Chapter 15 Racial and Ethnic Considerations in the United States



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Learning Objectives

- 1. Summarize current literature on eating disorders among racial and ethnic minority men in the United States.
- 2. Recognize how implicit biases have influenced studies within this literature.
- 3. Understand key culture-specific variables that may be important in the assessment, etiology, and treatment of eating disorders in men.

Key Points

- Certain racial/ethnic minority groups may engage in more extreme body and weight change strategies and binge eating compared with White men.
- Body image varies substantially across racial/ethnic minority men.
- An implicit bias of the literature is the assumption that etiological models based on White samples are normative.
- Race and ethnicity are often viewed and treated as static variables, when they can be dynamic and context-specific.
- There is no research on prevention and treatments specifically for racial/ethnic minority men.

Introduction

Recently, disordered eating pathology among racial/ethnic minority men has gained critical attention, initiating newfound interest in prevalence, etiology, assessment, and treatment within these populations. In the past, studies addressing the relation

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of race and ethnicity to disordered eating have disproportionately excluded men [1, 2]. As such, it is of great importance to incorporate the study of racial/ethnic minority groups in the eating disorder literature. The integration of these groups is essential in identifying disparities in eating disorder prevalence and presentation across groups and elucidating the roles of racial/ethnic minority-related variables such as acculturation, discrimination, socioeconomic status, body composition, and cultural norms in the conceptualization, etiology, prevention, and treatment of disordered eating pathology in diverse populations. For the purpose of this chapter, we focus here on four racial/ethnic groups: Black, Asian American, Latino, and Native American/First Nations men. The majority of the reviewed research is based on samples from the United States. However, a more detailed examination of disordered eating pathology across additional racial/ethnic minority groups is greatly warranted. For this review of the literature, keyword searches were conducted in Google Scholar, PubMed, and PsycINFO using the following words in combination: eating disorders, male, men, boys, race, ethnicity, Black, Asian American, Latino, Native American, disordered eating, eating pathology, binge eating, body dissatisfaction, muscle, and muscularity.

Implicit Bias of the Literature

In the history of eating disorder research, the vast majority of information contributing to etiological models, the clustering of symptoms that developed the diagnostic criteria informing assessments and screeners, and the empirically supported treatments have been based on middle-class and upper-class White women. This has contributed to an implicit bias within the current literature suggesting that etiological models, prevalence rates, and clustering of symptomatology developed based on Whites are normative. Thus, studies within the existing literature on racial/ethnic minority men have predominantly examined the degree to which White models generalize to racial/ethnic minority groups and the extent to which minorities deviate. This has serious implications for racial/ethnic minority health and is a common problem in the mental health field reflecting the history of racism in the United States, perpetuating the view of minorities being "subordinates" to Whites [3]. Indeed, most of the literature reviewed here uses Whites in a referent manner, and research has not taken an exploratory and broad approach to develop assessments and screeners for racial/ethnic minorities. Thus, as it stands, key symptoms and behaviors of disordered eating pathology exhibited by racial/ethnic minority groups but not Whites may be largely underrecognized in the field of eating disorder research.

Another weakness of the eating disorder literature is the treatment of race and ethnicity as static and stable variables [4]. Within the United States, race and ethnicity are socially constructed variables. Consequently, individuals who immigrate to and enter the United States are labeled per the country's definition (e.g., "Black"), despite potentially not identifying with the specified culture. Further, research

demonstrates that the degree of racial/ethnic self-identification fluctuates across time and context [5, 6], and the dynamic nature of identity should be considered in this work.

Prevalence Rates

The Collaborative Psychiatric Epidemiology Surveys consists of 3 nationally representative samples from the United States comprising over 14,000 adults (more than 8000 racial/ethnic minorities), which were collected by the University of Michigan Research Center. All individuals received a diagnostic assessment consistent with the *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV; [7]), criteria. Marques and colleagues [8] published prevalence rates across racial/ethnic minority men and conducted group comparisons, summarized in Table 15.1.

Among racial/ethnic minority men, there were higher prevalence rates of bulimia nervosa and binge eating disorder than anorexia nervosa. There were significant group differences between Latino men and non-Latino White men, where Latinos reported significantly (p < 0.05) greater rates of bulimia nervosa [8]. There were no other significant group differences.

Eating Disorder Symptoms and Behaviors

Black Men

Broadly, it seems that racial/ethnic minority men may engage in more extreme body change strategies compared with White men [9]. However, some nuances exist among specific racial/ethnic groups. For example, Black boys and men have been shown to engage in more extreme weight loss strategies (e.g., chronic dieting and use of diet pills, laxatives, and diuretics) compared with White boys and men [10–16]. Additionally, compared with Whites, Black boys have also been shown to use more weight or muscle gain strategies such as supplements or exercise [11, 13, 14, 17]. In terms of steroid use, the literature is mixed with some findings suggesting higher rates [18], lower rates [19], and similar rates of use [20]. Finally, findings

 Table 15.1
 Lifetime prevalence rates of DSM-IV eating disorder diagnoses across race/ethnicity

Lifetime history	Non-Latino White	Latinos	Asian American	African American
Anorexia nervosa	0.14 (0.12)	0.03 (0.07)	0.07 (0.12)	0.18 (0.14)
Bulimia nervosa	0.08 (0.08)	1.73 (0.50)	1.14 (0.50)	0.90 (0.32)
Binge eating disorder	0.94 (0.33)	1.54 (0.45)	0.84 (0.42)	0.78 (0.31)

Data presented as weighted percent mean (standard error percent)

indicate that, compared with White men and boys, Black men and boys also engage in more binge eating [10, 12, 14, 18, 21, 22].

Interestingly, although Black men may engage in more binge eating, extreme weight loss strategies, and weight/muscle strategies, previous work suggests Black men have more positive body image compared with White men. Indeed, a meta-analysis found that 21 out of 27 studies that examined body image supported this association across both adolescent boys and adult men [9]. This may be due to the fact that Black men report greater preference for larger body sizes, which may be protective against body dissatisfaction [23]. Increased body positivity may be also attributed to positive weight and body size perception [16, 24] and familial attitudes about diverse body sizes [9].

Asian American Men

Among Asian Americans, the literature on disordered eating pathology is largely inconsistent. Specifically, some evidence indicates the presence of higher levels of weight loss strategies among Asian Americans compared with Whites (e.g., [12, 16]), while other evidence indicates no difference [25, 26]. Similarly, regarding the use of weight/muscle gain strategies, previous work indicates that Asian Americans are either less likely [16] or more likely to want to gain muscle compared with Whites [27]. Despite these inconsistencies, it is possible that Asian American men may be more likely to use strategies oriented toward the development of greater muscularity compared with Whites [27, 28]. Similarly, mixed findings have emerged with regard to steroid use among Asian Americans. Indeed, existing work indicates Asian Americans may be more likely [18, 29], less likely [19], and equally likely to use steroids when compared with Whites [30]. Discrepancies are also present in the literature on binge eating. While some research suggests that Asian American men and boys are more likely to binge eat than men and boys from other racial/ethnic groups [16, 27, 31], this finding has not been universal [32]. Interestingly, one study found that compulsive exercise was particularly high among Asian American men who binge eat compared to White and Black men [27]; however, this finding has not been replicated. Compulsive exercise, paired with binge eating, may be illustrative of muscularity-oriented eating [28, 33], supporting previous findings highlighting the potentially heightened use of muscle-building strategies among Asian American men.

Findings regarding body image among Asian American men are also inconsistent. While some findings suggest that Asian Americans are less likely (e.g., [34, 35]) or equally likely [12, 34, 36] to endorse body image concerns when compared to Whites, other work suggests that Asian American boys and men may be particularly susceptible to body image concerns [16, 37], especially those focused on muscularity [27, 38]. Overall, much more work is needed to elucidate these discrepancies. Notably, intragroup variability among Asian Americans in body size and weight may account for some of the inconsistencies found among Asian American men [27, 39]. For example, Filipino men, who may have a higher body mass index than

other Asian American groups (e.g., Chinese and Japanese men), also endorse greater body dissatisfaction [40]. Alternatively, acculturation, exposure to media, and body image ideals and perceptions of masculinity may also account for some of the discrepancies found among Asian American men [9, 27, 39].

Latino Men

In regard to Latino boys and men within the United States, previous work indicates greater use of extreme weight loss strategies including chronic dieting, vomiting, and use of diet pills compared to Whites [9, 12, 16]. Latinos have also been shown to engage in more binge eating [12, 14, 31] and purging than Whites [8]. Very little work exists on the use of strategies to build muscle or gain weight among Latinos, and existing research is largely inconsistent, indicating Latinos may be more [11, 13] or equally likely to use weight/muscle gain strategies compared with Whites [29]. Similarly, findings on steroid use among Latinos have been largely mixed with some studies suggesting that Latinos are more likely to use steroids than Whites [18] and other findings indicating no differences [29]. More work is needed to clarify these inconsistencies.

Notably, while some mixed findings exist (e.g., [16, 41]), evidence suggests that Latinos do not differ in their body image when compared with Whites [9]. However, some findings suggest that Latinos endorse more positive attitudes toward larger body sizes compared with White boys and men [11, 16, 24]. Indeed, some work has found that Latinos are less likely to perceive themselves as overweight compared with Whites [24]. In light of similar body image perceptions and dissimilar rates of binge eating and weight loss strategies compared with Whites, it is possible that familial conflict, acculturation, and marginalization may account for some of the disparities highlighted with regard to disordered eating pathology among Latinos [9]. However, more work is needed to examine these factors among Latino populations.

Native American and Other First Nations Men

Native American and other First Nations men have been largely neglected in the literature on disordered eating. However, the limited existing work has indicated that Native American and other First Nations boys and men report greater incidence of extreme weight loss behaviors [12, 16, 31, 42, 43]. Native Americans also report greater prevalence of binge eating compared to Whites [12, 16, 31, 42, 43]. The extant research demonstrates no difference between Native American/First Nation boys and men and Whites on weight gain/muscle gain strategies [16, 18]. However, the existing literature on steroid use is mixed with some findings indicating higher likelihood of use among Native American/First Nations men [44] and others indicating no difference in steroid use when compared with Whites [16, 18].

Evidence also suggests that Native American/First Nations people endorse more body image concerns compared with Whites [12, 16, 42, 43, 45]. High rates of overweight and obesity within Native American/First Nations populations coupled with greater likelihood of perception of overweight [16] may contribute to these elevated rates of body dissatisfaction. Higher rates of binge eating and extreme weight loss behaviors may be attributed to cultural conflict and familial pressures [43]. Family seems to play a unique role among Native American men. Interestingly, Native American adolescents with one Native parent have also been found to be less likely to report body image concerns and disordered eating behaviors, compared to their peers with two Native American parents, highlighting the potential role of acculturation in impacting disordered eating pathology within this population [43].

Summary

Overall, it appears that men belonging to a range of racial/ethnic minority groups may engage in more extreme body and weight change strategies and binge eating compared with Whites [9]. However, some inconsistencies exist, and more work is needed to elucidate these findings. In particular, body image seems to vary substantially across racial/ethnic minority groups [9], highlighting the necessity of examining additional mediating and moderating variables such as acculturation, discrimination, socioeconomic status, body mass index (BMI), and cultural norms.

Relevant Culture-Specific Variables

Here, we review acculturation and discrimination as potentially salient cultural factors warranting greater consideration in the examination of disordered eating pathology among racial/ethnic minority populations. First, acculturation has been found to be associated with disordered eating pathology and is noteworthy when considering racial/ethnic minority populations. However, much of the literature on acculturation and disordered eating pathology addresses populations of women, and more work is needed to expand this literature to groups of men. The extant body of literature provides some evidence for the association between acculturation and disordered eating pathology among Black men [46]. Among Asian Americans, findings are mixed, with some indicating an association between acculturation, disordered eating, and body image concerns [22, 39] and others reporting no association [34, 47]. Among Latinos, acculturative stress, rather than acculturation, has been found to be associated with body image concerns [48]. Acculturative stress is the daily stress of balancing two different cultures and has been found to be unique from general daily stress [49]. Interestingly, among Native American men, acculturation to Western values was associated with fewer body image concerns as well as less disordered eating symptomatology [43]. It seems that, in some cases, acculturation to Western ideals may be protective against disordered eating pathology, whereas in others,

greater adherence to Western ideals can be detrimental. Future research should examine the role of acculturative stress as an important factor in the consideration of disordered eating pathology.

Previous research asserts that racism contributes to mental and physical health issues [50]. Research has found that Black fathers and their adolescent sons, who report more everyday discrimination relative to other Black father-son dyads, also report more emotional eating [51]. Further, emotional eating has been found to mediate the relationship between everyday discrimination and BMI among Black adolescent boys [51]. Yet, for Black fathers, everyday discrimination has been shown to have an indirect effect on BMI through emotional eating [51]. Among Asian American college men, perceived perpetual racism significantly predicts drive for muscularity above and beyond internalization of Western standards for masculine physiques [39]. These findings highlight the importance of understanding racial contexts as they relate to eating disorder behaviors. Furthermore, these findings are consistent with other research that has found everyday discrimination to be associated with negative coping, depression, low self-esteem, and anxiety among Black adolescent boys [52, 53]. To date, no studies have specifically examined the effects of discrimination on disordered eating pathology among Latino, Asian American, and Native American/First Nations men, Additional work is needed to determine the effects of discrimination on eating disorder behaviors and symptomatology among ethnic/racial minority men.

Summary

Further research should continue to examine the extent to which acculturation, acculturative stress, and discrimination play a role in disordered eating pathology among racial/ethnic minority men. Additionally, more nuanced research using multi-contextual frameworks integrating diverse biological, psychological, developmental, and environmental perspectives to determine conditional and differential susceptibility to disordered eating pathology is greatly needed.

Future Directions in Assessment, Prevention, and Treatment

It is noteworthy to highlight gaps in this literature. Currently, there is no research examining the psychometric properties of screeners and assessments for eating disorders and correlates among racial/ethnic minority men. This is important as knowledge and assumptions about eating disorder assessment and treatment rely on valid and reliable assessment measures. Further, there is no research examining prevention of eating disorders, drive for muscularity, or other correlates specifically within racial/ethnic minority men. However, one study conducted a cognitive dissonance-based prevention program for eating disorder behaviors and risk factors specific for

sexual minority men [54]; the sample consisted of 43% racial/ethnic minority men, and, although minority-specific analyses were not conducted, overall the intervention group had significant decreases in body dissatisfaction, drive for muscularity, dietary restraint, and bulimic symptoms [54]. A second study conducted a comparison of a cognitive dissonance-based prevention program for women compared to a group consisting of men and women [55]. Although no racial-/ethnic-specific analyses were conducted, the sample did consist of 23.8% racial/ethnic minorities. For men, the prevention program produced significant decreases in body dissatisfaction and body attitudes toward low fat and muscularity [55]. Although both cognitive dissonance prevention programs yielded significant decreases in a racially and ethnically diverse sample of men, both studies were underpowered to examine minority men specifically. Thus, the extent to which these findings generalize to racial/ethnic minority men remains unclear.

Within the treatment literature, there are no studies examining the extent to which empirically supported treatments generalize to racial/ethnic minority men. Further, we were unable to locate any case studies. Future research is therefore crucial to explore the extent to which current treatments are efficacious and if any cultural modifications are required to make treatments more appropriate for use within ethnic/racial minority groups of men.

Conclusion

There is a paucity of research on disordered eating pathology among racial/ethnic minority men at all levels of clinical science. Although some research has emerged on the prevalence of eating disorder symptoms and behaviors among racial/ethnic minority men, it remains in its infancy stage. In particular, a noted weakness of the existing literature is the tendency to examine the extent to which racial/ethnic minority men deviate from the "norm" (i.e., White men). Additionally, research has not taken an exploratory and broad approach to develop assessments and screeners for racial/ethnic minority men. Consequently, disordered eating symptoms that are uniquely exhibited by racial/ethnic minorities may be largely underrecognized in the field of eating disorder research. The literature on prevalence of disordered eating highlights that, in general, racial/ethnic minority men exhibit more extreme body change strategies than their White counterparts. Preliminary research has found associations between disordered eating symptoms and acculturation and discrimination among Black men and disordered eating and acculturative stress among Latinos. Finally, the empirical literature addressing assessment psychometrics and efficacy/effectiveness of eating disorder prevention and treatment programs among racial/ethnic minority men is extremely limited.

Echoed throughout this chapter is the critical need for more research incorporating a racial and ethnic minority perspective. Existing etiological models of eating disorders need to be generalized to men and integrated within existing racial and ethnic minority stress frameworks (see, e.g., [56]). Further, examining the intersectionality

of minority identity and the potential additive role of being a racial or ethnic minority man may provide a more nuanced understanding of eating disorder development, treatment, and prevention.

References

- 1. Mehler PS, Sabel AL, Watson T, Andersen AE. High risk of osteoporosis in male patients with eating disorders. Int J Eat Disord. 2008;41:666–72. https://doi.org/10.1002/eat.20554.
- Kimber M, Couturier J, Georgiades K, Wahoush O, Jack SM. Ethnic minority status and body image dissatisfaction: a scoping review of the child and adolescent literature. J Immigr Minor Health. 2015;17:1567–79. https://doi.org/10.1007/s10903-014-0082-z.
- 3. Vega WA, Rumbaut RG. Ethnic minorities and mental health. Annu Rev Sociol. 1991;17:351–83. https://doi.org/10.1146/annurev.so.17.080191.002031.
- 4. Perez M, Plasencia M. Psychological perspectives on ethnic-minority eating behavior and obesity. In: Blume A, editor. Social issues in living color: challenges and solutions from the perspective of ethnic minority psychology. New York: Praeger Books; 2016.
- Kiang L, Fuligni AJ. Ethnic identity in context: variations in ethnic exploration and belonging within parent, same-ethnic peer, and different-ethnic peer relationships. J Youth Adolesc. 2009;38:732–43. https://doi.org/10.1007/s10964-008-9278-7.
- Saylor ES, Aries E. Ethnic identity and change in social context. J Soc Psychol. 1999;139:549–66. https://doi.org/10.1080/00224549909598416.
- 7. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th ed. Text Revision. Washington, D.C.: American Psychiatric Association Publishing; 2000.
- 8. Marques L, Alegria M, Becker AE, Chen CN, Fang A, Chosak A, et al. Comparative prevalence, correlates of impairment, and service utilization for eating disorders across US ethnic groups: implications for reducing ethnic disparities in health care access for eating disorders. Int J Eat Disord. 2011;44:412–20. https://doi.org/10.1002/eat.20787.
- Ricciardelli LA, McCabe MP, Williams RJ, Thompson JK. The role of ethnicity and culture in body image and disordered eating among males. Clin Psychol Rev. 2007;27:582–606. https:// doi.org/10.1016/j.cpr.2007.01.016.
- Gray JJ, Ford K, Kelly LM. The prevalence of bulimia in a black college population. Int J Eat Disord. 1987;6:733–40. https://doi.org/10.1002/1098-108X(198711)6:6<733::AID-EAT22 60060606>3.0.CO;2-U.
- 11. Serdula MK. Weight control practices of U.S. adolescents and adults. Ann Intern Med. 1993;119:667. https://doi.org/10.7326/0003-4819-119-7_Part_2-199310011-00008.
- Story M, French SA, Resnick MD, Blum RW. Ethnic/racial and socioeconomic differences in dieting behaviors and body image perceptions in adolescents. Int J Eat Disord. 1995;18:173–9. https://doi.org/10.1002/1098-108X(199509)18:2<173::AID-EAT2260180210>3.0.CO;2-Q.
- Neumark-Sztainer D, Story M, Falkner NH, Beuhring T, Resnick MD. Sociodemographic and personal characteristics of adolescents engaged in weight loss and weight/muscle gain behaviors: who is doing what? Prev Med. 1999;28:40–50. https://doi.org/10.1006/ pmed.1998.0373.
- Neumark-Sztainer D, Hannan PJ. Weight-related behaviors among adolescent girls and boys: results from a national survey. Arch Pediatr Adolesc Med. 2000;154:569–77. https://doi. org/10.1001/archpedi.154.6.569.
- Barry DT, Grilo CM. Eating and body image disturbances in adolescent psychiatric inpatients: gender and ethnicity patterns. Int J Eat Disord. 2002;32:335–43. https://doi.org/10.1002/eat.10082.
- Neumark-Sztainer D, Croll J, Story M, Hannan PJ, French SA, Perry C. Ethnic/racial differences in weight-related concerns and behaviors among adolescent girls and boys: find-

- ings from project EAT. J Psychosom Res. 2002;53:963–74. https://doi.org/10.1016/S0022-3999(02)00486-5.
- 17. Nagata JM, Bibbins-Domingo K, Garber AK, Griffiths S, Vittinghoff E, Murray SB. Boys, bulk, and body ideals: sex differences in weight-gain attempts among adolescents in the United States. J Adolesc Health. 2019;64:450–3. https://doi.org/10.1016/j.jadohealth.2018.09.002.
- Irving LM, Wall M, Neumark-Sztainer D, Story M. Steroid use among adolescents: findings from project EAT. J Adolesc Health. 2002;30:243–52. https://doi.org/10.1016/S1054-139X(01)00414-1.
- 19. Komoroski EM, Rickert VI. Adolescent body image and attitudes to anabolic steroid use. Am J Dis Child. 1992;146:823–8. https://doi.org/10.1001/archpedi.1992.02160190055019.
- Yesalis CE, Kennedy NJ, Kopstein AN, Bahrke MS. Anabolic-androgenic steroid use in the United States. JAMA. 1993;270:1217–21. https://doi.org/10.1001/jama.1993.03510100067034.
- Johnson WG, Rohan KJ, Kirk AA. Prevalence and correlates of binge eating in white and African American adolescents. Eat Behav. 2002;3:179–89. https://doi.org/10.1016/ S1471-0153(01)00057-5.
- 22. Aruguete MS, Nickleberry LD, Yates A. Acculturation, body image, and eating attitudes among black and White college students. N Am J Psychol. 2003;6:393–404.
- Russell W. Comparison of self-esteem, body satisfaction, and social physique anxiety across males of different exercise frequency and racial background. J Sport Behav. 2002;25:74–90.
- 24. Paeratakul S, White MA, Williamson DA, Ryan D, Bray GA. Sex, race/ethnicity, socioeconomic status, and BMI in relation to self-perception of overweight. Obes Res. 2012;10:345–50. https://doi.org/10.1038/oby.2002.48.
- 25. Barr SI. Dieting attitudes and behavior in urban high school students: implications for calcium intake. J Adolesc Health. 1995;16:458–64. https://doi.org/10.1016/1054-139X(94)00092-S.
- 26. Mintz LB, Kashubeck S. Body image and disordered eating among Asian American and Caucasian college students: an examination of race and gender differences. Psychol Women Q. 1999;23:781–96. https://doi.org/10.1111/j.1471-6402.1999.tb00397.x.
- Kelly NR, Cotter EW, Tanofsky-Kraff M, Mazzeo SE. Racial variations in binge eating, body image concerns, and compulsive exercise among men. Psychol Men Masculinity. 2015;16:326–36. https://doi.org/10.1037/a0037585.
- Murray SB, Nagata JM, Griffiths S, Calzo JP, Brown TA, Mitchison D, et al. The enigma of male eating disorders: a critical review and synthesis. Clin Psychol Rev. 2017;57:1–11. https:// doi.org/10.1016/j.cpr.2017.08.001.
- 29. Eisenberg ME, Wall M, Neumark-Sztainer D. Muscle-enhancing behaviors among adolescent girls and boys. Pediatrics. 2012;130:1019–26. https://doi.org/10.1542/peds.2012-0095.
- 30. Radakovich J, Broderick P, Pickell G. Rate of anabolic-androgenic steroid use among students in junior high school. J Am Board Fam Pract. 1993;6:341–5. https://doi.org/10.3122/jabfm.6.4.341.
- 31. Croll J, Neumark-Sztainer D, Story M, Ireland M. Prevalence and risk and protective factors related to disordered eating behaviors among adolescents: relationship to gender and ethnicity. J Adolesc Health. 2002;31:166–75. https://doi.org/10.1016/S1054-139X(02)00368-3.
- 32. Striegel RH, Bedrosian R, Wang C, Schwartz S. Why men should be included in research on binge eating: results from a comparison of psychosocial impairment in men and women. Int J Eat Disord. 2012;45:233–40. https://doi.org/10.1002/eat.20962.
- 33. Griffiths S, Murray SB, Touyz S. Disordered eating and the muscular ideal. J Eat Disord. 2013;1:15. https://doi.org/10.1186/2050-2974-1-15.
- 34. Cachelin FM, Rebeck RM, Chung GH, Pelayo E. Does ethnicity influence body-size preference? A comparison of body image and body size. Obes Res. 2002;10:158–66. https://doi.org/10.1038/oby.2002.25.
- 35. Yang CF, Gray P, Pope HG. Male body image in Taiwan versus the West: Yanggang Zhiqi meets the Adonis Complex. Am J Psychiatry. 2005;162:263–9. https://doi.org/10.1176/appi.ajp.162.2.263.

- 36. Wang Z, Byrne NM, Kenardy JA, Hills AP. Influences of ethnicity and socioeconomic status on the body dissatisfaction and eating behaviour of Australian children and adolescents. Eat Behav. 2005;6:23–33. https://doi.org/10.1016/j.eatbeh.2004.05.001.
- 37. Edman JL, Yates A. A cross-cultural study of disordered eating attitudes among Filipino and Caucasian Americans. J Eat Disord. 2005;13:279–89. https://doi.org/10.1080/10640260590932887.
- Keum BT, Wong SN, DeBlaere C, Brewster ME. Body image and Asian American men: examination of the drive for muscularity scale. Psychol Men Masculinity. 2015;16:284–93. https://doi.org/10.1037/a0038180.
- 39. Cheng HL, McDermott RC, Wong YJ, La S. Drive for muscularity in Asian American men: sociocultural and racial/ethnic factors as correlates. Psychol Men Masculinity. 2016;17:215–27. https://doi.org/10.1037/men0000019.
- 40. Yates A, Edman J, Aruguete M. Ethnic differences in BMI and body/self-dissatisfaction among Whites, Asian subgroups, Pacific Islanders, and African-Americans. J Adolesc Health. 2004;34:300–7. https://doi.org/10.1016/j.jadohealth.2003.07.014.
- 41. Frederick DA, Forbes GB, Grigorian KE, Jarcho JM. The UCLA Body Project I: gender and ethnic differences in self-objectification and body satisfaction among 2,206 undergraduates. Sex Roles. 2007;57:317–27. https://doi.org/10.1007/s11199-007-9251-z.
- 42. Smith JE, Krejci J. Minorities join the majority: eating disturbances among Hispanic and Native American youth. Int J Eat Disord. 1991;10:179–86. https://doi.org/10.1002/1098-108 X(199103)10:2%3C179::AID-EAT2260100206%3E3.0.CO;2-S.
- 43. Lynch WC, Heil DP, Wagner E, Havens MD. Ethnic differences in BMI, weight concerns, and eating behaviors: comparison of Native American, White, and Hispanic adolescents. Body Image. 2007;4:179–90. https://doi.org/10.1016/j.bodyim.2007.01.001.
- Handelsman DJ, Gupta L. Prevalence and risk factors for anabolic-androgenic steroid abuse in Australian high school students. Int J Androl. 1997;20:159–64. https://doi.org/10.1046/j.1365-2605.1997.d01-285.x.
- Ricciardelli LA, McCabe MP, Ball K, Mellor D. Sociocultural influences on body image concerns and body change strategies among Indigenous and Non-Indigenous Australian Adolescent girls and boys. Sex Roles. 2004;51:731–41. https://doi.org/10.1007/s11199-004-0722-1.
- Marais DL, Wassenaar DR, Kramers AL. Acculturation and eating disorder symptomatology in black men and women. Eat Weight Disord St. 2003;8:44–54. https://doi.org/10.1007/BF03324988.
- 47. Kwan MY, Gordon KH, Minnich AM. An examination of the relationships between acculturative stress, perceived discrimination, and eating disorder symptoms among ethnic minority college students. Eat Behav. 2018;28:25–31. https://doi.org/10.1016/j.eatbeh.2017.12.003.
- 48. Warren CS, Rios RM. The relationships among acculturation, acculturative stress, endorsement of Western media, social comparison, and body image in Hispanic male college students. Psychol Men Masculinity. 2013;14:192–201. https://doi.org/10.1037/a0028505.
- 49. Kroon Van Diest AM, Tartakovsky M, Stachon C, Pettit JW, Perez M. The relationship between acculturative stress and eating disorder symptoms: is it unique from general life stress? J Behav Med. 2014;37:445–57. https://doi.org/10.1007/s10865-013-9498-5.
- 50. Brondolo E, Gallo LC, Myers HF. Race, racism, and health: disparities, mechanisms, and interventions. J Behav Med. 2009;32:1–8. https://doi.org/10.1007/s10865-008-9190-3.
- Coleman A, O'Neil J, Ferris AM. The mediation effect between everyday discrimination, gender role conflict, emotional eating, and obesity in African American fathers and sons. Psychol Men Masc. 2019;20(2):182–93. https://doi.org/10.1037/men0000201.
- 52. Mereish EH, N'cho HS, Helms JE. Discrimination and depressive symptoms among Black American men: moderated-mediation effects of ethnicity and self-esteem. Behav Med. 2016;42(3):190–6. https://doi.org/10.1080/08964289.2016.1150804.

- Assari S, Moazen-Zadeh E, Caldwell CH, Zimmerman MA. Racial discrimination during adolescence predicts mental health deterioration in adulthood: gender differences among Blacks. Front Public Health. 2017;29(5):104. https://doi.org/10.3389/fpubh.2017.00104.
- 54. Brown TA, Keel PK. A randomized controlled trial of a peer co-led dissonance-based eating disorder prevention program for gay men. Behav Res Ther. 2015;74:1–10. https://doi.org/10.1016/j.brat.2015.08.008.
- 55. Kilpela LS, Blomquist K, Verzijl C, Winfred S, Beyl R, Becker CB. The body project 4 all: a pilot randomized controlled trial of a mixed-gender dissonance-based body image program. Int J Eat Disord. 2016;49:591–602. https://doi.org/10.1002/eat.22562.
- 56. Mason TB, Lewis RJ. Minority stress, body shame, and binge eating among lesbian women: social anxiety as a linking mechanism. Psychol Women Q. 2016;40:428–40.