i>All Other Races/Ethnicities</i>	2.15 (0.57)			2.47 (0.57)			2.07 (0.60)		
Sexual Identity		12.93	<0.001		12.65	<0.001		1.62	0.199
<i>Gay</i>	2.37 (0.52)			2.51 (0.55)			2.07 (0.67)		
<i>Bisexual</i>	2.08 (0.48)			2.29 (0.56)			1.95 (0.62)		
<i>Other MSM Identity</i>	2.02 (0.61)			2.10 (0.73)			1.91 (0.67)		
HIV Status		0.76	0.446		0.93	0.352		-0.24	0.809
<i>Negative</i>	2.35 (0.53)			2.49 (0.56)			2.05 (0.71)		
<i>Positive</i>	2.32 (0.54)			2.45 (0.58)			2.06 (0.63)		
Education Level		-4.88	<0.001		-2.86	0.004		-1.79	0.074
<i>HS or Less</i>	2.04 (0.56)			2.28 (0.63)			1.92 (0.64)		
<i>More than HS/GED</i>	2.37 (0.52)			2.49 (0.56)			2.07 (0.68)		
Wave of MACS Enrollment		3.09	0.002		2.31	0.021		-0.12	0.902
<i>Pre-1987</i>	2.39 (0.52)			2.51 (0.56)			2.05 (0.70)		
<i>Post-2001</i>	2.25 (0.55)			2.41 (0.59)			2.06 (0.63)		
Any Lifetime Discrimination		1.99	0.047		3.05	0.002		1.62	0.105
<i>No</i>	2.37 (0.49)			2.53 (0.52)			2.10 (0.65)		
<i>Yes</i>	2.29 (0.59)			2.40 (0.62)			2.01 (0.70)		
Any Lifetime Discrimination Salience		5.31	0.001		5.89	0.001		1.68	0.171
<i>No Discrimination</i>	2.37 (0.49)			2.53 (0.52)			2.10 (0.65)		
<i>No/Low Salience</i>	2.20 (0.56)			2.30 (0.62)			2.04 (0.70)		
<i>Moderate Salience</i>	2.26 (0.59)			2.38 (0.57)			2.06 (0.64)		
<i>High Salience</i>	2.45 (0.59)			2.53 (0.64)			1.92 (0.77)		

Table 11 Continued

Any Sexuality-Related Discrimination		0.44	0.664		1.77	0.077		0.20	0.845
<i>No</i>	2.34 (0.52)			2.50 (0.55)			2.06 (0.64)		
<i>Yes</i>	2.32 (0.58)			2.41 (0.62)			2.05 (0.74)		
Sexuality-Related Discrimination Saliency		45.84	0.001		3.85	0.010		0.53	0.663
<i>No sexuality discrimination</i>	2.34 (0.52)			2.50 (0.55)			2.06 (0.64)		
<i>No/Low Saliency</i>	2.19 (0.56)			2.31 (0.65)			2.09 (0.73)		
<i>Moderate Saliency</i>	2.27 (0.59)			2.38 (0.57)			2.08 (0.66)		
<i>High Saliency</i>	2.57 (0.52)			2.60 (0.58)			1.96 (0.83)		
Multifactorial Discrimination		2.72	0.067		5.06	0.007		1.53	0.217
<i>0 Types Experienced</i>	2.37 (0.49)			2.53 (0.52)			2.09 (0.65)		
<i>1 Type Experienced</i>	2.34 (0.56)			2.43 (0.61)			2.04 (0.73)		
<i>2+ Types Experienced</i>	2.26 (0.61)			2.37 (0.62)			1.99 (0.68)		
Multifactorial Discrimination Saliency		2.86	0.023		3.98	0.003		0.96	0.431
<i>0 Types Experienced</i>	2.37 (0.48)			2.53 (0.52)			2.10 (0.65)		
<i>1 Type – No/Low Saliency</i>	2.28 (0.49)			2.27 (0.74)			2.04 (0.80)		
<i>1 Type – Mod/High Saliency</i>	2.36 (0.58)			2.51 (0.54)			2.04 (0.71)		
<i>2+ Types- No/Low Saliency</i>	2.15 (0.58)			2.32 (0.56)			2.04 (0.64)		
<i>2+ Types- Mod/High Saliency</i>	2.34 (0.61)			2.41 (0.66)			1.95 (0.71)		

Table 12. Univariate and Multivariable Models for the Attachment Subscale in Midlife and Older Adult MSM in the MACS, N = 668

Variable	Univariate Model			Multivariable Model 1			Multivariable Model 2			Multivariable Model 3		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort												
<i>Older Adulthood</i>	-0.08 (0.06)	-0.06	0.156									
Race/Ethnicity												
<i>Non-Hispanic Black</i>	-0.07 (0.07)	-0.04	0.297									
<i>All Other Race/Ethnicities</i>	-0.00 (0.01)	-0.00	0.968									
Sexual Identity												
<i>Bisexual</i>	0.04 (0.13)	0.01	0.756	0.03 (0.13)	0.01	0.812	0.04 (0.13)	0.01	0.743	-0.01 (0.13)	-0.00	0.926
<i>Other MSM Identity</i>	-0.46 (0.10)	-0.17	<0.001	-0.44 (0.10)	-0.16	<0.001	-0.44 (0.10)	-0.16	<0.001	-0.48 (0.10)	-0.18	<0.001
HIV Status												
<i>Positive</i>	0.01 (0.05)	0.01	0.830									
Education Level												
<i>More than HS</i>	0.16 (0.09)	0.07	0.061									
Wave of Enrollment												
<i>Post 2001</i>	-0.02 (0.05)	-0.01	0.727									
Any Lifetime Discrimination												
<i>Yes</i>	-0.17 (0.05)	-0.12	0.001	-0.15 (0.05)	-0.11	0.004						
Any Lifetime Discrimination Saliency												
<i>No/Low</i>	-0.23 (0.07)	-0.13	0.001				-0.26 (0.07)	-0.14	<0.001			
<i>Moderate</i>	-0.10 (0.07)	-0.05	0.179				-0.14 (0.08)	-0.07	0.070			
<i>High</i>	0.03 (0.08)	0.01	0.716				-0.04 (0.08)	-0.02	0.636			
Any Lifetime Sexuality Discrimination												
<i>Yes</i>	-0.14 (0.06)	-0.09	0.015							-0.15 (0.06)	-0.10	0.007
Sexuality Discrimination Saliency												
<i>No/Low</i>	-0.26 (0.08)	-0.12	<0.001									
<i>Moderate</i>	-0.08 (0.09)	-0.04	0.354									
<i>High</i>	0.07 (0.09)	0.03	0.479									
Multifactorial Discrimination												
<i>1 Type Experienced</i>	-0.05 (0.07)	-0.03	0.459									
<i>2+ Types Experienced</i>	-0.18 (0.06)	-0.11	0.003									
Multifactorial Discrimination Saliency												
<i>1 Type – No/Low</i>	-0.25 (0.11)	-0.09	0.023									
<i>1 Type – Moderate/High</i>	0.06 (0.08)	0.03	0.461									
<i>2+ Types – No/Low</i>	-0.19 (0.09)	-0.09	0.024									
<i>2+ Types – Moderate/High</i>	-0.12 (0.07)	-0.06	0.097									

Table 12 Continued

Variable	Multivariable Model 4			Multivariable Model 5			Multivariable Model 6		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort									
<i>Older Adulthood</i>									
Race/Ethnicity									
<i>Non-Hispanic Black</i>									
<i>All Other Race/Ethnicities</i>									
Sexual Identity									
<i>Bisexual</i>	0.00 (0.13)	0.00	0.993	0.04 (0.13)	0.01	0.758	0.04 (0.13)	0.01	0.770
<i>Other MSM Identity</i>	-0.48 (0.10)	-0.18	<0.001	-0.43 (0.11)	-0.16	<0.001	-0.42 (0.11)	-0.16	<0.001
HIV Status									
<i>Positive</i>									
Education Level									
<i>More than HS</i>									
Wave of Enrollment									
<i>Post 2001</i>									
Any Lifetime Discrimination									
<i>Yes</i>									
Any Lifetime Discrimination Salience									
<i>No/Low</i>									
<i>Moderate</i>									
<i>High</i>									
Any Lifetime Sexuality Discrimination									
<i>Yes</i>									
Sexuality Discrimination Salience									
<i>No/Low</i>	-0.28 (0.08)	-0.14	0.001						
<i>Moderate</i>	-0.14 (0.09)	-0.06	0.120						
<i>High</i>	0.01 (0.09)	0.00	0.930						
Multifactorial Discrimination									
<i>1 Type Experienced</i>				-0.12 (0.07)	-0.07	0.096			
<i>2+ Types Experienced</i>				-0.18 (0.06)	-0.12	0.004			
Multifactorial Discrimination Salience									
<i>1 Type – No/Low</i>							-0.29 (0.11)	-0.10	0.010
<i>1 Type – Moderate/High</i>							-0.04 (0.08)	-0.02	0.665
<i>2+ Types – No/Low</i>							-0.24 (0.09)	-0.11	0.006
<i>2+ Types – Moderate/High</i>							-0.14 (0.08)	-0.07	0.069

Note: Primary Predictors – Model 1: Any lifetime discrimination; Model 2: Any lifetime discrimination salience; Model 3: Any Sexuality-Related Discrimination; Model 4: Any sexuality related discrimination salience; Model 5: Multifactorial Discrimination; Model 6: Multifactorial Discrimination Salience

Table 13. Univariate and Multivariable Models for the Social Integration Subscale in Midlife and Older Adult MSM in the MACS, N = 668

Variable	Univariate Model			Multivariable Model 1			Multivariable Model 2			Multivariable Model 3		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort												
<i>Older Adulthood</i>	0.02 (0.05)	0.01	0.723									
Race/Ethnicity												
<i>Non-Hispanic Black</i>	-0.10 (0.06)	-0.07	0.094									
<i>All Other Race/Ethnicities</i>	-0.05 (0.07)	-0.03	0.461									
Sexual Identity												
<i>Bisexual</i>	0.03 (0.11)	0.01	0.808	0.03 (0.11)	0.01	0.753	0.04 (0.11)	0.02	0.682	-0.02 (0.11)	0.01	0.837
<i>Other MSM Identity</i>	-0.24 (0.09)	-0.11	0.006	-0.18 (0.09)	-0.08	0.048	-0.18 (0.09)	-0.08	0.045	-0.20 (0.09)	-0.09	0.024
HIV Status												
<i>Positive</i>	-0.06 (0.04)	-0.05	0.195									
Education Level												
<i>More than HS</i>	0.20 (0.07)	0.11	0.006	0.17 (0.09)	0.07	0.025	0.16 (0.07)	0.09	0.032	0.17 (0.07)	0.09	0.027
Wave of Enrollment												
<i>Post 2001</i>	-0.06 (0.05)	-0.05	0.190									
Any Lifetime Discrimination												
<i>Yes</i>	-0.10 (0.04)	-0.09	0.028	-0.09 (0.04)	0.08	0.037						
Any Lifetime Discrimination Salience												
<i>No/Low</i>	-0.18 (0.06)	-0.12	0.003				-0.18 (0.06)	-0.12	0.003			
<i>Moderate</i>	-0.06 (0.06)	-0.04	0.317				-0.09 (0.08)	-0.05	0.178			
<i>High</i>	0.07 (0.06)	0.04	0.278				0.02 (0.08)	-0.01	0.814			
Any Lifetime Sexuality Discrimination												
<i>Yes</i>	-0.06 (0.05)	-0.05	0.239									
Sexuality Discrimination Salience												
<i>No/Low</i>	-0.13 (0.07)	0.07	0.046							-0.15 (0.07)	-0.08	0.031
<i>Moderate</i>	-0.08 (0.07)	-0.04	0.262							-0.11 (0.07)	-0.06	0.141
<i>High</i>	0.12 (0.08)	0.06	0.117							0.08 (0.08)	0.04	0.320
Multifactorial Discrimination												
<i>1 Type Experienced</i>	-0.02 (0.06)	-0.01	0.781									
<i>2+ Types Experienced</i>	-0.11 (0.05)	-0.09	0.025									
Multifactorial Discrimination Salience												
<i>1 Type – No/Low</i>	-0.20 (0.09)	-0.08	0.036									
<i>1 Type – Moderate/High</i>	0.08 (0.07)	0.05	0.250									
<i>2+ Types – No/Low</i>	-0.14 (0.07)	-0.08	0.047									
<i>2+ Types – Moderate/High</i>	-0.06 (0.06)	-0.04	0.305									

Table 13 Continued

Variable	Multivariable Model 4			Multivariable Model 5		
	<i>b</i> (<i>se</i>)	β	<i>p</i>	<i>b</i> (<i>se</i>)	β	<i>p</i>
Age Cohort						
<i>Older Adulthood</i>						
Race/Ethnicity						
<i>Non-Hispanic Black</i>						
<i>All Other Race/Ethnicities</i>						
Sexual Identity						
<i>Bisexual</i>	0.04 (0.11)	0.02	0.694	0.04 (0.11)	0.01	0.710
<i>Other MSM Identity</i>	-0.17 (0.09)	-0.08	0.060	-0.17 (0.09)	-0.07	0.065
HIV Status						
<i>Positive</i>						
Education Level						
<i>More than HS</i>	0.17 (0.07)	0.09	0.024	0.16 (0.07)	0.09	0.028
Wave of Enrollment						
<i>Post 2001</i>						
Any Lifetime Discrimination						
<i>Yes</i>						
Any Lifetime Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Any Lifetime Sexuality Discrimination						
<i>Yes</i>						
Sexuality Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Multifactorial Discrimination						
<i>1 Type Experienced</i>	-0.06 (0.06)	-0.04	0.321			
<i>2+ Types Experienced</i>	-0.12 (0.05)	-0.09	0.025			
Multifactorial Discrimination Salience						
<i>1 Type – No/Low</i>				-0.21 (0.09)	-0.09	0.024
<i>1 Type – Moderate/High</i>				-0.01 (0.07)	0.01	0.841
<i>2+ Types – No/Low</i>				-0.17 (0.07)	-0.09	0.021
<i>2+ Types – Moderate/High</i>				-0.08 (0.06)	-0.05	0.200

Note: Primary Predictors – Model 1: Any lifetime discrimination; Model 2: Any lifetime discrimination salience; Model 3: Any sexuality related discrimination salience; Model 4: Multifactorial Discrimination; Model 5: Multifactorial Discrimination Salience

Table 14. Univariate and Multivariable Models for the Guidance Subscale in Midlife and Older Adult MSM in the MACS, N = 668

Variable	Univariate Model			Multivariable Model 1			Multivariable Model 2			Multivariable Model 3		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort												
<i>Older Adulthood</i>	-0.06 (0.05)	-0.04	0.252									
Race/Ethnicity												
<i>Non-Hispanic Black</i>	-0.18 (0.06)	-0.11	0.005	-0.08 (0.07)	-0.05	0.250	-0.08 (0.07)	-0.05	0.284	-0.10 (0.07)	-0.06	0.133
<i>All Other Race/Ethnicities</i>	-0.11 (0.08)	-0.05	0.169	-0.10 (0.08)	-0.05	0.189	-0.10 (0.08)	-0.05	0.218	-0.10 (0.08)	-0.05	0.205
Sexual Identity												
<i>Bisexual</i>	-0.07 (0.12)	-0.02	0.544	-0.05 (0.12)	-0.02	0.692	0.04 (0.12)	-0.01	0.760	-0.05 (0.12)	-0.02	0.663
<i>Other MSM Identity</i>	-0.44 (0.09)	-0.18	<0.001	-0.36 (0.10)	-0.15	<0.001	-0.36 (0.10)	-0.15	<0.001	-0.38 (0.10)	-0.16	<0.001
HIV Status												
<i>Positive</i>	0.00 (0.05)	0.00	0.994									
Education Level												
<i>More than HS</i>	0.19 (0.08)	0.09	0.017	0.08 (0.08)	0.04	0.331	0.07 (0.08)	0.04	0.368	0.08 (0.08)	0.04	0.351
Wave of Enrollment												
<i>Post 2001</i>	-0.09 (0.05)	-0.08	0.054									
Any Lifetime Discrimination												
<i>Yes</i>	-0.13 (0.05)	-0.11	0.004	-0.15 (0.05)	-0.11	0.004						
Any Lifetime Discrimination Salience												
<i>No/Low</i>	-0.20 (0.06)	-0.12	0.002				-0.20 (0.06)	-0.13	0.002			
<i>Moderate</i>	-0.13 (0.07)	-0.08	0.040				-0.14 (0.07)	-0.08	0.038			
<i>High</i>	0.09 (0.07)	0.05	0.179				-0.03 (0.07)	-0.02	0.677			
Any Lifetime Sexuality Discrimination												
<i>Yes</i>	-0.08 (0.05)	-0.06	0.134									
Sexuality Discrimination Salience												
<i>No/Low</i>	-0.17 (0.07)	-0.09	0.021							-0.19 (0.07)	-0.10	0.008
<i>Moderate</i>	-0.12 (0.08)	-0.06	0.137							-0.16 (0.08)	-0.08	0.046
<i>High</i>	0.15 (0.08)	0.07	0.073							0.08 (0.08)	0.04	0.367
Multifactorial Discrimination												
<i>1 Type Experienced</i>	-0.02 (0.06)	-0.02	0.683									
<i>2+ Types Experienced</i>	-0.15 (0.05)	-0.11	0.004									
Multifactorial Discrimination Salience												
<i>1 Type – No/Low</i>	-0.14 (0.10)	-0.05	0.160									
<i>1 Type – Moderate/High</i>	0.04 (0.07)	0.02	0.610									
<i>2+ Types – No/Low</i>	-0.20 (0.08)	-0.08	0.007									
<i>2+ Types – Moderate/High</i>	-0.08 (0.06)	-0.05	0.224									

Table 14 Continued

Variable	Multivariable Model 4			Multivariable Model 5		
	<i>b (se)</i>	β	<i>p</i>	<i>b (se)</i>	β	<i>p</i>
Age Cohort						
<i>Older Adulthood</i>						
Race/Ethnicity						
<i>Non-Hispanic Black</i>	-0.08 (0.07)	-0.05	0.264	-0.08 (0.07)	-0.05	0.265
<i>All Other Race/Ethnicities</i>	-0.10 (0.08)	-0.05	0.215	-0.10 (0.08)	-0.05	0.190
Sexual Identity						
<i>Bisexual</i>	-0.04 (0.12)	0.01	0.739	-0.04 (0.12)	-0.01	0.759
<i>Other MSM Identity</i>	-0.35 (0.10)	-0.15	<0.001	-0.36 (0.10)	-0.15	<0.001
HIV Status						
<i>Positive</i>						
Education Level						
<i>More than HS</i>	0.08 (0.08)	0.04	0.302	0.08 (0.08)	0.04	0.331
Wave of Enrollment						
<i>Post 2001</i>						
Any Lifetime Discrimination						
<i>Yes</i>						
Any Lifetime Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Any Lifetime Sexuality Discrimination						
<i>Yes</i>						
Sexuality Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Multifactorial Discrimination						
<i>1 Type Experienced</i>	-0.08 (0.06)	-0.05	0.188			
<i>2+ Types Experienced</i>	-0.14 (0.06)	-0.10	0.015			
Multifactorial Discrimination Salience						
<i>1 Type – No/Low</i>				-0.17 (0.10)	-0.07	0.090
<i>1 Type – Moderate/High</i>				-0.04 (0.07)	-0.02	0.566
<i>2+ Types – No/Low</i>				-0.22 (0.08)	-0.11	0.004
<i>2+ Types – Moderate/High</i>				-0.08 (0.07)	-0.05	0.263

Note: Primary Predictors – Model 1: Any lifetime discrimination; Model 2: Any lifetime discrimination salience; Model 3: Any sexuality related discrimination salience; Model 4: Multifactorial Discrimination; Model 5: Multifactorial Discrimination Salience

Table 15. Univariate and Multivariable Models for the Reassurance of Worth Subscale in Midlife and Older Adult MSM in the MACS, N = 668

Variable	Univariate Model			Multivariable Model 1			Multivariable Model 2			Multivariable Model 3		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort												
<i>Older Adulthood</i>	0.05 (0.05)	0.04	0.297									
Race/Ethnicity												
<i>Non-Hispanic Black</i>	-0.15 (0.06)	-0.10	0.008	-0.01 (0.06)	-0.01	0.841	-0.01 (0.06)	-0.01	0.874	-0.02 (0.06)	-0.02	0.698
<i>All Other Race/Ethnicities</i>	-0.21 (0.07)	-0.12	0.002	-0.18 (0.07)	-0.10	0.014	-0.17 (0.07)	-0.10	0.014	-0.17 (0.07)	-0.10	0.018
Sexual Identity												
<i>Bisexual</i>	-0.27 (0.10)	-0.10	0.009	-0.27 (0.11)	-0.10	0.012	-0.26 (0.11)	-0.10	0.015	-0.26 (0.11)	-0.10	0.013
<i>Other MSM Identity</i>	-0.34 (0.08)	-0.16	<0.001	-0.25 (0.09)	-0.11	0.004	-0.25 (0.09)	-0.12	0.004	-0.27 (0.09)	-0.12	0.002
HIV Status												
<i>Positive</i>	-0.03 (0.04)	-0.03	0.446									
Education Level												
<i>More than HS</i>	0.33 (0.07)	0.19	<0.001	0.25 (0.07)	0.14	0.001	0.24 (0.07)	0.13	0.001	0.24 (0.07)	0.14	0.001
Wave of Enrollment												
<i>Post 2001</i>	-0.13 (0.04)	0.04	0.002	-0.04 (0.05)	-0.03	0.441	-0.03 (0.05)	-0.03	0.547	-0.03 (0.05)	-0.03	0.502
Any Lifetime Discrimination												
<i>Yes</i>	-0.08 (0.04)	-0.08	0.047	-0.07 (0.04)	-0.06	0.092						
Any Lifetime Discrimination Salience												
<i>No/Low</i>	-0.17 (0.06)	-0.12	0.002				-0.16 (0.06)	-0.11	0.004			
<i>Moderate</i>	-0.09 (0.06)	-0.06	0.108				-0.08 (0.06)	-0.06	0.156			
<i>High</i>	0.13 (0.06)	0.08	0.035				0.06 (0.06)	0.04	0.303			
Any Lifetime Sexuality Discrimination												
<i>Yes</i>	-0.02 (0.05)	-0.02	0.664									
Sexuality Discrimination Salience												
<i>No/Low</i>	-0.16 (0.06)	-0.10	0.010							-0.18 (0.07)	-0.11	0.004
<i>Moderate</i>	-0.07 (0.07)	-0.04	0.304							-0.10 (0.08)	-0.06	0.135
<i>High</i>	0.25 (0.07)	0.13	0.001							0.16 (0.08)	0.08	0.032
Multifactorial Discrimination												
<i>1 Type Experienced</i>	-0.00 (0.05)	-0.00	0.977									
<i>2+ Types Experienced</i>	-0.11 (0.05)	-0.09	0.026									
Multifactorial Discrimination Salience												
<i>1 Type – No/Low</i>	-0.06 (0.09)	-0.03	0.502									
<i>1 Type – Moderate/High</i>	0.03 (0.06)	0.02	0.661									
<i>2+ Types – No/Low</i>	-0.21 (0.07)	-0.12	0.002									
<i>2+ Types – Moderate/High</i>	0.00 (0.06)	0.00	0.995									

Table 15 Continued

Variable	Multivariable Model 4			Multivariable Model 5		
	<i>b</i> (<i>se</i>)	β	<i>p</i>	<i>b</i> (<i>se</i>)	β	<i>p</i>
Age Cohort						
<i>Older Adulthood</i>						
Race/Ethnicity						
<i>Non-Hispanic Black</i>	-0.01 (0.06)	-0.01	0.854	-0.01 (0.06)	-0.01	0.860
<i>All Other Race/Ethnicities</i>	-0.17 (0.07)	-0.10	0.016	-0.18 (0.07)	-0.10	0.012
Sexual Identity						
<i>Bisexual</i>	-0.26 (0.11)	-0.10	0.014	-0.25 (0.11)	-0.09	0.018
<i>Other MSM Identity</i>	-0.24 (0.09)	-0.14	0.005	-0.26 (0.09)	-0.12	0.003
HIV Status						
<i>Positive</i>						
Education Level						
<i>More than HS</i>	0.25 (0.07)	0.14	0.001	0.24 (0.07)	0.14	0.001
Wave of Enrollment						
<i>Post 2001</i>	-0.04 (0.05)	-0.03	0.447	-0.04 (0.05)	-0.03	0.415
Any Lifetime Discrimination						
<i>Yes</i>						
Any Lifetime Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Any Lifetime Sexuality Discrimination						
<i>Yes</i>						
Sexuality Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Multifactorial Discrimination						
<i>1 Type Experienced</i>	-0.05 (0.05)	-0.03	0.325			
<i>2+ Types Experienced</i>	-0.08 (0.05)	-0.07	0.098			
Multifactorial Discrimination Salience						
<i>1 Type – No/Low</i>				-0.09 (0.09)	-0.04	0.323
<i>1 Type – Moderate/High</i>				-0.04 (0.06)	-0.02	0.539
<i>2+ Types – No/Low</i>				-0.21 (0.07)	-0.12	0.002
<i>2+ Types – Moderate/High</i>				0.01 (0.06)	0.01	0.906

Note: Primary Predictors – Model 1: Any lifetime discrimination; Model 2: Any lifetime discrimination salience; Model 3: Any sexuality related discrimination salience; Model 4: Multifactorial Discrimination; Model 5: Multifactorial Discrimination Salience

Table 16. Univariate and Multivariable Models for the Reliable Alliance Subscale in Midlife and Older Adult MSM in the MACS, N = 668

Variable	Univariate Model			Multivariable Model 1			Multivariable Model 2			Multivariable Model 3		
	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>	<i>b</i> (se)	β	<i>p</i>
Age Cohort												
<i>Older Adulthood</i>	0.04 (0.05)	0.03	0.419									
Race/Ethnicity												
<i>Non-Hispanic Black</i>	-0.19 (0.06)	-0.12	0.002	-0.07 (0.07)	-0.05	0.311	-0.07 (0.07)	-0.04	0.325	-0.09 (0.07)	-0.06	0.161
<i>All Other Race/Ethnicities</i>	-0.11 (0.07)	-0.06	0.132	-0.10 (0.08)	-0.05	0.198	-0.10 (0.08)	-0.05	0.198	-0.10 (0.08)	-0.05	0.199
Sexual Identity												
<i>Bisexual</i>	-0.19 (0.11)	-0.07	0.089	-0.16 (0.11)	-0.06	0.168	-0.15 (0.11)	-0.05	0.188	-0.16 (0.11)	-0.06	0.150
<i>Other MSM Identity</i>	-0.34 (0.08)	-0.16	<0.001	-0.32 (0.09)	-0.14	0.001	-0.33 (0.09)	-0.14	<0.001	-0.35 (0.09)	-0.15	<0.001
HIV Status												
<i>Positive</i>	-0.04 (0.04)	-0.04	0.352									
Education Level												
<i>More than HS</i>	0.21 (0.07)	0.11	0.004	0.11 (0.08)	0.06	0.158	0.10 (0.08)	0.05	0.186	0.10 (0.07)	0.05	0.110
Wave of Enrollment												
<i>Post 2001</i>	-0.11 (0.05)	-0.09	0.021	-0.02 (0.05)	-0.02	0.632	-0.02 (0.05)	-0.01	0.733	-0.03 (0.05)	-0.02	0.606
Any Lifetime Discrimination												
<i>Yes</i>	-0.14 (0.04)	-0.12	0.002	-0.11 (0.04)	-0.10	0.010						
Any Lifetime Discrimination Salience												
<i>No/Low</i>	-0.20 (0.06)	-0.13	0.001				-0.21 (0.06)	-0.14	0.001			
<i>Moderate</i>	-0.11 (0.06)	-0.07	0.087				-0.12 (0.06)	-0.07	0.072			
<i>High</i>	0.07 (0.07)	0.04	0.287				0.00 (0.07)	0.00	0.947			
Any Lifetime Sexuality Discrimination												
<i>Yes</i>	-0.09 (0.05)	-0.07	0.077									
Sexuality Discrimination Salience												
<i>No/Low</i>	-0.08 (0.07)	-0.10	0.007							-0.21 (0.07)	-0.12	0.002
<i>Moderate</i>	-0.10 (0.07)	-0.05	0.184							-0.15 (0.07)	-0.08	0.047
<i>High</i>	0.13 (0.08)	0.06	0.101							0.04 (0.08)	0.02	0.529
Multifactorial Discrimination												
<i>1 Type Experienced</i>	-0.05 (0.06)	-0.03	0.383									
<i>2+ Types Experienced</i>	-0.13 (0.05)	-0.10	0.008									
Multifactorial Discrimination Salience												
<i>1 Type – No/Low</i>	-0.22 (0.09)	-0.09	0.021									
<i>1 Type – Moderate/High</i>	0.04 (0.07)	0.02	0.545									
<i>2+ Types – No/Low</i>	-0.17 (0.07)	-0.09	0.019									
<i>2+ Types – Moderate/High</i>	-0.08 (0.06)	-0.05	0.215									

Table 16 Continued

Variable	Multivariable Model 4			Multivariable Model 5		
	<i>b</i> (<i>se</i>)	β	<i>p</i>	<i>b</i> (<i>se</i>)	β	<i>p</i>
Age Cohort						
<i>Older Adulthood</i>						
Race/Ethnicity						
<i>Non-Hispanic Black</i>	-0.07 (0.07)	-0.04	0.315	-0.07 (0.07)	-0.05	0.307
<i>All Other Race/Ethnicities</i>	-0.10 (0.08)	-0.05	0.206	-0.10 (0.08)	-0.06	0.173
Sexual Identity						
<i>Bisexual</i>	-0.16 (0.11)	-0.05	0.175	-0.16 (0.11)	-0.06	0.167
<i>Other MSM Identity</i>	-0.32 (0.09)	-0.14	0.001	-0.32 (0.09)	-0.14	0.001
HIV Status						
<i>Positive</i>						
Education Level						
<i>More than HS</i>	0.11 (0.08)	0.06	0.156	0.10 (0.08)	0.05	0.176
Wave of Enrollment						
<i>Post 2001</i>	-0.02 (0.05)	-0.02	0.635	-0.02 (0.05)	-0.02	0.713
Any Lifetime Discrimination						
<i>Yes</i>						
Any Lifetime Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Any Lifetime Sexuality Discrimination						
<i>Yes</i>						
Sexuality Discrimination Salience						
<i>No/Low</i>						
<i>Moderate</i>						
<i>High</i>						
Multifactorial Discrimination						
<i>1 Type Experienced</i>	-0.11 (0.06)	-0.07	0.072			
<i>2+ Types Experienced</i>	-0.12 (0.05)	-0.09	0.024			
Multifactorial Discrimination Salience						
<i>1 Type – No/Low</i>				-0.25 (0.09)	-0.10	0.009
<i>1 Type – Moderate/High</i>				-0.04 (0.07)	-0.02	0.560
<i>2+ Types – No/Low</i>				-0.18 (0.07)	-0.10	0.012
<i>2+ Types – Moderate/High</i>				-0.07 (0.06)	-0.05	0.247

Note: Primary Predictors – Model 1: Any lifetime discrimination; Model 2: Any lifetime discrimination salience; Model 3: Any sexuality related discrimination salience; Model 4: Multifactorial Discrimination; Model 5: Multifactorial Discrimination Salience

6.4 DISCUSSION

The purpose of this analysis was to test the associations of perceived social discrimination, characterized by any lifetime, any sexuality-related, and multifactorial discrimination, on the experiences of social well-being in a sample of midlife and older adult MSM from the MACS. To our knowledge, this is first study to examine midlife and older adult MSM's social well-being via subjective evaluations of their social networks' functionality using the *Social Provisions Scale* [211].

Through our analyses, we were able to capture the multifaceted nature of participants' perceptions of their social networks' capacities to provide social support (e.g., access to shared interests, affirming resources, and collective problem-solving and guidance). Considering the subscale means and distributions of the *Social Provisions Scale* among our study sample (Figure 4), we argue that participants in our study are fairly resilient. In general, participants in our study report a high degree of beneficial social connectedness and access to social supportive networks. This is aligned with the definition of resilience as having positive outcomes despite facing a tremendous amount of social adversity [86].

We observed no statistically significant differences in social well-being by age cohort or HIV serostatus, which further supports the resiliencies of these communities. Though prior research has sought to characterize social well-being in older adults as small or weak [115,183,202-205], MSM in our sample indicate a high level of social attachments, integration, and worth within their social networks. Similarly, for HIV-positive MSM, our findings counter

prior studies that suggested MSM in midlife and older age have fragile networks [209]. The lack of differences between HIV-negative and HIV-positive men suggests that overall, midlife and older adult HIV-positive MSM are experiencing a high level of social well-being.

Our hypotheses were supported with our findings indicating that experiences of social discrimination are associated with lower social well-being among midlife and older adult MSM. Secondly, any lifetime experience of sexuality-related discrimination was associated with lower scores on the *Attachment* subscale, which describes an individual's emotional bonds that provide a sense of security [211]. This is a critical finding in understanding midlife and older adult MSM's beneficial social connections as an important facet of healthy aging. Our results may be similar to prior findings that described gay males who perceived sexuality-related discrimination also reported greater attachment anxiety, which is defined as disengagement or detachment from social networks given a fear of interpersonal rejection or abandonment, compared to those who did not [217].

These findings are also supported by the social stress theory, which suggests that marginalized communities experience a reduction in social resources that have the potential to mitigate the negative effects of stress on disease [46-48]. Secondly, our findings implicate the role of intersectionality; specifically, that identifying with multiple marginalized statuses is associated with a reduction in critical social resources. This is further illustrated in the role of multifactorial discrimination on social well-being in our sample. Generally speaking, the number of discrimination types was negatively related to our indicators of social well-being. Figure 5 illustrates descending mean trends in social well-being indicators across number of discrimination types with those who experienced no discrimination across the life course exhibiting the highest social well-being between the three groups.

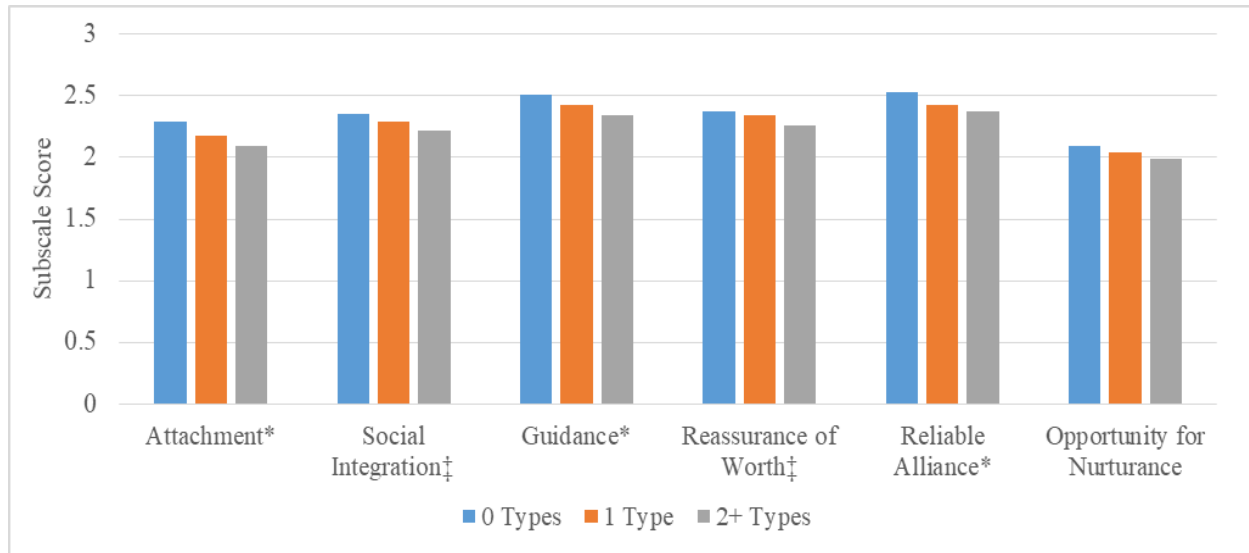


Figure 5. Participants' Mean Subscale Scores of Social Provision Scale by Number of Discrimination Types Experienced (Note: * $p < 0.05$; ‡ $p < 0.10$)

In our multivariable models, those who reported at least two types of discrimination reported lower social well-being in most of the *Social Provision* subscales. Interestingly, the four subscales that were found to be negatively associated with the number of experienced discrimination types included those that assessed participants' social connectedness (*Attachment* and *Social Integration*) and network trustworthiness (*Guidance* and *Reliable Alliance*) of participants' social networks in respect to perceived functional social support. Therefore, public health efforts intended to combat the long-term effects of discrimination may seek to enhance these social facets of healthy aging.

When accounting for the salience of discrimination experiences in our sample, the relationship between discrimination and social well-being becomes less straightforward. As observed in Figures 6 and 7, participants' scores on social well-being largely exhibit a U-shape distribution.

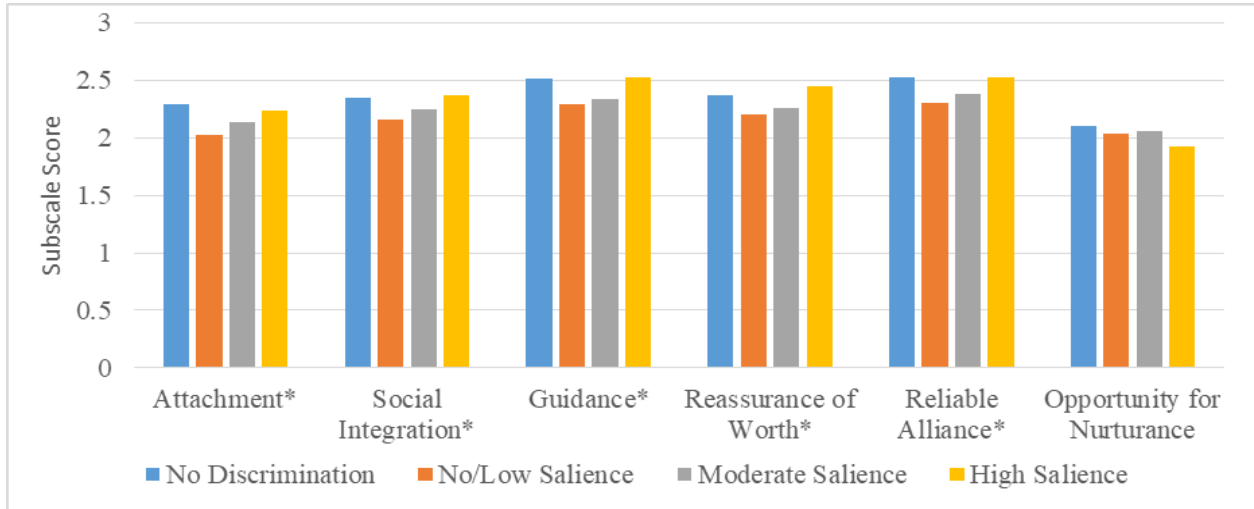


Figure 6. Distribution of Subscale Scores of the Social Provision Scale by Salience of Any Lifetime Discrimination among Midlife and Older Adult MSM in the MACS (Note: * $p < 0.05$)

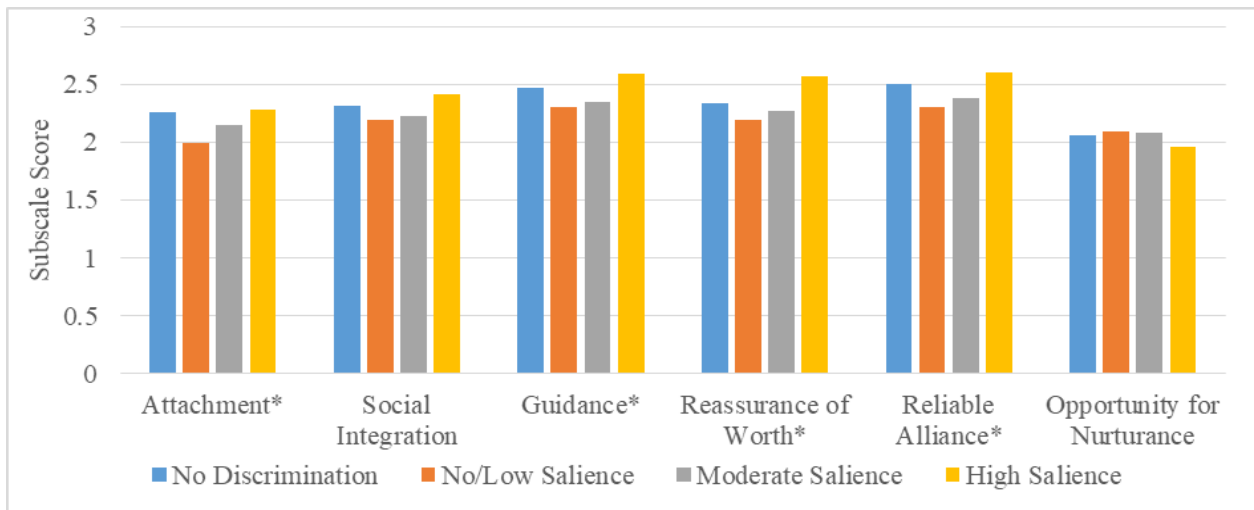


Figure 7. Distribution of Subscale Mean Scores of the Social Provision Scale by Salience Discrimination among Midlife and Older Adult MSM in the MACS Who Reported Any Lifetime Sexuality-Related Discrimination (Note: * $p < 0.05$)

Participants who reported a high amount of salience of their discrimination experiences indicated social well-being scores nearly equal to those who reported no lifetime discrimination. Accounting for the number of types of discrimination experienced (multifactorial discrimination;

Figure 8), the pattern of participants with no or low salience regardless of the number of types of discrimination persisted in having the lowest scores on the *Social Provision* subscales. In our multivariable models, the adjusted relationships between salience of multifactorial discrimination and indicators of social well-being consistently exhibited significant decreases among participants who reported no or low salience regardless of the number of types of discrimination reported.

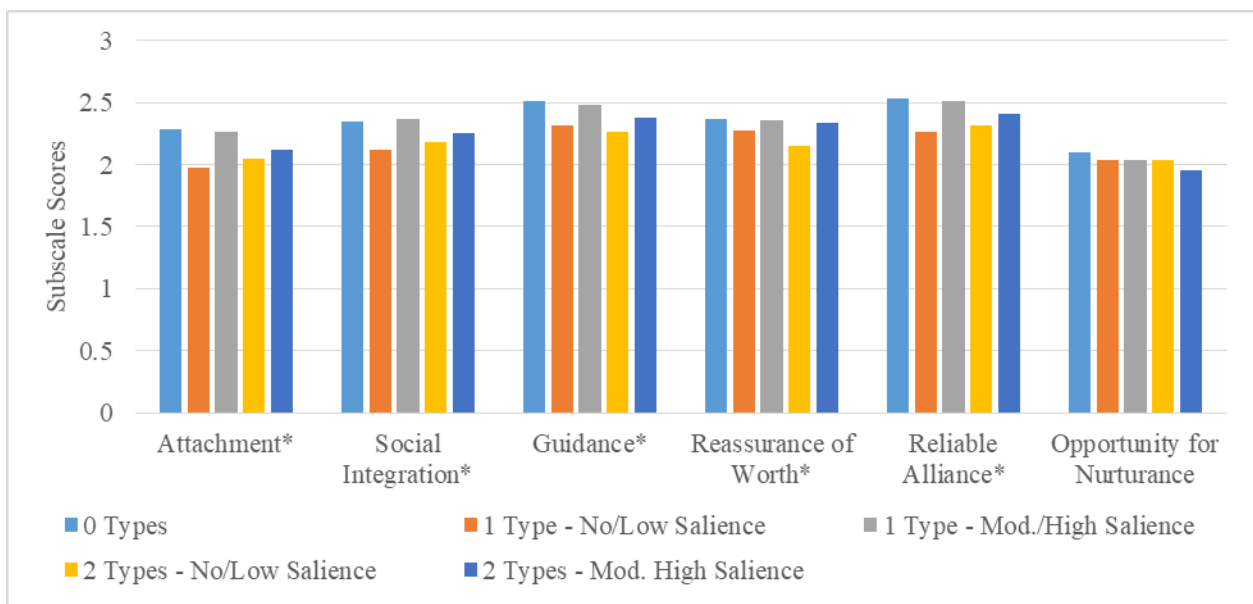


Figure 8. Distribution of Social Provision Subscale Mean Scores for the Salience of Multifactorial Discrimination among Midlife and Older Adult MSM in the MACS (Note: * $p < 0.05$)

These findings underscore the body of literature that argue against assessing social stressors in terms of exposure alone, that in doing so, we potentially obscure important underlying mechanisms that better capture the relationships between stress, health, and well-being [79,218]. By expanding discrimination exposure to discrimination salience, we lessened the importance of exposure frequency and temporality and pushed forward the significance of emotional reactivity

because the way people react to adversity and exclusion has implications for the way social behaviors (e.g., participation and integration) are self-regulated [219-220]. Our findings indicate that midlife and older adult MSM who report high discrimination salience are resilient; specifically, in their ability to create and maintain social networks that afford high functioning social support. This may be explained by prior research suggesting that in the face of social adversity, disadvantaged persons increase identification with other individuals who share their marginalized identities [46,80,221]. If greater exposure to discrimination is associated with lower social well-being, but higher salience of discrimination implicates little to no difference compared to those who experience no discrimination, this may suggest that through coping processes, those who report high salience may be more active in seeking and/or maintaining the necessary social supports that mitigate the detrimental influences of social stress. Our findings, however, do not specify how who one has access to in terms of available support systems interacts with social support functionality. Given the natural diversity of sexual minority communities, individuals identify with multiple communities (e.g., racial/ethnic, sexual minority, religious groups) and those who have strong identifications with these communities may be greater sensitized to social adversity as it occurs [45,79,222].

These explanations in turn, may suggest greater salience of the extent to which midlife and older MSM feel socially connected to their communities and networks. These particular findings, however, are in opposition of the social stress theory that argues disadvantage individuals who experience social discrimination are conferred fewer coping resources than those who do not have these experiences [46]. Further research should utilize qualitative methods to contextualize and parse out the discrepancy between assessments of exposure versus salience of discrimination on midlife and older adult MSM's subjective evaluations of their social

networks. Additionally, research efforts may benefit from exploring how stigmatized group identity salience interacts with indicators of social well-being such as attachment or social integration to shape and produce sensitivity to perceptions of social discrimination [42].

Given our findings, we advocate for continued public health research and practice endeavors with and for this population. Most importantly, our results support the need to address social discrimination, especially sexuality-related discrimination, through legislative and community efforts. These efforts would provide a macro-level approach to enhancing social connectedness given sexuality-related discrimination's detrimental association to social attachments that provide a sense of emotional security. Prior findings support the continued need, particularly for midlife and older adult MSM, for efforts to increase gay community involvement since sexual minority communities provide non-stigmatizing environments and affirm evaluations of self [223-224]. However, the extent to which a value is placed on youthfulness and ageism is propagated in current gay communities may shape the ways in which MSM socially participate or engage in midlife and older adulthood [225-227]. Given the relationship of multifactorial discrimination on social well-being, it is essential to develop interventions that communicate diversity values as a means to change environmental cues regarding social norms and structure [145]. Community environments that express, practice, and emphasize a value in diversity at the intersections of different social identities may foster community level feelings of trustworthiness, which may elicit greater access to social supports [227].

With respect to research efforts, there is a need to understand qualitative narratives regarding how midlife and older adult MSM tap into their social networks as a source of strength, especially when faced with social adversity. First, what factors among those who

experienced discrimination and reported a high degree of salience shaped their ability to achieve or maintain high social well-being? Identifying these factors may provide critical insight for developing effective resilience-based social network and support-based interventions that tackle social stress among midlife and older adult MSM [228]. Secondly, though it is important to gain a comprehensive understanding of this community's social well-being, future analyses should aim to develop more sophisticated statistical models (e.g., mediation or structural equation models) to identify health outcomes and behaviors that are shaped by both social discrimination and social well-being. More sophisticated models may inform how social well-being fits into a healthy aging conceptual framework among this community. Lastly, our null findings regarding *Opportunity for Nurturance* warrants further assessment. Since prior literature argues this form of social interdependence is a critical component of well-being [197], future efforts should identify and explore whether these experiences are salient to MSM in midlife and older adulthood, and if so, what are associated social factors.

Despite the strengths and implications of our analyses, our study was not without its share of limitations. First, inherent in the cross-sectional study design, we were unable to infer causal relationships that distinguished social well-being by experiences of discrimination. Future research may benefit from assessing trends in social well-being at multiple time points across cohorts of midlife and older adult MSM stratified by experiences of discrimination. Secondly, our findings may be limited due to small within-group sample sizes (e.g., racial minorities, bisexual and other non-gay-identified MSM, participants who reported discrimination and no salience), that led us to conflate the experiences of distinct identities and experiences.

Furthermore, our findings may insufficiently estimate the social well-being in subgroups of our sample given that those who provided no or incomplete responses to the *Social Provisions*

Scale were more likely to report marginalized identities including a Non-Hispanic Black race, an MSM identity other than gay or bisexual, and a high school or below level of education. Future efforts may benefit from recruitment efforts that provide sufficient power to better address within-group differences [148]. Given that perceptions of discrimination tend to be underreported as well, the effect of discrimination and discrimination salience on social well-being may be underestimated as well [153-155]. Additionally, our analysis conflates midlife and older adult MSM's experiences with stigma solely to perceptions of discrimination. Minority stressors such as violent victimization or perceived homophobic attitudes (felt stigma) in communities may also serve to reduce MSM's abilities to maintain or achieve social well-being [46-47,107]. Lastly, our findings are not generalizable to midlife and older adult MSM beyond the MACS. Future studies should seek to support or refute our findings with other community and clinical samples of midlife and older adult MSM in the U.S.

As healthy aging among midlife and older adult MSM have emerged as a public health priority in the U.S. [2], social and behavioral scientists are tasked with challenges to assist in creating efforts that enhance this population's social well-being. Prior research and reports consistently indicate that enhancing social connectedness among this population, which has lived through socially stigmatizing periods of U.S. history, are necessary for well-being into old age [95,220,222]. We add to the current body of literature, emphasizing the quality of social network supports accessible to these men, as well as providing insight into experiences of social discrimination as significant barriers to accessing these support systems. Additionally, we built on prior reports that argue for assessing stressors beyond simple exposure by introducing the component of discrimination salience [78]. Discrimination salience implies that for some individuals, these experiences will endure beyond the exposure and the extent to which an

individual reconciles these experiences and will have implications for health and social well-being [79]. Most importantly, we give great attention to the fact that midlife and older adult MSM belong to resilient communities. Midlife and older adult MSM have successfully integrated into communities that afford them access to critical social resources despite risk and exposure to decades of social adversity. Finally, further exploration of how these resiliencies manifest may provide pragmatic approaches for future public health interventions.

7.0 CONCLUSION

7.1 SUMMARY OF MAIN FINDINGS

The findings from this dissertation advance the literature on healthy aging among midlife and older adult MSM in the United States. We provide evidence to support the overarching hypotheses that MSM in midlife and older adulthood who identify with any and multiple marginalized social identities bear a greater burden of social discrimination compared to those of privileged groups and that those who experience social discrimination are at risk for poor health outcomes. Through our analyses, we also advocate for the importance of assessing perceptions of discrimination beyond the lens of exposure, acknowledging that the impact of these events endures beyond the discriminatory event.

In our first study, we elucidate the alarming prevalence of social discrimination experiences reported by midlife and older adult MSM; specifically, nearly half reported any lifetime experience, nearly a third reported lifetime discrimination attributed to one's sexual identity, and over a quarter of participants indicated that they experienced at least two types of social discrimination. Unsurprisingly, Non-Hispanic Black and HIV-positive participants, respectively, experienced greater risk for multifactorial discrimination. Despite these risks, however, we found a moderating relationship of one's risk for multifactorial discrimination that indicated that HIV-positive Non-Hispanic Black identity had a decreased risk of multifactorial

discrimination. To our knowledge, this was the first study to examine multifactorial discrimination in this population.

From the second study, we were able to support prior research indicating that internalized homophobia persists in midlife and older adult MSM. Though exposure and salience of discrimination were associated to internalized homophobia at the bivariate/univariate level, our hypotheses that these experiences shaped internalized homophobia were unsupported in our multivariable models. Despite these null findings, we were able to observe the prevalence of moderate and high discrimination salience (27.2%) experienced by MSM in our study. To our knowledge, we are the first to shed light on the fact that MSM who have experienced social discrimination largely indicate that these experiences have interfered with their abilities to live full and productive lives.

In our third study, we sought to examine exposure and salience of social discrimination and their relationships to indicators of social well-being using the *Social Provisions Scale*, which measures participants' subjective evaluations of the accessibility of functional social network support. Overall, one of our most important findings is that men in our study experience a high degree of social well-being (social connectedness and accessibility to strong social support systems), which suggests a high degree of resilience among our participants. This counters prior narratives that seek to classify individuals in old age as socially isolated and lonely.

Despite these findings, we identified that among marginalized groups, MSM who reported as racial minorities reported lower scores on indicators of social well-being compared to Non-Hispanic White participants. Generally speaking, our hypotheses were supported in that exposure to lifetime, sexuality-related, and multifactorial discrimination were detrimental to the social well-being of MSM in midlife and older adulthood. One surprising finding was the

distribution of social well-being when account for discrimination salience. Across indicators of social well-being, there was a U-shaped distribution indicating that those who had high salience of their discrimination experiences exhibited similar social well-being than those who reported no lifetime discrimination experiences. This finding supports prior reports that argue the importance of addressing discrimination beyond exposure. In our study, addressing exposure alone would have obscured the significant finding that those who have high discrimination salience are resilient in their ability to create and maintain strong social support systems.

Across all studies, we observed no statistically significant differences in social discrimination, current internalized homophobia, and social well-being. Older adult MSM in our sample have survived times marked by intense homophobic stigmatization and invisibility. Though men in older adulthood may have had greater vulnerability, men in older adulthood are faring as well as men in midlife with respect to social well-being.

7.2 FUTURE RESEARCH IMPLICATIONS

The findings from our study implicate and advocates a pressing need to examine social processes of healthy aging among midlife and older adult MSM through research efforts. Though much progress has been made for sexual minorities in respect to tackling stigma across different communities in the U.S. as well as reducing structural barriers to access to civil rights, MSM in midlife and older adulthood have and continue to endure experiences of social discrimination. Research efforts should further seek to contextualize the sociohistorical contexts that shape health and well-being into older age, especially because MSM who enter midlife and older

adulthood in current and future generations will have lived through periods marked by different sociopolitical challenges.

Future research efforts should continue to examine the health and well-being of midlife and older adult MSM from an intersectionality lens, acknowledging the importance of how belonging to communities of stigmatized identities implicate risk and resilience regarding social stressors. Though our findings present important findings in respect to one's risk for social adversity, the small sample sizes of subgroups in our study (e.g., Non-Hispanic Black, Hispanic/Latino, and other race/ethnicities) limited our ability to conduct within-group analyses. By increasing power/sample size for these subgroups, we may achieve greater representativeness of men in midlife and older adulthood and greater attention may be paid to cultural factors that shape social processes and resiliencies related to healthy aging.

Given our finding that over a third of midlife and older adult MSM continue to experience feelings of internalized homophobia, efforts to ascertain what underlying mechanisms may be shaping these negative self-evaluations are needed. If social discrimination does not account for internalized homophobia, which other factors (e.g., anticipated/felt stigma, violent victimization) strongly shape these experiences in midlife and older adult men? Furthermore, since prior research indicates that internalized homophobia among MSM is resolved over time, research examining the resiliencies of men in midlife and older adulthood at individual, interpersonal, community, and structural levels to overcome these negative feelings are warranted.

In respect to experiences of discrimination among midlife and older adult MSM, the fact that a large proportion of men who reported any lifetime discriminatory event also indicated moderate or high salience is a novel finding. Our inability to find significant findings of

discrimination salience on internalized homophobia begs the question of how discrimination salience shapes health outcomes as one ages. Since our findings suggest discrimination salience shapes MSM's experiences at the interpersonal level, future efforts should seek to understand how discrimination salience shapes MSM's health at the individual level across an array of health indicators. Qualitative narratives regarding managing and coping with experiences of discrimination may inform health and quality of life indicators shaped by enduring social stress. Additionally, more sophisticated models (e.g., mediation, structural equation models) may better inform the pathways of discrimination, discrimination salience, resiliency factors, psychological well-being, and disease outcomes in this population.

Furthermore, the distribution of discrimination salience skewed toward high salience in our sample, which creates challenges in our understanding of resilience for this population. Intuitively, participants who indicate no or low salience indicate resilience given that these salience levels suggest that the impact discrimination has had on their lives has been minimal to none. This hypothesis, however, was challenged by the fact that those who reported high discrimination salience reported the social well-being that were not statistically different to those who reported no experiences of discrimination. Given these competing ideas, there are a number of implications for future research. Efforts should seek to assess the extent to which the current or other measures of discrimination salience are psychometrically sound (valid and reliable) with midlife and older adult MSM. Since our measure measures salience broadly, other scales or measures may better inform the relationship between discrimination salience and health. Additionally, the ability to recruit larger sample sizes may increase power to examine factors or characteristics that distinguish level of discrimination salience and in turn, inform stigma management and resilience focused interventions.

7.3 ADVOCACY FOR THE STUDY OF HEALTHY AGING AMONG MSM

Midlife and older adult MSM in the U.S. today represent a population that has witnessed profound social change in regard to the advancement of sexual minority civil rights and liberties. Additionally, this population has been historically impacted by critical events and periods such as the height of the HIV epidemic in which many men lost friends, family members, significant others, and life partners. These times were also marked by intense anti-gay stigmatization in which MSM were treated like second-class citizens, discriminated against, and commonly rejected or abandoned by close social networks. Despite these adversities, midlife and older adult MSM exhibit resiliencies at multiple levels of the social ecological spectrum. Providing opportunities to better understand these resiliency factors will serve to reduce health disparities by sexual orientation, narrowing the barriers this population needs live full, productive lives. This dissertation provides a starting point for future efforts in research and practice to elicit and enhance resiliencies among midlife and older adult MSM from a social perspective, a perspective that is deemed critical given the strength of influence beneficial social factors have in mitigating the relationships between stress and disease. Efforts that seek to enhance, maintain, and achieve social well-being in this population will ultimately benefit the mental, emotional, and physical dimensions of healthy aging.

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