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## Racial Disparities in Health Behaviors and Conditions Among Lesbian and Bisexual Women: The Role of Internalized Stigma

Yamile Molina, PhD<sup>1,2,3</sup>, Keren Lehavot, PhD<sup>4,5</sup>, Blair Beadnell, PhD<sup>6</sup>, and Jane Simoni, PhD<sup>7</sup>

<sup>1</sup>Fred Hutchinson Cancer Research Center, Seattle, Washington

<sup>2</sup>Epidemiology and Biostatistics Division, University of Illinois–Chicago, Chicago, Illinois

<sup>3</sup>Department of Health Services, University of Washington, Seattle, Washington

<sup>4</sup>VA Puget Sound Health Care System, Seattle, Washington

<sup>5</sup>Department of Psychiatry & Behavioral Sciences, University of Washington, Seattle, Washington

<sup>6</sup>School of Social Work, University of Washington, Seattle, Washington

<sup>7</sup>Department of Psychology, University of Washington, Seattle, Washington

### Abstract

There are documented disparities in physical health behaviors and conditions, such as physical activity and obesity, with regard to both race/ethnicity and sexual orientation. However, physical health disparities for lesbian and bisexual (LB) women who are also racial minorities are relatively unexplored. Minority stressors, such as internalized stigma, may account for disparities in such multiply marginalized populations. We sought to (1) characterize inequalities among non-Hispanic white and African American LB women and (2) examine the roles of internalized sexism and homophobia in disparities. Data on health behaviors (diet, physical activity); physical health (hypertension, diabetes, overweight/obesity); internalized sexism; and internalized homophobia were collected via a web-based survey. Recruitment ads were sent electronically to over 200 listservs, online groups, and organizations serving the lesbian, gay, and bisexual community in all 50 U.S. states. The analytic sample consisted of 954 white and 75 African American LB women. African American participants were more likely than white participants to report low fruit/vegetable intake and physical activity, a higher body mass index, and a history of diabetes and hypertension. There were no racial differences in internalized homophobia, but African American women reported higher levels of internalized sexism. Internalized sexism partially mediated racial disparities in physical activity and diabetes, but not in the other outcomes. Findings suggest that African American LB women may be at greater risk than their white counterparts for poor health and that internalized sexism may be a mediator of racial differences for certain behaviors and conditions.

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Address correspondence to: Yamile Molina, PhD, 1100 Fairview Avenue N, M3-B232, Seattle, WA 98109, ymolina@fhcrc.org.

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## Keywords

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## Introduction

The health disparities impacting marginalized groups such as women<sup>1,2</sup>; racial/ethnic minorities<sup>3,4</sup>; and lesbian, gay, and bisexual (LGB)<sup>5</sup> people have been attributed to societal inequity.<sup>6,7</sup> Further, the interplay of gender, race/ethnicity, and sexual orientation and its impact on health has gained increasing attention.<sup>8,9</sup> Little research has characterized disparities that may exist within lesbian and bisexual (LB) populations or potential contributing factors. One potential contributing factor toward poorer health might be internalization of negative societal attitudes toward one's own minority group (internalized stigma).<sup>10–12</sup> This study extends the literature by examining racial disparities in physical health among a sample of non-Hispanic African and white American LB women living in the United States and assessing the potentially mediating role of two types of internalized stigmas: internalized homophobia and internalized sexism.

## Health disparities

The unequal distribution of health, called “health disparities,” has been described by Healthy People 2020 as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage,”<sup>7</sup> such as institutionalized sexism, racism, and heterosexism. Women, LGB, and African American populations have been noted to have poorer health behaviors and to be more likely to suffer from some health conditions than male, heterosexual, and white counterparts, respectively. For example, women appear to be less physically active,<sup>13</sup> have a higher prevalence of obesity,<sup>14</sup> and experience poorer prognoses if diagnosed with hypertension and diabetes than men.<sup>15,16</sup>

Health disparities have further been documented within women across sexual orientation<sup>17</sup> and race/ethnicity.<sup>18</sup> Findings on sexual orientation disparities in cardiovascular disease and diabetes have been inconsistent, with some studies indicating differences and others not.<sup>17,19–21</sup> Nevertheless, LB women report lower vegetable intake<sup>22–24</sup> and physical activity<sup>25</sup> and are more likely to report overweight/obese status<sup>26</sup> than heterosexual women. Racial/ethnic minority women (e.g., Latina, Asian American, Native American) experience poorer health than white women<sup>18</sup>; the most well-documented differences have been found between white and African American women, with African American women reporting lower vegetable intake<sup>27</sup> and physical activity<sup>28</sup> as well as greater rates of obesity,<sup>29</sup> diabetes,<sup>30</sup> and hypertension.<sup>31</sup>

The majority of health disparity research has focused on sexual orientation (with mostly white samples) or race/ethnicity (with presumably mostly heterosexual samples), without taking both sexual orientation and race/ethnicity into account. Neither African American nor LB women are homogeneous groups and vary by age, geographic region, education, and income. African American LB women may be particularly vulnerable to poorer health outcomes given the additive impact of multiple social stressors tied to their gender, race/

ethnicity, and sexual orientation as well as unique forms of oppression (e.g., gendered racism, heterosexism within communities of color).<sup>32,33</sup>

Little research has examined African American LB women's physical health behaviors and conditions or compared them with their heterosexual and/or white counterparts. Mays and colleagues found greater rates of obesity for African American LB women relative to heterosexual African American women but similar rates of hypertension, heart disease, and diabetes.<sup>34</sup> It is worthwhile to note that obesity disparities by both race and sexual orientation are well documented, whereas consistent disparities in hypertension, heart disease, and diabetes have been found by race, but not by sexual orientation. No research to date has assessed racial/ethnic differences among LB women with regard to multiple health behaviors (e.g., diet, physical activity) and conditions (e.g., hypertension, diabetes) for which LB women and/or racial/ethnic minorities appear to be particularly at risk. On the one hand, it is possible that there are racial disparities in health behaviors and conditions among LB women similar to disparities seen in the general population. Disparities in hypertension and diabetes have been well documented for African Americans but not for sexual minorities. Given these findings, African American LB women may report greater rates of diabetes and hypertension than white LB women. On the other hand, because both African American and LB women are considered vulnerable groups with respect to rates of poorer diet, physical activity, and obesity, it is possible that these racial disparities among LB women may be less pronounced. Further studies assessing heterogeneity in health among racial/ethnic and LGB populations are warranted to determine variation within and across groups.

### Internalized stigma and health

In addition to documenting health disparities, it is imperative to assess contributing factors in order to develop appropriate and effective interventions. One potential contributing factor is stigma, an "enduring condition, status, or attribute that is negatively valued by a society and whose possession consequently discredits and disadvantages an individual."<sup>35</sup> In systems of oppression (e.g., sexism, racism, heterosexism), several levels of stigma exist and may impact individual health, including institutional, interpersonal, and internalized.<sup>36</sup> For example, systemic differences in economic and access opportunities may affect the types of health-risk behaviors and conditions women disproportionately experience.<sup>37</sup> Health disparities among women by race/ethnicity and sexual orientation have also been linked to systemic stressors related to heterosexism (e.g., discriminatory policies<sup>38</sup>) and the unique and persistent racism African Americans experience (e.g., residential hyper-segregation<sup>39</sup>). Health and well-being has also been linked to interpersonal discrimination based on gender,<sup>40</sup> sexual orientation,<sup>41</sup> and race.<sup>42</sup>

Internalization of negative societal attitudes described above toward one's own minority group (internalized stigma) may also negatively impact the health behaviors and conditions of marginalized communities. The most well-studied type of internalized stigma with regard to physical health behaviors and conditions is internalized racism among African American populations. Internalized racism has been linked to obesity<sup>43,44</sup> and glucose levels, an important indicator of diabetes.<sup>45</sup> Little research has addressed internalized stigma across

racial groups of women and assessed its role in health across groups. There are at least two types of internalized stigma that apply to LB women across race/ethnicity: internalized homophobia (antihomosexual attitudes toward the self) and internalized sexism (sexist attitudes toward the self). Internalized homophobia has been empirically linked to poorer psychological outcomes<sup>46,47</sup> and greater alcohol use<sup>48</sup> among women. Similarly, internalized sexism has been found to be related to poorer mental health among LB women.<sup>11,49</sup>

Regarding differences in these forms of internalized stigma, racial/ethnic minority LGB individuals may report greater internalized homophobia, potentially because of perceived homophobia within communities of color (e.g., homosexuality as a white concept) and racial discrimination within LGB communities.<sup>50</sup> Nevertheless, available literature has reported comparable levels of internalized homophobia across racial groups.<sup>51,52</sup> This research, however, has generally focused on gay and bisexual men or has grouped several racial/ethnic minority groups together.

We are aware of no studies that have compared internalized sexism between African and white American women. Striving for traditional femininity or a set of attributes and behaviors generally associated with women (e.g., stereotypic image and activities, deference, purity, caretaking, emotionality)<sup>53</sup> may be particularly important for African American women, who face gendered racism, including stereotypes of being unattractive, aggressive, and poor at mothering.<sup>54–56</sup> This may result in a greater pressure to adhere to traditional gender norms and elevated levels of internalized sexism. Racial differences in internalized stigma and pressures to adhere to traditional cultural norms may further potentially influence decisions related to health behaviors (e.g., food, exercise) and conditions.

The present Internet study aimed to (1) investigate differences in reported health behaviors (vegetable intake, physical activity) and conditions (obesity, diabetes, hypertension) between LB African American and white women, and (2) assess the potentially mediating roles of internalized homophobia and sexism in health disparities.

## Materials and Methods

Data were collected via a web-based survey using Survey-Monkey. Fliers about the study, including a brief description and survey link, were sent electronically to approximately 200 listservs, website groups, and organizations serving the LGB community in all 50 U.S. states and the District of Columbia. Such listservs and groups were identified by searching online for key terms such as “lesbian” or “bisexual” groups in each state. Targeted advertising was used to sample LB women of color and bisexual women, with ads calling attention to these groups of women (e.g., “Seeking lesbian and bisexual women of color to participate in a study focusing on your life experiences”) being sent to online sites and listservs within these communities. Individuals following the study link were taken to an information statement that described the study’s purpose; requirements for participation (age 18 years or older; born biologically female; identification as lesbian, gay, bisexual, queer, or two-spirit; living in the United States); risks and benefits; and confidentiality. Those who agreed to participate

then completed the online survey, which took approximately 40 minutes and was followed by a listing of health resources. Participants who completed the survey could voluntarily enter a drawing to win one of five \$50 prizes. This study was approved by the Institutional Review Board at the University of Washington.

## Measures

**Demographics**—Demographic items included age, sexual orientation identity, education, and income. Racial/ethnic groups included non-Hispanic white/Caucasian, African American, Latina, Asian American, American Indian, Pacific Islander, and other race/ethnicity. For the purposes of this study, we only included women who self-identified as non-Hispanic African American or white/Caucasian.

**Fruit/vegetable intake**—Participants completed the Fruit and Vegetable section of the Food Screener,<sup>57</sup> which has been previously validated across sex as well as among white and African American samples.<sup>58,59</sup> Individuals indicated how often they ate seven foods (e.g., fruit juice, vegetable juice, green salad) with the following response categories: 0 = less than 1 a week; 1 = once a week; 2 = 2–3 times a week; 3 = 4–6 times a week; 4 = once a day; 5 = 2 or more a day. Cronbach's alpha for this scale was acceptable (0.61). Scores were dichotomized with the cut-off of 11, such that a score of < 11 indicated low fruit/vegetable intake, as has been used in previous research using this instrument.<sup>57</sup>

**Physical activity**—The International Physical Activity Questionnaire<sup>60</sup> includes six items assessing physical activity during the last 7 days (e.g., “How much time did you usually spend doing moderate physical activities?”), in terms of days per week, hours per day, and minutes per day. Continuous scores were calculated in terms of median minutes/week (metabolic energy [MET]-minutes/week). The scale has shown good validity among African American and white samples.<sup>60–62</sup> In line with official protocols (IPAQ website), individuals' scores were categorized as low (< 600 MET-min/week), moderate (600 MET-min/week), and high (3000 MET-min/week).

**Body mass index**—Body mass index (BMI) was calculated based on self-reported height and weight. BMI has been used as a reliable indicator for obesity across different racial/ethnic groups and can be examined continuously or categorically (underweight, normal, overweight, obese).<sup>63,64</sup> Preliminary findings suggested similar findings across categorical and continuous measures; to maintain simplicity, we report BMI as a continuous measure.

**Physical health conditions**—Participants were asked if they had ever been told by a doctor or other health professional if they had diabetes or hypertension (with each item scored as *yes* or *no*).

**Internalized homophobia**—The Internalized Homophobia scale<sup>65</sup> assesses the extent to which LB individuals reject their sexual orientation and are uneasy about their same-sex desires. It includes 10 items ranging on a Likert scale from 1 (never) to 4 (often). A sample item includes, “You have wished you weren't lesbian/gay/bisexual.” Previous studies have demonstrated that the scale has good internal consistency and convergent validity,<sup>66,67</sup> and

the scale's short form has been previously used with African American LGB individuals.<sup>52</sup> In our sample, Cronbach's alpha was 0.82. Scores were calculated such that greater scores indicate more internalized homophobia.

**Internalized sexism**—The Passive Acceptance subscale of the Feminist Identity Composite scale was used to measure internalized sexism,<sup>68</sup> which includes eight items reflecting a denial of sexism and an unexamined acceptance of traditional gender role stereotypes. Sample items include, “I do not want to have equal status with men” and “I don't see much point in questioning the general expectation that men should be masculine and women should be feminine,” with response categories ranging from 1 (strongly disagree) to 5 (strongly agree). This scale has been indicated as reliable and validated with multiple samples, including LB samples,<sup>11,69</sup> although we are not aware of its validation specifically with an African American sample. Cronbach's alpha for the current sample was 0.75. Scores were calculated such that greater scores indicate more internalized sexism.

### Analytic plan

Analyses were conducted using SPSS, version 20. In all analyses, we controlled for demographic variables that were significantly related to race, which were age and education. For the first hypothesis, we regressed race onto diet, physical activity, obesity, hypertension, and diabetes. We used logistic regression for all outcomes, except physical activity, for which we used ordinal regression, and BMI, for which we used linear regression. We report significance for the dummy-coded race regression estimates with whites as the referent group. For the second hypothesis, we first examined associations between internalized stigma with health behaviors and conditions. We subsequently conducted mediation tests based on associations found among race, internalized stigma, and health behaviors and conditions. In these, the effect of race predicting the mediators (internalized stigma) was labeled A; and the effect of the mediator predicting outcomes was labeled B. We used the Preacher and Hayes method to calculate the mediated effect ( $A \times B$ ), which is the effect of race predicting outcomes as mediated by stigma. This method is considered superior relative to others for testing mediation among small to moderate sample sizes.<sup>70,71</sup> This bootstrap method is a nonparametric resampling procedure that involves sampling from the data set multiple times (5,000 for this study) and generating a sampling distribution. We calculated 95% confidence intervals (95% CI) of the mediated effect as follows:

$$\frac{a \times b}{a \times b + c'}$$

Finally, we handled missing data (0.3–5% of main study variables) with listwise case deletions, which is considered an adequate manner of accommodating a relatively low percentage of missing data.<sup>72</sup>

### Results

The analytic sample included 954 self-identified white and 75 African American LB women. Table 1 provides racial differences in sociodemographic variables. When assessing



potential covariates, we found racial differences in age,  $F(1, 994) = 5.59, p = 0.02$ ; a nonsignificant trend with regard to education,  $F(1, 994) = 3.60, p = 0.06$ ; and no significant differences in income,  $F(1, 994) = 0.17, p = 0.68$ . Thus, age and education were included as covariates in all subsequent analyses, including mediation models.

Table 2 demonstrates racial differences in health behaviors and conditions, after adjusting for age and education. African American women were more likely to report low fruit/vegetable intake, the lowest level of physical inactivity, greater likelihood of diabetes and hypertension, and greater BMI.

To inform which mediation models to test, we first examined racial differences in internalized homophobia and sexism. African American women reported greater internalized sexism, but comparable levels of internalized homophobia (Table 2). Next, we assessed associations between internalized sexism and health behaviors and outcomes through linear (BMI), ordinal (physical activity), and logistic regressions (fruit/vegetable intake, diabetes, hypertension). Internalized sexism was significantly associated with physical activity,  $B = -0.2, 95\% \text{ CI } [-0.001, -0.4], p = 0.05$ , and diabetes,  $OR = 2.2, 95\% \text{ CI } [1.3, 3.7], p = 0.002$ . There was a nonsignificant trend between internalized sexism and BMI,  $B = 0.76, SE = 0.4, 95\% \text{ CI } [-0.1, 1.6], p = 0.07$ . Associations with fruit/vegetable intake and hypertension were not significant (all  $p$ -values  $> 0.05$ ).

Next, we conducted multiple mediation analyses to test if racial differences in physical activity and diabetes were mediated by internalized sexism. Findings suggested partial mediation (Table 3): African American women reported greater internalized sexism, which was associated with a greater likelihood of diabetes and lower physical activity ( $p$ -values  $< 0.05$ ).

## Discussion

This study was one of the first to examine racial disparities in health behaviors and conditions between African American and white LB women and evaluate the potential mediating role of internalized stigma. Relative to white counterparts, African American LB women reported lower fruit/vegetable intake and physical activity. They were also more likely to indicate a history of diabetes and hypertension as well as reported greater BMI. Findings from this preliminary Internet study parallel previous research findings documenting white versus African American disparities in the broader U.S. population.<sup>18</sup>

Similar to other studies,<sup>51,52</sup> we found no significant differences in internalized homophobia between racial groups. African American women in our sample did, however, report higher levels of internalized sexism. This finding is in contrast to some literature, which has suggested more flexible gender norms among African American samples.<sup>73</sup> More research is necessary, given that multiple simultaneous identities (e.g., age, geographic region) may influence gender norms, values, and practices among African Americans. Regarding our work, future research is needed to replicate this finding among LB samples. Our measure of internalized sexism focused specifically on passive acceptance of traditional gender roles and lack of awareness of sexism, rather than a belief in male superiority.<sup>68,74,75</sup> The latter is

also viewed as central to the concept of internalized sexism, and our preliminary findings suggest that more thorough assessment of this measure with multiply marginalized populations is needed. Qualitative research on internalized sexism among larger samples of African American LB women may be especially helpful, as this group may have unique manifestations of internalized sexism given their race and sexual orientation. Such work may lead to the development of tools that assess these unique forms of stigma and may allow for work that implements an intersectional perspective.

Internalized sexism partially mediated the association between race and both physical activity and diabetes in this sample. These findings are noteworthy, as previous research on internalized stigma and health (i.e., obesity, hypertension, diabetes-related conditions) has almost exclusively focused on internalized racism among international populations of African descent.<sup>43–46</sup> Internalized stigma may influence physical health through a disruption or dysregulation of biological stress pathways (e.g., cortisol<sup>12</sup>), although more research is needed to clarify the mechanisms through which the internalization of negative attitudes about one's group may impact physical well-being. Internalized stigma may further influence behavior in terms of decisions regarding diet and physical activity. Cultural norms and stereotypes have often aligned exercise and athleticism with masculinity, such that women who participate in physical activity and sports are thought to be gender atypical.<sup>76</sup> Female athletes have often been negatively described as sexual minorities because of their presumed masculine traits (e.g., athletes given the “lesbian label”).<sup>77</sup> Given this, internalized sexism and adherence to traditional gender norms may contribute to decisions to not participate in physical activity. Research that assesses under what circumstances and in what ways internalized stigma impacts physical health behaviors is needed to clarify this relationship.

Other factors that may explain health disparities for African American LB women need to be considered, given the abundant literature implicating social determinants of health and the importance of institutional factors.<sup>78–81</sup> Two systemic factors that may contribute to differences in health behaviors and conditions that were not included in the current study's models were socioeconomic status and access to healthcare. Socioeconomic factors have been implicated in the relationship between race/ethnicity and income, wherein racial/ ethnic minorities in general have lower incomes and income is a strong predictor of health.<sup>82</sup> Our initial findings found no racial differences in individual income within our sample, which may be because of convenience-based sampling methods. Given this and our relatively small sample, we did not adjust for income in analyses, although education did differ by race and was included. Future studies with larger, more diverse, and more representative samples should examine the role of multiple socioeconomic factors, including individual and neighborhood socioeconomic status.<sup>83</sup> Healthcare access factors (e.g., insurance status) and neighborhood characteristics (e.g., recreational facilities) may also have a systemic impact on adverse outcomes (e.g., obesity, diet).<sup>78</sup> African American women are more likely to live in segregated, low-income neighborhoods, which have less access to facilities and fewer opportunities for exercise.<sup>82</sup> African Americans additionally have lower rates of insurance and source of usual care compared with white Americans, as well as lower quality of care once in the healthcare system.<sup>18,82</sup> Lower access to care has also been noted for LGB individuals relative to heterosexual populations and has been suggested to be particularly



poor for ethnic minorities who identify as LGB.<sup>84</sup> Further research that addresses the residence and systemic factors influencing African American LB women is warranted to understand their contributions to health disparities across race and sexual orientation.

Our work suggests that development, implementation, and dissemination of stigma reduction programs for African American LB women may be associated with physical health benefits. Programs may consider focusing on gender values and resulting health behavior and condition consequences in an effort to reduce internalized sexism as well as other forms of internalized stigma (racism, homophobia). Furthermore, interventions may target not only individuals but also communities, systems, and policies. For example, stigma reduction programs may incorporate reduction of internalized stigma among LB women as well as target reduction of interpersonal forms of stigma among their communities. Multilevel interventions addressing neighborhood and healthcare factors may benefit from consideration of how both race/ethnicity and sexual orientation influence access as well as decisions regarding health behaviors and subsequent conditions.

Interpretation of the findings needs to be tempered by methodological limitations of this preliminary Internet study. Most importantly, there were relatively few African American women in this current sample, despite attempts to oversample and specifically target women of color for the overall survey. It will be important for future research to replicate our findings with a larger sample of African American LB women. We focused on African American LB women, given the widespread, dramatic gaps across a number of health outcomes relative to white Americans.<sup>18,27–31</sup> Furthermore, with regard to relationships between stigma and health, African Americans experience particularly harsh societal oppression in the United States.<sup>85–87</sup> Nevertheless, there are health disparities experienced by other racial/ethnic minority groups and future research needs to examine potential disparities for these groups among LB women. Additionally, lesbian and bisexual women were grouped together in this study because of sample size limitations; future research should examine the impact of different sexual identities among ethnically diverse samples. Furthermore, data were based on self-report, and thus are subject to recall bias or social desirability concerns. The small convenience sample of women was highly educated and recruited solely on the Internet, and thus strong conclusions cannot be made about the generalizability of the data to the broader population. Finally, while we examined internalized homophobia and sexism, internalized racism was not assessed in this study, limiting our ability to assess fully the relationship between internalized stigma and health for African American LB women. This type of internalized stigma may be particularly salient for women of color and should be examined in future studies.

Although not intersectional in itself, this study provides a platform for several avenues of future research, especially those in line with intersectional theory and analysis. For example, future studies may address racial, gender, and sexual orientation-based differences in health through comparing individuals from a number of racial/ethnic backgrounds who identify as male and female as well as heterosexual and LGB in order to more thoroughly address which groups are at greatest risk for which health outcomes. Future work should also incorporate multiple indicators of socioeconomic status given their robust association with health and well-being.<sup>88,89</sup> Such work may include path and moderation analyses in order to

understand differences within and between groups and allow for greater comparison across different groups versus comparison to the traditionally used referent groups (e.g., white heterosexual counterparts). Furthermore, our work suggests the need to address and understand internalized stigma from the perspective of African American women who identify as lesbian/bisexual. Future research that assesses this assumption is warranted, especially as unique components of internalized sexism are likely, given the interlocking identities of multiply marginalized women (e.g., interaction of internalized racism and sexism).

## Conclusions

Research on health disparities needs to consider the experiences of individuals from multiple marginalized backgrounds, such as sexual minority women of color. Findings from this Internet-based study demonstrated that LB women who are African American are at greater risk for poorer diet, poorer physical activity, greater BMI, and greater likelihood of diabetes and hypertension than their white LB counterparts and may benefit from targeted interventions. Moreover, internalized sexism partially mediated these disparities, highlighting the potential benefit of internalized sexism reduction programs for African American LB women.

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## References

1. Gorman B, Read JNG. Gender disparities in adult health: An examination of three measures of morbidity. *J Health Soc Behav.* 2006; 47:95–110. [PubMed: 16821505]
2. Laditka SB, Laditka JN. Recent perspectives on active life expectancy for older women. *J Women Age.* 2002; 14:163–184.
3. Mensah GA, Mokdad AH, Ford ES, et al. State of disparities in cardiovascular health in the United States. *Circulation.* 2005; 111:1233–1241. [PubMed: 15769763]
4. Zhang Q, Wang YF, Huang ES. Changes in racial/ethnic disparities in the prevalence of Type 2 diabetes by obesity level among U.S. adults. *Ethn Health.* 2009; 14:439–457. [PubMed: 19360513]
5. McKay B. Lesbian, gay, bisexual, and transgender health issues, disparities, and information resources. *Med Ref Services Q.* 2011; 30:393–401.
6. National Institutes of Health. Biennial Report of the Director, National Institutes of Health, Fiscal Years 2008 & 2009. Bethesda, MD: National Institutes of Health; 2010.
7. U.S. Department of Health and Human Services. [last accessed October 26, 2011] Healthy People 2020 Objectives: Lesbian, gay, bisexual, and transgender health. 2011. [www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=25](http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=25)

8. Kertzner RM, Meyer IH, Frost DM, Stirrat MJ. Social and psychological well-being in lesbians, gay men, and bisexuals: The effects of race, gender, age, and sexual identity. *Am J Orthopsychol.* 2009; 79:500–510.
9. Greene B. Lesbian women of color. *J Lesbian Stud.* 1997; 1:109–147. [PubMed: 24784950]
10. Mak WS, Poon CYM, Pun LYK, Cheung SF. Meta-analysis of stigma and mental health. *Soc Sci Med.* 2007; 65:245–261. [PubMed: 17462800]
11. Szymanski DM. Heterosexism and sexism as correlates of psychological distress in lesbians. *J Counsel Dev.* 2005; 83:355–360.
12. Tull ES, Sheu YT, Butler C, Cornelious K. Relationships between perceived stress, coping behavior, and cortisol treatment in women with high and low levels of internalized racism. *J Natl Med Assoc.* 2005; 97:206–212. [PubMed: 15712783]
13. Troiano RP, Berrigan D, Dodd KW, et al. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc.* 2008; 40:181–188. [PubMed: 18091006]
14. Whitson HE, Landerman LR, Newman AB. Chronic medical conditions and the sex-based disparity in disability: The cardiovascular health study. *J Gerontol.* 2010; 65:1325–1331.
15. Keyhani S, Scobie JV, Hebert PL, McLaughlin MA. Gender disparities in blood pressure control and cardiovascular care in a national sample of ambulatory care visits. *Hypertension.* 2008; 51:1149–1155. [PubMed: 18259013]
16. McCollum M, Hansen LB, Sullivan PW. Gender differences in diabetes mellitus and effects on self-care activity. *Gender Med.* 2005; 2:246–254.
17. Institute of Medicine. *The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding.* Washington, DC: Institute of Medicine; 2011.
18. Williams DR. Racial/ethnic variations in women's health: The social embeddedness of health. *Am J Public Health.* 2002; 92:588–597. [PubMed: 11919058]
19. Case P, Austin SB, Hunter DJ, et al. Sexual orientation, health risk factors, and physical functioning in the Nurses' Health Study II. *J Women Health.* 2004; 13:1033–1047.
20. Conron KJ, Mimiaga MJ, Landers SJ. A population-based study of sexual orientation identity and gender differences in adult health. *Am J Public Health.* 2010; 100:1953–1960. [PubMed: 20516373]
21. Dilley JA, Simmons KW, Boysun MJ, et al. Demonstrating the importance and feasibility of including sexual orientation in public health surveys: Health disparities in the Pacific Northwest. *Am J Public Health.* 2010; 100:460–467. [PubMed: 19696397]
22. Kirkpatrick SI, Dodd KW, Reedy J, Krebs-Smith SM. Income and race/ethnicity are associated with adherence to food-based dietary guidance among US adults and children. *J Acad Nutr Diet.* 2012; 112:624–635. [PubMed: 22709767]
23. Roberts SA, Dibble SL, Nussey B, Casey K. Cardiovascular disease risk in lesbian women. *Women Health Issues.* 2003; 13:167–174.
24. Valanis BG, Bowen DJ, Bassford T, Whitlock E, Carney P. Sexual orientation and health: Comparisons in the Women's Health Initiative Sample. *Arch Fam Med.* 2000; 9:843–853. [PubMed: 11031391]
25. Aaron DJ, Markovic N, Danielson ME, et al. Behavioral risk factors for disease and preventive health practices among lesbians. *Am J Public Health.* 2001; 91:972–975. [PubMed: 11392943]
26. Bowen DJ, Balsam KF, Ender SR. A review of obesity issues in sexual minority women. *Obesity.* 2008; 16:221–228. [PubMed: 18239627]
27. Kant AK, Graubard BI, Kumanyika SK. Trends in Black-White differentials in dietary intakes of U.S. adults, 1971–2002. *Am J Prev Med.* 2007; 32:264–272. [PubMed: 17383557]
28. Ransdell LB, Wells CL. Physical activity in urban White, African-American, and Mexican-American women. *Med Sci Sports Exerc.* 1998; 30:1608–1615. [PubMed: 9813874]
29. Ogden CL. Disparities in obesity prevalence in the United States: Black women at risk. *Am J Clin Nutr.* 2009; 89:1001–1002. [PubMed: 19244372]
30. Brancati FL, Kao WHL, Folsom AR, et al. Incident type 2 diabetes mellitus in African American and white adults: The Atherosclerosis Risk in Communities Study. *JAMA.* 2000; 283:2253–2259. [PubMed: 10807384]

31. Hertz RP, Unger AN, Cornell MS, Saunders E. Racial disparities in hypertension prevalence, awareness, and management. *Arch Intern Med.* 2005; 165:2098–2104. [PubMed: 16216999]
32. Thomas AJ, Speight SL, Witherspoon KM. Gendered racism, psychological symptoms, and coping styles of African American women. *Cult Div Ethn Min Psychol.* 2008; 14:307–314.
33. Balsam KF, Molina Y, Beadnell B, Simoni J, Walters K. Measuring multiple minority stress: The LGBT people of color microaggressions subscale. *Cultur Divers Ethnic Minor Psychol.* 2011; 17:163–174. [PubMed: 21604840]
34. Mays VM, Yancey AK, Cochran SD, et al. Heterogeneity of health disparities among African American, Hispanic, and Asian American women: Unrecognized influences of sexual orientation. *Am J Public Health.* 2002; 92:632–639. [PubMed: 11919064]
35. Herek GM, Capitanio JP, Widaman KF. Stigma, social risk, and health policy: Public attitudes toward HIV surveillance policies and social construction of illness. *Health Psychol.* 2002; 22:595.
36. Jones CP. Levels of racism: A theoretic framework and a gardener's tale. *Am J Public Health.* 2000; 90:1212–1215. [PubMed: 10936998]
37. Bird CE, Rieker PP. Gender matters: An integrated model for understanding men's and women's health. *Soc Sci Med.* 1999; 48:745–755. [PubMed: 10190637]
38. Hatzenbuehler ML, McLaughlin KA, Keyes KM, et al. The impact of institutional discrimination on psychiatric disorders in lesbian, gay, and bisexual populations: A prospective study. *Am J Public Health.* 2010; 100:452–459. [PubMed: 20075314]
39. Acevedo-Garcia D, Lochner KA, Osypuk TL, et al. Future directions in residential segregation and health research: A multilevel approach. *Am J Public Health.* 2003; 93:214–221.
40. Borrell C, Artacoz L, Gil-González D, et al. Perceived sexism as a health determinant in Spain. *J Womens Health.* 2010; 19:741–750.
41. Burgess D, Lee R, Tran A, et al. Effects of perceived discrimination on mental health and mental health services utilization among gay, lesbian, bisexual, and transgender persons. *J LGBT Health.* 2008; 3:1–14.
42. Williams DR, Mohammed SA. Discrimination and racial disparities in health: Evidence and needed research. *J Behav Med.* 2009; 32:20–47. [PubMed: 19030981]
43. Butler C, Tull ES, Chambers EC, et al. Internalized racism, body fat distribution, and abnormal fasting glucose among African-Caribbean women in Dominica, West Indies. *J Natl Med Assoc.* 2002; 94:143–148. [PubMed: 11918383]
44. Chambers EC, Tull ES, Fraser HS, et al. The relationship of internalized racism to body fat distribution and insulin resistance among African adolescent youth. *J Natl Med Assoc.* 2004; 96:1594–1598. [PubMed: 15622689]
45. Tull ES, Cort MA, Gwebu ET, et al. Internalized racism is associated with elevated fasting glucose in a sample of adult women but not men in Zimbabwe. *Ethn Dis.* 2007; 17:731. [PubMed: 18072387]
46. Meyer IH. Minority stress and mental health in gay men. *J Health Soc Behav.* 1995; 36:38–56. [PubMed: 7738327]
47. Szymanski DM, Kashubeck-West S, Meyer J. Internalized heterosexism: Measurement, psychosocial correlates, and research directions. *Counsel Psychol.* 2008; 36:525–574.
48. Amadio DM. Internalized heterosexism, alcohol use, and alcohol-related problems among lesbians and gay men. *Addict Behav.* 2006; 31:1153–1162. [PubMed: 16183207]
49. Piggot, M. Unpublished thesis. Psychology Strand at Swinburne University of Technology; Australia: 2004. Double jeopardy: Lesbians and the legacy of multiple stigmatized identities.
50. Bridges SK, Selvidge M, Matthews CR. Lesbian women of color: Therapeutic issues and challenges. *J Multicult Counsel Dev.* 2003; 31:113–130.
51. Dubé EM, Savin-Williams RC. Sexual identity development among ethnic sexual-minority male youths. *Dev Psychol.* 1999; 35:1389–1398. [PubMed: 10563729]
52. Moradi B, Wiseman MC, DeBlaere C, et al. LGB of color and White individuals' perceptions of heterosexist stigma, internalized homophobia, and outness: Comparison of levels and links. *Counsel Psychol.* 2010; 38:397–424.

53. Lehman, P. Master's thesis. Florida Institute of Technology; 2000. A validity study of the femininity ideology scale.
54. Sekayi D. Aesthetic resistance to commercial influences: The impact of Eurocentric beauty standard on Black college women. *J Negro Ed.* 2003; 72:467–477.
55. West CM. Mammy, Sapphire, and Jezebel: Historical images of Black women and their implications for psychotherapy. *Psychotherapy.* 1995; 32:458–466.
56. Hancock, AM. *The Politics of Disgust: The Public Identity of the Welfare Queen.* New York: New York University Press; 2004.
57. Block G, Gillespie C, Rosenbaum EH, Jenson C. A rapid food screener to assess fat and fruit and vegetable intake. *Am J Prev Med.* 2000; 18:284–288. [PubMed: 10788730]
58. Baker AH, Wardle J. Sex differences in fruit and vegetable intake in older adults. *Appetite.* 2003; 40:269–275. [PubMed: 12798784]
59. Watters JL, Satia JS, Galanko JA. Associations of psychosocial factors with fruit and vegetable intake among African-Americans. *Public Health Assoc.* 2007; 10:701–711.
60. Hallal PC, Victora CG. Reliability and validity of the international physical activity questionnaire (IPAQ). *Med Sci Sports Exerc.* 2004; 36:556. [PubMed: 15076800]
61. Hagstromer M, Oja P, Sjostrom M. The International Physical Activity Questionnaire (IPAQ): A study of concurrent and construct validity. *Public Health Nutr.* 2006; 9:755–762. [PubMed: 16925881]
62. Wolin KY, Heil DP, Askew S, Matthews CE, Bennett GG. Validation of the international physical activity questionnaire-short among blacks. *J Phys Act Health.* 2008; 5:746. [PubMed: 18820348]
63. Calle EE, Thun MJ, Petrelli JM, Rodriguez C, Heath CW. Body-mass index and mortality in a prospective cohort of U.S. adults. *N Eng J Med.* 1999; 341:1097–1105.
64. National Heart, Lung, and Blood Institute. *Clinical Guidelines on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults: The Evidence Report.* Bethesda, MD: National Heart, Lung, and Blood Institute; 1998.
65. Martin, JL.; Dean, L. Unpublished manuscript. Mailman School of Public Health, Columbia University; 1992. Summary of measures: Mental health effects of AIDS on at-risk homosexual men.
66. Herek GM, Cogan JC, Gillis JR, Glunt EK. Correlates of internalized homophobia in a community sample of lesbians and gay men. *J Gay Lesbian Med Assoc.* 1998; 2:17–25.
67. Lewis RJ, Derlega VJ, Griffin JL, Krowinski AC. Stressors for gay men and lesbians: Life stress, gay-related stress, stigma consciousness, and depressive symptoms. *J Soc Clin Psychol.* 2003; 22:716–729.
68. Fischer AR, Tokar DM, Mergl MM, Good GE, Hill MS, Blum SA. Assessing women's feminist identity development: Studies of convergent, discriminant, structural validity. *Psychol Women Q.* 2000; 24:15–29.
69. Szymanski DM, Gupta A. Examining the relationship between multiple internalized oppressions and African American lesbian, gay, bisexual, and questioning persons' self-esteem and psychological distress. *J Counsel Psychol.* 2009; 59:110–118.
70. Hayes AF. Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Comm Monogr.* 2009; 76:408–420.
71. Preacher KJ, Hayes AF. Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav Res Met.* 2008; 40:87–91.
72. Schafer JL, Graham JW. Missing data: Our view of the state of the art. *Psychol Methods.* 2002; 7:142–177.
73. Hill SA. Teaching and doing gender in African American families. *Sex Roles.* 2002; 47:493–506.
74. Szymanski DM. Feminist identity and theories as correlates of feminist supervision practices. *Counsel Psychol.* 2005; 33:729–747.
75. Moradi B, Subich LM. Feminist identity development measures comparing the psychometrics of three instruments. *Counsel Psychol.* 2002; 30:66–86.
76. Krane V, Choi PY, Baird SM, et al. Living the paradox: Female athletes negotiate femininity and muscularity. *Sex Roles.* 2004; 50:315–329.

77. Sartore ML, Cunningham GB. The lesbian stigma in the sport context: Implications for women of every sexual orientation. *Quest*. 2009; 61:289–305.
78. LaVeist, TA. *Race, Ethnicity, and Health*. 1. San Francisco, CA: Jossey-Bass; 2002.
79. Krieger N, Smith GD. “Bodies count,” and body counts: Social epidemiology and embodying inequality. *Epid Rev*. 2004; 26:92–103.
80. Adler NE, Rehkopf DH. US disparities in health: Descriptions, causes, and mechanisms. *Annu Rev Public Health*. 2008; 29:235–252. [PubMed: 18031225]
81. Link BG, Phelan JC. Social conditions as fundamental causes of disease. *J Health Soc Behav*. 1995; (Spec No):80–94. [PubMed: 7560851]
82. Williams DR, Jackson PB. Social sources of racial disparities in health. *Health Affairs*. 2005; 24:325–334. [PubMed: 15757915]
83. Krieger N, Williams DR, Moss NE. Measuring social class in US public health research: Concepts, methodologies, guidelines. *Ann Rev Public Health*. 1997; 18:341–378. [PubMed: 9143723]
84. Wilson, PA.; Yoshikawa, H. Improving access to healthcare among African-American, Asian, and Pacific Islander, and Latino lesbian, gay, and bisexual populations. In: Meyer, IH.; Northridge, ME., editors. *The Health of Sexual Minorities*. New York: Mailman School of Public Health; 2007. p. 607-632.
85. Katznelson, I. *When Affirmative Action Was White: An Untold History of Racial Inequality in Twentieth-Century America*. New York: W.W. Norton; 2005.
86. Massey, DS. *Categorically Unequal: The American Stratification System*. New York: Russell Sage Foundation; 2007.
87. Packard, GM. *American Nightmare: The History of Jim Crow*. New York: St. Martin’s Press; 2002.
88. Braveman P. Health disparities and health equity: Concepts and measurement. *Annu Rev Public Health*. 2006; 27:167–194. [PubMed: 16533114]
89. Veenstra G. Race, gender, class, sexuality (RGCS) and hypertension. *Soc Sci Med*. 2013; 89:16–24. [PubMed: 23726211]



**Table 1**

Analysis of Variance and Chi-Square Tests of Sociodemographic Characteristics Across Race

Variable	White Americans (n = 954), M (SE) <sup>c</sup>	African Americans (n = 75), M (SE) <sup>c</sup>	F (1, 994)
Age (years)	34.27 (0.40)	30.69 (1.46)	5.59*
Income <sup>a</sup>	3.65 (0.07)	3.54 (0.25)	0.17
Education <sup>b</sup>	5.02 (0.06)	4.62 (0.21)	3.60
	% (n)	% (n)	$\chi^2(6)$
Sexual identity			1.80
Lesbian/gay	50.7 (483)	50.7 (38)	
Bisexual	29.1 (277)	34.7 (26)	
Other	20.2 (192)	14.7 (11)	

<sup>a</sup> 1 = < \$10,000; 2 = \$10,000–19,999; 3 = \$20,000–29,999; 4 = \$30,000–39,999; 5 = \$40,000–59,999; 6 = \$60,000–79,999; 7 = \$80,000–99,999; 8 = \$100,000–149,999; 9 = \$150,000.

<sup>b</sup> 1 = no/some high school; 2 = high school/GED; 3 = some college, no degree; 4 = associate's degree; 5 = bachelor's degree; 6 = some graduate/professional school; 7 = advanced degree (MS, PhD).

<sup>c</sup> Indicates means and standard errors.

\*  $p < 0.05$ .

**Table 2**

Age- and Education-Adjusted Racial Differences in Health Behaviors, Health Conditions, Internalized Homophobia, and Internalized Sexism

Variable	White Americans (n = 954), % (n)	African Americans (n = 75), % (n)	aOR [95% CI] <sup>a</sup>
Low fruit/vegetable intake <sup>b</sup>	7.8 (74)	17.3 (13)	2.4 [1.2, 4.5]**
Physical activity <sup>c</sup>			0.7 [0.2, 1.1]**
Low	13.4 (128)	26.7 (20)	
Moderate	45.3 (432)	41.3 (31)	
High	41.3 (394)	32.0 (24)	
Diabetes <sup>d</sup>	3 (28)	12.7 (9)	2.9 [1.1, 4.7]**
Hypertension <sup>d</sup>	11.4 (106)	21.1 (15)	2.7 [1.4, 5.2]**
	M (SE)	M (SE)	B [95% CI] <sup>a</sup>
Body mass index <sup>e</sup>	28.17 (0.25)	30.38 (0.94)	0.7 [0.3, 1.2]**
Internalized homophobia <sup>f</sup>	1.35 (0.02)	1.41 (0.06)	0.02 [-0.1, 0.05]
Internalized sexism <sup>g</sup>	1.65 (0.02)	1.94 (0.07)	0.08 [0.04, 0.11]***

<sup>a</sup> Age-adjusted odds ratios (aOR) and slope coefficients (B) are provided from multivariable logistic and linear regression models, respectively (\*\*p < 0.01, \*\*\*p < 0.001).

<sup>b</sup> Scores of < 11 on the Fruit and Vegetable section of the Food Screener instrument.

<sup>c</sup> Categories were based on median minutes a week (MET-min/week), such that low was < 600 MET-min/week, moderate was 600–2,999 MET-min/week, and high was 3,000 + MET-min/week.

<sup>d</sup> On the basis of self-report.

<sup>e</sup> Continuous measures calculated from self-report measures of weight and height.

<sup>f</sup> Response categories were 1 = never, 2 = rarely, 3 = sometimes, 4 = often.

<sup>g</sup> Response categories ranged from 1 = strongly disagree to 5 = strongly agree. 95% CI, 95% confidence interval.

**Table 3**

Analysis of Internalized Sexism as a Mediator of Racial Differences in Health Behaviors and Conditions

<i>Bootstrap results for mediation effects,<sup>a</sup> 95% CI</i>				
<i>Model</i>	<i>% Mediated effect<sup>b</sup></i>	<i>A × B</i>	<i>Lower</i>	<i>Upper</i>
<b>Physical activity</b>	<b>14.6</b>	<b>0.01</b>	<b>0.002</b>	<b>0.03</b>
<b>Diabetes</b>	<b>12.0</b>	<b>0.05</b>	<b>0.01</b>	<b>0.12</b>

*N* = 929–945. Reported effects were calculated from models including internalized sexism and homophobia (total) as mediators (*A* × *B*). Boldface type highlights a significant effect as determined by the 95% bias corrected and accelerated confidence interval (95% CI).

<sup>a</sup> 5,000 resamples.

<sup>b</sup> Percent mediated is calculated as  $\frac{a+b_{\text{internalized sexism}}}{a \times b_{\text{total}} + c}$ .