

The Relationship Between Sexual Minority Stigma and Sexual Health Risk Behaviors Among HIV-Positive Older Gay and Bisexual Men

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Abstract

This study investigates how internalized sexual minority stigma and enacted sexual minority stigma in health care settings are associated with sexual health risk behaviors (SRBs) and the mediating role of infrequent routine health care and perceived stress among older gay and bisexual (G/B) men living with HIV disease. Survey responses from 135 sexually active older G/B men living with HIV were analyzed using hierarchical linear regression models. Results indicate that one fifth of G/B older adult men living with HIV are engaged in multiple SRBs. Internalized sexual minority stigma and enacted sexual minority stigma in health care settings are significantly associated with SRBs. The relationship between internalized sexual minority stigma and SRBs are mediated by infrequent routine health care and elevated levels of

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perceived stress. Improved primary and secondary prevention strategies are needed for the growing number of sexually active older G/B men.

Keywords

sexual identity, HIV disease, sexual risk, health care utilization, older adults

Introduction

The number of older adults living with HIV infection is increasing dramatically and remains a serious public health issue (Centers for Disease Control and Prevention [CDC], 2013b). Data from the CDC indicate that 17% of new HIV infections in 2011 were among adults aged 50 and above (Centers for Disease Control and Prevention, 2013a) and the prevalence of HIV among gay and bisexual (G/B) men, aged 40 and older, is greater than it is among those aged 18 to 39 (Centers for Disease Control and Prevention, 2015). Those who begin highly active antiretroviral therapy (HAART), and are diagnosed when their CD4 count is greater than 200 cells/mm³, have the potential for life expectancy that extends into their 70s (Cahill & Valadéz, 2013).

Older adults are sexually active and identify sexuality as an important part of their lives (Lindau et al., 2007). Some older adults, regardless of sexual identity, engage in sexual health risk behaviors (SRBs), that is, sex without a condom or unprotected sex with a partner of unknown serostatus, which could increase the likelihood of HIV and other sexually transmitted diseases. In addition to increasing rates of HIV, recent studies have noted a significant increase in non-HIV sexually transmitted infections (STIs) among older adults (Bodley-Tickell et al., 2008), and the CDC has reported a consistent increase among STIs in men who have sex with men since the mid-1990s (Centers for Disease Control and Prevention, 2010), suggesting an increase in SRBs and a greater potential for HIV/STI co-infection.

HIV/STI co-infection can be problematic. Research has found STIs to be associated with increased concentrations of HIV RNA, and STIs can increase the likelihood of HIV exposure through symptoms such as genital bleeding (Kalichman, Pellowski, & Turner, 2011), and may compromise the effectiveness of antiretroviral therapy (ART) (Kalichman et al., 2011). Thus, understanding characteristics that are associated with increased SRBs among older adults living with HIV disease is critical to gerontological research and clinical practice.

Sexuality Among G/B Men

Rosenfeld, Bartlam, and Smith (2012) suggested that HIV disease “casts a long shadow, shaping these men’s personal and collective health . . .” (p.

261), and suggest we have an inadequate understanding of the sexual and romantic relationships of older G/B men. Lovejoy and colleagues (2008) found that more than one third (36%) of older G/B men in their study were sexually active, while Golub et al. (2010) found nearly half (48%) of older adults from the Research on Older Adults With HIV (ROAH) study were sexually active. Among G/B men who are sexually active, a significant number do not engage in consistent safe sex practices. It is estimated that anywhere from one third to slightly more than 40% of older HIV-positive G/B men do not use condoms when engaging in anal or vaginal intercourse (Golub et al., 2010), and bisexual men may have lower rates of condom use when they have sex with women (Spikes et al., 2009). Other behavioral factors contribute to HIV risk among older G/B men. Depression in lesbian, gay, bisexual, and transgender (LGBT) older adults has been associated with HIV status among older adults (Fredriksen-Goldsen et al., 2011), and in a recent intervention study, Lovejoy and Heckman (2014) found more than 60% of older HIV-positive adults enrolled in the study experienced some levels of depression. In addition, lower (but existent) depression was significantly associated with increased SRBs. Substance use has also been associated with SRB among older G/B men. Recently, Brennan-Ing, Porter, Seidel, and Karpiak (2014) found drug use of certain types significantly associated with SRB in this population. They also noted the importance of differentiating drug use among older G/B men. Thus, prevalence of drug use, depression, and increased SRB place older G/B men and their partners at high risk for HIV infection. Gay-related stigma has also been associated with high risk sex acts (Lelutiu-Weinberger et al., 2013).

At this time, the literature on SRB among older people in general, and older G/B men in particular, is somewhat embryonic. In a recent comprehensive review of the HIV and aging literature, Chambers and colleagues (2012) identified only 11 scholarly research articles focused on SRBs among older adults with or at risk for HIV disease. Studies that explore SRBs among older adults differ in their examination of HIV status, gender, substance use, and even the definition of SRB. Using standardized criteria from the CDC and others, sexual risk behavior in this inquiry is defined as being treated for a sexually transmitted disease, intravenous drug use, giving and receiving money or drugs in exchange for sex, and non-condom protected anal sex all within the past year (Rietmeijer, Lanksy, Anderson, & Fichtner, 2001; Wen, Balluz, & Town, 2012). The limited research on this issue among older people living with HIV has identified stigma as an important contributor to SRB. Although researchers have recently begun to examine the relationship between HIV stigma and SRB (Hatzenbuehler, O'Cleirigh, Mayer, Mimiaga, & Safren, 2011), fewer studies have examined sexual minority stigma and

SRB and explanatory factors accounting for the relationship between them. Lelutiu-Weinberger and colleagues (2013) did find gay-related stigma to be associated with high risk sexual acts including anal sex without a condom with a casual partner, anal sex acts while using drugs/alcohol, and total days of drug use in the past month. In this article, we investigate to what extent internalized and enacted sexual minority stigma are associated with SRB and whether lack of health care utilization and perceived stress account for these relationships among G/B men aged 50 and older living with HIV disease.

Conceptual Framework and Relevant Literature

This research is guided by a conceptual framework of stigma developed by Earnshaw and Chaudoir (2009). They build upon the pioneering work of Goffman (1963) who theorized stigma as societal reaction to a spoiled identity. Although this framework was originally developed specific to HIV stigma, the social processes that comprise the mechanisms of stigma and their outcomes are relevant to sexual minority stigma and applicable to this study. Individuals who possess a devalued attribute (HIV disease or sexual minority identity) are kept in a relative position of power by those who do not possess the devalued attribute. In the early conceptual development of stigma, that social process was broken down into two primary types; *internalized stigma* was primary, representing the endorsed intrapersonal negative attributes and beliefs about one's status (Parker & Aggleton, 2003). For example, internalized stigma may include feelings such as shame, guilt, and loss of self-worth. Relevant to our study, *internalized sexual minority stigma* has been linked to higher rates of SRB among self-identified, HIV-positive gay men (Johnson, Carrico, Chesney, & Morin, 2008; Ross, Rosser, Neumaier, & Positive Connections Team, 2008). *Enacted stigma*, however, represents the social experiences of prejudice or discrimination from others as a result of one's status. For example, social distancing, avoidance, and fear are all examples of enacted stigma.

The stigma framework used to guide this study recognizes that the mechanisms of stigma differ between those who do and do not possess the devalued attribute. Relevant to this study, the framework goes further to include outcomes. Earnshaw and Chaudoir (2009) conceptualized that stigma mechanisms, such as internalized as well as enacted stigma, as well as prejudice and discrimination will impact psychological, behavioral, and health outcomes. The framework recognizes, for example, that the endorsements of stereotypes (related to HIV or sexual minority status) may impact health outcomes.

Greater incidence of enacted stigma has been associated with increased SRB and psychological distress among Latino gay men (Díaz, Ayala, & Bein, 2004), among gender non-conforming Indian MSM (Thomas et al., 2012),

and in African American and Latino men who have sex with men (MSM) (Finlayson, 2007). However, among rural HIV-positive MSM in New England, greater experiences of enacted stigma were associated with decreased SRB (Varni, Miller, & Solomon, 2012). Whether internalized and enacted sexual minority stigma is directly associated with SRBs is not known. Recently, structural sexual minority stigma, defined as anti-gay prejudice at the community level, has been empirically associated with higher mortality rates among sexual minorities in a national representative sample, reinforcing the dramatic negative consequence of stigma (Hatzenbuehler et al., 2011).

Consistent with the stigma framework, some studies suggest that lack of health care utilization and increased stress may account for the relationship between sexual minority stigma and SRBs. First, routine health care utilization is an important point of prevention and intervention, which has been found to reduce SRB (Fisher et al., 2004). Studies have shown that utilization of health-related services reduces SRB in HIV-infected populations (Booth, Kwiatkowski, & Weissman, 1999; Fisher et al., 2006; National LGBT Health Education Center, 2013). Fisher and colleagues (2006) found clinician-delivered interventions during routine medical care significantly reduced SRB among HIV-infected (including older) adults.

Those with high levels of internalized stigma may anticipate fear of discrimination by health care providers, creating barriers to routine health care utilization, preventing early detection and treatment of health conditions before they become serious (Dibble, Eliason, & Christiansen, 2007). Because of internalized stigma, sexual minorities may believe they do not deserve “the same access to healthcare as heterosexuals” (Institute of Medicine, 2011, p. 64). Jenness, Hanna, and Murrill (2007) noted stigma as a critical barrier to care among adults living with HIV disease in New York City.

As institutions, health care settings evolved in the same socio-historical era that criminalized and pathologized sexual minorities (Institute of Medicine, 2011). Older G/B men who grew up during this period may distrust these systems and with good reason. Despite more affirming social climates in recent years, older sexual minorities still experience overt homophobia in health care settings (Brotman, Ryan, & Cormier, 2003). Nearly a third of sexual minority adults have delayed or foregone needed medical care because of past experiences of discrimination (Krehely, 2009), and may not believe that health care providers are knowledgeable of their unique needs and issues (Brotman et al., 2003). Those G/B men living with HIV who are reluctant to utilize health care services are less likely to receive HIV-related education regarding sexual health, HIV prevention, and the importance of reducing SRBs. Thus, consistent with the stigma conceptual framework, we propose that the lack of health utilization as a behavioral

response may actually account for the relationship between internalized and enacted stigma and elevated SRBs.

Internalized heterosexism has been found to be related to increased levels of perceived stress among sexual minorities (Guerrero, Chang, Fritz, & Vosvick, 2012). The minority stress model (Meyer, 2003) posits that internalized stigma experienced by sexual minorities increases psychological distress (Meyer, 2003), and Fredriksen-Goldsen and colleagues (2014) found internalized stigma among older transgender adults to be associated with higher levels of perceived stress.

G/B men who report greater numbers of stressful events are at increased risk for contracting HIV, an association that is mediated by SRB (Burchell et al., 2010). Pantalone, Huh, Nelson, Pearson, and Simoni (2014) found increased stress was significantly associated with SRB in 134 adult MSM. The authors suggest the potential of seeking sexual release associated with SRB as a means of bringing about euphoric feelings, temporarily relieving perceived stress. Based on the stigma framework, stress, as a psychological response, may account for the relationship between internalized and enacted stigma and SRBs.

More research is needed to improve our understanding of how older G/B men experience internalized sexual minority stigma and enacted stigma in health care settings and their associations to SRBs. Although we know from other studies that older adults, including older G/B men, experience HIV-related stigma (Emlet, 2006; Emlet et al., 2013), an improved understanding of sexual minority stigma is needed. It may be that lack of routine health care utilization and elevated levels of stress account for the relationship between internalized stigma and enacted stigma and SRBs. The purpose of this study, therefore, is to examine the role of sexual minority stigma in the relationship with SRBs and the mediating effects of lack of routine health care utilization and stress.

Based on a stigma conceptual framework, in this article, we will investigate how internalized sexual minority stigma and enacted sexual minority stigma in health care settings are associated with SRBs among G/B older adult men living with HIV. We will test the following hypotheses:

Hypothesis 1: Elevated levels of internalized sexual minority stigma and enacted sexual minority stigma in health care settings are positively associated with increased SRBs.

Hypothesis 2: The relationship between internalized sexual minority stigma and increased SRBs will be mediated by lack of routine health care utilization and elevated levels of stress, controlling for covariates.

Hypothesis 3: The relationship between enacted sexual minority stigma in health care settings and increased SRBs will be mediated by lack of routine health care utilization and elevated levels of stress, controlling for covariates.

Design and Method

Sample

We utilized the national survey of the Caring and Aging With Pride: The National Health, Aging and Sexuality Study: Caring and Aging with Pride, which was conducted in 2010 through collaboration with 11 agencies across the United States. The participants in the study are adults, aged 50 and older, who self-identified as gay, lesbian, bisexual, and transgender. The total N for the parent study was 2,560. Detailed information regarding the data collection procedures are described elsewhere (Fredriksen-Goldsen et al., 2013). For this study, we selected older G/B men who reported having HIV disease and who were sexually active for a sample size of 135. HIV status was assessed by asking participants whether they have ever been told they had HIV disease or AIDS. Being sexually active is defined as having had sex in the past 12 months. All study procedures were reviewed and approved by the University of Washington Institutional Review Board.

Measures

Outcome variable. The number of SRBs participants endorsed as occurring during the past 12 months was calculated. The measure of SRBs (Wen et al., 2012) included treatment for a sexually transmitted disease, giving or receiving money or drugs in exchange for sex, having anal sex without condom, and intravenous drug use within the past 12 months. The composite score ranges from 0 (*no SRB*) to 4 (*all four types of SRBs*).

Sexual minority stigma. Internalized sexual minority stigma was assessed by a five-item scale modified from the Homosexual Stigma Scale (Liu, Feng, & Rhodes, 2009). Participants were asked to rate to what extent they agreed, for example, that they had tried to not be LGB or T, they felt that being LGB or T is a personal shortcoming, with a 4-point Likert-type scale (1 = *strongly disagree* and 4 = *strongly agree*). Items were averaged, and higher scores indicated greater levels of internalized stigma (Cronbach's $\alpha = .78$). To measure enacted sexual minority stigma in health settings, participants were asked how many times (0 [*never*] to 3 [*three or more*]) in their lives they

perceive that they had been denied or provided inferior health care due to their sexual or gender identity.

Lack of routine health care utilization. Lack of routine health care utilization and time since last routine checkup were measured by asking participants “about how long has it been since you last visited a doctor for a routine checkup? A routine checkup is a general physical exam, not an exam for a specific injury, illness, or condition.” Responses were *within past 1 year* (=1), *within past 2 years* (=2), *within past 5 years* (=3), *5 or more years ago* (=4), and *never* (=5).

Perceived stress. Perceived stress was measured using the 4-item Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983), which assesses the degree to which participants appraise life situations as being stressful during the past month. We calculated averages of the four items, and the summary score ranges from 0 to 4, with higher scores indicating greater levels of perceived stress (Cronbach’s $\alpha = .78$).

Background characteristics. Background characteristics included age (in years), sexual identity (gay vs. bisexual), household income ($\leq 200\%$ of federal poverty level (FPL)[1] vs. $>200\%$ FPL [0]), education (high school or less [1] vs. some college or more [0]), race/ethnicity (non-Hispanic White vs. Other), relationship status (married/partnered vs. other), and having children; the number of chronic conditions was determined by whether participants had ever been diagnosed by a physician with any of the following conditions: high blood pressure, high cholesterol, heart attack, angina, stroke, cancer, asthma, arthritis, or diabetes (range = 0-9); HIV progression was measured by asking participants whether they had been diagnosed with AIDS; and time since HIV diagnosis (in years) was calculated by subtracting the year of HIV diagnosis from the survey year.

Analysis

Data analyses were conducted using STATA/IC for Windows (Version 11.2). Proportions, means, and standard deviations (*SDs*) were calculated to describe the distributions of background characteristics and main study variables. Pearson’s correlations were computed to assess the bivariate relationships between internalized sexual minority stigma, enacted sexual minority stigma in health settings, lack of routine health care utilization, and SRBs. We conducted a hierarchical linear regression analysis adjusting for key background characteristics (age, education, income, relationship status,

Table 1. Distributions of Background Characteristics Among Sexually Active Gay and Bisexual Older Men With HIV Disease.

	Percent/M (SD)
Age (years), <i>M</i> (<i>SD</i>)	62.36 (7.34)
Sexual identity, gay %	95.49
Education, high school or less, %	9.63
Income, 200% poverty, %	31.30
Race/ethnicity, White, %	89.39
Married/partnered, %	48.15
Children, %	12.78
HIV progression to AIDS, %	38.52
Chronic conditions, <i>M</i> (<i>SD</i>)	1.64 (1.50)
Time since HIV diagnosis <i>M</i> (<i>SD</i>)	17.4 (7.22)

Note. *SD* = standard deviation.

chronic conditions, and HIV progression) to test the influence of internalized stigma on SRBs and the mediating role of lack of routine health care utilization and perceived stress. Internalized stigma was included in Model 1; in Model 2, lack of routine health care utilization was added to Model 1; in Model 3, perceived stress was added to Model 1; and Model 4 entered both mediators. Last, we conducted a similar hierarchical linear regression analysis, in which enacted stigma in health settings is tested as an independent variable. The indirect effects of lack of routine health care utilization and perceived stress were tested using the Sobel–Goodman test (Mackinnon, Warsi, & Dwyer, 1995). There were no multicollinearity issues detected in the regression models.

Results

Among 226 G/B older men with HIV disease in the parent study, 60% (*n* = 135) had been sexually active during the past year. Background characteristics are described in Table 1. The average age was 62.36 years (*SD* = 7.34 years) with a range of 50 to 86 years. About 41% were 65 years and older. The majority (95%) were gay, with 5% identifying as bisexual. Although most participants (90%) reported that they received 2 years or higher of college education, nearly a third (31%) earned household incomes at or below 200% of the FPL the previous year. Eighty-nine percent were non-Hispanic White. Slightly less than a half (48%) were married/partnered, and 13% reported having children. Nearly 40% had HIV disease that had progressed to

Table 2. Descriptive Statistics and Pearson's Correlations of Key Study Variables.

	M (SD)	Correlations				
		(1)	(2)	(3)	(4)	(5)
(1) Internalized sexual minority stigma	1.50 (0.59)	1.00				
(2) Enacted sexual minority stigma in health settings	0.38 (0.82)	.16	1.00			
(3) Lack of routine health care utilization	1.21 (0.72)	.25**	-.08	1.00		
(4) Perceived stress	1.26 (0.84)	.37***	.33***	.22*	1.00	
(5) SRBs	0.81 (0.86)	.28**	.26**	.29***	.26**	1.00

Note. SRB = sexual health risk behavior.

* $p < .05$. ** $p < .01$. *** $p < .001$.

AIDS, and the average time since HIV diagnosis was 17.4 years ($SD = 7.22$ years, range = 1-30 years). The average number of chronic conditions was 1.64 ($SD = 1.50$, range = 0-7).

Associations Between Key Study Variables

Table 2 illustrates distributions of key study variables and zero-order correlations. We found one third of those (33%) in this study had engaged in one of the defined risk behaviors in the past year, while approximately 23% engaged in two or more. The mean degree of participants' involvement in SRB was 0.81 ($SD = 0.86$, range = 0 to 4). The degree of SRB was significantly and positively associated with internalized sexual minority stigma, enacted sexual minority stigma in health settings, lack of routine health care utilization, and perceived stress. The correlates of SRB were significantly associated with each other with two exceptions; the associations between internalized stigma and enacted stigma and between lack of routine health care utilization and enacted stigma were not significant.

Predictors of SRBs

We used a hierarchical regression analysis to test the influence of internalized sexual minority stigma on SRB and the possibilities of mediating effects of lack of routine health care utilization and perceived stress while controlling for background characteristics (Table 3). In Model 1, internalized stigma ($\beta = .265$, $p = .004$) was a significant predictor of SRB, and the regression model

Table 3. The Results of Hierarchical Regression Analysis of Internalized Stigma, Lack of Routine Health Care Utilization, and Perceived Stress on Sexual Health Risk Behaviors.

	Model 1		Model 2		Model 3		Model 4	
	β	p	β	p	β	p	β	p
Age	-.116	.200	-.099	.260	-.057	.533	-.054	.543
Education, High School or less	.077	.394	.060	.498	.053	.552	.041	.640
Income, 200% poverty or less	-.073	.427	-.095	.291	-.141	.137	-.155	.095
Married/partnered	.027	.764	.060	.489	.044	.619	.077	.372
HIV progression	.010	.909	.018	.837	-.018	.836	-.012	.891
Chronic conditions	.085	.339	.084	.330	.049	.579	.047	.586
Internalized stigma	.265	.004	.205	.023	.190	.045	.137	.144
Lack of routine health care utilization	—	—	.254	.005	—	—	.233	.009
Perceived stress	—	—	—	—	.250	.018	.220	.034
ΔR^2	—	—	.058	.005	.041	.018	.090	.002
R^2	.114	.040	.172	.004	.156	.008	.204	.001
Adjusted R^2	.062		.116		.100		.143	—

Note. β = standardized coefficient.

accounted for 11% of the variance in SRB ($p = .040$). However, when lack of routine health care utilization was added to the model (Model 2), the coefficient of internalized stigma decreased to .205. The Sobel–Goodman test indicates that the mediation effect via lack of routine health care utilization was significant (Sobel: $p = .051$; Goodman: $p = .044$) with about 23% of the total effect of internalized stigma on SRB being mediated. When perceived stress was added to Model 1, the coefficient of internalized stigma decreased to .190. The mediation effect of perceived stress was significant (Sobel: $p = .035$; Goodman: $p = .032$) with about 30% of the total effect being mediated. In the final model (Model 4), both lack of routine health care utilization ($\beta = .233$, $p = .009$) and perceived stress ($\beta = .220$, $p = .034$) were independently and significantly associated with SRB, and the addition of lack of routine health care utilization and perceived stress to the regression model increased the explained variance in SRB by 9% ($p = .002$). In the final model, 20% of the variance in SRB was accounted for by the study variables ($p < .001$).

We also tested whether the relationship between enacted sexual minority stigma in health settings and SRB is explained by lack of routine health care utilization and perceived stress while controlling for background characteristics. Looking at Model 1 in Table 4, we find that enacted stigma is positively associated with increased numbers of SRBs ($\beta = .299$, $p = .002$). When lack of routine health care utilization (Model 2) and perceived stress (Model 3) were added to the regression model, enacted stigma remained significant, and the Sobel–Goodman test indicates that there were no mediation effects. In Model 4, enacted stigma ($\beta = .293$, $p = .001$) and lack of routine health care utilization ($\beta = .300$, $p < .001$) were significant predictors of SRB, but perceived stress was not. The total proportion of variance in SRBs explained by the final model was 25% ($p < .001$).

Discussion

The purpose of this study was to examine the association of sexual minority stigma on SRBs in a sample of sexually active G/B men living with HIV disease. The mean age of participants was 62.36 years, which is older than many of the published aging and HIV studies. A sizable proportion (60%, $n = 135$) of the 226 older, HIV-positive men are sexually active. Nearly a third of sexually active G/B men with HIV disease are engaged in a SRB, and more than a fifth are engaging in multiple SRBs.

Overall variables in the study related to each other as anticipated with two exceptions. Internalized and enacted stigma was not significantly associated. In this study, enacted stigma was focusing on health care providers. It may be possible that the experiences of enacted stigma were not internalized as might

Table 4. The Results of Hierarchical Regression Analysis of Enacted Stigma, Lack of Routine Health Care Utilization, and Perceived Stress on Sexual Health Risk Behaviors.

	Model 1		Model 2		Model 3		Model 4	
	β	p	β	p	β	p	β	p
Age	-.128	.157	-.087	.307	-.057	.529	-.047	.589
Education, High School or less	.101	.263	.062	.469	.065	.461	.041	.631
Income, 200% poverty or less	-.065	.485	-.083	.340	-.134	.155	-.132	.143
Married/partnered	.066	.470	.113	.193	.074	.404	.118	.169
HIV progression	-.075	.419	-.067	.439	-.086	.344	-.079	.358
Chronic conditions	.006	.950	-.006	.947	-.016	.861	-.025	.770
Enacted stigma	.299	.002	.337	<.001	.241	.011	.293	.001
Lack of routine health care utilization	—	—	.336	<.001	—	—	.300	<.001
Perceived stress	—	—	—	—	.264	.009	.185	.060
ΔR^2	—	—	.106	<.001	.050	.009	.129	<.001
R^2	.125	.026	.231	<.001	.172	.004	.254	<.001
Adjusted R^2	—	—	.178	—	.115	—	.196	—

Note. β = standardized coefficient.

be expected. There was no significant association between lack of health care utilization and enacted stigma. Although the direction of the relationship was as expected, lack of health care utilization was specific to routine health care, not exams for a specific injury or condition. One possible explanation is that routine health care is infrequent enough to not result in high levels of enacted stigma.

Our findings raise important concerns regarding SRB in this population. Nearly one quarter of the men in the study engaged in two or more SRBs in the past 12 months. Engaging in SRBs may have deleterious effects for both the HIV-positive older person as well as sexual partners. Unprotected sex can place the HIV-positive person at risk for contracting secondary infections such as syphilis, gonorrhea, or different strains of HIV that can serve to accelerate HIV disease (Crepaz & Marks, 2002) and may lessen the effectiveness of ART (Kalichman et al., 2011). Considering the prevalence of late diagnosis of HIV among older adults and increased mortality and morbidity among HIV-positive older people (Centers for Disease Control and Prevention, 2013a), engaging in sexual risk behaviors is a serious threat to one's health and well-being.

Our findings reinforce the need for more aggressive and improved primary and secondary HIV prevention strategies targeting older G/B men. Primary prevention efforts aimed at this population continue to be important while our findings also reinforce the need to further develop secondary prevention strategies. It will be important to move this newer strategy for HIV prevention toward increased focus on older G/B men living with HIV. In addition, these findings point to the need to better identify potentially modifiable factors that could reduce SRB in this population as well as pilot interventions related to the reduction of SRB.

Our first hypothesis posited that elevated levels of internalized sexual minority stigma and enacted sexual minority stigma in health care settings are positively associated with increased SRB. Both these hypotheses were supported. These findings reinforce the important impact of both internalized stigma processes as well as more interpersonal process such as prejudice and discrimination in increasing SRB in this population.

Our second hypothesis, that the relationship between internalized sexual minority stigma and increased SRB would be mediated by lack of routine health care utilization and elevated levels of stress after controlling for covariates, was supported. Lack of routine health screening and fear of accessing services may lessen older G/B men's willingness to access needed support, education, and dialogue to prevent sexual risk behavior. The importance of routine health care, particularly for people living with HIV, cannot be overemphasized. Our findings parallel those of other researchers extending

findings to older G/B men living with HIV. For example, Horstmann, Brown, Islam, Buck, and Agins (2010) found people living with HIV who are not retained in HIV care have an increased likelihood of SRBs, while Metsch and colleagues (2008) found HIV-positive adults who were enrolled in routine medical care for more than 12 months had significantly lower odds of engaging in SRB. Perceived stress, like internalized stigma, is an intrapersonal and psychological construct, and it is possible that stress associated with engaging a health care system that one does not believe to be LGBT friendly can serve as a barrier to care and result in elevated rates of SRB. More research is needed to better understand the mechanisms between stress and sexual risk behaviors.

This finding suggests important implications for developing and refining SRB reduction interventions. Increasing health care utilization and alleviating stress among G/B older men with HIV disease are crucial to reduce and prevent engagement in SRBs. To this end, the influence of internalized sexual minority stigma on lack of health care utilization and stress should not be ignored. As previous studies show, consequent fear of discrimination related to internalized sexual minority stigma may present obstacles to accessing routine health care utilization (Dibble et al., 2007). Internalized sexual minority stigma has also been associated with higher levels of perceived stress in sexual minority populations (Guerrero et al., 2012).

With reference to our third hypothesis, although the mediation hypothesis was not supported, enacted stigma in health care settings and routine health care utilization had independent influences on SRB. Why we found no relationship between enacted stigma in health care setting and routine health care utilization is unclear. One possibility is that due to the nature and severity of HIV, G/B men living with HIV recognize the need to routinely access health care, even in the face of enacted stigma in health care settings to manage their illness. Lack of routine health care utilization prevents older G/B men with HIV disease from obtaining information regarding SRB and its probable influence on their health and motivation for avoiding SRB (National LGBT Health Education Center, 2013). Furthermore, enacted sexual minority stigma may hinder older G/B men from gaining such information even when they do use services. Enacted stigma could occur when health providers are ignorant of specific needs of G/B men with HIV disease.

Health care studies targeting racial and ethnic minority populations found that experiences of discrimination in health settings prevented individuals from building trust with their physicians (Hausmann, Kwoh, Hannon, & Ibrahim, 2013). Similarly, older G/B men with HIV disease who experience discrimination may not rely on information obtained from their health care provider. Future research needs to examine the role of trust in the relationship

with health providers in the mechanism between enacted sexual minority stigma and SRBs. More research is needed to better understand the intersection of both sexual minority stigma and HIV stigma in this population to determine the individual as well as collective impact of stigma on SRB (Wohl et al., 2013). Future research needs to examine the independent contribution and the cumulative risk associated with sexual minority stigma and HIV-related stigma to sexual risk behaviors among older G/B men, as well as examine the impact of any intersection of these two stigmas.

Limitations

Although this study successfully recruited older, HIV-positive, G/B men from 11 sites throughout the United States, there are limitations to this study. First, because participants were recruited through LGBT aging services, these individuals may be more connected to service agencies than others in this population. It is possible that older HIV-positive G/B men who are not associated with social service agencies may be more socially isolated and report sexual activity and risk behavior differently. In this study, we did find that the mean scores on several of the risk factors were relatively low, and it may be that those recruited through such agencies have lower stigma and stress and more health care utilization than those not in the study. It may also be that among those living with HIV that their stigma associated with their sexual identity and related stress is reduced in part through their service and community connections. In addition, many of the key measures, including experiences of enacted stigma in health care settings are self-reported. Future research should seek to incorporate more objective measures. Therefore, caution should be taken in transferring knowledge from this study to populations of older G/B men who are not linked to aging service organizations. The majority of respondents were White and our findings may not sufficiently address the intersection with racial/minority stress. Because of the sample size, we were unable to include more complex modeling that may have explained additional variance. Finally, because the parent study focused on LGBT older adults in general, HIV-specific data on important constructs such as HIV stigma could not be collected, which will be important to explore in future research.

Conclusion

Due to the success of ART, we will continue to see growing numbers of older adults living with HIV, and the high proportion of older G/B men will likely continue. Our findings, like those from previous research, suggest that a

proportion of older HIV-positive adults continue to be sexually active and engage in sexual risk behaviors. Thus, the continued improvement of primary and secondary prevention strategies for older G/B men is critical to improved public health. The relationships between intrapersonal and psychological processes such as stress and internalized stigma, and how they interact with behavioral processes, such as utilization of health care, and interpersonal processes, including enacted stigma, will need to continue to evolve in the coming years. How society views and accepts older adults who are sexual minorities and living with HIV and the societal influence of public policy need to remain key public health issues to support the treatment and prevention of HIV among older adults.

Authors' Note

The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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