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Research Article

Race/Ethnicity and Health-Related Quality of Life Among LGBT Older Adults

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Abstract

Purpose of the Study: Few existing studies have addressed racial/ethnic differences in the health and quality of life of lesbian, gay, bisexual, and transgender (LGBT) older adults. Guided by the Health Equity Promotion Model, this study examines health-promoting and health risk factors that contribute to racial/ethnic health disparities among LGBT adults aged 50 and older.

Design and Methods: We utilized weighted survey data from Aging with Pride: National Health, Aging, and Sexuality/Gender Study. By applying multiple mediator models, we analyzed the indirect effects of race/ethnicity on health-related quality of life (HRQOL) via demographics, lifetime LGBT-related discrimination, and victimization, and socioeconomic, identity-related, spiritual, and social resources.

Results: Although African Americans and Hispanics, compared with non-Hispanic Whites, reported lower physical HRQOL and comparable psychological HRQOL, indirect pathways between race/ethnicity and HRQOL were observed. African Americans and Hispanics had lower income, educational attainment, identity affirmation, and social support, which were associated with a decrease in physical and psychological HRQOL. African Americans had higher lifetime LGBT-related discrimination, which was linked to a decrease in their physical and psychological HRQOL. African Americans and Hispanics had higher spirituality, which was associated with an increase in psychological HRQOL.

Implications: Findings illustrate the importance of identifying both health-promoting and health risk factors to understand ways to maximize the health potential of racially and ethnically diverse LGBT older adults. Interventions aimed at health equity should be tailored to bolster identity affirmation and social networks of LGBT older adults of color and to support strengths, including spiritual resources.

Keywords: Health disparities, Sexual identity, Racial and ethnic minority, Latino, Black

A growing body of evidence indicates that lesbian, gay, bisexual, and transgender (LGBT) adults, aged 50 and older, experience disparities in health and well-being when compared with heterosexual peers (Fredriksen-Goldsen, Kim, Barkan, Muraco, & Hoy-Ellis, 2013). Race/ethnicity is known to be a significant determinant of health disparities among older adults in general, particularly among African Americans and Hispanics (Ng et al., 2014; Villa, Wallace, Bagdasaryan, & Aranda, 2012). However, our understanding of the role of race/ethnicity in the health and well-being of LGBT older adults remains limited. LGBT and racial/ethnic identities are distinct yet intersecting because both serve as dimensions of social stratification that impact one's ability to achieve health (Cronin & King, 2010). Experiences of racial/ethnic identity also mutually shape and are informed by experiences of sexuality and gender across the life course (Mullings & Schulz, 2006). Our knowledge of health and social inequities among

LGBT older adults has been derived from largely non-Hispanic White samples ignoring racial/ethnic disparities in this population. In this study, we examine how racial/ethnic differences in health-promoting and health risk factors are associated with physical and psychological health-related quality of life (HRQOL) of African American, Hispanic, and non-Hispanic White LGBT older adults.

According to the Health Equity Promotion Model (HEPM; Fredriksen-Goldsen et al., 2014), health equity is defined as the attainment of full health potential. Many health disparity studies have highlighted deficit-focused models accounting for health problems. The HEPM further extends this conceptualization by incorporating health-promoting and health risk factors common across diverse populations as well as unique to LGBT individuals as they relate to the full spectrum of health and quality of life. In addition, this model suggests that LGBT older adults may have different configurations of risks and resources due to heterogeneous social positions, including race/ethnicity. Living as both racial/ethnic and sexual minorities may create both challenges and benefits for older adults. Holding multiple marginalized social positions in society may create heightened risks of social exclusion and difficulties securing health-promoting resources, such as socioeconomic and social resources as well as positive identity appraisal. Still, African American and Hispanic LGBT older adults can maximize resources and optimize well-being by adapting protective cultural norms and values from racial/ethnic minority communities. In this paper, we utilize the HEPM to identify health-promoting and health risk factors potentially contributing to racial/ethnic differences in HRQOL of LGBT older adults.

The HEPM posits that within the historical context of social exclusion, LGBT older adults have often faced historical and environmental risks. For example, they may have experienced LGBT-related discrimination (i.e., covert or overt actions that prevent LGBT individuals from social, economic, housing, and political opportunities) and victimization (i.e., intentional physical, verbal, or psychological abuse) attributed to their sexual and/or gender identities (Fredriksen-Goldsen et al., 2014). These adverse experiences have been found to be significant predictors of poorer physical and mental HRQOL among LGBT adults aged 50 and older (Fredriksen-Goldsen, Kim, Shiu, Goldsen, & Emlet, 2015). As the HEPM suggests, LGBT individuals may have dissimilar levels of LGBT-related discrimination and victimization experiences in part due to their intersecting social positions, including race/ethnicity. It has been argued that LGBT people of color may face heterosexism and nonacceptance within their own racial/ethnic communities and the dominant society (Harper, Jernewall, & Zea, 2004). A previous study, for example, found that Hispanic LGBT older adults were at elevated risk of poor mental health compared with their non-Hispanic White peers, in part due to more frequent experiences of lifetime LGBT-related discrimination (Kim & Fredriksen-Goldsen, 2016). As higher prevalence of ongoing day-to-day discrimination among racial/ethnic minorities has been documented (Barnes, Mendes De Leon, Wilson, Bienias, Bennett, & Evans, 2004), LGBT older adults of color may be exposed to heightened risks of such adverse ongoing experiences due to doubly marginalized social positions. Still, few empirical studies have investigated the relationship between race/ethnicity, day-to-day discrimination, and HRQOL among LGBT older adults.

Socioeconomic resources, including income and education, are strong predictors of health of older adults (Yao & Robert, 2008), with large population-based studies indicating that African American and Hispanic older adults experience lower income and educational attainment when compared with non-Hispanic Whites (Bratter & Gorman, 2011; Brown, O'Rand, & Adkins, 2012). Among LGBT older adults, income is significantly associated with physical and mental HRQOL (Fredriksen-Goldsen et al., 2015), but the role of socioeconomic resources by race/ethnicity has rarely been investigated. According to the 2010 American Community Survey (ACS), African American and Hispanic adults in same-sex couples reported higher rates of poverty than non-Hispanic White counterparts (Badgett, Durso, & Schneebaum, 2013). A similar pattern was found in a community-based survey of LGBT adults aged 50 and older; Hispanic LGBT older adults are more likely than non-Hispanic Whites to live in poverty and have lower levels of educational attainment, factors which in turn are linked to poor mental health (Kim & Fredriksen-Goldsen, 2016).

In the HEPM, sexual and gender identity appraisal are considered psychological processes that may be associated with HRQOL among LGBT older adults. Building upon the sexual minority identity model (Mohr & Kendra, 2011), we conceptualize identity appraisal as the self-assessment of sexual or gender identity, consisting of two components: identity stigma and identity affirmation. Identity stigma refers to negative internalized feelings, such as shame or embarrassment, related to one's identity, whereas identity affirmation reflects positive feelings of pride, comfort, or fulfillment related to one's identity. To date, the majority of studies have focused on the negative effect of identity stigma on mental health problems (Newcomb & Mustanski, 2010), yet it is important to note that identity affirmation is a relevant dimension of identity and a significant predictor of mental HRQOL among LGBT older adults (Fredriksen-Goldsen et al., 2015). Currently data on the relationship between race/ethnicity and identity appraisal are limited and inconclusive. Due to insufficient sample sizes, racial/ethnic minorities are often collapsed into a single group, and identity-related processes of different racial/ethnic groups are rarely investigated. One study found that levels of internalized stigma are similar between racial/ethnic minorities and non-Hispanic Whites among lesbian, gay, and bisexual adults (Moradi et al., 2010). Another study found that African American and Hispanic lesbians are less likely than their White counterparts to disclose their sexual

identity, especially to families and religious communities (Parks, Hughes, & Matthews, 2004), which may reflect marginalization of sexual minorities within racial/ethnic communities and lower levels of identity affirmation.

Spiritual resources, associated with better well-being of older adults (Lawler-Row & Elliott, 2009), tend to be higher among African American and Hispanic older adults than non-Hispanic Whites (Chatters, Nguyen, & Taylor, 2013). Yet, few studies have explored spiritual resources among LGBT older adults. Attending religious or spiritual activities may place them at risk of negative homophobic experiences, and conflicts between sexual identity development and religion may lead them to dissociate from religious activities (Beagan & Hattie, 2015). Equally important, some LGBT older adults report receiving emotional and instrumental support from religious activities and communities (Brennan-Ing, Seidel, Larson, & Karpiak, 2013) by concealing their identities or participating in "gay-positive" religious institutions (Levy, 2012). One study found that spirituality enhances resilience among Black lesbian, gay, and bisexual adults, even in the presence of internalized stigma (Walker & Longmire-Avital, 2013) while no research, to our knowledge, has explored these associations among transgender, or gender minority, older adults.

Social resources are important predictors of health among older adults generally (Cornwell & Waite, 2009) as well as among LGBT older adults (Fredriksen-Goldsen et al., 2015). For racial and ethnic minorities, however, sexual minority identities may limit sources of social support (Arreola, Ayala, Diaz, & Kral, 2013; Woody, 2014). One qualitative study of Black lesbians (Bowleg, Huang, Brooks, Black, & Burkholder, 2003) found that friends and partners were primary sources of social support whereas family support was more available when participants concealed their sexual identity. As sexual minority adults of color are also more likely to conceal their sexual identity among family (Moradi et al., 2010), such circumstances may limit the social support they receive. Although partnership status appears to be similar across racial/ethnic LGBT groups (Gates, 2012), one study found that Black and Latino sexual minority adults have smaller social networks than Whites, although the degree of connectedness to sexual minority communities did not differ (Meyer, Schwartz, & Frost, 2008).

This study investigates health-promoting and health risk factors accounting for racial/ethnic differences in physical and psychological HRQOL between African American, Hispanic, and non-Hispanic White LGBT older adults. In terms of health-promoting and health risk factors, we consider lifetime LGBT-related discrimination and victimization, day-to-day discrimination, and socioeconomic, identity-related, spiritual, and social resources. Based on the previous literature, we hypothesize that (i) African American and Hispanic LGBT older adults, compared with non-Hispanic Whites, will have higher levels of lifetime LGBT-related discrimination and victimization as well as day-to-day discrimination; fewer socioeconomic, identity-related and social resources; yet, higher spiritual resources and (ii) race/ethnicity and physical and psychological HRQOL will be indirectly associated via health-promoting and health risk factors (mediators).

Design and Methods

We conducted a cross-sectional analysis using 2014 survey data from the longitudinal study, Aging with Pride: National Health, Aging, and Sexuality/Gender Study (NHAS) of adults aged 50 and older, who self-identified as lesbian, gay, bisexual, or transgender or were engaged in same-sex sexual behavior or a romantic relationship with someone of the same sex or gender. Participants were recruited from across all U.S. census divisions using contact lists of organizations providing LGBT aging services as well as via social network clustering chain referral to further reach underrepresented subgroups, including racial/ethnic minorities. The sample for the longitudinal study (N = 2,450) was established according to stratification goals by cohort, gender, race/ethnicity, and geographic location. Self-administered surveys were distributed in the Fall of 2014 by mail or online according to participant's preference and available in either English or Spanish. All study procedures were approved by the Human Subjects Division of the University of Washington. This study included participants who self-identified their race/ethnicity as non-Hispanic White (unweighted n = 1,902), non-Hispanic African American or Black (unweighted n = 218), and Hispanic (unweighted n = 168).

In order to reduce sampling bias and increase the generalizability of the findings, we applied survey weights to statistical analyses. Survey weights were computed utilizing three external probability samples' data as benchmarks following two-step postsurvey adjustment, as has been applied to other types of nonprobability samples (Lee, 2006; Lee & Valliant, 2009). In the first step, the Aging with Pride: NHAS sample was combined with the National Health Interview Survey (NHIS) sample ascertaining sexual orientation by sexual identity, and we computed the probability of being selected from the NHIS versus the Aging with Pride: NHAS sample by using a logistic regression model with age, sex, sexual orientation, Hispanic ethnicity, race, education, region, and house ownership as covariates. In the second step, we further calibrated the weights for those in same-sex partnerships, another indicator of sexual orientation. The population totals by age, race/ethnicity, gender, education, marital status, and region were estimated from the NHIS, the ACS, and the Health and Retirement Study. See Fredriksen-Goldsen and Kim (2017) for detailed information regarding the postsurvey adjustment procedures.

Measures

Outcome variables

The physical health and psychological domains of WHO Quality of Life-BREF (Bonomi, Patrick, Bushnell, & Martin, 2000) were used to measure HRQOL. For the assessment of physical HRQOL, participants were asked to rate seven items including vitality, mobility, pain, dependence on medical treatment, satisfaction with sleep, daily living activities, and work capacity (α = .85). For the assessment of psychological HRQOL, the psychological domain asked participants to rate six items including positive and negative affect, body image acceptance, self-esteem, concentration, and personal beliefs (α = .85). A summary score was calculated for each domain as recommended (World Health Organization, 2004). Summary scores ranged from 0 to 100, with a higher score indicating better quality of life.

Lifetime LGBT-related discrimination and victimization

We assessed five types of discrimination (e.g., employment, housing, and health care) and nine types of victimization (e.g., verbal and physical threat, verbal, physical, and sexual assault, property damage, threat of being outed) related to one's LGBT identities (Fredriksen-Goldsen & Kim, 2017). Participants were asked to report how many times in their life they had experienced each type of discrimination or victimization because they were, or were perceived to be LGBT on the scale of never (= 0) to 3 or more times (= 3). The range of the summed scores for LGBT-related discrimination was from 0 to 15 and for LGBT-related victimization was 0 to 27 (α = .77 and α = .85, respectively).

Day-to-day discrimination

We assessed six types of day-to-day discrimination (Fredriksen-Goldsen & Kim, 2017), or experiences of unfair treatment on a daily basis, such as "People suggest you are inferior to others" (α = .91). Moderate to high levels of day-to-day discrimination was computed by coding experiencing any item a few times a year or more often, consistent with previous studies (Perez, Fortuna, & Alegria, 2008).

Socioeconomic resources

Household income was dichotomized by at or below (= 0) versus above 200% of the federal poverty level (= 1), using federal income guidelines (U.S. Department of Health and Human Services, 2013). Educational attainment was dichotomized into high school graduate or less (= 0) and some college or more (= 1).

Identity-related resources

The identity appraisal scale assessed levels of identity affirmation and stigma (Fredriksen-Goldsen & Kim, 2017). Identity affirmation included four items such as "I am proud to be LGBT" (α = .81). Identity stigma included four items such as "I feel ashamed of myself for being LGBT" (α = .83). Participants were asked to rate each item on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree); mean scores were calculated.

Spiritual resources

We measured spirituality by utilizing a 4-item spirituality scale (Fredriksen-Goldsen & Kim, 2017) to assess spiritual beliefs, meaning, and support, including such items as "I believe in a higher power or God who watches over me." Participants were asked to rate each item on a 6-point Likert scale ranging from strongly disagree (= 1) to strongly agree (= 6), with the mean score calculated (α = .93).

Social resources

A 4-item social support scale derived from the MOS-Social Support scale (Gjesfjeld, Greeno, & Kim, 2008) assessed perceived instrumental, informational, affectionate, and social interaction support. Participants were asked how often these supports were available, if needed. A 5-point Likert scale was used (never = 1; very often = 5), with higher scores indicating more social support (α = .92).

Background characteristics included age (in years), sexual identity (gay/lesbian = 1; bisexual = 2; something else = 3), and gender (female = 1; male = 0). Place of birth was measured by asking participants whether they were born in the United States (0 = US born; 1 = foreign-born).

Overview of Analyses

Data analyses were conducted using Stata/SE 14.1 (StataCorp LP, College Station, TX). To test the first hypothesis, we examined racial/ethnic differences in demographic characteristics and health-promoting and health risk factors by computing descriptive statistics (means, standard errors, and percentages) as well as conducting linear or logistic regressions, as appropriate; race/ethnicity was dummy coded with non-Hispanic Whites as the reference group. Only those demographic characteristics and health-promoting and risk factors that were significantly associated with race/ethnicity were included in the subsequent analyses examining the indirect effects of race/ethnicity on the outcome variables (physical and psychological HRQOL). As a first step toward testing the mediating effect of health-promoting and health risk factors on the relationship between race/ethnicity and HRQOL (the second hypothesis), we conducted hierarchical multiple regressions to assess associations between race/ethnicity and the outcome variables before (total effect; Model 1) and after controlling for demographic and health-promoting and health risk factors (direct effect; Model 2). Next, to further test the second hypothesis, we tested indirect effects of race/ethnicity on the outcome variables via the demographic and health-promoting and health risk factors (mediators) by applying multiple mediator model assessments (Preacher & Hayes, 2008). As Hayes (2009) suggests, the total effect of

race/ethnicity on HRQOL may be undetectable when multiple mediators with opposite signs cancel each other out; and testing indirect effects rather than testing reduction in total effects is preferable. Indirect effect coefficients (e.g., product of the coefficient of a mediator on a dummy coded race/ethnicity and the coefficient of an outcome variable on the mediator) were calculated. Significance tests of indirect effect coefficients were performed by computing bootstrap standard errors and bias-corrected confidence intervals; if the confidence interval did not contain zero, the indirect effect was considered to be statistically significant (UCLA: Statistical Consulting Group).

Results

Health-Promoting and Health Risk Factors by Race/Ethnicity

As shown in Table 1, African Americans and Hispanics were younger than non-Hispanic Whites among LGBT older adults, but distributions of sexual identity and gender were not statistically different between racial/ethnic groups. Hispanics were more likely to be foreign-born than non-Hispanic Whites.

There were significant racial/ethnic differences in health-promoting and health risk factors (Table 1). African Americans showed a higher level of lifetime LGBT-related discrimination when compared with non-Hispanic Whites, although Hispanics did not. Race/ethnicity was not associated with lifetime LGBT-related victimization or day-to-day discrimination. When compared with non-Hispanic Whites, African Americans and Hispanics had lower levels of household income, educational attainment, identity affirmation and social support, and higher levels of identity stigma and spirituality.

Mediating Effects of Health-Promoting and Health Risk Factors

We further conducted hierarchical regression analyses to examine the associations of race/ethnicity as well as potential mediators with physical and psychological HRQOL. As Model 1 in Table 2 illustrates, among LGBT older adults, African Americans and Hispanics showed lower levels of physical HRQOL than non-Hispanic Whites. The levels of psychological HRQOL were not different between the racial/ethnic groups. After entering demographic and health-promoting and health risk factors in the regression model (Model 2, Table 2), the association between race/ethnicity and physical HRQOL did not remain significant, and the association between race/ethnicity and psychological HRQOL was significant with African Americans and Hispanics having greater psychological HRQOL than non-Hispanic Whites. Income, education, identity affirmation, and social support were positively associated with both

Table 1. Comparison of Background Characteristics and Health-Promoting and Health Risk Factors by Race/Ethnicity

	Race/Ethnicity		
	Non-Hispanic White (unweighted n = 1902)	African American (unweighted n = 218)	Hispanic (unweighted n = 168)
Background characteristics			
Age, *M* (*SE*)	62.32 (0.28)	57.03 (0.54)***	59.35 (0.93)**
Sexual orientation, %			
Lesbian/Gay	74.28	65.76	69.15
Bisexual	15.60	18.8	12.01
Something else	10.12	15.43	18.84
Gender, female, %	45.25	54.8	41.38
Place of birth, Foreign born, %	3.26	4.01	41.78***
Health-promoting and health risk factors			
Lifetime LGBT-related discrimination, *M* (*SE*)	1.53 (0.10)	2.67 (0.48)*	1.58 (0.30)
Lifetime LGBT-related victimization, *M* (*SE*)	4.52 (0.19)	5.96 (0.76)	5.26 (0.83)
Day-to-day discrimination, %	53.93	53.78	55.84
Income > 200% FPL, %	79.01	39.11***	47.90***
Some college or more, %	81.37	40.66***	50.12***
Identity affirmation, *M* (*SE*)	5.24 (0.03)	4.83 (0.12)**	4.91 (0.14)*
Identity stigma, *M* (*SE*)	1.54 (0.03)	1.88 (0.11)**	1.83 (0.11)*
Spirituality, *M* (*SE*)	3.63 (0.06)	5.04 (0.14)***	4.29 (0.16)***
Social support, *M* (*SE*)	2.79 (0.04)	2.36 (0.15)**	2.45 (0.17)*

Note: FPL = federal poverty level; LGBT = lesbian, gay, bisexual, and transgender; SE = standard error; weighted estimates are presented in the table; linear or logistic regressions were performed to examine racial/ethnic differences in background characteristics and health-promoting and health risk factors with non-Hispanic White being the reference group.
*p < .05. **p < .01. ***p < .001.

Table 2. Regression Coefficients for Predictors of Physical and Psychological Health-Related Quality of Life

	Physical HRQOL	Psychological HRQOL
	b (95% CI)	*b* (95% CI)
Model 1		
Non-Hispanic White (referent)	—	—
African American	−9.29*** (−14.48, −4.10)	0.13 (−4.12, 4.37)
Hispanic	−6.64* (−12.09, −1.19)	−3.65 (−8.94, 1.63)
Model 2		
Non-Hispanic White (referent)	—	—
Hispanic	0.72 (−4.62, 6.06)	4.04* (0.19, 7.89)
African American/Black	1.24 (−4.23, 6.70)	9.03*** (4.12, 13.93)
Age	0.08 (−0.07, 0.22)	0.35*** (0.23, 0.48)
Place of birth, Foreign born	1.16 (−3.84, 6.17)	0.72 (−3.50, 4.94)
Lifetime LGBT-related discrimination	−1.11*** (−1.55, −0.68)	−0.76** (−1.27, −0.25)
Income > 200% FPL	8.23*** (4.73, 11.70)	4.44** (1.33, 7.55)
≥ Some college	6.04*** (2.15, 9.93)	5.25** (1.81, 8.69)
Identity affirmation	3.72** (1.47, 5.97)	3.12*** (1.55, 4.70)
Identity stigma	1.55 (−1.72, 3.81)	−1.31 (−2.95, 0.34)
Spirituality	−0.16 (−0.98, 0.67)	1.13** (0.41, 1.84)
Social support	3.61*** (2.31, 4.91)	5.42*** (4.32, 6.52)

Note: CI = confidence interval; FPL = federal poverty level; HRQOL = health-related quality of life; LGBT = lesbian, gay, bisexual, and transgender.
*$p < .05$. **$p < .01$. ***$p < .001$.

physical and psychological HRQOL, whereas lifetime LGBT-related discrimination was negatively associated with both. Age and spirituality were also positively associated with psychological HRQOL. Place of birth and identity stigma were not significantly associated with either outcome.

Table 3 shows the results of the indirect effects of race/ethnicity on physical and psychological HRQOL. Lower physical and psychological HRQOL among African American and Hispanic older adults compared with non-Hispanic Whites was explained in part by lower levels of income, educational attainment, identity affirmation, and social support. Lower levels of psychological HRQOL among African Americans and Hispanics compared with non-Hispanic Whites were explained in part by younger age, whereas higher levels were associated with more spirituality. In addition, among African Americans lower physical and psychological HRQOL, compared with non-Hispanic Whites, was explained in part by higher levels of lifetime LGBT-related discrimination.

Discussion

The health and quality of life of LGBT older adults of color have rarely been investigated. This study examined health-promoting and health risk factors that account for the associations between race/ethnicity and physical and psychological HRQOL. The HEPM was utilized to identify key correlates of HRQOL among LGBT older adults. The findings endorse the importance of taking racial/ethnic diversity of LGBT older adults, as emphasized by the HEPM, into consideration in explaining mechanisms of health equity and inequity.

Although nonprobability sampling was implemented due to barriers to conducting probability sampling of this hard-to-reach population, this study recruited participants across all U.S. census divisions and applied survey weights to reduce sampling bias and noncoverage to enhance generalizability. Being African American or Hispanic, when compared with non-Hispanic White, was negatively associated with physical and psychological HRQOL via fewer socioeconomic resources, lower identity affirmation, and lower social support; being African American was also indirectly associated with lower HRQOL via higher levels of LGBT-related discrimination. On the other hand, being a racial/ethnic minority was indirectly associated with better psychological HRQOL via higher levels of spirituality. Although we would expect that adverse factors and disadvantages in resources associated with multiple marginalized identities would place these groups at risk for poorer quality of life, it is equally important to understand their strengths, as identified in the HEPM, which may promote HRQOL. Overall, the findings from this study illustrate the importance of recognizing the heterogeneity of experiences by race/ethnicity of LGBT older adults, a fact that is too often overlooked given that most research samples of LGBT older adults are predominantly non-Hispanic White.

We found partial support for our hypotheses related to historical and environmental risks, particularly, lifetime LGBT-related discrimination and victimization as well as day-to-day discrimination. In this study African American LGBT older adults reported LGBT-related discrimination more often over the life span compared with their non-Hispanic White peers. Heightened homonegativity within

Table 3. Indirect Effects of Race/Ethnicity on Physical and Psychological Health-Related Quality of Life

	Physical HRQOL	Psychological HRQOL
	Path coefficient (bias-corrected 95% CI)	Path coefficient (bias-corrected 95% CI)
Indirect effect: age		
African American	−0.41 (−1.21, 0.32)	**−1.84 (−2.76, −1.13)**
Hispanic	−0.26 (−0.92, 0.16)	**−1.14 (−2.07, −0.36)**
Indirect effect: foreign born		
African American	0.01 (−0.08, 0.33)	0.01 (−0.07, 0.24)
Hispanic	0.41 (−1.32, 2.47)	0.26 (−1.25, 1.84)
Indirect effect: LGBT-related discrimination		
African American	**−1.20 (−3.00, −0.23)**	**−0.81 (−2.16, −0.16)**
Hispanic	0.01 (−0.85, 0.67)	0.01 (−0.55, 0.49)
Indirect effect: income		
African American	**−3.20 (−5.31, −1.69)**	**−1.70 (−3.33, −0.54)**
Hispanic	**−2.45 (−4.22, −1.22)**	**−1.36 (−2.69, −0.47)**
Indirect effect: Education		
African American	**−2.39 (−4.45, −0.89)**	**−2.11 (−3.89, −0.73)**
Hispanic	**−1.65 (−3.37, −0.60)**	**−1.50 (−2.94, −0.51)**
Indirect effect: identity affirmation		
African American	**−1.48 (−3.43, −0.42)**	**−1.22 (−2.39, −0.46)**
Hispanic	**−1.05 (−2.60, −0.20)**	**−0.94 (−2.21, −0.21)**
Indirect effect: identity stigma		
African American	0.46 (−0.10, 1.56)	−0.36 (−1.23, 0.04)
Hispanic	0.37 (−0.08, 1.37)	−0.33 (−1.13, 0.03)
Indirect effect: spirituality		
African American	−0.23 (−1.48, 0.98)	**1.64 (0.62, 2.90)**
Hispanic	−0.09 (−0.66, 0.40)	**0.66 (0.21, 1.41)**
Indirect effect: social support		
African American	**−1.41 (−3.03, −0.38)**	**−2.19 (−4.02, −0.55)**
Hispanic	**−1.45 (−2.97, −0.32)**	**−2.31 (−4.32, −0.59)**

Note: CI = confidence interval; LGBT = lesbian, gay, bisexual, and transgender.
Path coefficients were computed by multiplying the coefficient for a mediator (e.g., age) on a dummy coded race/ethnicity and the coefficient for an outcome variable on the mediator; non-Hispanic Whites were coded as the reference group. Reported bias-corrected 95% confidence intervals were calculated from the bootstrap results of 3,000 resamples. The confidence intervals that do not contain zero are presented in bold.

African American communities has been documented (Lewis, 2003). This study suggests that African American LGBT older adults may have faced heightened risks of discrimination in such settings as housing, employment, and health care where their intersectional LGBT and racial identities could increase their vulnerability as targets for unfair treatment. The levels of lifetime LGBT-related discrimination were similar between Hispanic and non-Hispanic LGBT older adults. This finding is not consistent with an earlier study of English-speaking Hispanic LGBT older adults which showed higher levels of LGBT-related discrimination compared with non-Hispanic Whites (Kim & Fredriksen-Goldsen, 2016). Further research is needed to better understand complexities in LGBT-related discrimination among Hispanics. A large proportion of Hispanic participants in this study were foreign born. Avoidance of discrimination by concealing LGBT identities (Harper et al., 2004) may be more pervasive among Hispanic immigrant older adults, many of whom came of age in environments where LGBT identities were invisible and silenced.

The levels of LGBT-related lifetime victimization and global day-to-day discrimination for African Americans and Hispanics were as high as those for non-Hispanic Whites in this study. It will be important to further investigate how discrimination and victimization experiences relate directly to racial/ethnic identities, which may be instrumental to more fully understanding the interplay and impact of intersecting identities. This study, guided by the HEPM, suggests that socioeconomic resources, identity affirmation, and social support relative to discrimination and victimization are possibly stronger mediating factors accounting for heightened disadvantages in HRQOL among African American and Hispanic LGBT older adults.

As hypothesized, lower socioeconomic resources, including income and education, were reported by African American and Hispanic LGBT older adults compared with non-Hispanic Whites. Both income and education mediated the relationship between racial/ethnic minority status and poorer physical and psychological HRQOL, a relationship well documented in racial/ethnic health disparities research

(Adler & Rehkopf, 2008). Some studies indicate a "Hispanic paradox" in which health and mortality of Hispanic older adults may be more similar to non-Hispanic Whites than to African Americans despite economic disparities (Palloni & Arias, 2004). One possible explanation posits that immigrants with serious health conditions often return to their countries of origin for family support (Thomson, Nuru-Jeter, Richardson, Raza, & Minkler, 2013). Although we found that more than 40% of Hispanic LGBT older adults were foreign-born, we did not observe a significant relationship between place of birth and HRQOL. Perhaps Hispanic LGBT older adults who migrate to the United States are less likely than other Hispanics to return to their country of origin, particularly if they have fewer supportive family and social ties in their country of origin given their sexual and/or gender minority identities.

Both African American and Hispanic LGBT older adults reported lower identity affirmation and higher identity stigma than non-Hispanic Whites. However, only identity affirmation significantly mediated the association between race/ethnicity and physical and psychological HRQOL. Past studies have primarily focused on identity stigma and its negative relationship to mental health, including depressive symptoms (Newcomb & Mustanski, 2010). Our finding suggests that identity affirmation may be a more important protective factor associated with HRQOL, which may help to support resilience and self-worth among African American and Hispanic LGBT older adults.

As expected, African American and Hispanic LGBT older adults reported higher levels of spiritual resources than non-Hispanic Whites, which was significantly associated with better psychological HRQOL. This finding echoes previous observations among older adults in which spirituality has been shown to have a positive impact on well-being (Lawler-Row & Elliott, 2009). One large national study of sexual minority African American adults found that spirituality as well as having no religious affiliation were associated with a higher level of overall self-rated health (Battle & DeFreece, 2014). Although this pattern illustrates, and we would expect that, the relationship between spiritual resources and health is complex and nuanced, spiritual resources as we have measured them (focusing on individual-level understanding of spirituality as opposed to formal religious activity participation or affiliation) act as a protective resource for older African American and Hispanic LGBT older adults in terms of psychological HRQOL. Thus, it is likely important to create safe environments for religious and spiritual expression, as well as supporting personal spiritual growth, in order to promote HRQOL among racial/ethnic minorities.

African Americans and Hispanics, compared with non-Hispanic Whites, had lower levels of social support, which was associated with poorer physical and psychological HRQOL. Some studies suggest that heightened levels of heterosexism and homophobia in communities of color as well as racism in LGBT communities (Harper et al., 2004) may contribute to the lack of social support available to LGBT older adults of color. Lower levels of social support in this study may also be related to limited family and spousal or partner support. Families present an important source of emotional and instrumental support among older adults generally (Merz & Huxhold, 2010), but LGBT older adults, particularly gay and bisexual older men, may experience limitations in accessing this support as they are less likely to have spouses, partners, or children (Fredriksen-Goldsen et al., 2013). LGBT adults of color may be particularly impacted as they are less likely than White counterparts to disclose their sexual orientation to their families of origin (Moradi et al., 2010). Such varied factors may limit the ability of LGBT older adults of color to access emotional support via social relationships, in turn impacting HRQOL. Future interventions should consider both community- and family-level approaches to strengthen the social resources of LGBT older adults of color, including increasing awareness and acceptance of LGBT people in communities of color, providing support to families of LGBT individuals of all ages, and promoting antiracist organizing within LGBT communities.

Although African Americans and Hispanics in the study reported poorer physical HRQOL, the association was explained after controlling for health-promoting and health risk factors, indicating that the impact of race/ethnicity on physical health is fully mediated through the specified factors. This pattern is consistent with other studies in which associations between race/ethnicity and physical health outcomes were explained by other race-based differences, such as socioeconomic status (Bratter & Gorman, 2011). Interestingly, race/ethnicity was not significantly associated with psychological HRQOL prior to controlling for health-promoting and health risk factors, and African Americans and Hispanics had higher levels of psychological HRQOL after accounting for the indirect paths including a path via spirituality. This finding suggests that there may be other unexplained factors that could lead to African Americans and Hispanics having advantages in psychological HRQOL, which may also compensate for the disadvantages due to higher LGBT-related discrimination (for African Americans), lower income and educational attainment, and lower identity affirmation and social support.

Although this is one of the first studies to investigate the health-promoting and health risk factors associated with HRQOL by race/ethnicity, there are several limitations to consider. The study was conducted using cross-sectional data, which represent one point in time. In future research, it will be important to use longitudinal data to better understand trajectories of HRQOL in this population as well as temporal relationships between variables. We would expect significant differences to emerge not only related to race/ethnicity, but also by gender and sexual identity. However, such detailed analyses are not feasible due to the size of the African American and Hispanic subsamples in this study. Additionally, the size of the African American and Hispanic

subsamples may have limited statistical power reducing the ability to detect additional differences between groups. Furthermore, this study may not address other relevant predictors of HRQOL, including biological factors. For example, the link between health-promoting and health risk factors and physical HRQOL may be mediated by physiological responses to stress, which will be important to assess in future research. Finally, although survey weights were applied to analyses, some sampling bias likely remains due to the nature of sampling within hard-to-reach populations.

Despite its limitations, this study represents an important step forward in understanding health-promoting and health risk factors associated with physical and psychological HRQOL in understudied and multiply marginalized populations and specifically among LGBT older adults of color. Such findings can inform the development of future interventions designed to improve HRQOL in this population. Recognizing identity affirmation as a significant factor in both physical and psychological HRQOL provides an opportunity to support individuals' positive identity appraisal as opposed to solely challenging sexual identity stigma. Additionally, supporting the development of personal spiritual resources and creating safe and affirming spaces for spiritual development may further promote HRQOL among LGBT older adults of color. Future interventions should be tailored to promote the development of supportive social networks available to LGBT older adults of color including close family relationships and broader and more inclusive racial/ethnic and LGBT communities.

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References

Adler, N. E., & Rehkopf, D. H. (2008). U.S. disparities in health: Descriptions, causes, and mechanisms. *Annual Review of Public Health*, **29**, 235–252. doi:10.1146/annurev.publhealth.29.020907.090852

Arreola, S. G., Ayala, G., Díaz, R. M., & Kral, A. H. (2013). Structure, agency, and sexual development of Latino gay men. *Journal of Sex Research*, **50**, 392–400. doi:10.1080/00224499.2011.648028

Badgett, M. V. L., Durso, L. E., & Schneebaum, A. (2013). New patterns of poverty in the lesbian, gay, and bisexual community. Retrieved from http://williamsinstitute.law.ucla.edu/wp-content/uploads/LGB-Poverty-Update-Jun-2013.pdf

Barnes, L. L., Mendes De Leon, C. F., Wilson, R. S., Bienias, J. L., Bennett, D. A., & Evans, D. A. (2004). Racial differences in perceived discrimination in a community population of older blacks and whites. *Journal of Aging and Health*, **16**, 315–337. doi:10.1177/0898264304264202

Battle, J., & DeFreece, A. (2014). The impact of community involvement, religion, and spirituality on happiness and health among a national sample of Black lesbians. *Women, Gender, and Families of Color*, **2**, 1–31. doi:10.5406/womgenfamcol.2.1.0001

Beagan, B. L., & Hattie, B. (2015). Religion, spirituality, and LGBTQ identity integration. *Journal of LGBT Issues in Counseling*, **9**, 92–117. doi:10.1080/15538605.2015.1029204

Bonomi, A. E., Patrick, D. L., Bushnell, D. M., & Martin, M. (2000). Validation of the United States' version of the World Health Organization Quality of Life (WHOQOL) instrument. *Journal of Clinical Epidemiology*, **53**, 1–12. doi:10.1016/S0895-4356(99)00123-7

Bowleg, L., Huang, J., Brooks, K., Black, A., & Burkholder, G. (2003). Triple jeopardy and beyond: Multiple minority stress and resilience among black lesbians. *Journal of Lesbian Studies*, **7**, 87–108. doi:10.1300/J155v07n04_06

Bratter, J. L., & Gorman, B. K. (2011). Is discrimination an equal opportunity risk? Racial experiences, socioeconomic status, and health status among black and white adults. *Journal of Health and Social Behavior*, **52**, 365–382. doi:10.1177/0022146511405336

Brennan-Ing, M., Seidel, L., Larson, B., & Karpiak, S. E. (2013). "I'm created in God's image, and God don't create junk": Religious participation and support among older GLBT adults. *Journal of Religion, Spirituality & Aging*, **25**, 70–92. doi:10.1080/15528030.2013.746629

Brown, T. H., O'Rand, A. M., & Adkins, D. E. (2012). Race-ethnicity and health trajectories: Tests of three hypotheses across multiple groups and health outcomes. *Journal of Health and Social Behavior*, **53**, 359–377. doi:10.1177/0022146512455333

Chatters, L. M., Nguyen, A. W., & Taylor, R. J. (2013). Religion and spirituality among older African Americans, Asians, and Hispanics. In K. E. Whitfield & T. A. Baker (Eds.), *Handbook of minority aging* (pp. 46–64). New York: Springer.

Cornwell, E., & Waite, L. (2009). Social disconnectedness, perceived isolation, and health among older adults. *Journal of Health and Social Behavior*, **50**, 31–48. doi:10.1177/002214650905000103

Cronin, A., & King, A. (2010). Power, inequality and identification: Exploring diversity and intersectionality amongst older LGB adults. *Sociology—The Journal of the British Sociological Association*, **44**, 876–892. doi:10.1177/0038038510375738

Fredriksen-Goldsen, K. I., & Kim, H.-J. (2017). The science of conducting research with LGBT older adults: An introduction to Aging with Pride: National Health, Aging, and Sexuality/Gender Study. *The Gerontologist*, 57, S1-S14. doi:10.1093/geront/gnw212.

Fredriksen-Goldsen, K. I., Kim, H. J., Barkan, S. E., Muraco, A., & Hoy-Ellis, C. P. (2013). Health disparities among lesbian, gay, and bisexual older adults: Results from a population-based study. *American Journal of Public Health*, **103**, 1802–1809. doi:10.2105/AJPH.2012.301110

Fredriksen-Goldsen, K. I., Kim, H. J., Shiu, C., Goldsen, J., & Emlet, C. A. (2015). Successful aging among LGBT older adults: Physical and mental health-related quality of life by age group. *The Gerontologist*, **55**, 154–168. doi:10.1093/geront/gnu081

Fredriksen-Goldsen, K. I., Simoni, J. M., Kim, H. J., Lehavot, K., Walters, K. L., Yang, J., … Muraco, A. (2014). The Health Equity Promotion Model: Reconceptualization of lesbian, gay, bisexual,

and transgender (LGBT) health disparities. *The American Journal of Orthopsychiatry*, **84**, 653–663. doi:10.1037/ort0000030

Gates, G. J. (2012). Same-sex couples in Census 2010: Race and ethnicity. Retrieved from http://williamsinstitute.law.ucla.edu/wp-content/uploads/Gates-CouplesRaceEthnicity-April-2012.pdf

Gjesfjeld, C., Greeno, C., & Kim, K. (2008). A confirmatory factor analysis of an abbreviated social support instrument: The MOS-SSS. *Research on Social Work Practice*, **18**, 231–237. doi:10.1177/1049731507309830

Harper, G. W., Jernewall, N., & Zea, M. C. (2004). Giving voice to emerging science and theory for lesbian, gay, and bisexual people of color. *Cultural Diversity & Ethnic Minority Psychology*, **10**, 187–199. doi:10.1037/1099-9809.10.3.187

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, **76**, 408–420. doi:10.1080/03637750903310360

Kim, H.-J., & Fredriksen-Goldsen, K. I. (2016). Disparities in mental health quality of life between Hispanic and non-Hispanic White LGB midlife and older adults and the influence of lifetime discrimination, social connectedness, socioeconomic status, and perceived stress. *Research on Aging*. Advance online publication. doi:10.1177/0164027516650003

Lawler-Row, K. A., & Elliott, J. (2009). The role of religious activity and spirituality in the health and well-being of older adults. *Journal of Health Psychology*, **14**, 43–52. doi:10.1177/1359105308097944

Lee, S. (2006). Propensity score adjustment as a weighting scheme for volunteer panel web surveys. *Journal of Official Statistics*, **22**, 329–349.

Lee, S., & Valliant, R. (2009). Estimation for volunteer panel web surveys using propensity score adjustment and calibration adjustment. *Sociological Methods & Research*, **37**, 319–343. doi:10.1177/0049124108329643

Levy, D. L. (2012). The importance of personal and contextual factors in resolving conflict between sexual identity and Christian upbringing. *Journal of Social Service Research*, **38**, 56–73. doi:10.1080/01488376.2011.586308

Lewis, G. (2003). Black-white differences in attitudes toward homosexuality and gay rights. *The Public Opinion Quarterly*, **67**, 59–78. doi:10.1086/346009

Merz, E. M., & Huxhold, O. (2010). Wellbeing depends on social relationship characteristics: Comparing different types and providers of support to older adults. *Ageing & Society*, **30**, 843–857. doi:10.1017/S0144686x10000061

Meyer, I. H., Schwartz, S., & Frost, D. M. (2008). Social patterning of stress and coping: Does disadvantaged social statuses confer more stress and fewer coping resources? *Social Science & Medicine (1982)*, **67**, 368–379. doi:10.1016/j.socscimed.2008.03.012

Mohr, J. J., & Kendra, M. S. (2011). Revision and extension of a multidimensional measure of sexual minority identity: The Lesbian, Gay, and Bisexual Identity Scale. *Journal of Counseling Psychology*, **58**, 234–245. doi:10.1037/a0022858

Moradi, B., Wiseman, M. C., DeBlaere, C., Goodman, M. B., Sarkees, A., Brewster, M. E., & Huang, Y. P. (2010). LGB of color and white individuals' perceptions of heterosexist stigma, internalized homophobia, and outness: Comparisons of levels and links. *Counseling Psychologist*, **38**, 397–424. doi:10.1177/0011000009335263

Mullings, L., & Schulz, A. J. (2006). Intersectionality and health: An introduction. In L. Mullings and A. J. Schulz (Eds.) *Gender, race, class, and health: An intersectional approach* (pp. 3–17). San Francisco: John Wiley & Sons.

Newcomb, M. E., & Mustanski, B. (2010). Internalized homophobia and internalizing mental health problems: A meta-analytic review. *Clinical Psychology Review*, **30**, 1019–1029. doi:10.1016/j.cpr.2010.07.003

Ng, J. H., Bierman, A. S., Elliott, M. N., Wilson, R. L., Xia, C., & Scholle, S. H. (2014). Beyond black and white: Race/ethnicity and health status among older adults. *The American Journal of Managed Care*, **20**, 239–248.

Palloni, A., & Arias, E. (2004). Paradox lost: Explaining the Hispanic adult mortality advantage. *Demography*, **41**, 385–415. doi:10.1353/dem.2004.0024

Parks, C. A., Hughes, T. L., & Matthews, A. K. (2004). Race/ethnicity and sexual orientation: Intersecting identities. *Cultural Diversity & Ethnic Minority Psychology*, **10**, 241–254. doi:10.1037/1099-9809.10.3.241

Perez, D. J., Fortuna, L., & Alegria, M. (2008). Prevalence and correlates of everyday discrimination among US Latinos. *Journal of Community Psychology*, **36**, 421–433. doi:10.1002/jcop.20221

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavioral Research Methods*, **40**, 879–891. doi:10.3758/BRM.40.3.879

Thomson, E. F., Nuru-Jeter, A., Richardson, D., Raza, F., & Minkler, M. (2013). The Hispanic Paradox and older adults' disabilities: Is there a healthy migrant effect? *International Journal of Environmental Research and Public Health*, **10**, 1786–1814. doi:10.3390/ijerph10051786

U.S. Department of Health and Human Services. (2013). Annual update of the HHS poverty guidelines. *Federal Register*, **78**, 5182–5183.

UCLA: Statistical Consulting Group. How can I do mediation analysis with a categorical IV in Stata? Retrieved from http://www.ats.ucla.edu/stat/stata/faq/mediation_cativ.htm

Villa, V. M., Wallace, S. P., Bagdasaryan, S., & Aranda, M. P. (2012). Hispanic Baby Boomers: Health inequities likely to persist in old age. *The Gerontologist*, **52**, 166–176. doi:10.1093/geront/gns002

Walker, J. J., & Longmire-Avital, B. (2013). The impact of religious faith and internalized homonegativity on resiliency for black lesbian, gay, and bisexual emerging adults. *Developmental Psychology*, **49**, 1723–1731. doi:10.1037/a0031059

Woody, I. (2014). Aging out: A qualitative exploration of ageism and heterosexism among aging African American lesbians and gay men. *Journal of Homosexuality*, **61**, 145–165. doi:10.1080/00918369.2013.835603

World Health Organization. (2004). The World Health Organization Quality of Life (WHOQOL)—BREF. Retrieved from http://www.who.int/substance_abuse/research_tools/en/english_whoqol.pdf

Yao, L., & Robert, S. A. (2008). The contributions of race, individual socioeconomic status, and neighborhood socioeconomic context on the self-rated health trajectories and mortality of older adults. *Research on Aging*, **30**, 251–273. doi:10.1177/0164027507311155