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Psychosocial Functioning and Decisional Balance to Use Condoms among Young Gay/Bisexual/MSM: Comparisons across Race/Ethnicity

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Abstract

Young gay/bisexual and other men who have sex with men (YGBMSM; ages 18–24) are experiencing an increase in HIV infection rates, particularly if they are Black or Latino. Psychosocial functioning is consistently implicated in HIV risk behaviors; however, less is known about the role of these factors in YGBMSM's decision-making process to use condoms (i.e., Decisional Balance to use Condoms; DBC). We examined whether YGBMSM's psychological functioning was associated differentially with their DBC across racial/ethnic groups. Using data from a cross-sectional web-survey of single YGBMSM (N=1380; 9.9% Black; 18.6% Latino; 71.5% White), we performed racial/ethnic-specific multivariable regression models to explore the association between DBC and psychological factors (e.g., depression, anxiety), demographics (e.g., age, education, HIV status, prior STI diagnosis), and perceived difficulty implementing safer-sex strategies. Black YGBMSM reported lower DBC if they expressed higher depression symptoms ($\beta = -.31, p < .05$), were HIV-negative ($\beta = -.20, p < .05$), and had greater difficulty implementing safer sex strategies ($\beta = -.32, p < .001$). Latino participants reported greater DBC to use condoms if they reported greater anxiety symptoms ($\beta = .21, p < .05$). White participants reported greater DBC if they were younger ($\beta = -.09, p < .01$), did not report a prior STI ($\beta = .10, p < .001$), and had fewer difficulties implementing safer sex strategies ($\beta = -.27, p < .001$); DBC had no association to psychological well-being among White participants. Psychological factors may be differentially associated with DBC across racial/ethnic group categories. Health promotion initiatives targeting condom use may benefit from culturally-tailored interventions that address psychosocial functioning and its role in YGBMSM's condom use decision-making.

Compliance with Ethical Standards

Conflict of Interest Ryan M. Wade declares that he has no conflict of interest.

Gary W. Harper declares that he has no conflict of interest.

José A. Bauermeister declares that he has no conflict of interest

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Keywords

Depression; anxiety; HIV; disparities; mental health

Introduction

HIV infection rates have been decreasing across most demographic groups over the past several years in the United States. However, young gay, bisexual, and other men who have sex with men (YGBMSM) between the ages of 13–24 have been experiencing an increase in rates of HIV infection (Hall, Byers, Ling, & Espinoza, 2007; Center for Disease Control [CDC], 2013). In 2014, Black YGBMSM accounted for the majority of new HIV diagnoses (CDC, 2015). HIV-positive diagnoses increased by 87% for Black YGBMSM between 2005 and 2014, and recent projections declare that nearly 50% of all Black GBMSM and 25% of all Latino GBMSM will receive a positive diagnosis for HIV during their lifetime (CDC, 2016a; 2016b). Black and Latino gay and bisexual men as a whole continue to experience disparate rates of HIV incidence and prevalence when compared to YGBMSM in other demographic categories (Harawa et al., 2004; Hall et al., 2007; CDC, 2013; CDC, 2015), making these populations a priority for continued public health research and intervention.

While there are many proposed explanations for an increase in infection rates among racial/ethnic YGBMSM—ranging from generational differences in attitudes and behaviors to social and structural contributors to health disparity—the precise reasons for these increasing disparities are still unclear (Galvan, Davis, Banks, & Bing, 2010; Millett, Peterson, Wolitski, & Stall, 2006; Millett et al., 2012). Researchers have provided evidence that Black YGBMSM as a whole do not engage in individual risk behaviors to any greater degree or frequency than other racial/ethnic groups (Garofalo, Mustanski, Johnson, & Emerson, 2010; Maulsby et al., 2013; Wade & Harper, 2015), and may actually engage in less risk behavior relative to other groups (Calabrese, Rosenberger, Schick, Novak, & Reece, 2013). Thus, it is possible that the racial/ethnic disparity in HIV incidence may be caused by greater HIV prevalence in smaller racial/ethnic populations relative to the impact that a comparable number of cases would cause among the much larger majority population of White YGBMSM counterparts. In addition, data have noted that systematic underinvestment in linking and retaining racial/ethnic YGBMSM across the HIV prevention and care continuum exist (Rosenberg et al., 2014). Given that effective structural solutions to address these disparities are still in development, current efforts to curb HIV incidence must continue to rely on condom use as an effective HIV prevention strategy.

Condom use is widely regarded to be one of the most efficacious strategies to minimize the likelihood of being infected with HIV. However, a report from the CDC (2013) indicates an upward trend in the discontinuation of condom use among gay men, noting that the percentage of men reporting at least one instance of sex without a condom in the prior 12 months had increased from 48% in 2005 to 57% in 2011. Researchers and health practitioners have noted the importance of negotiating safer sex with prospective partners. The ease or difficulty of having conversations about safer sex with a casual or romantic partner, making sex fun and enjoyable with a latex condom, and using condoms under the

influence of drugs and alcohol, are all important contributors to sexual health behaviors (Brown et al., 2008; Greene, Andrews, Kuper, & Mustanski, 2014; Troth & Peterson, 2000; Vanable, 2004). While the concern of ease versus difficulty in implementing safer sex strategies is of considerable importance, scales using multiple items as an indicator of this construct have seldom been employed in existing research with YGBMSM. Given the centrality of how easy or difficult it is for an individual to implement safer sex strategies, both research and targeted interventions around sexual health may benefit by accounting for this variable, especially among YGBMSM who remain at high risk for exposure to HIV.

Beyond individuals' perceived difficulty with safer sex strategies, researchers have also highlighted the importance of acknowledging the decision making process preceding condom use. The decision making process around safer sex is a critical precursor to actual behavior, and this process may be influenced by a wide range of contextual, interpersonal, and intrapersonal factors (Ostergen, Rosser, & Horvath, 2011; Mustanski, Newcomb, & Clerkin, 2011; Bauermeister, Ventuneac et al., 2012). Decisional balance, a construct derived from the Transtheoretical Model (TTM) of behavior change (Janis & Mann, 1977; Prochaska & Velicer, 1997), refers to an individual's assessment of the net benefits and drawbacks of engaging in a particular behavior. Researchers have investigated decisional balance in a behavior change framework for a wide range of health-related behaviors, including tobacco use, drug use, alcohol use, diet/exercise, condom use, mammography screening, delinquent behaviors, and many others (LaBrie, Pedersen, Earleywine, & Olsen, 2006; Grossman et al., 2008; Collins, Carey, & Otto, 2009; Di Noia & Prochaska, 2010). Understanding motivations to pursue or forego a particular course of action may be an important factor when developing interventions that aim to influence behavior change, especially as it pertains to condom use. Many researchers have highlighted the importance of examining decisional balance in developing health promotion initiatives around safer sex, and note that these initiatives may focus on identifying and promoting the perceived advantages of condom use over the perceived disadvantages, which may then translate into actual behavior change (Grossman et al., 2008; Prat, Planes, Gras, & Sullman, 2016). While few interventions have been implemented to date, researchers did find support for an intervention that targeted decisional balance among heterosexual college-aged men to enhance motivations to pursue safer-sex strategies (LaBrie, Pedersen, Thompson, & Earleywine, 2008). Given that condom use interventions have shown mixed effectiveness, decisional balance represents an important yet underutilized construct in a holistic model of sexual risk reduction, and presents an opportunity for researchers to target a wider scope of critical variables that are associated with sexual risk behavior.

Decisional balance to use condoms has been found to be associated with condom use behaviors among MSM. In a study of MSM who intentionally met partners online for bareback sex in NYC, Bauermeister and colleagues (2009) noted that decisional balance to use condoms in order to pursue an emotional connection with a partner was highly correlated with sexual risk behavior, underscoring the importance of measuring motivations to use condoms as a decision-making process whereby individuals assign value to the anticipated outcome of engaging in a behavior (e.g., sex with condoms) and contrast it to the anticipated outcomes of an alternative behavioral strategy (e.g., sex without condoms). Decisional balance to use condoms to achieve an emotional connection has been associated

with sexual risk behavior in diverse samples of YGBMSM and diverse types (e.g., casual, romantic) of sexual partnerships (Bauermeister, 2013; Bauermeister, 2015; Gullette, Wright, Booth, Feldman, & Stewart, 2009). At present, however, it remains unclear whether psychosocial factors play a role in the decision making process to use or forego condoms to achieve an emotional connection. Understanding the relationship between decisional balance to use condoms to achieve an emotional connection and psychosocial functioning is vital, given prior research suggesting that individuals may seek to regulate psychological distress through sex, and/or may experience low self-efficacy to negotiate condoms if they have low self-esteem (Donenberg & Pao, 2005; Elkington, Bauermeister & Zimmerman, 2010; Mutumba & Harper, 2015).

Having a greater understanding of the relationship between decisional balance and psychosocial functioning among YGBMSM may have important implications for the development of sexual health promotion initiatives. At present, however, the literature examining the relationship between psychosocial functioning and sexual risk behavior remains inconclusive among YGBMSM (Mustanski, Newcomb, Du Bois, Garcia, & Grov, 2011). In studies examining the relationship between depressive symptoms and sexual risk among MSM, for example, researchers have found inconsistent results between depression and sexual risk behavior (Fendrich, Avci, Johnson, & Mackesy-Amiti, 2013; Hanson, Mansergh, Koblin, Flores, Hudson, Myers & Colfax, 2015; O’Cleirigh, Newcomb, Mayer, Skeer, Traeger, & Safren, 2013). Moreover, although there is limited support to suggest racial/ethnic disparities in rates of mental health disorders (Mustanski et al., 2010), researchers have noted that racial/ethnic MSM might experience greater symptomatology due to an amalgam of factors, including the stress of racism, disproportionate HIV infection in their social networks, and rejection from others within both their racial/ethnic and sexual communities (Hightow-Weidman et al., 2011; Jamil, Harper, & Fernandez, 2009). For example, in a study examining state and trait affect among a racially and ethnically diverse sample of MSM, for example, Mustanski (2007) reported a positive association between state anxious arousal (AA) and risky sexual behavior; however, trait AA was found to be negatively associated with sexual behavior with a high-risk partner. There is also a paucity of quantitative research examining the effects of self-esteem on sexual health risk for Black and Latino YGBMSM. One study found that higher levels of self-esteem was actually associated with a higher likelihood of engaging in high risk sexual behavior among Latino GBMSM, which stands in contrast to the health promoting effects of a seemingly ‘positive’ psychosocial variable (De Santis et al., 2008). In qualitative studies, researchers have pointed to the potentially important relationship that self-esteem has on mitigating sexual health risk for Black YGBMSM (Adam et al., 2005; Husbands, Murray, & Maxwell, 2005; Millett, Malebranche, & Peterson, 2007; Stokes & Peterson, 1998). Altogether, the question of psychosocial variables and their influence on sexual health risk across racial/ethnic groups warrants closer investigation, as these relationships may manifest differentially within each racial/ethnic group due to a complex myriad of psychosocial factors.

Race-based comparisons on psychosocial factors and condom use decision making among YGBMSM is exceedingly sparse. Given the importance of understanding how psychosocial functioning is associated with YGBMSMs decisional balance to use condoms (DBC), we sought to examine these factors across Black, White, and Latino YGBMSM. Our study had

two major aims. First, we examined whether there were racial/ethnic differences in YGBMSM's ability to implement safer sex strategies, DBC, and psychosocial functioning. Second, we explored the association between DBC and YGBMSM's psychosocial functioning, after accounting for their perceived difficulty implementing safer sex strategies and sociodemographic characteristics, comparing the findings across our racially/ethnically stratified models.

Method

Participants

Participants were drawn from a nationwide cross-sectional survey in 2013 designed to examine online dating and internet behaviors among YGBMSM. Criteria for study eligibility included: (1) being between the ages of 18 and 24 inclusive, (2) being single, (3) having used a dating website in the last 3 months, (4) having been sexually active in the last 6 months with a male partner found through a dating website, and (5) residing in the United States or Puerto Rico. Participants were recruited through advertisements on two social and sexual networking websites, as well as referrals from other participants. Advertisements asked individuals to participate in a university study focused on the online dating and partner-seeking behaviors of YGBMSM. Ads included information about the \$10 study incentive and the survey website, and were only made viewable to men in the targeted age, location, and sexual identity demographic.

A total of 3,140 entries were recorded over the 7 months of data collection. We excluded 942 entries because they were ineligible to participate once they completed the screener. We then used best practices (Bauermeister et al., 2012; Teitcher et al., 2015) to identify duplicates and falsified entries by manually examining participants' online presence, email and IP addresses, operating system and browser information, irregular answer patterns, and time taken to complete survey. We disqualified 366 entries because they were identified as duplicate/fraudulent entries, leaving us with a total of 1,963 valid entries. Of these, 325 participants consented but did not commence the survey (i.e., missing all data; 16.6%); resulting in an analytic sample of $N = 1,638$ eligible YGBMSM. One hundred and fifty-eight of these eligible and consented participants did not complete all sections of the survey and were excluded from the analyses ($N = 158$; 9.6%), bringing the sample down to 1,480 entries.

The analysis for this study was limited to Black, White, and Latino populations because other race participants had insufficient sample sizes; participants who identified as any different race or ethnicity were omitted ($N = 130$; 8.8%). We observed no statistical differences in age, education, income, or HIV status between the retained White, Black and Latino sample and the omitted sample. Thus, the final analytic sample for this analysis is 1,350.

Procedure

Participants consenting to participate in the study completed an online survey lasting 30 to 45 minutes. Participants were permitted to save their answers and return to the survey at a

later time if they were not able to complete it in a single sitting. Participants were compensated \$10 in the form of a Visa e-gift card for their participation in the survey. Study data were kept in an encrypted and firewall-protected server. Our Institutional Review Board approved all study procedures.

Measures

Decisional Balance to Use Condoms—Self-report data on decisional balance to use condoms (DBC) were collected to create an index for DBC. The index was created using Bauermeister and colleagues' (2009) decisional balance to use or forego condoms scale. The scale consisted of 14 items, where participants were asked seven statements with two different behaviors. For each item, participants rated their preference for sex with condoms followed by the same question, only phrased as a preference for sex without condoms (e.g., 'sex with/without condoms makes me feel very connected with my sexual partner;' 'sex with/without condoms is what I like the most;' 'sex with/without condoms is very intimate to me'). Each item was measured using a 4-point scale containing the following values: 1 = Strongly disagree; 2 = Disagree; 3 = Agree; 4 = Strongly agree. Scores were computed by taking the sum of the net difference between each with/without statement, where scores on the 'without' responses were subtracted from scores on the 'with' responses, resulting in a score ranging from -3 to +3. Positive scores indicated more decisional balance to use condoms, while negative scores indicated more decisional balance to forego condoms. Cronbach's alpha values demonstrated strong reliability for each racial/ethnic group (White = .886; Black = .902; Latino = .880).

Safer-Sex Difficulty—Self-report data on the difficulty of pursuing safer-sex strategies were collected to create a mean safer-sex difficulty index. The index was created using the Perceived Difficulty of AIDS Preventive Behavior scale (Misovich, Fisher, & Fisher, 1998), where the mean of 11 items was computed. Participants were asked how easy or hard it would be to perform a series of activities (e.g., 'to discuss having safer sex with your regular partner;' 'to make safer sex with a latex condom sexually exciting for a casual partner;' 'to avoid using alcohol if you think you might be having sex later'). Each item was measured using a 4-point scale containing the following values: 1 = Very easy to do; 2 = Fairly easy; 3 = Fairly hard; 4 = Very hard to do. Higher scores indicated higher self-reported levels of difficulty in implementing safer sex strategies. Cronbach's alpha values demonstrated strong reliability for each racial/ethnic group (White = .804; Black = .877; Latino = .863).

Depressive Symptoms—Self-report data on indicators of depressive symptoms in the prior week were collected to create a mean depressive symptoms index. The index was created using the shortened 10-item version of the Center for Epidemiologic Studies Depression (CES-D) scale (Radloff, 1977; Zhang et al., 2012), where the mean of ten survey items was computed, ranging from 1 to 4. Participants were asked to indicate how they felt in the last week (e.g., 'I felt that everything I did was an effort;' 'I felt hopeful about the future;' 'I felt lonely'). Each item was measured using a 4-point scale containing the following values: 1 = Rarely or none; 2 = Occasionally; 3 = Some or a little of the time; 4 = All of the time. Appropriate items were reverse-coded so that responses were in directional alignment with the other items, where higher scores indicated higher self-reported levels of

depressive symptoms in the last week. Cronbach's alpha values demonstrated moderate to strong reliability for each racial/ethnic group (White = .734; Black = .778; Latino = .767).

Anxiety Symptoms—Self-report data on indicators of anxiety symptoms in the prior week were collected to create a mean anxiety index. The index was created using the Anxiety Subscale of the Brief Symptom Inventory (Derogatis, 1975), where the mean of six survey items was computed, ranging from 1 to 5. Participants were asked to indicate how often they felt specific anxiety symptoms (e.g., 'nervousness or shakiness inside;' 'suddenly scared for no reason;' 'feeling fearful.' Each item was measured using a 5-point scale containing the following values: 1 = Never; 2 = Almost Never; 3 = Sometimes; 4 = Fairly often; 5 = Very often. Higher scores indicated higher self-reported levels of anxiety symptoms in the last week. Cronbach's alpha values demonstrated strong reliability for each racial/ethnic group (White = .902; Black = .948; Latino = .939).

Self-Esteem—Self-report data on self-esteem were collected to create a self-esteem score. The score was created using the Rosenberg Self-Esteem Inventory (Rosenberg, 1965), where the mean of ten survey items were computed, ranging from 1 to 4. Participants were asked to indicate the degree to which they agreed with a series of statements (e.g., 'I am able to do things as well as most other people;' 'I feel I do not have much to be proud of;' 'I take a positive attitude towards myself'). Each item was measured using a 4-point scale containing the following values: 1 = Strongly disagree; 2 = Disagree; 3 = Agree; 4 = Strongly agree. Appropriate items were reverse-coded so that responses were in directional alignment with the other items, where higher scores indicated higher self-reported levels of self-esteem. Cronbach's alpha values demonstrated strong reliability for each racial/ethnic group (White = .894; Black = .829; Latino = .868).

Demographics—The age, race/ethnicity, and sexual identity of each participant was based on self-report. Participants were divided into three racial/ethnic categories: 'Non-Hispanic Black/African-American,' 'Non-Hispanic White/European,' and 'Latino/Hispanic.' Most Latinos identified as White/European American (n=154; 61.1%). Few Latinos identified with the Black/African American racial group (n=22; 8.7%) or employed other classifications not affiliated with White or Black racial categories (e.g., Puerto Rican, Cuban, Asian Chilean; n=76; 30.2%), making it difficult to have sufficient cases to represent Latinos by these racial or national subgroups in our multivariable analyses. We also asked participants to report their sexual identity as gay/homosexual, bisexual, straight/heterosexual, same gender loving, MSM, or Other.

Participants were asked to answer their highest educational attainment (e.g., 1=Less than high school, 2=High school/GED, 3=Technical school, 4=Associate degree, 5=Some college, 6=College, or 7=Some graduate school or more). Given that age would confound participants' educational attainment post-high school, we recoded this variable to denote whether participants had completed high school or not. Not having graduated high school served as the referent group.

HIV Status and other Sexually Transmitted Infections (STI)—Participants were asked whether they had ever been tested for HIV, if they had received their test result, and

whether they were HIV positive (no actual HIV test was performed). Based on their answers, we created dummy variables to indicate whether participants reported being HIV negative, not knowing their HIV status, or living with HIV. HIV negative participants served as the referent group. Participants were also asked whether they had ever been diagnosed with a STI by a health professional. Participants without a diagnosed STI served as the referent group (0=No, 1=Yes).

Data Analytic Strategy

Descriptive statistics were computed for exploratory analyses of the sample, including mean scores, frequency counts, and percentages for demographic characteristics and study variables. We then examined differences by race/ethnicity across our study variables using X^2 tests for categorical variables and oneway ANOVAs with Scheffé post-hoc pairwise comparisons for continuous variables (see Table 1). We then estimated multivariable regression models for DBC across White, Black, and Latino participants, separately. By stratifying the multivariable regression models by race/ethnicity, we were able to compare whether certain indicators were differentially associated with DBC by race/ethnicity. While each regression model had a unique set of statistically-significant indicators by race/ethnicity, one predictor (safer sex difficulty) was found to be associated with DBC in the model for White YGBMSM and Black YGBMSM. In this instance, we compared the beta coefficient (Paternoster, Brame, Mazerolle, Piquero, 1998) for safer sex difficulty between White and Black YGBMSM, yet did not find that the magnitude of the association differed statistically for these two groups.

Results

Sample Description

The mean age of the sample was 20.80 years ($SD = 1.94$). The majority of participants identified as gay (92.9%) or bisexual (3.0%), with the remaining participants identifying as straight/heterosexual (1.5%), same gender loving (0.8%), MSM (0.2%), or other (1.6%). White participants accounted for 71.5% of the total sample ($N = 965$), Latino participants accounted for 18.6% of the sample ($N = 252$), and Black participants accounted for 9.9% of the sample ($N = 133$). The majority reported being HIV-negative (80.4%). Nearly one fifth of the sample had never been tested for HIV (18.2%), and a small proportion reporting living with HIV (1.4%). Sixteen percent of the sample reported having been diagnosed with a STI in their lifetime (see Table 1). In bivariate comparisons by race/ethnicity, Black participants were more likely to report living with HIV (5.3%) when compared to White (.6%) and Latino (2.4% counterparts). We observed no other racial/ethnic differences across the demographic characteristics of our sample.

Overall, participants' decisional balance scores were close to neutral ($M = .02$; $SD = 1.11$), and safer-sex difficulty scores were relatively low ($M = 1.85$; $SD = .55$). Black participants reported fewer safer sex difficulties and greater decisional balance to use condoms than White and Latino YGBMSM, respectively (see Table 1). The sample reported a low to moderate degree of depressive ($M = 2.26$; $SD = .55$) and anxiety symptoms ($M = 2.15$; $SD = 1.03$). Self-esteem scores were moderate to high ($M = 2.87$; $SD = .59$). In bivariate

comparisons of race/ethnicity, Latino participants were more likely than Black YGBMSM to report greater depressive and anxiety symptoms, respectively, and lower self-esteem. Compared to White participants, Black YGBMSM reported less anxiety symptoms. No differences between White and Black participants were observed for depression or self-esteem.

Multivariable Analyses

Whites—In our model for White YGBMSM ($F_{(9, 955)} = 12.47, p < .001; R^2 = 9.7\%$), greater decisional balance to use condoms was associated with age ($\beta = -.09, p < .001$), having a prior STI ($\beta = -.10, p < .001$) and safer sex difficulty ($\beta = -.29, p < .001$). We found no association between DBC and education, HIV status, depression, anxiety or self-esteem (see Table 2).

Blacks—In our model for Black YGBMSM ($F_{(9, 123)} = 5.12, p < .001; R^2 = 21.9\%$), decisional balance to use condoms was associated with safer sex difficulty ($\beta = -.32, p < .001$) and depression ($\beta = -.31, p < .05$) symptoms. Compared to HIV negative counterparts, Black participants who did not know their HIV status reported greater decisional balance to use condoms ($\beta = .20, p < .05$). We did not observe differences between HIV negative participants and counterparts living with HIV. No association between DBC and age, education, having a prior STI, anxiety or self-esteem scores among our Black participants was found (see Table 2).

Latinos—The model focused on Latino YGBMSM's decisional balance to use condoms ($F_{(9, 242)} = 2.41, p < .05; R^2 = 4.8\%$) only had a significant association with anxiety, where higher anxiety scores were associated with greater DBC ($\beta = .21, p = .05$). We observed no association between DBC and age, education, HIV status, prior STI diagnosis, safer sex difficulties, depression symptoms, or self-esteem among Latino participants (see Table 2).

Discussion

The present study aimed to explore the effects of psychosocial functioning on decisional balance to use condoms among Black, Latino, and White YGBMSM. DBC is a critical yet understudied construct that precedes the use of a condom during sexual intercourse, and is therefore an important topic to explore in a broader HIV risk reduction framework. Overall, Black young men in the sample reported less difficulty to implement safer sex strategies than White and Latino men, and also reported higher DBC to use condoms than White and Latino peers. In fact, White and Latino participants' mean scores on decisional balance to use condoms were negative, albeit slightly, indicating that White and Latino participants show a small overall preference to forego condoms.

Within our multivariable models, safer sex difficulty was significantly associated with a decrease in DBC for Black and White YGBMSM, with the effect size for the association between DBC and safer sex difficulties being greater for Black YGBMSM than White counterparts. We also observed a trend towards significance ($p < .10$) between DBC and safer sex difficulty for Latino YGBMSM. Taken together, these findings complement previous studies showing that Black YGBMSM do not have a greater likelihood to forego condoms

when compared to other racial/ethnic groups (Calabrese et al., 2013; Garofalo et al., 2010; Maulsby et al., 2013; Millett et al., 2006; Wade & Harper, 2015).

When we examined mean differences across race/ethnicity in psychological functioning, we found that Latino participants had higher overall mean depressive symptoms scores relative to Black participants. In multivariable models, we found a statistically-significant association between depressive symptoms and DBC among Black YGBMSM, suggesting that greater depressive symptoms were related to a decrease in Black participants' inclination toward condom use. In fact, the effect size for depressive symptoms on Blacks' decisional balance to use condoms was among the largest in the study, which complements previous findings on the adverse relationship between depressive symptoms and behavioral health risk for Black MSM (Reisner et al., 2009).

With regard to anxiety symptoms, Latino YGBMSM reported greater mean scores than White and Black counterparts. They also reported a positive association between DBC and anxiety symptoms, an association that was not observed in the other two groups. It is possible that unique social, cultural, and familial experiences among Latino YGBMSM contribute to the differences observed in anxiety among this population. For the present study, the underlying mechanisms associated with these differences are unclear. More research is needed on how the unique experiences across different racial/ethnic groups contribute to differential associations between psychosocial factors and DBC. Overall, the present study suggests that general symptoms of anxiety may serve to increase decisional balance to use condoms among Latino YGBMSM, which is consistent with earlier research about HIV/STI-specific anxiety (Ellen et al., 1996).

Black YGBMSM reported higher self-esteem scores than Latino counterparts, and comparable scores to White peers. In our race-specific multivariable models, however, self-esteem was not significantly associated with decisional balance to use condoms in any of our race/ethnicity models. This finding does not support earlier qualitative research suggesting that self-esteem may have an influence on sexual health risk for Black MSM (Adam et al., 2005; Stokes & Peterson, 1998), and builds on a sparse literature exploring the relationship between self-esteem and sexual risk among YGBMSM. Given these inconsistent findings, researchers may consider examining self-esteem in future studies exploring differential associations between psychosocial factors and DBC across racial/ethnic groups. Overall, results of the present study suggest that psychological factors may be differentially associated with decisional balance to use condoms by race/ethnicity. To this end, the findings support the creation of initiatives that address the specific and unique psychosocial needs of different ethnic groups, aligning with previous research emphasizing the importance of developing culturally-tailored interventions (Harper et al., 2012).

Across sociodemographic variables, White participants were the only group to show a significant effect for age and prior STI diagnosis, where being older and having been diagnosed with a STI in the past were associated with a decrease in decisional balance to use condoms, respectively. Developmental factors, attitudinal shifts among younger generations around condom use, and less perceived severity about acquiring new STIs may explain the observed associations with DBC among White participants. With a burgeoning biomedical

landscape in the area of HIV prevention—including a focus on treatment as prevention, Pre-exposure Prophylaxis (PrEP), and the use of rectal microbicides—the prospect of alternative strategies to condom use has come increasingly into the public health discourse (Smith, Powers, Kashuba, & Cohen, 2011; Juusola et al., 2012; Gamarel & Golub, 2015). Moreover, with the advent of antiretroviral treatment (ART), a generational shift in attitudes about the danger of HIV may be taking place, and optimistic attitudes about the efficacy of ART may generate reduced apprehension in decisions to forego condoms (MacKellar et al., 2011). Unfortunately, these data were collected prior to the scale-up of PrEP in the United States. Consequently, more investigation will be needed to understand whether attitudes towards condoms are shifting in light of the aforementioned changes in the prevention landscape.

Strengths and Limitations

This study benefits from having a large sample size, enabling the researchers to draw meaningful conclusions about the population of focus, and enhancing the generalizability of the study findings. The study was also strengthened by the analytic strategy, as the estimation of three linear regression models enabled the researchers to make comparisons across racial/ethnic group categories. These comparisons were also beneficial, as few researchers have examined race-based differences with regard to psychological factors and decisional balance to use condoms. As such, this study makes an important contribution to the understanding of racial/ethnic differences among YGBMSM, and the ways in which these differences are associated with sexual health decision making.

Due to the cross-sectional survey design of this study, however, it is not possible to draw conclusions about causal relationships between the variables observed. Also, over 70% of the sample identified as White, and fewer than 10% were non-Hispanic Black/African American identified. As such, future studies would benefit from a larger number of racial/ethnic minorities—particularly Black YGBMSM—to enhance the generalizability of study findings to this population. Our sample may also have limited generalizability to the larger population due to our sampling strategy and self-selection. In addition, other racial/ethnic groups were excluded from the analyses, and thus data for a substantial number of racial/ethnic groups were not captured in this study. In the future, researchers should examine decisional balance to use condoms and similar psychosocial variables across a broader spectrum of racial/ethnic groups, in order to identify unique differences among a more diverse population. Finally, although prior research has noted an association between DBC and condom use behaviors, other motivations beyond seeking to make an emotional connection with a partner might also predict condom use behaviors. Future research examining the relative contribution of different motivations on condom use, including their role as a potential mediator between psychological functioning and condom use, is warranted.

The study sample also consists of young men who (1) have access to the internet and (2) are interested in using the internet to meet partners, two criteria for participation that further limits the researchers' ability to generalize to all YGBMSM. YGBMSM who experience greater marginalization—such as those who are homeless or economically disenfranchised as well—as YGBMSM who differ on their preferred methods for meeting and dating other

men—are not accounted for in this study. In the case of homeless and economically displaced YGBMSM, the risk for HIV and other STI infection may be especially high (Gangamma, Slesnick, Toviessi, & Serovich, 2008), pointing to the importance of capturing and accounting for other factors among this population that contribute to health risk. Consequently, future studies examining the role of psychosocial functioning and youths' perception of ease/difficulty in implementing safer sex strategies should aim to gather data on subpopulations that may have been missed in this study.

Taken together, the results of this study suggest that greater emphasis should be placed on addressing symptoms of depression and anxiety among Black and Latino YGBMSM, respectively. It would also be beneficial to have a better understanding of the ways in which anxiety serves to increase decisional balance to use condoms among Latino YGBMSM. As the HIV prevention landscape continues to be influenced by multi-level solutions to confront the epidemic, it will be critical for practitioners to take into account racial/ethnic differences with regard to psychosocial functioning and the decision making processes surrounding condom use. This will be especially important for Black YGBMSM who present with depressive symptoms, as they may be more prone to forego condoms in light of such symptoms. Future studies should also consider how different manifestations of anxiety symptoms, including state vs. trait, performance, social, and generalized anxiety are associated with DBC. These data may help us garner a better understanding of YGBMSM's decisional balance to use condoms, and allow us to tailor intervention initiatives that take competing motivations and interests into account.

In addition, the finding of a negative value on decisional balance to use condoms among both Whites and Latino YGBMSM raises concerns about safer sex decision making, and complements earlier reports from the CDC (2013) that condom use has been on a decline among this population. Moving forward, it will be important for public health practitioners to place a continued emphasis on health education initiatives concerning safer sex practices, highlighting the potential for PrEP among YGBMSM who may not desire, or be able, to use condoms consistently (Gamarel & Golub, 2015). Investigators have already pointed to the lack of sufficient sex-education as a reason for high-risk behavior among youth, and point especially to a deficit of LGBT content in school-based sex education curricula (Gowen & Winges-Yanez, 2013; Pingel, Thomas, Harmell, & Bauermeister, 2013). Since LGBT youth and adolescents are less likely to receive educational content that are tailored to their specific needs, they may in turn lack the requisite skills, confidence, and self-efficacy needed to pursue safer sex strategies with both casual and romantic partners. Sex education that is inclusive of a range of sexual expressions, behaviors, and identities may better serve populations that are too often neglected in classroom settings, and in turn reduce the disproportionate rates of sexual health disparities within these populations.

The finding that Black men in this study sample have higher DBC relative to other groups complements a growing body of literature concerning individual risk behaviors (such as condom use), and their failure to explain the elevated rates of HIV among Black YGBMSM. These results have important implications for the future of research and practice in sexual health promotion. While it is important to communicate the effectiveness of condoms on reducing HIV risk, especially given recent trends of condom discontinuation among gay

men, this study provides evidence that Black YGBMSM already see greater benefits to using condoms relative to their White and Latino peers. Moreover, there is emerging evidence that Black YGBMSM use condoms more consistently than other groups, and still rates of HIV are increasing among this population (Calabrese et al., 2013). As such, it will be important for researchers and practitioners to pursue alternative strategies for intervention, and cultivate a more holistic approach to addressing disparities in sexual health. Specifically, researchers may consider addressing community-level, structural, or sociocultural factors that influence racial/ethnic minority sexual health through indirect pathways (e.g., psychological distress), as opposed to concentrating their efforts exclusively or predominantly on the promotion of condom use. Finally, investigators should continue to explore the dynamics of social systems and structural influences on HIV across racial/ethnic domains, with a particular focus on culture and community as a conduit for developing new health promotion initiatives beyond the individual-level.

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Table 1

Descriptive statistics by race/ethnicity across study variables

	Overall	White (N=965)	Black (N=133)	Latino (N=252)	F/X ²	Sig.	Racial/ethnic differences
	M(SD)/N(%)	M(SD)/N(%)	M(SD)/N(%)	M(SD)/N(%)			
Age	20.80(1.94)	20.79(1.95)	20.89(1.95)	20.79(1.90)	.16	.85	
High School Completion	1301(96.4 %)	932 (96.6%)	125 (94.0%)	244 (96.8%)	2.43	.30	
HIV Status							
HIV Negative	1085 (80.4%)	778 (80.6%)	107 (80.4%)	200 (79.4%)	.20	.91	
HIV Unknown	246 (18.2%)	181 (18.8%)	19 (14.3%)	46 (18.2%)	1.57	.46	
HIV Positive	19 (1.4%)	6 (.6%)	7 (5.3%)	6 (2.4%)	20.26	.001	B>W; B > L
Prior STI	221 (16.4%)	152 (15.8%)	28 (21.1%)	41 (16.3%)	2.40	.30	
Safer Sex Difficulty	1.85(.55)	1.88(.53)	1.65(.55)	1.87(.61)	9.75	.001	B < W; B < L
Decisional Balance	.02(1.11)	-.02(1.08)	.47(1.15)	-.06(1.12)	12.44	.001	B > W; B > L
Depression	2.26(.55)	2.25(.53)	2.14(.59)	2.34(.58)	5.86	.003	B < L
Anxiety	2.15(1.03)	2.12(.97)	2.01(1.12)	2.34(1.17)	6.12	.002	L > W; L > B
Self- Esteem	2.87(.59)	2.87(.59)	2.97(.58)	2.82(.60)	3.03	.05	B > L

Notes. Statistically-significant pairwise comparisons by race are noted in last column for Black (B), Latino (L), and White (W) YGBMSM.

Table 2

Multivariable regression model of decisional balance to use condoms by race/ethnicity

	White (N=965)		Black (N=133)		Latino (N=252)	
	b(SE)	β	b(SE)	β	b(SE)	β
Constant	1.80(.54)		1.25(1.30)		-.73(1.11)	
Age	-.05(.02)	-.09**	-.01(.05)	-.01	-.04(.04)	-.07
Education	.18(.19)	.03	.11(.38)	.02	.12(1.84)	.12
HIV Status						
HIV Unk	.10(.09)	.04	.66(.27)	.20*	.15(.19)	.05
HIV Poz	-.38(.43)	-.03	.07(.41)	.01	-.16(.48)	-.02
Prior STI	-.30(.10)	-.10***	-.30(.23)	-.11	-.10(.20)	-.04
Safer Sex Difficulty	-.55(.07)	-.27***	-.66(.17)	-.32***	-.21(.11)	-.11
Depression	-.16(.09)	-.08	-.60(.26)	-.31*	.13(.18)	.07
Anxiety	.09(.05)	.08	.27(.14)	.26*	.20(.09)	.21*
Self-Esteem	.08(.07)	.05	.37(.20)	.19	.17(.14)	.09
Omnibus Test	F(9,955)=12.47***		F(9,123)=5.12***		F(9,242)=2.41*	

Notes. Referent groups for multivariable regressions are: not completing high school (Education), self-reporting as HIV-negative (HIV Status), and not having a prior STI diagnosis (Prior STI).

* p<.05;

** p<.01;

*** p<.001.