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Ethnic/Racial and Gender Differences in Body Image Disorders Among a Diverse Sample of Sexual Minority U.S. Adults

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Abstract

This study assessed the occurrence of probable eating disorders (EDs), ED symptoms, probable body dysmorphic disorder (BDD), BDD symptoms, drive for muscularity, and appearance and performance enhancement drug (APED) misuse, in an ethnically/racially diverse sample of 962 cisgender sexual minority (SM) individuals in the United States, aged 18–30 years old. The overall occurrence of probable ED, probable BDD, and APED misuse in the current sample was 32.7%, 50.9%, and 30.6%, respectively. With respect to ethnicity/race, Hispanic SMs reported the highest rates of EDs, BDD, APED misuse, and drive for muscularity, and may therefore be particularly at risk for developing body image disorders (BIDs). With respect to gender, SM men reported significantly greater drive for muscularity and APED misuse compared to SM women, while SM women reported significantly higher occurrence of probable ED and ED symptoms. The occurrence of EDs, BDD, and APED misuse were higher among SMs in this sample compared to previous rates found among heterosexual samples, suggesting that SMs, regardless of gender and ethnicity/race, are vulnerable to experiencing BIDs and APED misuse. Future research is needed to identify the mechanisms that place SMs at (increased) risk for BIDs, which will aid prevention/intervention development.

Keywords

Body image disorders; sexual minorities; racial minorities; racial differences; gender

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Author statement

Manuel Gonzales IV: Conceptualization, Software, Investigation, Data Curation, Writing - Original Draft, Visualization, Project administration, Funding acquisition **Aaron J. Blashill:** Conceptualization, Methodology, Software, Validation, Formal analysis, Investigation, Resources, Data Curation, Writing - Review & Editing, Visualization, Supervision, Project administration, Funding acquisition

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1. Introduction

Body dissatisfaction contributes to the development of body image disorders (Stice & Shaw, 2002; Fairburn & Harrison, 2003; Sarwer, Wadden, Pertschuk, & Whitaker, 1998), and constitutes a public health burden. *Body image disorders* is an umbrella term that has been used to group psychiatric disorders such as most eating disorders (EDs) and body dysmorphic disorder (BDD) given their shared core symptom of body image disturbance (e.g., Phillipou, Blomeley, & Castle, 2016; Pope, Khalsa, & Bhasin, 2017). Due to an emphasis on physical attractiveness and unrealistic/narrow appearance ideals in Western society, individuals may compare themselves to others and develop body dissatisfaction if they perceive themselves to be less attractive (Myers & Crowther, 2009), and potentially develop a body image disorder (Sarwer et al., 1998; Stice & Shaw, 2002). EDs (e.g., anorexia nervosa, bulimia nervosa, binge eating disorder) are estimated to affect 1–3% of women and 0.1–2% of men (Allen, Byrne, Oddy, & Crosby, 2013; Garfinkel et al., 1995; Murray et al., 2017; Smink, Hoeken, Oldehinkel, & Hoek, 2014) and are often comorbid with other psychiatric and substance use disorders (Blinder, Cumella, & Sanathara, 2006; Fornari et al., 1992; Hudson, Hiripi, Hope, & Kessler, 2007). Additionally, a recent systematic review on BDD in community samples revealed a weighted prevalence rate of 1.9% (Veale, Gledhill, Christodoulou, & Hodson, 2016), and BDD is associated with high rates of suicidality (Buhlmann et al., 2010; Conroy et al., 2008; Phillips, 2007; Phillips et al., 2005; Phillips, Menard, Fay, & Weisberg, 2005).

Body dissatisfaction may also contribute to the development of other body concerns/behaviors (e.g., drive for muscularity, misuse of appearance and performance enhancing drugs; Bergeron & Tylka, 2007; Brower, Blow, & Hill, 1994). For example, individuals may strive for a muscular body and subsequently engage in appearance-driven exercise, disordered eating, and anabolic steroid and supplement misuse (Eisenberg, Wall, & Neumark-Sztainer, 2012; Hoffmann & Warschburger, 2017; Tylka, 2011). Meta-analytic findings revealed a global lifetime prevalence rate of 3.3% for anabolic steroid misuse, with a prevalence rate of 6.4% and 1.6% in men and women, respectively (Sagoe, Molde, Andreassen, Torsheim, & Pallesen, 2014). Appearance and performance enhancement drug (APED; e.g., anabolic steroids, creatine, dehydroepiandrosterone) misuse is associated with negative mental health (Thiblin & Petersson, 2005), cardiovascular mortality (Thiblin et al., 2015), and testicular cancer (Li et al., 2015). Thus, collectively, body image disorders, drive for muscularity, and APED misuse are associated with numerous negative health outcomes, underscoring their public health burden.

Sexual minority individuals (e.g., gay, lesbian, bisexual, and other non-heterosexual individuals) are an at-risk group for developing body image disorders (e.g., Calzo, Blashill, Brown, & Argenal, 2017; Goldhammer, Maston, & Keuroghlian, 2019; Mason, Lewis, & Heron, 2018). In a recent study, Kamody et al., (2020) revealed that among a U.S. nationally representative sample, prevalence rates of lifetime ED diagnoses were significantly higher in sexual minority individuals compared to heterosexual individuals. Also, sexual minorities report higher levels of disordered eating symptoms compared to their heterosexual counterparts (Calzo et al., 2017; Shearer et al., 2015; Yean et al., 2013). Similarly, Boroughs, Kawczyk, and Thompson (2010) found a BDD prevalence rate ranging from 2.4%–7.7% in

sexual minority college students, with sexual minority women endorsing the highest rates of BDD symptomology compared to sexual minority men, and heterosexual men and women. Furthermore, there is some evidence that sexual minority men and women report higher levels of drive for muscularity compared to heterosexual men and women (Yean et al., 2013; Yelland & Tiggeman, 2003). Additionally, lifetime prevalence rates of anabolic steroid misuse in sexual minority men range from 4.3%–21% (Blashill, Calzo, Griffiths, & Murray, 2017; Blashill, Gordon, & Safren, 2014; Blashill & Safren 2014) compared to an estimated global prevalence rate of 3.3% among the general population of men and women (Sagoe et al., 2014). Thus, available evidence indicates that rates of body image disorders and APED misuse among sexual minorities are higher compared to their heterosexual counterparts.

One theory that may explain why sexual minorities are at elevated risk for the development of body image disorders is the *minority stress theory* (Meyer, 2003), which states that an individual experiences stress due to the stigmatization of their minority status which subsequently may lead to the development of negative mental and physical health outcomes. With respect to sexual orientation, heterosexist harassment and discrimination, internalized homophobia, gay-related rejection sensitivity, and sexual orientation concealment, are theorized to contribute to the development of negative health outcomes among sexual minorities (Meyer, 2003). Within this model, additional variables, such as integration of sexual minority identity with other identities (e.g., ethnic, racial, and/or gender) have been highlighted as potential moderators in the association between minority stressors and negative health outcomes. Thus, future research exploring the association between sexual orientation and body image disorders, taking gender and ethnicity/race into account, may have etiological and treatment implications.

Gender may be a variable of interest when examining body image disorders, as men and women face varied pressures to achieve the ideal body (Meyers & Crowther, 2009). Men tend to strive for a muscular and lean body (Thompson & Schaefer, 2018; Tiggeman, Martins, & Kirkbride, 2007), while women tend to strive for a thin body (Grogan, 2008) or a toned and lean body (Bozsik, Whisenhunt, Hudson, Bennett, & Lundgren, 2018). Given that sexual minority men are romantically attracted to other men, they may experience similar pressures as heterosexual women (e.g., Siever, 1994). One theory that may explain why sexual minority men are at greater risk than sexual minority women for developing body image disorders is *objectification theory* (Fredrickson & Roberts, 1997), which states that one views their own body as a sexual object due to societal appearance-related pressures and gender expectations, therefore causing individuals to engage in maladaptive behaviors to meet an internalized standard of attractiveness, through increased body surveillance and body shame. This theory states that the male gaze, or visually inspecting a woman's body, occurs which separates an individual's body from the actual person, and thus only viewed as an object (Fredrickson & Roberts, 1997). This was thought to have originally developed to maintain and express patriarchy (Fredrickson & Roberts, 1997). Since sexual minority men attempt to attract other men, they are both the enactor and receiver of sexual objectification, therefore, potentially exacerbating the negative effects of stress associated with sexual objectification.

There is some evidence that sexual minority men report higher rates of body image disorders and body image concerns compared to heterosexual men. Previous research has revealed that SM men report greater levels of self-objectification and body surveillance compared to heterosexual men (Kozak, Frankenhauer, & Roberts, 2009; Martins, Tiggemann, & Kirkbride, 2007; Michaels, Parent, & Moradi, 2012). One study found that sexual minority men were 10 times more likely to develop ED symptoms than heterosexual men and had similar levels of ED symptoms compared to heterosexual women (Strong, Williamson, Netemeyer, & Geer, 2000). Oshana and colleagues (2020) found that 50.2% of sexual minority men screened positive for BDD. Furthermore, research on APED misuse among sexual minority men has produced mixed results, with some studies finding similar rates of APED misuse among sexual minority and heterosexual men (Calzo et al., 2015; Calzo, Sonnevile, Scherer, Jackson, & Austin, 2016), and others finding higher rates of APED misuse in sexual minorities compared to heterosexual males (Blashill et al., 2017; Blashill et al., 2014; Blashill & Safren, 2014; Griffiths, Murray, Dunn, & Blashill, 2017). Although there are some conflicting findings, the preponderance of data seem to indicate that sexual minority men are a vulnerable group for developing body image disorders.

Conversely, prior research on body image disorders among sexual minority women has been more inconclusive. For example, some evidence suggests that sexual minority women have lower disordered eating symptoms than heterosexual women (Lakkis, Ricciardelli, & Williams, 1999; Schneider, O'leary, & Jenkins, 1995; Siever, 1994; Strong et al., 2000), while other studies have found no significant differences between sexual minority women and heterosexual women (Feldman & Meyer, 2007; Hazzard et al., 2019; Share & Mintz, 2002). Boroughs et al. (2010) found that sexual minority women had higher rates of BDD (7.7%) followed by heterosexual women (6.1%), sexual minority men (2.4%), and heterosexual men (2.3%). Additionally, Yean et al. (2013) found that sexual minority women reported higher rates of drive for muscularity compared to heterosexual women. To our knowledge, no known studies have compared APED misuse among sexual minority and heterosexual women. This may be due to limited assessment of APED misuse among women and low counts of APED misuse found in previous studies (Calzo et al., 2016). In sum, past research has produced mixed findings on rates of body image disorders among sexual minority women compared to heterosexual women and future research is needed to clarify the findings while also exploring additional variables that may attenuate these relationships.

Limited research on ethnic/racial differences in body image disorders among sexual minorities has been conducted. Of the few studies on the topic, Feldman and Meyer (2007) found that there were no statistically significant differences in ED diagnoses among ethnic and racial subgroups of sexual minorities. Given that sample sizes were fairly small, Feldman and Meyer (2007) may have had limited statistical power to detect small-medium differences at the $p < .05$ level, yet there was some evidence of elevations among Black and Latino sexual minority men and women. Similarly, Boroughs et al. (2010) were not able to adequately explore ethnic/racial differences in BDD symptomatology among sexual minority subgroups due to small subgroup sample sizes. Blashill et al. (2017) revealed that Black and Hispanic sexual minority adolescent boys had higher rates of anabolic steroid misuse compared to non-Hispanic White sexual minority adolescent boys. The findings by

Feldman and Meyer (2007) and Boroughs et al. (2010) have yet to be replicated and they sampled participants from specific regions of the U.S., casting uncertainty in the generalizability of the findings to the broader U.S. population. Thus, it is not clear whether ethnic/racial differences in body image disorders among sexual minorities exist, and further research exploring the association between ethnicity/race and body image disorders among sexual minority individuals is warranted.

Few studies have examined both gender and ethnic/racial differences within sexual minorities in predicting body image disorders. The *double jeopardy hypothesis* states that members of multiple minority statuses experience greater psychological distress (Ferraro & Farmer, 1996). For instance, sexual minorities of color may experience greater levels of distress than White sexual minorities, caused by heterosexism from broader society, while also experiencing discrimination within the sexual minority community, and society at large, due to their race/ethnicity (Lemelle & Battle, 2004; Pachankis & Goldfried, 2004, Velez, Moradi, & DeBlare, 2015). Yet, empirical evidence suggests that ethnic/racial sexual minorities do not have higher rates of psychiatric disorders (e.g., anxiety, mood, and substance use disorders) compared to White sexual minorities (e.g., Rodriguez-Seijas, Eaton, & Pachankis, 2019). However, to date, ethnic/racial disparities in body image disorders within sexual minorities have yet to be explored.

To summarize, the aim of the current study was to assess the occurrence of probable eating disorders (EDs), ED symptoms, probable body dysmorphic disorder (BDD), BDD symptoms, drive for muscularity, and appearance and performance enhancement drug (APED) misuse in an ethnically/racially diverse sample of sexual minorities in the U.S. Due to the limited literature on gender, racial, and ethnic differences in body image disorders amongst sexual minorities, directional hypotheses were not generated.

2. Method

2.1. Participants and Procedures

Participants ($N = 962$) were sexual minority men and women between the ages of 18–30 years ($M = 23.68$, $SD = 3.73$) recruited from across the U.S., equally stratified by ethnicity/race and gender (for sample characteristics see Table 1). Participants were recruited via Qualtrics panels, in which Qualtrics, an online survey website, sent participants a 15–20 minute survey. Qualtrics panels is a service in which individuals can register and create an account to participate in surveys. Inclusion criteria for the current study were: 1) between the ages of 18–30 years; 2) self-identify as gay, lesbian, or bisexual; 3) self-identify as either i) Black or African American, ii) Non-Hispanic White, iii) Asian American/Pacific Islander, or iv) Hispanic with any other race; and 4) English speaking. If participants met these inclusion criteria, as indicated by their Qualtrics profile, they were sent an invitation stating that they were eligible to participate in the study. The invitation did not contain any disclosing information about the study. Participants consented to participate in the study and then completed a pre-screener to confirm that they met eligibility criteria. Participants received the equivalent of \$4 US dollars in e-rewards currency for participating in the study. E-reward currency is administered/redeemed by Qualtrics, which participants can redeem for

various gifts (e.g., gift cards, frequent-flyer miles). All procedures were reviewed and approved by the “San Diego State University” Institutional Review Board.

2.2. Measures

2.2.1. Probable eating disorder diagnosis and eating disorder symptoms.—

Eating disorder symptoms and probable diagnoses were assessed using the Eating Disorder Examination Questionnaire version 6.0 (EDE-Q; Fairburn & Beglin, 1994). The EDE-Q is a 28-item scale that measures various ED symptomology over the past 28 days (e.g., “On how many of the past 28 days have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?”; “Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?”). The EDE-Q was scored using a single global score comprised of 22 EDE-Q items, with a maximum score of 132 (six items are open response, and thus were not included in the global score). A global score of 56 or greater, along with the occurrence of any objective binge episodes and/or exercising as a means weight control at least once per week, indicates a probable ED diagnosis (specificity = .96, sensitivity = .83; Mond, Hay, Rodgers, Owen, & Beumont, 2004). Past research has found an internal consistency of $\alpha = .95$ in a sample of sexual minority men (Blashill & Vander Wal, 2009) and .96 in sexual minority women (Davids & Green, 2011). The internal consistency in the current study was $\alpha = .95$.

2.2.2. Probable body dysmorphic disorder diagnosis and body dysmorphic disorder symptoms.—

BDD symptoms and probable diagnosis was assessed using the Dysmorphic Concerns Questionnaire (DCQ; Oosthuizen, Lambert, & Castle, 1998). The DCQ is a 7-item scale measuring BDD symptoms (e.g., “Have you ever been very concerned about some aspect of your physical appearance?”; “Spent a lot of time worrying about a defect in your appearance/bodily function?”; “Been told by others/doctor that you are normal in spite of you strongly believing that something is wrong with your appearance or bodily function?”), with response options ranging from 0 = *Not at all* to 3 = *Much more than most people*. The DCQ is scored by summing all responses, with possible scores ranging from 0 to 21. With a sensitivity of 96.4% and a specificity of 90.6%, a validated cut-off score of 9 or greater indicates a likely diagnosis of BDD (Mancuso, Knoesen, & Castle, 2010). Previous research has found an internal consistency of $\alpha = .88$ (Oosthuizen et al., 1998) and an internal consistency of $\alpha = .89$ in a sample of sexual minority men (Oshana et al., 2020). The internal consistency in the current study was $\alpha = .88$.

2.2.3. Drive for muscularity.—

Drive for muscularity was assessed using the Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000). The DMS is a 15-item scale using a 6-point Likert scale (1 = *Never* to 6 = *Always*) measuring one’s behaviors, as well as attitudes and motivations, for a more muscular/bulkier body (e.g., “I lift weights to build more muscle.”; “I feel guilty if I miss a weight-training session.”). Responses are averaged with higher scores indicating a higher drive for muscularity (McCreary, Sasse, Saucier, & Dorsch, 2004). The DMS has been validated in sexual minority men (DeBlaere & Brewster, 2017). Previous research has found an internal consistency of $\alpha = .84$ (McCreary & Sasse, 2000). The internal consistency in the current study was $\alpha = .93$.

2.2.4. Appearance and performance enhancement drugs.—Appearance and performance enhancement drug misuse was assessed using three items that were adapted from the Growing Up Today Study (GUTS; see Field et al., 1999), which is a U.S. national sample of adolescent children of women participating in the Nurse’s Health Study II (Solomon, Willett, Carey, Rich-Edwards, Hunter, Colditz, & Manson, 1997). The three items assess use of non-medically prescribed anabolic steroids, non-medically prescribed growth hormone, and dehydroepiandrosterone (DHEA) within the last year. Responses ranged from 0 = *Never* to 4 = *Daily*. A binary APED misuse composite variable was created. The variable was dichotomized as no misuse versus endorsement of any of the three items.

2.2.5. Ethnicity and race.—Ethnicity was assessed using a single item, “What is your ethnicity?” with response options: *Hispanic/Latino* or *Not Hispanic/Latino*. Race was assessed using a single item, “What is your race?” with response options: *White, Black or African American, Native American or American Indian, and Asian/Pacific Islander*.

2.2.6. Gender.—Gender was assessed using a single item, “How would you describe your sexual attraction” with response options: *Male who is only attracted to males, Male who is mostly attracted to males, Male who is equally attracted to males and females, Male who is only attracted to females, Female who is only attracted to females, Female who is mostly attracted to females, Female who is equally attracted to males and females, and Female who is only attracted to males*. Any response that included male self-identification was coded as “1: male”; whereas any response that included female self-identification was coded as “0: female.”

2.3. Planned Analysis

All analyses were conducted in SPSS version 25 (IBM corp., 2017). The effects of gender and ethnicity/race on body image disorder outcomes were tested via generalized linear models, with independent variables of gender (men vs. women) and ethnicity/race (dummy coded with White set as the referent group). Furthermore, interactions of ethnicity/race and gender in predicting these outcomes were tested by entering product terms of gender by each of the three dummy coded ethnicity/race variables. Lastly, as a marker of effect size, Cohen’s *d* was calculated for continuous effects, whereby 0.20, 0.50, and 0.80 constitute small, medium, and large effect sizes, respectively (Cohen, 1992).

3. Results

The overall occurrence of probable ED, probable BDD, and APED misuse in the current sample was 32.7%, 50.9%, and 30.6%, respectively (see Table 2). The mean ED symptom score was 50.84 ($SD = 31.88$), BDD symptom score was 8.80 ($SD = 5.51$), and drive for muscularity score was 2.60 ($SD = 1.13$ see Table 3).

3.1. Probable Eating Disorder Diagnosis and Eating Disorder Symptoms

The overall model for probable ED diagnosis was significant, $\chi^2(7) = 16.59, p = .020$. A significant main effect of gender emerged, $\chi^2(1) = 4.27, p = .039$; OR = 1.32; 95% CI: 1.01, 1.73, with women (35.8%) reporting a higher occurrence of probable EDs compared to men

(29.7%). A significant main effect of ethnicity/race also emerged, $\chi^2(3) = 9.84, p = .020$, with White participants (31.4%) not significantly differing from African American (29.3%) and Asian American (29.6%) participants but reporting a 1.51 (95% CI: 1.03, 2.20) lowered odds of probable ED diagnosis compared to Hispanic participants (40.8%). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 3.38, p = .337$.

The overall model for ED symptoms was significant, $\chi^2(7) = 47.23, p < .001$. The main effect of gender was significant, $\chi^2(1) = 9.35, p = .002$, with women ($M = 54.09, SD = 31.89$) reporting elevated symptoms compared to men ($M = 47.55, SD = 31.56$; Cohen's $d = 0.21$). The main effect of ethnicity/race was also significant, $\chi^2(3) = 35.04, p < .001$, with White participants ($M = 53.42, SD = 32.29$) reporting significantly lower symptoms compared to Hispanic participants ($M = 59.26, SD = 31.05$; Cohen's $d = -0.18$), significantly higher symptoms compared to Asian American participants ($M = 47.23, SD = 30.50$; Cohen's $d = 0.20$) and African American participants ($M = 43.36, SD = 31.32$; Cohen's $d = 0.32$). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 4.86, p = .182$.

3.2. Probable Body Dysmorphic Disorder Diagnosis and Body Dysmorphic Disorder Symptoms

The overall model for probable BDD diagnosis was significant, $\chi^2(7) = 38.42, p < .001$. The main effect of gender was non-significant, $\chi^2(1) = 0.64, p = .425$; OR = 0.91; 95% CI: 0.71, 1.17. The main effect of ethnicity/race was significant, $\chi^2(3) = 30.64, p < .001$, with White participants (51.5%) not significantly differing from African American participants (46.4%), reporting 1.53 (95% CI: 1.07, 2.18) higher odds of probable BDD diagnosis compared to Asian American participants (41%), but reporting 1.78 (95% CI: 1.23, 2.57) lowered odds of probable BDD diagnosis compared to Hispanic participants (65.4%). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 5.99, p = .112$.

The overall model for BDD symptoms was significant, $\chi^2(7) = 34.99, p < .001$. The main effect of gender was non-significant, $\chi^2(1) = 1.03, p = .311$. The main effect of ethnicity/race was significant, $\chi^2(3) = 29.68, p < .001$, with White participants ($M = 8.96, SD = 5.46$) reporting significantly lower symptoms compared to Hispanic participants ($M = 10.29, SD = 5.31$; Cohen's $d = -0.25$), significantly higher symptoms compared to Asian American participants ($M = 7.86, SD = 5.27$; Cohen's $d = 0.21$), but not significantly differing from African American participants ($M = 8.09, SD = 5.68$; Cohen's $d = 0.16$). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 5.001, p = .172$.

3.3. Drive for Muscularity

The overall model for drive for muscularity was significant, $\chi^2(7) = 100.80, p < .001$. The main effect of gender was significant, $\chi^2(1) = 90.45, p < .001$, with men ($M = 2.94, SD = 1.09$) reporting a significantly greater drive for muscularity compared to women ($M = 2.27, SD = 1.07$; Cohen's $d = 0.62$). The main effect of ethnicity/race was also significant, $\chi^2(3) = 11.22, p = .011$, with White participants ($M = 2.48, SD = 1.09$) reporting significantly lower scores compared to Hispanic participants ($M = 2.79, SD = 1.23$; Cohen's $d = -0.27$), but not significantly differing from Asian American participants ($M = 2.51, SD = 1.03$; Cohen's $d =$

-0.03) or African American participants ($M = 2.65$, $SD = 1.15$; Cohen's $d = -0.15$). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 3.295$, $p = .348$.

3.4. Appearance and performance enhancement drug misuse

The overall model for APED misuse was significant, $\chi^2(7) = 59.86$, $p < .001$. The main effect of gender was significant, $\chi^2(1) = 11.81$, $p = .001$; OR = 1.63; 95% CI: 1.23, 2.14, with men (35.7%) reporting significantly higher rates of APED misuse compared to women (25.5%). The main effect of ethnicity/race was also significant, $\chi^2(3) = 41.65$, $p < .001$, with White participants (24.9%) not significantly differing from Asian American participants (18.5%), but indicating 2.40 (95% CI: 1.61, 3.50) lowered odds compared to Hispanic participants (44%), and 1.67 (95% CI: 1.23, 2.48) lowered odds compared to African American participants (35.6%). The interaction between ethnicity/race and gender was non-significant, $\chi^2(3) = 4.462$, $p = .216$.

4. Discussion

To date, there has been a paucity of research examining within-group differences in body image disorder amongst sexual minority individuals. To the best of our knowledge, this is the first study to assess the occurrence of body image disorders among an ethnically/racially diverse sample of sexual minority men and women in the U.S. In this study, rates of body image disorders among sexual minorities were higher compared to previously published rates found in heterosexual samples (Allen, Byrne, Oddy, & Crosby, 2013; Garfinkel et al., 1995; Murray et al., 2017; Smink, Hoeken, Oldehinkel, & Hoek, 2014). Notably, Hispanic sexual minorities reported the highest rates of EDs, BDD, APED misuse, and drive for muscularity compared to other racial groups and may be particularly at risk for developing body image disorders. Additionally, SM men reported significantly greater drive for muscularity and APED misuse compared to SM women, while SM women reported a significantly higher occurrence of probable ED and ED symptoms compared to SM men. We did not find any significant interactions between ethnicity/race and gender.

One potential explanation for elevated rates of body image disorders among Hispanic sexual minorities is that this group may experience elevated minority stressors both from within the sexual minority community, and from society at-large, related to negative stereotypes towards Hispanic individuals that other ethnic/racial sexual minorities may not experience. Indeed, when examining a nationally representative sample of heterosexual and sexual minority individuals, Rodriguez-Seijas et al. (2019) found that Hispanic sexual minorities reported the highest levels, albeit small effects, of sexual orientation-related discrimination compared to other ethnic/racial sexual minorities. Previous research has also revealed that Hispanic individuals, of unknown sexual orientation, who become more assimilated into U.S. culture experience higher rates of perceived discrimination compared to their less acculturated counterparts (Pérez, Fortuna, & Alegría, 2008). Similarly, Hispanic individuals who reported a strong ethnic identity experienced a buffer against perceived discrimination, which may partially be explained by increased interactions with other Hispanic individuals (Pérez et al., 2008). Thus, it may be that Hispanic sexual minorities who are more involved in the sexual minority community, yet less involved in their ethnic community, perceive

greater discrimination compared to other sexual minorities of color. However, the moderating effect of strength of ethnic identity will need to be tested in future research.

One particular feature of the negative stereotype toward Hispanic individuals, compared to other racial/ethnic groups, is related to their perceived status as “immigrants” in the U.S. (Cowan, Martinez, & Mendiola, 1997; Jiménez, 2007). Given that it is not possible to determine one’s immigration status through appearance, theoretically, Hispanic sexual minorities may experience stress from discrimination by the sexual minority community, society, and from internalizing societal views of immigration status. Among Hispanic individuals who were not born in the U.S., duration of time in the U.S and adoption of American ideals of beauty have been found to contribute to the development of EDs (Alegria et al., 2007; Cachelin, Phinney, Schug, & Striegel-Moore, 2007; Perez, Ohrt, & Hoek, 2016); thus, Hispanic sexual minorities may engage in behaviors to meet these appearance ideals to reduce their “otherness,” which in turn can contribute to the development of body image disorders. Lastly, Kelly et al. (2018) examined the association between perceived discrimination and loss of control (LOC) eating after the 2016 U.S. presidential election amongst racial/ethnic minority men, and found that perceived discrimination was positively associated with LOC eating. They also found that general discrimination, and stress/discrimination resulting from the 2016 presidential election, were associated with increased LOC eating. However, this was found among a predominately heterosexual sample of men; Hispanic sexual minorities may internalize perceived discrimination differently due to their experiences of discrimination from a variety of sources (i.e., sexual orientation and ethnicity) which negatively impacts their well-being, body image, and eating behaviors. Future research is warranted in further examining the discrimination and stigma that Hispanic sexual minorities face in the broader context of the U.S, such as how structural level discrimination may occur at the federal and/or state/local level, as well as ways in which cultural factors such as acculturation impact their rates of body image disorders.

In the current study, sexual minority women reported significant but small differences in levels of ED symptoms and probable diagnosis compared to sexual minority men, suggesting that sexual minority women do not notably differ in the occurrence of EDs compared to sexual minority men. Feldman and Meyer (2007) found similar rates of ED symptoms and diagnosis among ethnic/racial sexual minority men and women and White sexual minority men and women, which is congruent with the current findings of small differences in body image disorders among sexual minority subgroups. Understanding what factors contribute to high rates of EDs among sexual minority men and women, such as intraminority stressors (Pachankis et al., 2020) and the role of community involvement and the development of eating pathology, may aid intervention/prevention efforts.

Sexual minority men reported a higher drive for muscularity and higher APED misuse compared to sexual minority women. This is consistent with previous meta-analytic findings that heterosexual men report a higher level of drive for muscularity compared to heterosexual women (Edwards et al., 2014) and that men report higher prevalence rates of APED misuse compared to women (Sagoe et al., 2014). Since sexual minority men are viewed as less masculine and more feminine compared to heterosexual men, by both heterosexual men and women (Blashill & Powlishta, 2009; Kite & Deaux, 1987), sexual

minority men may be striving for an enhanced muscular, and hence masculine body (Blashill, 2011). The aforementioned factors may explain the higher rates of APED misuse among sexual minority men compared to sexual minority women. However, sexual minority women in this sample also reported high rates of APED misuse. Given that sexual minority individuals may present as more gender nonconforming than heterosexual individuals (Dunne, Bailey, Kirk, & Martin, 2000; Rieger, Linsenmeier, Gygax, & Bailey, 2008), and that sexual minority women may be increasingly internalizing more muscular body types (Yean et al., 2013), it is possible that sexual minority women may misuse APEDs to increase lean muscularity. Furthermore, Hispanic sexual minorities reported the highest rates of APED misuse, followed by African American sexual minorities. Blashill et al. (2017) found similar results when examining anabolic steroid misuse among sexual minority adolescent boys, suggesting that ethnic/racial sexual minorities are at higher risk for APED misuse. The current findings expand on previous findings of ethnic/racial sexual minority men that are at higher risk for APED misuse and adds that sexual minority women may have higher rates of APED misuse than originally anticipated.

There are several limitations that should be considered. The majority of the sample reported bisexual attraction, and this was more pronounced among women, a pattern often reported in the literature (NCHS, National Health Interview Survey, 2018). Although the sample was reasonably large, there was not adequate statistical power to test three-way interactions between gender, race/ethnicity, and sexual orientation; future work examining these within-group differences in body image disorders amongst diverse sexual minority individuals would be a fruitful area of research. Additionally, although participants were recruited from across the U.S., the sampling approach was not probability-based, was restricted to 18–30 year-olds, and did not include all ethnic/racial groups (e.g., Native Americans) which precludes generalizability to all SM adults in the U.S. Future research may benefit from including a wider range in age and ethnic/racial groups in addition to exploring within-group differences in some ethnic/racial groups (e.g., Puerto Rican, Mexican). Given that participants were required to be English speaking, monolingual Spanish speakers would have been precluded from taking the survey; thus, estimates of body image disorders amongst this subpopulation of Hispanic sexual minority individuals are unknown. Also, the current study was restricted to cisgender individuals, although transgender and other gender minority individuals also experience disproportionate levels of body image disorders (e.g., Diemer, Grant, Munn-Chernoff, Patterson, & Duncan, 2015), and examining racial and ethnic differences amongst gender minorities is another important avenue for future research. Lastly, a heterosexual comparison group was not included; thus, it was not possible to statistically test differences in body image disorders as a function of sexual orientation. However, rates of body image disorders and APED misuse revealed in the current study were higher than previously published reports amongst heterosexual individuals (Allen, Byrne, Oddy, & Crosby, 2013; Garfinkel et al., 1995; Murray et al., 2017; Sagoe, Molde, Andreassen, Torsheim, & Pallesen, 2014; Smink, Hoeken, Oldehinkel, & Hoek, 2014; Veale, Gledhill, Christodoulou, & Hodsoll, 2016).

Additionally, participants were recruited through an online panel service; thus, the psychometric properties of the current sample may differ from traditional in-person methodology. However, in a recent meta-analysis comparing the psychometric properties of

online panel-based samples to traditional in-person samples, Walter, Seibert, Goering, and O'Boyle (2018) revealed that internal reliability estimates, and the external validity found in panel-based samples fell within the 80% credibility values of the reliability estimates found in traditional in-person samples, suggesting that these two methodologies do not significantly differ from each other. The current study utilized the global score from the EDEQ, however, future research may benefit from exploring additional subdomains of eating pathology. Furthermore, given that the EDEQ (Fairburn & Beglin, 1994) and the DCQ (Oosthuizen et al., 1998) are self-report assessments, formal diagnoses of EDs and BDD could not be made, although the cut-scores employed have previously been found to possess strong sensitivity and specificity (Mancuso et al., 2010; Mond et al., 2004). Moreover, there is a lack of literature on measurement invariance of questionnaires employed in the study. Taken together, these limitations suggest that future research in this area would benefit from more thorough psychometric evaluation at the intersections of gender, sexual orientation, race/ethnicity, in addition to exploring these associations in multiple languages outside of English.

The current findings may confer some implications for applied work. Increased understanding of risk factors for the development of body image disorders among Hispanic sexual minorities may aid in the development of culturally-adapted treatments for this population. In a recent systematic review assessing current treatment options for EDs among Hispanics, Perez, Ohrt, and Hoek (2016) revealed that addressing cultural values such as incorporating family members in individualistic treatments, such as cognitive behavioral therapy (CBT), cultural foods into nutritional treatment plans, and lifestyle behavioral interventions, improved outcomes. Therefore, incorporating these cultural adaptations into other body image disorders interventions may aid in reducing the rates of body image disorders among Hispanic sexual minorities. Furthermore, assessment of acculturation may help to shed light on ways in which Hispanic sexual minorities are uniquely affected in relation to the development of body image disorders. For example, previous research has found that food insecurity is associated with ED pathology (Becker, Middlemass, Taylor, Johnson, & Gomez, 2017; Middlemass et al., 2020). Additionally, Middlemass et al. (2020) found that restrictive eating due to wanting others in their family to eat first, may potentially lead to subsequent binge eating in a primarily Hispanic (65%) sample. Thus, assessment of these factors among Hispanic sexual minorities may aid in future prevention/intervention efforts. Lastly, qualitative assessment may prove beneficial to preliminarily identify possible mechanisms to explore that place sexual minorities at risk for body image disorders, which if confirmed in prospective quantitative analyses, could aid prevention/intervention development.

In summary, Hispanic sexual minorities may be particularly at risk for the development of body image disorders compared to sexual minorities from other ethnic/racial groups. However, the occurrence of EDs, BDD, and APED misuse among sexual minorities in the current study are higher compared to previously published rates found among the general population, suggesting that sexual minorities, regardless of gender and ethnicity/race, are a vulnerable group for the development of body image disorders and APED misuse. This was further supported by the generally small effect sizes that emerged when comparing sexual minority groups. Future research is warranted to replicate the current findings and to include

a heterosexual comparison group to identify whether significant differences in body image disorders exist among sexual minorities and heterosexual individuals. Lastly, future research may benefit from extending the current findings in the context of existing theoretical models. For example, testing components of leading theories—such as the minority stress model (Meyer, 2003), intraminority stress model (Pachankis et al., 2020), and/or objectification theory (Fredrickson & Roberts, 1997)—in predicting body image disorders across intersections of sexual orientation, gender, and race/ethnicity, is a needed area for future work.

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Highlights

- Occurrence rates of body image disorders were higher than previously reported rates among the general population
- Occurrence rates of appearance and performance enhancement drug misuse were high
- Hispanic sexual minorities had the highest rates
- However, occurrence rates among all sexual minorities were high

Table 1

Sample Characteristics

Variable	Total	SM Men	SM Women
	<i>N (%)</i>		
Race			
African American/Black	236 (24.5%)	118 (50%)	118 (50%)
White	241 (25.1%)	116 (48.1%)	125 (51.9%)
Asian American/Pacific Islander	249 (25.9%)	124 (49.8%)	125 (50.2%)
Ethnicity			
Hispanic	234 (24.3%)	120 (51.3%)	114 (48.7%)
Sexual Identity			
Lesbian/Gay	336 (34.9%)	239 (71.1%)	97 (28.9%)
Bisexual	564 (58.6%)	206 (36.5%)	358 (63.5%)
Asexual	20 (2.1%)	10 (50.0%)	10 (50.0%)
Other	42 (4.4%)	24 (57.1%)	18 (42.9%)
Sexual Attraction			
only attracted to males		203 (21.1%)	
mostly attracted to males		89 (9.3%)	
equally attracted to males and females		187 (19.4%)	338 (35.1%)
only attracted to females			92 (9.6%)
mostly attracted to females			53 (5.5%)
	<i>M (SD)</i>		
Age	23.68 (3.73)	24.03 (3.76)	23.33 (3.68)

Note. *N* = number of participants, *M* = mean, *SD* = standard deviation, SM = sexual minority, common themes for Other category were 'pansexual' and 'queer'.

Table 2

Positive Screens of Body Image Disorders and APEDs

Variable	Ethnicity/Race														
	Hispanic			African American/ Black			White			Asian American/ Pacific Islander					
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total			
Probable ED	140 (29.7%)	172 (35.8%)	312 (32.7%)	47 (39.5%)	48 (42.1%)	95 (40.8%)	26 (22.6)	42 (35.9%)	68 (29.3%)	36 (31.6%)	39 (31.2%)	75 (31.4%)	31 (25.2%)	42 (33.9%)	73 (29.6%)
Probable BDD	249 (52.1%)	240 (49.7%)	489 (50.9%)	83 (69.2%)	70 (61.4%)	153 (65.4%)	50 (42.7%)	59 (50.0%)	109 (46.4%)	67 (57.8%)	57 (45.6%)	124 (51.5%)	49 (39.5%)	53 (42.4%)	102 (41%)
APED misuse	171 (35.7%)	123 (25.5%)	294 (30.6%)	62 (51.7%)	41 (36.0%)	103 (44.0%)	42 (35.6%)	42 (35.6%)	84 (35.6%)	37 (31.9%)	23 (18.4%)	60 (24.9%)	29 (23.4%)	17 (13.6%)	46 (18.5%)

Note. N = number of participants, ED = eating disorders, BDD = body dysmorphic disorder, APED = appearance and performance enhancement drug

Table 3

Mean Body Image Disorder Symptoms

Variable	Ethnicity/Race														
	Full Sample			Hispanic			African American/ Black			White			Asian American/ Pacific Islander		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
ED symptoms	47.55 (31.56)	54.09 (31.89)	50.84 (31.88)	56.50 (30.36)	62.17 (31.63)	59.26 (31.05)	37.04 (31.04)	49.67 (30.44)	43.36 (31.32)	53.10 (31.77)	53.71 (32.89)	53.42 (32.29)	43.72 (29.83)	50.70 (30.87)	47.23 (30.50)
BDD symptoms	8.62 (5.40)	8.97 (5.61)	8.80 (5.51)	10.34 (4.95)	10.24 (5.68)	10.29 (5.31)	7.38 (5.60)	8.78 (5.69)	8.09 (5.68)	9.29 (5.50)	8.65 (5.42)	8.96 (5.46)	7.50 (5.05)	8.22 (5.47)	7.86 (5.27)
DMS	2.94 (1.09)	2.27 (1.07)	2.60 (1.13)	3.13 (1.10)	2.43 (1.26)	2.79 (1.23)	2.89 (1.03)	2.40 (1.20)	2.65 (1.15)	2.83 (1.18)	2.16 (.89)	2.48 (1.09)	2.92 (1.03)	2.11 (.85)	2.51 (1.03)

Note. *M* = mean, *SD* = standard deviation, ED = eating disorders, BDD = body dysmorphic disorder, DMS = drive for muscularity