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Masculinity, Muscularity, and HIV Sexual Risk Among Gay and Bisexual Men of Color

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Previous research has highlighted the association between HIV sexual risk behaviors, muscularity concerns, and masculinity among gay and bisexual men (GBM). A few studies that explored these issues, however, have used relatively small sample sizes and predominantly White GBM samples. In addition, little is known about whether a drive for muscularity and perceptions of masculinity are associated with HIV sexual risk behaviors among GBM of color. This community-based study examined the association between drive for muscularity, masculinity, and HIV sexual risk among a sample of 389 GBM of color in Toronto. In multivariable analyses, drive for muscularity and masculinity were significantly associated with HIV sexual risk, after controlling for sociodemographic variables and internalized homophobia. Findings suggest that a desire to be more muscular or a disappointment with one's musculature, as well as an endorsement of body image and penis size as indicators of masculinity may play a role in HIV sexual risk behaviors. This study is among the first to examine the role of drive for muscularity and notions of masculinity in relation to HIV sexual risk exclusively among an ethnoracially diverse sample of GBM. Further research is needed to better understand the link between body image and masculinity to reduce HIV risk among GBM of color.

Keywords: masculinity, muscularity, HIV sexual risk, gay men, racial minorities

Previous research has shown that among gay and bisexual men (GBM), HIV sexual risk behaviors have been associated with body image disturbance (Allensworth-Davies, Welles, Hellerstedt, & Ross, 2008; Wilton, 2009) and masculinity (Halkitis & Parsons, 2003; Hamilton & Mahalik, 2009). Research shows that in comparison to heterosexual men, GBM have increased susceptibility to HIV (Brooks, Rotheram-Borus, Bing, Ayala, and Henry, 2003; Muñoz-Laboy and Dodge, 2005) and that in the United States and Canada, GBM of color are at even greater risk for HIV infection (Centers for Disease Control and Prevention, 2012; Hall et al., 2009; Millett et al., 2012; Remis, Swantee, Schiedel, Fikre, & Liu, 2007; Wolitski, Stall, & Valdiserri, 2008). Racial and ethnic disparities in HIV rates among GBM may be suggestive of the compounding negative effects of multiple forms of oppression on the health of this population, including homophobia, racism, and masculine gender norms.

Although some research has examined the relationships between body image, masculinity, and HIV sexual risk among GBM, most has focused on primarily White populations. Less is known about whether drive for muscularity and masculinity are associated with HIV sexual risk behaviors for GBM of color. Of the few studies that have explored these issues among GBM of color all have used a small sample size or used a qualitative method, which limits our capacity to denote a statistically significant relationship between HIV sexual risk, drive for muscularity, and masculinity.

Identifying the factors that are associated with sexual risk is important given the considerable physical health consequences associated with HIV transmission and the disproportionate prevalence of HIV and sexually transmitted infections among GBM of color (Diaz, Ayala & Bein, 2004; Hall et al., 2009; Remis et al., 2007). Thus, there is a vital need for research that explores the relationship between body image (in particular drive for muscularity), masculinity, and HIV sexual risk.

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Masculinity and HIV Sexual Risk

Research has highlighted the endorsement of masculinity norms among GBM of color (Fischgrund, Halkitis, & Caroll, 2012). Using data from in-depth interviews with 37 Asian gay men, Phua (2007) studied how participants interpreted and negotiated their form of masculinity within a racialized gender hierarchy. Phua (2007) highlighted how the stereotyping of Asian gay men's physical features portrays them as less masculine and often as a receptive partner during anal sex (Phua, 2007).

Another study with Latino and African American GBM shows that these men often felt that they were perceived as less masculine because of their sexuality and that this may increase HIV risk behavior (Rhodes et al., 2011).[1] Given the need for GBM who feel threatened by dominant masculine ideology to preserve their manhood, GBM may feel that risky behaviors (i.e., inconsistent condom use) preserve their sense of masculinity, and/or may try to compensate the feelings of not being perceived as "real men" by increasing the number of their sexual partners (Rhodes et al., 2011).

Recent studies indicate that bisexually active GBM of color are at significantly higher risk for HIV/AIDS than exclusively homosexually active men and exclusively heterosexually active men (Brooks et al., 2003; Muñoz-Laboy and Dodge, 2005). For instance, maintaining a masculine identity plays a crucial role in the way bisexually active Latino men construct their sexual lives, sexual interactions, and limit sexual communication (including the negotiation of sexual risk practices) through the internalization of masculine ideologies of communication (Muñoz-Laboy & Dodge, 2005).

A study by Kisler and Williams (2012) of 16 HIV-positive African American men who have sex with both men and women (MSMW) suggested that African American MSMW are likely to experience racial discrimination within White heterosexual and gay communities as well as sexual discrimination in African American communities. Participants in their study repeatedly described how feminine, nonmasculine traits were associated with perceptions of being gay and of being HIV-positive. As a result, by exhibiting traits associated with more traditional conceptions of masculinity (e.g., muscular body), a buffer against the effects of HIV stigma and being a sexual minority could be established (Halkitis, 2001; Kisler & Williams, 2012). Similarly, other research with African American communities suggests that hypermasculinity may be a way to buffer racial discrimination within the broader society (Ward, 2005). The emphasis on "buffering" against the effects of HIV stigma among gay men in large cities in North America emerged in reaction to the health of gay men living with HIV who experienced weight loss, muscular wasting, and eventual death from AIDS (Halkitis, 2001). It is in this context, and the context of side effects of earlier HIV medications, that gay men have historically perpetuated a subculture of muscularity that associates masculinity with physicality and sexual prowess (Halkitis, 2001).

GBM may also seek out unprotected sex as an affirmation of masculinity. Halkitis, Green, and Wilton (2004) reported that among HIV-positive gay men ($n = 114$), those who scored higher on beliefs about masculinity as important components of sexual behaviors reported more frequent anal intercourse without a condom. Halkitis and Parsons (2003) found that among a sample ($n = 112$) of mostly White HIV-positive gay men, sexual prowess and physical appearance were important components in defining masculinity. The HIV-positive GBM in their study reported that anal intercourse without a condom provided them with an affirmation of their physical attractiveness, masculinity and a sense of greater connectedness to their sex partners (Halkitis & Parsons, 2003). Hamilton and Mahalik (2009) also reported that greater conformity to norms of masculinity significantly predicted GBM's health risk behaviors, including HIV sexual risk. Fields and colleagues (2012) suggested that the sociocultural conceptions of masculinity and gender role expectations influence the type of sexual partners GBM of color select, their sexual roles (e.g., sexual positioning in sexual encounters), as well perceptions of partners' HIV risk.

Among Asian and African American GBM, smaller qualitative studies suggest that GBM of color may experience a desire to meet masculine ideals, and muscular body image ideals, but in addition they may experience added pressures related to being a member of an ethnoracial minority group (Drummond, 2005; Fields et al., 2012; Kisler & Williams, 2012). For GBM of color, the added pressure of managing racialized body stereotypes alongside mainstream body idealization creates a complex intersection of race and masculinity (Brennan et al., 2013). GBM of color are confronted with body image ideals that either erase their presence or that seek to exoticize them in ways that are dehumanizing and that impact self-esteem and well-being (Brennan et al., 2013).

Body Image Dissatisfaction and Drive for Muscularity

Research literature on primarily White samples of GBM has highlighted the increased prevalence of body image dissatisfaction and its implications for the health and well-being of this population. Research published in the last two decades consistently reports greater body dissatisfaction among GBM compared to heterosexual men (Beren, Hayden, Wilfley, & Grilo, 1996; Tiggemann, Martins, & Kirkbride, 2007). For example, in one study, although both gay ($n = 134$) and heterosexual men ($n = 119$) desired to be thinner and more muscular, body dissatisfaction (a discrepancy between current and ideal body image figures) was greater for gay men (Tiggemann et al., 2007). In Beren et al. (1996), compared with heterosexual men ($n = 72$), gay men ($n = 58$) reported significantly more distress in many of the psychosocial areas related to body dissatisfaction (Beren et al., 1996). Similarly, a meta-analysis of 27 studies ($d = 0.74$) investigating body image satisfaction among heterosexual men and women, lesbians, and gay men confirms that gay men ($n = 984$) are more vulnerable to body image dissatisfaction compared to heterosexual men ($n = 1,397$; Morrison, Morrison, & Sager, 2004).

Body image dissatisfaction among GBM has been associated with symptoms of depression (Blashill, 2010; Olivardia, Pope, Borowiecki, & Cohane, 2004), appearance-related anxiety (Blashill, 2010), and disordered eating symptomology (Blashill, 2010). A study of GBM ($n = 304$) suggests that men who reported more symptoms of muscle dysmorphia also reported lower self-

[1] Rhodes et al. (2011) use the term *men who have sex with men* (MSM) in their paper. For this study, however, the members of the Community Advisory Committee preferred the use of the term *gay and bisexual men* to *men who have sex with men*.

esteem and increased feeling of loneliness, than men who reported fewer muscle dysmorphia symptoms (Chaney, 2008).

Previous research has identified body image ideals for GBM based on the desire for muscularity (Beren et al., 1996; Lakkis, Ricciardelli, & Williams, 1999; Levesque & Vichesky, 2006; McCreary, Saucier, & Courtenay, 2005; Morgan & Arcelus, 2009; Morrison, Morrison, & Hopkins, 2003; McCabe & Ricciardelli, 2004; Silberstein, Mishkind, Striegel-Moore, Timko, & Rodin, 1989; Yelland & Tiggemann, 2003). Being muscular and masculine are highly valued qualities among GBM (Brennan, Craig, & Thompson, 2012). The desire to be muscular is characterized as an individual's perception that he or she is not muscular enough and that bulk should be added to the body, in the form of muscle mass (McCreary, & Sasse, 2000; McCreary, Saucier, & Courtenay, 2005). Muscularity, which is a construct closely associated with masculinity, is highly emphasized within general North American culture and society (Steinfeldt, Gilchrist, Halterman, Gomory, & Steinfeldt, 2011). A muscular male body has been the representative prototype for what constitutes manliness and masculinity (Kendall & Martino, 2006; Lanzieri & Hildebrandt, 2011).

GBM often seek to increase their muscularity as a means to negotiate the pressure to conform to masculine ideologies (Wilson et al., 2010). The drive for muscularity plays a significant and critical role in sociosexual interactions among GBM and also has been linked to depression, sexual risk taking, and internalized homonegativity (Brennan et al., 2012). Internalized homonegativity (a concept closely related to internalized homophobia) is an internalization of homophobic attitudes and assumptions about gay (and lesbian and bisexual [LGB]) people by LGB people themselves (Ross et al., 2013). It can lead to feelings of inferiority, social exclusion, guilt, and lack of self-worth (Ross et al., 2013). The minority stress model (Meyer, 1995) posits that GBM are subjected to chronic stress related to internalized homophobia and expectations of stigma (Kimmel & Mahalik, 2005). Research suggests that GBM who internalize homophobic attitudes and have greater expectations of being stigmatized for being gay, desire a powerful physique as a form of defense against the experience of prejudice from others or develop a negative body image as a result of their internalized shame and stigma (Kimmel & Mahalik, 2005). Therefore, body dissatisfaction among GBM who strive to present themselves as masculine through behaviors and appearance (e.g., drive for muscularity) may be related to the potential impact of homophobia and stigma (Halkitis, 2001).

Body Image Among GBM of Color

Some research has focused on issues of body image among GBM of color. Drummond (2005) suggested that Asian gay men in Australia struggled to fit with an ideal body type that simultaneously met the expectations of masculinity from their Asian ethnic and cultural identity as well as from mainstream gay culture. Latino GBM in the United States reported a link between body image dissatisfaction, HIV sexual risk, and high-risk eating attitudes and behaviors (De Santis et al., 2012). Heinberg, Pike, and Loue (2009) reported frequent use of appearance-altering substances (protein supplements and anabolic-androgenic steroids for muscle gain, as well as substances for weight loss/fat burning such as ephedrine), bulimic symptoms, and body dissatisfaction among a sample of young African American GBM.

Body dissatisfaction may also be associated with sexual risk behaviors among GBM of color. Wilton (2009) found that among 481 African American GBM, those with a negative body image were less likely to use condoms during anal intercourse compared to those with a positive body image. A drive for muscularity, standing as a proxy for a desired masculine appearance and identity, may be a construct directly linked to HIV sexual risk taking among GBM (Halkitis & Parsons, 2003; Kisler & Willians, 2012; Kippax & Smith, 2001). Because little is known about the impact of drive for muscularity and its relationship with indicators of perceived masculinity on the health and wellbeing of GBM of color (in particular, HIV sexual risk), more research is warranted to advance our knowledge in this area.

Given a growing body of literature that suggests that men in Western countries who adopt traditional beliefs about masculinity and who report the desire and drive for muscularity may be more likely to engage in risky sexual behavior (Halkitis, Green, & Wilton, 2004; Halkitis & Parsons, 2003; Hamilton & Mahalik, 2009), we presume this will also be true for GBM of color. The present study sought to examine the relationship between perceptions of masculinity, drive for muscularity, and the sexual health of GBM of color in Toronto, Canada. In focusing on masculinity, this article considers a very specific conceptualization of the multifaceted phenomenon of masculinity (e.g., assessment of the indicators of perceived masculinity such as body type, weight, muscle tone, and penis size) and does not attempt a comprehensive assessment of the impact of hegemonic masculinity on population health. Moreover, the health impact of attempting to achieve these masculine ideals is as of yet, mostly unknown, particularly among GBM of color who are also dealing with racism and homophobia (Kisler & Williams, 2012). We expect to find a significant relationship between the perceptions of masculinity, drive for muscularity, and HIV sexual risk among this sample.

Method

Design and Recruitment

The data for this article were collected during the second part of a two-phase, mixed-methods community-based study examining body image among GBM from the following four largest ethnoracial communities in Toronto (Statistics Canada, 2011): South Asian, Black/African/Caribbean, East/Southeast Asian, and Latino/Hispanic/Brazilian (Ibero American[2]). The larger study was designed to examine body image, health, and well-being among GBM of color (detailed description of the first phase is described in Brennan et al., 2013). This (second) phase used an online survey and a cross-sectional design method. Recruitment flyers were posted in community agencies serving GBM of color, in gay bars/clubs, and on social media websites and relevant community

[2] Combining Latino and Hispanic with Brazilian identities is sometimes used and thought of as Ibero-American, meaning that these were countries mostly colonized by Spain and/or Portugal (or from Spain or Portugal) that have some similar characteristics and history (Gastaldo, Mercado-Martinez, Ramasco-Gutierrez, Lizardi-Gomez, & Gil-Nebot, 2002). For this study, the members of the Community Advisory Committee felt it was reasonable to combine them a priori given that local services designed for Latino/Hispanic gay men often provide services to Brazilian men.

e-mail listserves. The study was conducted in collaboration with a Community Advisory Committee (CAC) of 14 GBM of color representing each of the aforementioned ethnoracial communities. Some of the CAC members were employees of social service agencies serving GBM of color, and others were community volunteers. In addition to actively assisting the research team with the development and design of the study, some of the CAC members also received training in basic research skills (capacity building) and actively participated in data collection, analysis, and member checking procedures. Study eligibility criteria included (a) being at least 18 years of age; (b) identifying as a gay or bisexual man or a man having had sex with another man in the last 12 months; (c) identifying with at least one of the following four largest ethnoracial groups in Toronto: Black/African/Caribbean, South Asian, East/Southeast Asian, and Latino/Hispanic/Brazilian (Ibero American); (d) living or working in Toronto; and (e) English proficiency.

All procedures were approved by the University of Toronto, Ryerson University, and the University of Ontario Institute of Technology Institutional Review Boards. Between March and June 2012, participants were directed to the website, proceeded through eligibility criteria and the online consent form, and then anonymously responded to the survey questions (IP tracking was disabled). All participants resided in Canada at the time of data collection. The average completion time for the survey was 1 hr. Upon completion of the survey, participants were offered a $30 gift card as compensation for their time.

Measures

Demographic variables. Sociocultural demographics included age, race/ethnicity (predetermined in the eligibility, but with the option to define in more detail qualitatively in the survey), household income (CAN$0–9,999, $10,000–29,999, $30,000–59,999, $60,000+), sexual orientation (gay/homosexual, heterosexual, and bisexual), and HIV status (positive, negative, unsure). The numbers of heterosexually identifying men were low ($n = 5$), and they were removed from further analyses.

Drive for muscularity. Body image was measured using the 15-item Drive for Muscularity Scale (McCreary & Sasse, 2000). All items were in a Likert scale format ranging from 1 (*always*) to 6 (*never*) and reverse-direction scored and summed up with a higher score indicating a greater drive for muscularity. The Drive for Muscularity Scale, being specifically focused on muscularity, is a commonly used scale that assesses an individual's level of satisfaction with the muscularity of their body (e.g., "I wish that I were more muscular") as well as behaviors associated with increasing muscle mass (e.g., "I lift weights to build up muscle"). This scale has been shown to have excellent internal consistency ($\alpha = .90$; Mussap, 2008). The Cronbach's alpha for the Drive for Muscularity Scale for the current sample was .90.

Perceived masculinity male eroticism. The indicators of perceived masculinity (e.g., body type, penis size) were measured by a 5-item questionnaire (Perceived Masculinity Male Eroticism subscale; Cheseboro & Fuse, 2001). This subscale is part of the larger Perceived Masculinity Scale (Cheseboro & Fuse, 2001) and was selected because of its particular focus on body image. The Male Eroticism subscale consists of five questions. For three of the five questions, we added the terms *gay/bi/queer community*. The scale assesses beliefs regarding physical appearance and penis size as indicators of masculinity (e.g., "How often do you think a man's weight, muscle tone, and overall physical appearance determine how masculine or manly a man is?," "How often do you think society [e.g., in TV and magazine advertising] uses a man's weight, muscle tone, and overall physical appearance to determine how masculine or manly a man is?," "How often do you think that the gay/bi/queer community [e.g., in TV and magazine advertising] uses a man's weight, muscle tone, and overall physical appearance to determine how masculine or manly a man is?" "How often do you think that the gay/bi/queer community uses a man's penis size to determine how masculine or manly a man is?" "How often do you think a man's penis size determines how masculine or manly a man is?"). For all five items, a 7-point Likert scale is used, with anchor points ranging from 1 (*never*) to 7 (*always*). All items are summed up with higher scores on this subscale reflecting greater endorsement of beliefs regarding body image as indicators of masculinity. Cronbach's alpha for the Perceived Masculinity Male Eroticism subscale for the current sample was .73.

We conducted factor analyses on the Perceived Masculinity Male Eroticism subscale to assess the dimensionality of this modified scale (data not shown). This principal axis factor analysis revealed that the Perceived Masculinity Male Eroticism subscale consists of two factors: the first factor examines participants' sense of society's or gay community's norms about masculinity, whereas the second factor relates to personal norms regarding masculinity/masculine appearance. Together, these two factors were able to explain 63.60% of the variance. All items loaded at .40 or higher, indicating that these three variables are related with each other. The Kaiser-Meyer-Olkin measure of sampling adequacy was .64, above the recommended value of .50, and Bartlett's test of sphericity was significant, $\chi^2(10) = 691.85$, $p < .05$. The communalities were all above .3, further confirming that each item shared some common variance with other items.

Internalized homophobia. Internalized homophobia was assessed with a nine-item Internalized Homophobia Scale developed by Herek, Cogan, Gillis, and Glunt (1998). This scale was designed to assess responses to questions about an individual's feelings about being a GBM (sample item: "I wish I weren't gay/bisexual"). This scale has demonstrated high reliability in previous research ($\alpha = .83$) and has been culturally validated among a sample of lesbian, gay, bisexual, and transgender people of color (Szymanski & Gupta, 2009). Cronbach's alpha for the Internalized Homophobia Scale for the current sample was also .91. All items were on a Likert scale format ranging from 1 (*always*) to 5 (*never*). All items were averaged, with higher scores reflecting higher levels of internalized homophobia.

HIV sexual risk behaviors. The outcome variable HIV risk was assessed as self-reported anal intercourse without a condom in the last 6 months with a partner (either primary and secondary) whose HIV status was serodiscordant or unknown. These data were categorized based on participants' HIV status and the HIV status of participants' sexual partners. Following other published psychological literature on HIV risk (e.g., Halkitis & Parsons, 2002; Wilton, 2009) data were coded into a single binary variable representing reported HIV sexual risk behaviors (yes/no).

Data Analysis

All data analyses were conducted using SPSS 21. First, to conduct bivariate and multivariate analyses, descriptive analyses, and tests for the assumptions of normality were conducted using histograms and tests for skewness and kurtosis. No distribution concerns were identified. Second, prior to performing the logistic regression analysis, bivariate analyses were conducted using chi-square tests for categorical variables, and Pearson correlations and *t* tests/analyses of variance for continuous variables, to assess the relationships between perceived masculinity, drive for muscularity, internalized homophobia, and demographic variables. After significant associations were identified in bivariate tests, multivariable analyses were conducted using binary logistic regression with reported odds ratios, Wald-statistic (likehood ratio test using maximum likehood estimation), and 95% confidence intervals. For better interpretability, participants' scores were transformed using Z-transformations to center the variables and show the increases in HIV sexual risk behavior for one standard deviation in each independent variable score. A logistic regression was conducted to assess the relationship between scores on the drive for muscularity, perceived masculinity, internalized homophobia scales and the measure of HIV risk, while controlling for sociodemographic factors such as age, household income, sexual orientation, and HIV status.

Results

Characteristics of the Sample

A total of 410 men completed the survey. Given the exploratory nature of the study, our study sample size was adequate for the purposes of this analysis. Because of missing data for the variables of interest (scores on Perceived Masculinity Scale and Internalized Homophobia Scale), after following listwise deletion procedure, the final study sample included 369 GBM of color. We conducted bivariate analyses to determine whether there were any patterns to the missing data. No significant results emerged from these analyses (no associations were found between the variables of interest, including demographics). Demographic characteristics of participants are listed in Table 1. Because stratified sampling was used, the ethnoracial groupings of participants were of similar frequencies. Participants identified as South Asian (20.6%), Black/African/Caribbean (21.7%), Latino/Brazilian (24.7%), East/Southeast Asian (27.4%), and mixed race (5.7%). The majority of respondents were born outside of Canada (68.6%). The mean age was 33 years ($SD = 8.6$). Half of the sample had a bachelor's degree or greater education level completed. The majority of respondents (84.0%) identified as gay/homosexual, and 16.0% as bisexual. The majority of respondents (51.9%) were single, 27.8% were married or partnered, 15.7% were currently dating, and 4.6% were separated, divorced, or widowed. Although 7.9% of participants were unsure of their HIV status and 17.3% self-reported as HIV-positive, almost three-quarter of the respondents self-reported as HIV-negative (74.8%). The majority of participants lived in urban areas (74.6%), followed by suburban (17.0%), and rural areas (8.5%). HIV sexual risk was reported by the 32.2% of the sample.

Table 1
Demographic Characteristics (N = 369)

Characteristic	Frequency (*n*)	% or *M* (*SD*)
Race		
Black, African, Caribbean	80	21.7
East/South East Asian	101	27.4
Latino, Hispanic, Brazilian	91	24.7
South Asian	76	20.6
Mixed	21	5.7
Sexual orientation		
Homosexual/gay	310	84.0
Bisexual	59	16.0
Age years (*M*, *SD*)		33.1 (8.6)
18–24	61	16.5
25–29	93	25.2
30–39	124	33.6
40–49	78	22.1
50+	13	3.5
Household income (CDN $)		
$0–9,999	68	18.4
$10,000–29,999	103	27.9
$30,000–59,999	102	27.6
$60,000+	96	26.0
Canadian or foreign-born		
Canadian-born	116	31.4
Foreign-born	253	68.6
Highest education level completed		
High school or less	81	22.0
Some postsecondary/college	99	26.8
Bachelor degree or greater	189	51.8
HIV status		
Negative	276	74.8
Positive	64	17.3
Not sure	29	7.9
HIV sexual risk		
No	250	67.8
Yes	119	32.2

Note. Total numbers vary due to missing data. CDN = Canadian.

Relationship Between Drive for Muscularity, Perceived Masculinity Male Eroticism subscale, and Internalized Homophobia

Pearson correlations between continuously distributed variables revealed a weak but significant negative association between age and scores on the Drive for Muscularity scale, such that younger participants were more likely to report higher scores on this scale, $r = -.10$, $p = .05$. On the other hand, higher scores on the Perceived Masculinity scale were weakly associated with higher scores on the Drive for Muscularity Scale, $r = .13$, $p = .01$, and with older age, $r = .14$, $p < .01$. Higher scores on the Internalized Homophobia Scale were significantly associated with younger age, $r = -.14$, $p < .01$ and higher scores on the Drive for Muscularity Scale, $r = .20$, $p < .01$. Correlation analyses are listed in Table 2.

Independent *t* tests revealed that, compared to gay men, bisexual men scored higher on both the Internalized Homophobia Scale ($t = -6.21$, $p < .01$, $d = .81$), and Perceived Masculinity Male Eroticism subscale ($t = -2.80$, $p < .01$, $d = .98$). Chi-square analyses indicated that HIV-negative men were less likely to report HIV sexual risk behaviors, compared to those who self-reported as HIV-positive and participants who did not report their HIV status ($\chi^2 = 48.88$, $p < .01$).

Table 2
Correlations Between Age, Drive for Muscularity, Perceived Masculinity, and Internalized Homophobia in a Sample of Gay and Bisexual Men of Color (N = 369)

Variable	1	2	3	4
1. Age	1.00	−.10*	.14*	−.14**
2. Drive for muscularity	−.10*	1.00	.13*	.20**
3. Perceived masculinity	.14*	.13*	1.00	.42**
4. Internalized homophobia	−.14*	20**	.10	1.00

* Pearson correlation significant at the .05 level (two-tailed). ** Pearson correlation significant at the .01 level (two-tailed).

Differences Between Ethnoracial Groups on Perceived Masculinity Male Eroticism subscale and HIV Sexual Risk

East/Southeast Asian men were less likely than other ethnoracial groups to report HIV sexual risk behaviors ($\chi^2 = 16.19$, $p < .01$). There were significant differences among ethnoracial groups with regard to scores on the Perceived Masculinity Scale ($F = 7.14$, $p < .01$, $d = .70$). A Sheffe post hoc test revealed that Latino/Hispanic/Brazilian GBM reported significantly lower perceived masculinity scores ($M = 18.69$, $SD = 4.68$) compared to East/Southeast Asian ($M = 21.94$, $SD = 5.68$, $p = .01$), Black/African/Caribbean ($M = 21.97$, $SD = 5.01$, $p = .02$), and South Asian GBM ($M = 22.16$, $SD = 5.17$, $p = .01$).

Associations Between Drive for Muscularity, Perceived Masculinity and HIV Sexual Risk

In the logistic regression model for HIV sexual risk, categorical variables were coded with the reference group in the following ways: for household income, CDN $60,000+; for sexual orientation, homosexual/gay; and for HIV-status, HIV-negative was selected as the reference group. In the first block of the logistic regression models, the demographic variables (age, sexual orientation, household income, HIV status) were entered. In the second block, the theoretical variables of interest were entered: Drive for Muscularity, Perceived Masculinity, and Internalized Homophobia. Tolerance and variance inflation factor values were computed for all factors to examine the assumptions of multicollinearity. No multicollinearity problems were identified.

The results of the model revealed a significant logistic regression model for HIV sexual risk among this sample of GBM of color ($\chi^2 = 75.60$, $p < .001$). This model had a very good fit with the sample data (−2 log likelihood = 388.43, Hosmer and Lemeshow chi-square test of goodness-of-fit, $\chi^2 = 15.47$, $p > .05$). The Cox and Snell R^2 and Nagelkerke R^2 indicate that the final model accounted for 19.0% to 26.0% of the variance in HIV risk, respectively. Finally, as determined by self-reported HIV risk behaviors, the model successfully predicted 77.2% of the cases.

The logistic regression analysis revealed an association between muscularity, masculinity, and HIV sexual risk (see Table 3). Specifically, drive for muscularity (adjust odds ratio [*AOR*] = 1.34, 95% confidence interval [CI] [1.04, 1.74], $SE = .13$, $p = .03$) and perceived masculinity male eroticism ($AOR = 1.45$, 95% CI [1.12, 1.88], $SE = .13$, $p = .005$) were significantly associated with HIV sexual risk, even after controlling for internalized homophobia, and the sociodemographic variables. In other words, an increase in 1 *SD* of the mean score of the Drive for Muscularity and Perceived Masculinity Male Eroticism Scale was associated with a 34%, and 45% increase in HIV sexual risk, respectively. In the final model, lower income ($AOR = 2.60$, 95% CI [1.24, 5.56], $SE = .38$, $p = .01$) remained significantly associated with HIV sexual risk. Compared to HIV-negative men, HIV-positive men were more likely to report HIV sexual risk ($AOR = 6.03$, 95% CI [3.14, 11.55], $SE = .33$, $p < .001$). Participants who self-reported an HIV unknown status were more likely to report HIV sexual risk behaviors compared to HIV-negative participants ($AOR = 11.0$, 95% CI [4.30, 27.94], $SE = .48$, $p < .001$).

Table 3
Multiple Logistic Regression of Sociodemographic and Psychosocial Variables on HIV Sexual Risk Behavior Among Gay and Bisexual Men of Color (N = 369)

Socio demographic variables	*B*	*SE*	*AOR*	95% CI	Wald statistic
Age	−0.06	0.02	0.99	[0.96, 1.03]	0.14
Household income (ref. = CDN$60,000+)					
$0–9,999	0.96	0.38	2.60*	[1.24, 5.56]	6.31
$10,000–29,000	−0.01	0.36	0.99	[0.49, 1.99]	0.01
$30,000–59,999	−0.12	0.35	0.89	[0.45, 1.78]	0.11
Sexual orientation (ref. = gay/homosexual)					
Bisexual	0.51	0.35	1.65	[0.83, 3.31]	2.04
HIV status (ref. = HIV-negative)					
HIV-positive	1.80	0.33	6.03**	[3.14, 11.55]	29.30
HIV-unknown	2.40	0.47	11.00**	[4.30, 27.94]	25.50
Psychosocial variables					
Drive for muscularity	0.29	0.13	1.34*	[1.04, 1.74]	4.97
Perceived masculinity	0.37	0.13	1.45*	[1.12, 1.88]	7.87
Internalized homophobia	−0.13	0.14	0.88	[0.67, 1.15]	0.88

Note. *SE* = standard error; *AOR* = adjusted odds ratio; CI = confidence interval; ref. = reference group; CDN = Canadian.
* $p < .05$. ** $p < .001$.

Discussion

This investigation among ethnoracially diverse GBM suggests that body image concerns and concepts of masculinity are associated with HIV sexual risk behaviors. The association between drive for muscularity and sexual risk suggests that a desire to be bigger and more muscular or a disappointment with one's musculature may indeed play a role in HIV sexual risk behaviors. A similar association has been identified in predominantly White samples of GBM (Brennan et al., 2012), but this may be the first examination of drive for muscularity and HIV sexual risk behavior among GBM of color.

The scores on the Perceived Masculinity Male Eroticism subscale were also associated with an increase in HIV sexual risk. As such, perceptions of masculinity as it relates to body image and penis size may be associated with HIV sexual risk. These findings are significant, given that between 2009 and 2012, among HIV-positive GBM diagnoses in Ontario, Canada, the proportion of cases classified as White decreased, from 68.2% in 2009–2010 to 61.3% in 2011–2012 (Remis & Liu, 2013). However, the proportion of HIV-positive GBM diagnosed and reported as Black increased from 8.9% in 2009–2010 to 13.7% in 2011–2012 and the proportion classified as East/Southeast Asian increased from 4.9% in 2009–2010 to 7.6% in 2011–2012 (Remis & Liu, 2013).

Similar to previous investigations (Halkitis, Green, & Wilton, 2004; Halkitis & Parsons, 2003; Hamilton & Mahalik, 2009; Wilton, 2009), this study found that HIV sexual risk behaviors were associated with measures of body image and masculinity. These findings add to the growing literature examining body image and masculinity in relationship to HIV sexual risk.

Previous research among HIV-positive GBM (Halkitis, 2001) and young GBM (Fields et al., 2012) has documented that an emphasis on masculinity may play a significant role in the sexual behaviors of GBM. Previous qualitative research has shown that GBM of color reference the media as a powerful influence on how they perceive and evaluate their own bodies (Brennan et al., 2013). For example, Black men report concerns that they are stereotyped as always being muscular with large penises. GBM of color report that racialized stereotypes are a challenge to their sense of body satisfaction because they are rarely accurate (i.e., nonracialized and/or nonfetishized) images of their bodies portrayed in the media (Brennan et al., 2013). Other research similarly suggests that White bodies are overrepresented in the media, whereas racialized bodies are often reserved for the type of advertisements that meet certain racial stereotypes (e.g., Black male bodies to sell athletic products; Gill, 2009).

Similar to previous research (Kimmel & Mahalik, 2005; Hamilton & Mahalik, 2009), the study findings suggest that (on a bivariate level) internalized homophobia is correlated with a drive for muscularity and with the indicators (e.g., body type, penis size) of perceived masculinity. Contrary to previous research, in our analysis, internalized homophobia was not associated with the measure of HIV sexual risk. This finding is important because over the past decade or more, sexual health promotion programs targeted for GBM have specifically focused on gay/queer identity as a point of departure for health interventions, empowerment and community mobilization. Although identity-based movements have been effective among some groups, it is possible that masculinity, ethnocultural background, and/or body image could serve as a more effective and culturally relevant substrates from which to create new and innovative HIV/sexually transmitted infection prevention efforts for GBM of color.

In addition, the finding that GBM of color with lower incomes are more likely to engage in HIV risk behaviors is significant given previous research documenting the complex relationship between race/ethnicity, class, body image, and eating disorder development (Gentile, Raghavan, Rajah, & Gates, 2007). Previous research suggests that lower income among GBM is associated with HIV sexual risk (Adler, 2006). The current study suggests that lower income is also associated with HIV risk specifically among GBM of color.

In relation to perceived masculinity norms, Ibero American GBM reported significantly lower scores compared to the other ethnoracial groups. These findings could be in part due to how masculinity is perceived in Latin America as a form of behavior that is expected to be enacted all the time, and an ideal to which Latino gay men feel tremendous social pressure to conform for their families and in their social environments (Guarnero, 2007). The lower scores on Perceived Masculinity Scale could represent the possibility that Ibero American gay men may have migrated to Canada because of their concerns about discrimination due to their sexual orientation, and to their self-perceived masculinity. This fear of discrimination has been established in previous literature related to sexual migration of Latino gay men to the United States (Bianchi et al., 2007; Carrillo, 2004; Diaz, 1998; Vasquez del Aguila, 2012). Although the majority of men in our sample who were Ibero American were not born in Canada, given the methodological limitations, we did not ask participants about the context of their immigration. Further research in this area among Ibero American GBM would be helpful to better understand these findings.

HIV sexual risk in the current study was reported by the 32.2% of the sample. This percentage may be relatively high compared to studies reporting HIV sexual risk among primarily White samples of GBM at 20.5% (Brennan et al., 2012). Further, compared to men who reported their HIV status as negative, self-reported HIV-positive men and those of unknown HIV status reported greater HIV sexual risk. There were no differences based on HIV status in scores related to muscularity or perceived masculinity among our sample. A previous meta-analysis has suggested that the majority of HIV-positive GBM do not engage in HIV sexual risk behavior with HIV-negative or HIV-unknown GBM (Crepaz et al., 2009). However, for those who report unprotected anal intercourse with a partner who is HIV-negative or unknown, there are likely to be several factors influencing this risk. Some individual level factors associated with HIV sexual risk among HIV-positive GBM include erectile dysfunction and sexual performance concerns (Bancroft, Carnes, & Janssen, 2005), social anxiety (Hart, James, Purcell, & Farber, 2008), sexual compulsivity, and sensation seeking (Shuper, Joharchi, & Rehm, 2013). However, other studies suggest that issues related to HIV risk among HIV-positive GBM may also likely be associated with structural factors. For instance, Diaz, Ayala, and Bein (2004) reported that among a probability sample of Latino men in the United States, experiences of social discrimination (e.g., homophobia, racism) and financial hardship were associated with increased psychological distress and an increase in HIV sexual risk behaviors. Therefore, it will be important to address concerns about sexual risk behaviors among

HIV-positive GBM by looking at multiple layers of influence (individual, community, and structural).

Previous research has also demonstrated that GBM who do not know their HIV status are more likely to report greater HIV risk (Lauby et al., 2008). A systematic review of qualitative evidence suggested several reasons GBM do not know their status (Lorenc et al., 2011). One concern is about the stigma of an HIV diagnosis, including stigma from family, friends, other gay men, and providers. Another concern is fear about living long-term with HIV and having to negotiate sexual and other personal and close relationships. More research is required to understand the association between unknown HIV status and sexual risk, particularly among GBM of color. Recently, given the stigma and potential legal implications (fear of legal liability in Canada and many jurisdictions in the United States) for HIV-positive individuals not disclosing their HIV status before having unprotected sex, it is possible that some men are not getting tested for HIV because they are having unprotected sex and do not wish to know that they might be HIV-positive.

Limitations, Future Directions, and Implications

There are several limitations in the current study. First, results in this cross-sectional study do not imply causal relationships between masculinity, body image, and HIV risk among GBM of color. It is possible HIV sexual risk behaviors may actually impact one's sense of body image and/or perceptions of masculinity. It is also possible a confounding variable (or variables) are causally related to both sexual risk taking and body image dissatisfaction. Second, as this investigation took place among ethnoracially diverse GBM, the concerns raised in this article may be more reflective of migrants of color. Given our current dataset and methodological limitations, we did not ask about the participants' reasons for migration to Canada. Further, although we collected data on participants' country of birth, where the person was born is not synonymous with what "culture" the person predominantly subscribes to. Third, this online-based survey study excluded GBM of color who did not have access to the Internet. Furthermore, as with most Internet-based research, it was not possible to ensure that all of the study participants were not misrepresenting their ethnic identity (i.e., GBM of color). To reduce this bias, the survey asked about race/ethnicity through different scenarios to ensure consistent answers in this regard. Also, the overall variance explained by the model (~24%) suggests that there are other factors (individually based or socioenvironmental factors) not measured here that may be critical in understanding the relationship among the study variables. Other forms of oppression and intersecting identities not captured in this study can affect health outcomes of GBM of color through multiple pathways. For instance, structural and interpersonal discrimination in the form of racism, classism, and fat stigma may result in social and economic practices that limit opportunities for employment, housing, education, access to health care with potential effects on health, and wellbeing of GBM of color (including effects on HIV sexual risk). Even with these limitations, this study advances our knowledge of the role that drive for muscularity and perceived masculinity has in the health and wellbeing of GBM of color.

In an effort to address health disparities among GBM of color, our study results point to several important future directions and implications for health care practice, policy, and research. First, health care providers (including psychologists, social workers, and other health care professionals such as nurses) who work with GBM of color might find it useful to assess for issues related to body dissatisfaction, a drive for muscularity, and perceptions of masculinity to reveal potential presence of negative health outcomes, particularly HIV sexual risk behaviors. On an individual level, it may be useful to explore the experiences of GBM of color with regard to the hegemonic body image idealization that occurs in the gay community (Brennan et al., 2013) and to assist them in considering what feels acceptable to them in terms of their body image and masculinity norms. On a community level, these findings can be used to develop campaigns (i.e., media, online outreach) and other methods to challenge community norms about masculinity and body image ideals. These campaigns can be locally tailored with particular attention being paid to the issues of specific subcommunities of GBM of color. To challenge pervasive body image ideals associated with having a White, muscular body, health campaigns targeting GBM would do well to be more inclusive of men with a variety of body types and skin colors. It would be important to pay attention to the impact of the negative effects of body image ideals for GBM of color and to consider ways to mitigate the impact of these ideals on the sexual health of GBM of color. These findings suggest that the development of culturally competent initiatives aimed at reducing the effects of body image and masculinity norms on the health and wellbeing of GBM should address the specific and unique lived experiences of men of color. Culturally competent initiatives could focus on race, racism, and body image ideals within the mainstream gay community and communities of GBM of color.

The findings can also be used to support policy interventions and to contextualize policies aimed at improving the health and wellbeing of GBM of color. It is critical to understand that, given the experiences of GBM of color, policies and structural interventions that continue to address HIV risk among GBM should direct specific attention to men of color. Health campaigns that target issues related to body image and sexual health may prove very useful, particularly if they are tailored for GBM of color. Further structural interventions that address body image and gendered norms for GBM of color should be developed. These campaigns could challenge these norms and ideals both in the GBM's communities and in the larger social context. Continued research efforts are needed to better understand factors that contribute to sexual risk behaviors among GBM of color to improve health outcomes for this population.

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