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Negative body talk measures for Asian, Latina(o), and White women and men: Measurement equivalence and associations with ethnic-racial identity

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ABSTRACT

Negative body talk measures have been developed with predominantly White, female samples. We tested measurement invariance (equivalence) of two available negative body talk scales for Asian, Latina(o), and White college women and men in the U.S. In Study 1 ($n = 1501$ women; $n = 1436$ men), multiple group confirmatory factor analyses indicated scalar (strong) invariance across groups for the Negative Body Talk (Engeln-Maddox, Salk, & Miller, 2012) and Male Body Talk (Sladek, Engeln, & Miller, 2014) scales, suggesting these measures can be used to test mean group differences. Ethnic group comparisons adjusting for body mass index (BMI) showed similarities overall; few differences that emerged had small effect sizes. In Study 2 ($n = 227$ women; $n = 141$ men), greater ethnic-racial identity resolution was associated with less frequent negative body talk for Latina and Asian women but more frequent muscularity-focused negative body talk for Asian men, adjusting for BMI.

1. Introduction

"Fat talk," a term first coined by Nichter and Vuckovic (1994), initially referred to conversations in which adolescent girls disparaged the size and shape of their bodies (Nichter, 2000). Fat talk is considered normative among young women in Western society (Barwick, Bazzini, Martz, Rocheleau, & Curtin, 2012), and has been conceptualized as both a reflection of widespread body image disturbance among women and causal contributor to body image struggles (Salk & Engeln-Maddox, 2011; Salk & Engeln-Maddox, 2012). A growing research literature has documented how these disparaging body-related comments (referred to as "negative body talk" more recently) contribute to body dissatisfaction, internalization of the thin ideal, and disordered eating among girls and women (Mills & Fuller-Tyszkiewicz, 2017; Shannon & Mills, 2015; Sharpe, Naumann, Treasure, & Schmidt, 2013). Moreover, recent evidence indicates that men also engage in negative body talk (Engeln, Sladek, & Waldron, 2013), and men's tendencies to voice body concerns aloud are also associated with greater body dissatisfaction and disordered eating (Engeln et al., 2013; Sladek et al., 2014).

Although negative body talk research is burgeoning and beginning to incorporate men, this research is still mostly focused on White[1] college women (see Shannon & Mills, 2015, for review) at a time when the current college landscape in the U.S. is increasingly diverse. As a result of dramatic demographic shifts, Asian and Latina(o) students will continue to comprise an increasingly higher proportion of university campuses, which serve as a central setting for fat talk and other body image research (Shannon & Mills, 2015). Asian students already attend college in the U.S. at consistently higher rates than their White peers, and the rate of college degrees awarded to Latina(o) students has almost doubled in the last ten years (National Center for Education Statistics, 2016). Extant negative body talk research does not recognize this increased diversity.

Important efforts to understand racial/ethnic similarities and differences in negative body talk, and, by extension, how cultural factors contribute to disordered eating, have stalled for lack of diverse samples and availability of appropriate measurement tools

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[1] Throughout this paper, we use "White" for brevity to refer to a non-Latina(o) White/Caucasian individual residing in the U.S., "Latina(o)" to refer to an individual residing in the U.S. with family ancestry in a Spanish-speaking country in Latin America, including the Caribbean and parts of the U.S. that were formerly territories of Spain or México (Umaña-Taylor & Updegraff, 2013), and "Asian" to refer to an Asian individual residing in the U.S. or an Asian American with Asian ancestry.

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(Kimber, Couturier, Georgiades, Wahoush, & Jack, 2015; Thompson, 2004). Quantitative survey measures that assess the frequency with which women and men speak disparagingly about their bodies were developed using samples of predominantly White university students (e.g., Clarke, Murnen, & Smolak, 2010; Engeln-Maddox, Salk, & Miller, 2012; Royal, MacDonald, & Dionne, 2013; Sladek et al., 2014). Therefore, researchers are ill-equipped to test whether negative body talk is an important element of body image disturbance among non-White women and men, despite evidence suggesting that ethnic minorities report levels of body dissatisfaction similar to (or higher than) their White peers (Grabe & Hyde, 2006; Miller et al., 2000). In the current research, we addressed this major limitation by systematically testing the equivalence of negative body talk measures for Asian, Latina(o), and White college women and men (Study 1). Following this important step, we also tested a potential cultural correlate of negative body talk by examining its associations with ethnic-racial identity in a racially/ethnically diverse sample (Study 2).

1.1. Testing measurement equivalence

A critical prerequisite for making meaningful group comparisons of psychological phenomena is establishing measurement invariance (i.e., equivalence; Milfont & Fischer, 2010). This process tests whether observed group differences are attributable to true latent differences or to measurement properties (e.g., item wording) that can produce different item responses across different groups (Knight, Roosa, & Umaña-Taylor, 2009). Without measurement invariance, any observed group differences could be a result of inappropriate measurement rather than actual differences in the construct of interest. Researchers have tested measurement invariance across gender and ethnicity for various measures of body image disturbance and disordered eating (e.g., Belon et al., 2011; Tylka, 2013; Tylka & Wood-Barcalow, 2015) but no such tests have been conducted with negative body talk measures. As researchers begin to test whether women and men of different racial/ethnic groups vary in how often they engage in negative body talk (e.g., Engeln & Salk, 2016; Fiery, Martz, Mary, & Curtin, 2016), it is vital to first systematically test the equivalence of available measures and explore the reliability and validity of scores across groups (Thompson, 2004).

In the current study, we focused on testing measurement equivalence for the Negative Body Talk scale (Engeln-Maddox et al., 2012) and the Male Body Talk scale (Sladek et al., 2014) for two primary reasons. First, both of these measures were originally developed following qualitative research, resulting in separate scales to validly assess how often women and men, respectively, voice body concerns aloud. Although the construct of negative body talk may fundamentally differ by gender (Sladek et al., 2014), the two measures use a similar 7-point relative frequency scale prompting participants to report how often they find themselves saying certain body-related concerns aloud (e.g., "I feel fat" for women, "I wish I could bulk up a little" for men). Second, both of these measures are relatively brief, quantitative scales (13 and 16 items, respectively) that have demonstrated strong psychometric properties in multiple validation studies (Engeln & Salk, 2014; Engeln-Maddox et al., 2012; Sladek et al., 2014). As of yet, this psychometric evidence has been gathered from majority White samples, providing an important opportunity to test the utility of the two scales in more ethnically diverse groups.

1.2. Gender and negative body talk

The original focus on girls' and women's negative body talk in the research literature (with few, if any, references to body talk among men) was likely a result of three related issues. First, Nichter's (2000) ethnography on the topic focused exclusively on girls, and this ethnography directly inspired later empirical research on the topic. Second, wide-ranging research demonstrates that girls and women tend to report higher rates of body image concerns than boys and men (e.g., Bearman, Presnell, Martinez, & Stice, 2006; Frederick, Peplau, & Lever, 2006; Karazsia, Murnen, & Tylka, 2017). Third, girls' and women's negative body talk can also be conceptualized as a result of the frequent objectification of women's bodies and the self-objectification that often results from these experiences (Fredrickson & Roberts, 1997). In other words, negative body talk may reflect high levels of body monitoring (also known as body surveillance), and women tend to report higher levels of body monitoring than men (Frederick, Forbes, Grigorian, & Jarcho, 2007; McKinley, 2006).

Despite the robust gender difference in various indices of body image disturbance, a significant number of men do struggle with body image concerns (Pope et al., 2000; Ricciardelli, McCabe, Williams, & Thompson, 2007), and recent evidence suggests that men also engage in negative body talk (Engeln, Sladek, & Waldron, 2013). Whereas women's negative body talk appears to focus primarily on concerns about being too heavy, men's negative body talk also includes concerns about lack of muscularity or not being big enough. This dual focus is consistent with men's endorsement of a mesomorphic (rather than thin) body ideal (e.g., McCreary, 2007; Pope et al., 2000; Ridgeway & Tylka, 2005). Therefore, in order to appropriately assess negative body talk among men, researchers developed and validated the Male Body Talk scale to capture men's tendencies to complain both about being too big ("fat talk") and not big enough ("muscle talk"; Sladek et al., 2014). Initial findings have shown that simply being exposed to negative body talk (in the form of fat talk or muscle talk) increases men's body dissatisfaction (Engeln et al., 2013), and men's tendency to engage in this negative body talk has also been linked with body dissatisfaction and disordered eating (Arroyo & Brunner, 2016; Chow & Tan, 2016; Sladek et al., 2014). Therefore, research consistently points to negative body talk as an important element of body image disturbance and possible contributor to disordered eating in both women and men.

1.3. Culture and negative body talk

Sociocultural models of eating disorders suggest that increased awareness or knowledge of Western cultural ideals, largely promoted through media, can lead to perceived pressure to attain Western appearance and body ideals (Cafri, Yamamiya, Brannick, & Thompson, 2005; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Thus, exposure to and acceptance of U.S. mainstream (i.e., White) culture theoretically promotes adoption of the thin ideal for women and the muscular yet lean ideal for men. Empirical research examining ethnic group differences as an indirect test of this model (e.g., White versus non-White) is, not surprisingly, mixed. Some studies have not found ethnic differences in body-size preference or body image disturbance, after accounting for other factors like age, education, and body weight (Cachelin et al., 2002; Ricciardelli et al., 2007). In contrast, other studies have found that Black, Latina(o), and Asian adults report being less concerned with their weight and appearance than White adults (Crago, Shisslak, & Estes, 1996; Frederick, Kelly, Latner, & Sandhu, 2016; Yang, Gray, & Pope, 2005). Still other work has shown that Asians and Latinos may actually be at greater risk for some indicators of body image disturbance and compensatory weight-control behaviors (Croll, Neumark-Sztainer, Story, & Ireland, 2002; Neumark-Sztainer et al., 2002; Frederick et al., 2016; Ricciardelli et al., 2007). Meta-analyses (as of yet, based only on studies of women) indicate that effect sizes for ethnic group differences in women's body dissatisfaction were small or close to zero (Grabe &

Hyde, 2006), and associations between sociocultural factors (e.g., awareness and internalization of a thin ideal) and body image disturbance did not vary significantly by ethnic composition of study samples (Cafri et al., 2005).

Negative body talk research and available measures have generally focused on White college women, with very little attention given to other ethnic groups (Shannon & Mills, 2015). Among the few exceptions, Fiery et al. (2016) found that Black women reported less pressure to engage in negative body talk compared to Asian, Latina, and White women (ages 18–87), adjusting for body mass index (BMI). In contrast, Engeln and Salk (2016) did not find ethnic differences in how often women (ages 16–70) engaged in negative body talk, adjusting for age and BMI. Studies of men of a similarly wide age range suggest that Asian, Latino, and Black men may engage in negative body talk more frequently than their White peers (Fiery et al., 2016; Sladek et al., 2014). Of course, as described above, these preliminary studies did not examine whether measures assessed negative body talk in an equivalent manner for different racial/ethnic groups, calling into question whether such comparisons are meaningful.

When comparing body image constructs across ethnic groups it is also critical to incorporate culturally salient factors that might be linked with promoting positive body image (or reducing body image disturbance) for individuals from some ethnic groups, but not others. Cultural practices (e.g., body-related conversations) and values (e.g., attitudes toward appearance), which can differ across ethnic groups, are thought to profoundly motivate the development of body image concerns (Saunders & Frazier, 2017). Cultural identification with one's ethnic group(s) may further influence how individuals perceive and internalize culturally prescribed body ideals, especially when they differ from mainstream (White) norms (Swami, Airs, Chouhan, Leon, & Towell, 2009; Tiggemann, 2015). As of yet, there has been limited consideration of how such cultural factors may reduce harmful negative body talk, and how this might operate differently for women and men of different ethnic groups.

1.4. Ethnic-racial identity and body image

One cultural factor that may help to explain variation in voicing body concerns aloud is the multidimensional construct of *ethnic and racial identity* (ERI) – individuals' beliefs and attitudes about their racial/ethnic group(s) and the process of exploring them over time (Umaña-Taylor et al., 2014). Theoretically, individuals benefit psychologically when they have explored and gained a sense of clarity about how they define themselves as members of their social groups (Tajfel, 1981; Erikson, 1968). The study of ERI focuses on this process of identity formation specifically regarding one's membership in racial/ethnic groups along two dimensions: *exploration* of racial/ethnic background (e.g., searching for information, learning about traditions and history) and coming to a *resolution* about the meaning of one's race/ethnicity (e.g., achieving a coherent and stable identity; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004). Greater ERI has generally been associated with positive psychological adjustment among ethnic minority adolescents and young adults, including higher self-esteem and lower depressive symptoms (e.g., Greene, Way, & Pahl, 2006; Rivas-Drake, 2011). Although ERI is considered a normative, universal feature of identity formation for all (Umaña-Taylor et al., 2014), ERI is theoretically more salient for ethnic minorities due to the added weight of negotiating minority status and struggling to gain acceptance in mainstream society (Phinney, 1996). Indeed, the link between ERI exploration and self-esteem has been stronger for racial/ethnic minorities compared to Whites, whereas the association between ERI resolution and self-esteem may be more consistent across ethnic groups (Umaña-Taylor et al., 2004; Umaña-Taylor & Shin, 2007).

Striegel-Moore and Smolak (2000) proposed that stronger ERI may decrease risk for disordered eating by contributing to positive self-esteem, but researchers have only recently started to incorporate ERI into body image studies. Greater ERI (composite of exploration and resolution) has been associated with greater body appreciation among Black college women (Cotter, Kelly, Mitchell, & Mazzeo, 2015) and less body dissatisfaction among Asian American college women (Cheng, 2014). Rakhkovskaya and Warren (2016) found that pressure for thinness was associated with body dissatisfaction to a lesser degree for Asian American and Black women who reported a stronger sense of ERI. This buffering effect was not found for Latina and White women, suggesting that ERI may influence body image disturbance in distinct ways for different ethnic groups. With no such studies in the negative body talk literature, it remains unclear how ERI might be related to the tendency to express body concerns aloud with others, and how such associations may differ by gender and ethnic group.

1.5. The current research

Extant negative body talk research and available measures have generally focused on White college women (Shannon & Mills, 2015). However, the current college landscape in the U.S. is increasingly diverse, reflecting dramatic demographic shifts. Coupled with evidence showing college students are collectively at risk for elevated disordered eating symptoms (Berg, Frazier, & Sherr, 2009; Eisenberg, Nicklett, Roeder, & Kirz, 2011), it is clear that further research is needed to understand racial/ethnic similarities and differences in negative body talk, and associations between ethnic-racial identity and negative body talk. Prior to embarking on this important research agenda, it is first necessary to establish whether available measures are appropriate for different ethnic groups. Thus, we assessed whether two survey measures, the Negative Body Talk scale designed for women (Engeln-Maddox et al., 2012) and the Male Body Talk scale designed for men (Sladek et al., 2014), are equivalent for Asian, Latina(o), and White university students (Study 1). In a follow-up study, we examined the temporal stability of scores on these measures and associations with ethnic-racial identity exploration and resolution (Study 2).

2. Study 1

First, we aimed to address a major limitation of available literature by systematically testing measurement invariance of the Negative Body Talk and Male Body Talk scales in a large, racially/ethnically diverse sample recruited from two geographically distinct regions in the U.S. We followed one common approach to testing measurement equivalence by confirming that factor structures, item factor loadings, and intercepts (i.e., means) were *invariant* (i.e., do not substantially vary) across comparison groups (Milfont & Fischer, 2010). If these conditions are not met, mean group comparisons are generally inappropriate because they would include a combination of any true underlying differences between groups *and* subscale- or item-level differences in how members of different groups interpret and respond to questions. After establishing support for the equivalence of these measures for Asian, Latina(o), and White university students, we tested whether the frequency of negative body talk differed across these groups. Based on prior work (Engeln & Salk, 2016; Fiery et al., 2016), we did not expect significant ethnic group differences in women's tendency to engage in negative body talk, but we did expect that Asian and Latino men would report a greater tendency to engage in negative body talk than their White peers (Fiery et al., 2016; Sladek et al., 2014).

2.1. Participants and procedure

Participants were recruited from introductory psychology courses at a large, public university in the southwestern U.S. ($n = 2873$) and a mid-sized, private university in the Midwest ($n = 651$).[2] Participants received course credit for completing surveys. Procedures were approved by each university's Institutional Review Board. Following prior work to ensure data integrity (Engeln-Maddox et al., 2012; Sladek et al., 2014), 158 participants were excluded from analyses for failing to correctly answer questions designed to test attention and understanding (e.g., "If you are reading this, please select *sometimes*" embedded within each measure). Data were also excluded from participants who reported impossible height/weight combinations ($n = 30$; e.g., 7′ 5″ tall, weighing 70 lbs), due to concerns that these participants were also not carefully completing the online survey or did not follow instructions. Finally, 25 participants were excluded for being under the age of 18 or over the age of 35.

Of the remaining 3311 participants, 1862 (56.2%) identified as non-Hispanic White/Caucasian, 606 (18.3%) Asian/Asian American, 469 (14.2%) Latino/Hispanic, 149 (4.5%) Black/African American, 124 (3.7%) multiracial or other, 64 (1.9%) Middle Eastern/Arab, and 26 (0.8%) Native American. Ten participants per indicator are recommended as a minimum sample size for CFA (Kline, 2010). Thus, the final analytic sample for women ($N = 1501$; $M_{age} = 18.86$; $SD = 1.52$; range 18–33) comprised the three ethnicities with group sizes above this threshold: 932 White women, 301 Asian women, and 268 Latina women. Women's self-reported height and weight was used to calculate BMI ($M = 22.34$; $SD = 3.76$; range: 15.20–43.85). The final analytic sample for men ($N = 1436$; $M_{age} = 19.39$; $SD = 2.04$; range: 18–35) comprised 930 White men, 305 Asian men, and 201 Latino men ($M_{BMI} = 23.72$; $SD = 3.65$; range: 15.73–37.13).

2.2. Measures

2.2.1. Frequency of negative body talk among women

Women completed the 13-item Negative Body Talk (NBT) scale (Engeln-Maddox et al., 2012), which measures the frequency with which women engage in fat talk conversations with their friends. Participants respond to a list of statements (e.g., "This outfit makes me look fat," "I wish my body looked like hers"), indicating how often they disparage the size/shape of their bodies aloud when conversing with their friends from 1 (*never*) to 7 (*always*). In prior research, a series of factor analyses indicated that items loaded on two correlated factors, Body Concerns and Body Comparison. With respect to construct validity, these scores have been positively correlated with body shame, body surveillance, physical appearance comparison, thin ideal internalization, and weight dissatisfaction (Engeln & Salk, 2016; Engeln-Maddox et al., 2012). The original authors reported alpha values ranging from .93 to .94 in samples of college students and older adult women.

2.2.2. Frequency of negative body talk among men

Men completed the 16-item Male Body Talk (MBT) scale (Sladek et al., 2014), which measures the frequency with which men engage in negative body talk about their muscularity and body fat concerns. Similar to the NBT scale, participants respond to a list of statements (e.g., "I wish I had bigger biceps," "I need to lose some weight") by indicating how often they disparage the size/shape of their bodies aloud from 1 (*never*) to 7 (*always*). In prior research, a series of factor analyses indicated that items loaded on two correlated factors, Muscle Talk and Fat Talk. With respect to construct validity, these scores have been positively correlated with drive for muscularity, investment in appearance, muscle dysmorphia symptoms, and upper body dissatisfaction (Sladek et al., 2014). The original authors reported alpha values ranging from .93 to .94 in samples of college students and older adult men.

2.3. Analytic strategy

Of all item responses, 0.2% were missing and Little's MCAR test (1988) indicated that women's, $\chi^2(155) = 172.85$, $p = .16$, and men's, $\chi^2(302) = 279.87$, $p = .82$, responses could be considered missing completely at random. Maximum likelihood estimation was used to handle missing data, which is considered a superior method (Enders & Bandalos, 2001). First, multiple model fit indices were used to assess the fit of 1-factor and 2-factor CFA models in Mplus version 7 (Muthén & Muthén, 1988–2012) irrespective of ethnic group membership. Given that the p value associated with the χ^2 test of model fit is sensitive to sample size (Kline, 2010), we favored the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR; Hu & Bentler, 1999) fit indices. Kline (2010) suggests that CFI $\geq .95$ and RMSEA $\leq .05$ represent good model fit, and CFI $\geq .90$ and RMSEA $\leq .08$ represent adequate model fit. Kelloway (1998) suggests that SRMR > .08 indicates relatively poor fit. There is no firm consensus of cutoffs for each fit index in isolation; thus, we used all available indices to evaluate model fit.

Next, we fit a series of nested multiple group CFA measurement models to test measurement equivalence of the NBT and MBT scales for non-Latina(o) White, Asian, and Latina(o) women and men, respectively (Milfont & Fischer, 2010). We tested configural invariance (equivalence of 2-factor structure) by constraining factors to be equal across ethnic groups, metric invariance (equivalence of factor loadings) by constraining factor loadings to be equal, and scalar (strong) invariance (equivalence of loadings and item intercepts) by constraining intercepts to be equal. We used rescaled likelihood ratio χ^2 difference tests to evaluate whether each sequentially stricter constraint resulted in significantly poorer fit than the prior freely estimated model (Satorra & Bentler, 2001). Some argue that these χ^2 difference tests are overly strict and overpowered in measurement models (Chen, 2007). Thus, we considered measurement invariance to hold if the CFI, RMSEA, and SRMR changed by less than .01 (Dimitrov, 2010; Little, 1997). Following support for strong invariance, we explored mean ethnic group differences in NBT and MBT scores using MANCOVAs, adjusting for BMI (consistent with extant research; Engeln & Salk, 2016; Fiery et al., 2016; Sladek et al., 2014).

2.4. Results

Table 1 presents a summary of multiple group CFA model fit indices for the NBT scale for women and MBT scale for men. Consistent with the scales' initial development, 1-factor models poorly fit the data. As shown in Table 1, adjusted 2-factor models provided adequate model-data fit. For the NBT scale, a 2-factor model revealed a dramatically low standardized factor loading (.298; all other loadings > .78) for Item #13 on the Body Comparison factor (*You never have to worry about gaining weight*).[3] Thus, we excluded

[2] Data were combined from these two collection sites to maximize diversity. Comparisons of negative body talk for women and men across sites revealed effect sizes ranging from "less than small" to "small" (*d*s: 0.15– 0.34 overall; *d*s: 0.003–0.46 within ethnic group).

[3] This item is worded differently than other items and might leave the focus of the comment ("you" the respondent vs. "you" the partner in the conversation) open to interpretation. It is also possible that the item does not load onto either of the two NBT subscales.

Table 1
Multiple group confirmatory factor analysis model fit statistics.

Women	BIC	CFI	RMSEA	SRMR	χ^2	$\Delta\chi^2$
1-factor	61919.73	.774	.171	.086	2416.01**	
2-factor	58855.46	.967	.067	.035	394.72**	
Configural invariance	59010.95	.964	.071	.040	544.07**	
Metric invariance	58950.38	.961	.070	.044	592.05**	29.54†
Scalar invariance	58910.78	.959	.068	.045	640.94**	42.91**
Men	**BIC**	**CFI**	**RMSEA**	**SRMR**	χ^2	$\Delta\chi^2$
1-factor	82119.70	.587	.200	.186	6053.68**	
2-factor	74797.51	.918	.092	.076	1276.66**	
Configural invariance	74978.32	.913	.097	.079	1609.25**	
Metric invariance	74892.04	.911	.094	.080	1672.08**	30.30
Scalar invariance	74861.87	.906	.092	.081	1769.69**	85.18**

Note. N = 1501 women: 932 White, 301 Asian, 268 Latina. N = 1436 men: 930 White, 305 Asian, 201 Latino. BIC = Bayesian Information Criteria (sample size-adjusted). CFI = confirmatory fit index. RMSEA = root mean square error of approximation. SRMR = square root mean square residual. χ^2 = chi-square test of model fit. $\Delta\chi^2$ = rescaled likelihood ratio "Satorra-Bentler" chi-square difference test.
†$p < .10$, *$p < .05$, **$p < .01$.

this item. After careful consideration of wording redundancy and modification indices >80, we also allowed correlated residuals for #1 (*I wish my body looked like hers*) with #6 (*Why can't my body look like hers?*), and #2 (*I need to go on a diet*) with #8 (*I need to start watching what I eat*). For the MBT scale, a 2-factor model did not adequately fit the data initially (CFI = .848, RMSEA = .122, SRMR = .086). After inspecting wording redundancy and modification indices (>150), we allowed correlated residuals for #1 (*I want a six-pack*) with #8 (*I wish my abs were more toned*), #4 (*I wish I had bigger biceps*) with #5 (*I wish my chest were more muscular*), #6 (*I want to add bulk*) with #14 (*I wish I could bulk up a little*), #8 (*I wish my abs were more toned*) with #12 (*I should work on my abs*), and #7 (*I need to lose some weight*) with #13 (*I need to lose a few pounds*).

2.4.1. Measurement invariance

See Table 2 for group-specific parameters for the NBT and MBT scales. Supporting configural invariance of NBT scale scores for women, a 2-factor model fit well when the factor structure was constrained to be equal across ethnic groups (CFI > .95, RMSEA < .08, SRMR < .08). The nonsignificant nested model test also provided support for metric invariance of NBT scores after constraining the factor loadings to be equal across ethnic groups, $\chi^2(20) = 29.54$, $p = .08$. Although the subsequent nested model test after constraining item intercepts to be equal across ethnic groups was significant, $\chi^2(20) = 42.91$, $p < .01$, all model fit indices changed by less than .01 (indeed, <.005), supporting strong invariance. Notably, alpha values demonstrated strong internal consistency of items across ethnic groups for NBT Body Concerns and NBT Body Comparison (.93–.95).

Supporting configural invariance of MBT scale scores for men, a 2-factor model fit adequately when the factor structure was constrained to be equal across ethnic groups (CFI > .90, SRMR < .08), but the RMSEA was just over the recommended .08. The nonsignificant nested model test also provided support for metric invariance of MBT scores after constraining factor loadings to be equal across ethnic groups, $\chi^2(28) = 30.30$, $p = .35$. Although the subsequent nested model test after constraining item intercepts to be equal across ethnic groups was significant, $\chi^2(28) = 85.18$, $p < .001$, all model fit indices changed by less than .01 (indeed, $\leq .005$), supporting strong invariance. Notably, alpha values demonstrated strong internal consistency of items across ethnic groups for MBT Muscle Talk and MBT Fat Talk (.93–.95).

2.4.2. Ethnic group differences in BMI and associations with negative body talk

One-way ANOVA revealed that Latina women ($M = 23.26$, $SD = 4.06$) had higher BMIs than White women ($M = 22.36$, $SD = 3.74$), and both White and Latina women had higher BMIs than Asian women ($M = 21.43$, $SD = 3.31$), $F(2, 1453) = 16.41$, $p < .001$, $\eta_p^2 = .02$, on average. Overall, BMI was slightly associated with NBT Body Concerns, $r(1454) = .20$, $p < .001$, but not with NBT Body Comparison, $r(1454) = .03$, $p = .27$. Similarly, Latino men ($M = 24.93$, $SD = 4.65$) had higher BMIs than White men ($M = 23.81$, $SD = 3.77$), and both White and Latino men had higher BMIs than Asian men ($M = 22.72$, $SD = 3.83$), $F(2, 1409) = 21.24$, $p < .001$, $\eta_p^2 = .03$, on average. Overall, BMI was moderately associated with MBT Fat Talk, $r(1410) = .47$, $p < .001$, but not associated with MBT Muscle Talk, $r(1410) = -.01$, $p = .75$.

2.4.3. Ethnic group similarities and differences in negative body talk

Given the support for equivalence (i.e., scalar invariance) of NBT and MBT scores across groups, we explored mean ethnic differences in negative body talk for women and men. We examined these comparisons with and without adjusting (i.e., controlling) for BMI. For women, a MANOVA revealed that neither NBT Body Concerns, $F(2, 1498) = 1.74$, $p = .18$, nor NBT Body Comparison scores, $p = .30$, varied significantly across ethnic groups. In contrast, a MANCOVA adjusting for BMI revealed that women's NBT Body Concerns scores varied significantly across ethnic groups, $F(2, 1452) = 4.14$, $p = .02$, whereas NBT Body Comparison scores did not, $p = .39$. Based on estimated marginal means (adjusting for group differences in BMI), Asian women scored significantly higher on NBT Body Concerns than their White, $d = 0.12$, $p = .03$, and Latina peers, $d = 0.12$, $p = .03$; however, these represent small effect sizes. Results from post-hoc pairwise comparisons using Bonferonni's correction are shown in Table 3.

For men, a MANOVA revealed that MBT Fat Talk scores varied significantly across ethnic groups, $F(2, 1433) = 16.75$, $p < .001$, whereas MBT Muscle Talk scores did not, $p = .10$. Similarly, a MANCOVA adjusting for BMI revealed that men's MBT Fat Talk scores varied significantly across ethnic groups, $F(2, 1408) = 25.61$, $p < .001$, whereas MBT Muscle Talk scores did not, $p = .13$. Asian and Latino men scored significantly higher on MBT Fat Talk than their White peers (Table 3), but these represent small effect sizes (Asian compared to White men: $d = 0.26$, $p < .001$; Latino compared to White men: $d = 0.37$, $p < .01$).

3. Study 2

In Study 2, we recruited a racially/ethnically diverse subsample from Study 1 to (1) investigate additional measurement properties of the NBT and MBT and (2) to examine how ethnic-racial identity (ERI) is related to negative body talk. Specifically, we

Table 2
Item intercepts and standardized factor loadings from configural invariance models.

NBT Body Concerns	Intercept			Factor Loading		
	White	Asian	Latina(o)	White	Asian	Latina(o)
I need to go on a diet.[a]	3.84	3.84	3.84		–	
I feel fat.	4.13	3.93	4.00	.84	.86	.90
This outfit makes me look fat.	3.63	3.48	3.57	.85	.76	.86
I need to start watching what I eat.	4.13	3.98	4.13	.78	.72	.77
I wish I was thinner.	3.73	3.54	3.68	.90	.87	.88
I think I'm getting fat.	3.66	3.85	3.66	.87	.86	.88
NBT Body Comparison						
I wish my body looked like hers.[a]	3.88	3.88	3.88	–		
She has a perfect stomach.	3.96	3.90	3.89	.88	.87	.84
Why can't my body look like hers?	3.59	3.66	3.73	.83	.87	.80
She has a perfect body.	4.27	4.34	4.33	.88	.86	.87
She's in such good shape.	4.50	4.50	4.36	.82	.81	.83
I wish my abs looked like hers.	3.85	3.76	3.73	.81	.82	.81
MBT Muscle Talk						
I want a six-pack.[a]	3.52	3.52	3.52	–		
I wish I had bigger biceps.	3.57	3.58	3.65	.89	.82	.88
I wish my chest were more muscular.	3.57	3.65	3.56	.85	.82	.86
I want to add bulk.	3.88	3.52	3.62	.76	.77	.76
I wish my abs were more toned.	3.47	3.38	3.54	.74	.67	.74
I need to lift weights more.	4.08	3.89	4.29	.73	.71	.66
I should work on my abs.	3.73	3.76	3.90	.79	.78	.76
I wish I could bulk up a little.	3.74	3.70	3.54	.81	.81	.82
I want to have more muscle.	4.20	4.18	4.33	.92	.91	.89
I wish I had more muscular arms.	3.84	3.91	4.02	.95	.94	.93
MBT Fat Talk						
I wish I could lose this belly fat.[a]	2.95	2.95	2.95	–		
I need to go on a diet.	2.62	2.70	2.64	.81	.84	.87
I need to lose some weight.	2.72	2.79	2.95	.82	.80	.83
I wish I could lose this gut.	2.55	2.33	2.64	.90	.81	.87
I need to start watching what I eat.	3.23	3.18	3.42	.72	.70	.76
I need to lose a few pounds.	2.69	2.74	2.70	.87	.86	.86

Note. Estimates from configural invariance models (2-factor structure constrained to be equal but intercepts and factor loadings free to vary across groups). All intercepts and loadings significant, $p < .001$.

[a] Item intercept constrained to be equal across groups and factor loading set to 1.00 for model identification.

Table 3
Mean ethnic group comparisons in negative body talk, adjusting for BMI.

Women	*n*	*M*	*SE*
NBT Body Concerns			
White	932	3.71[a]	0.05
Latina	268	3.63[a]	0.10
Asian	301	3.98[b]	0.09
NBT Body Comparison			
White	932	4.01	0.05
Latina	268	4.07	0.10
Asian	301	3.88	0.10
Men	*n*	*M*	*SE*
MBT Muscle Talk			
White	930	3.76	0.05
Latino	201	3.95	0.12
Asian	305	3.94	0.10
MBT Fat Talk			
White	930	2.77[a]	0.05
Latino	201	3.18[b]	0.11
Asian	305	3.45[b]	0.09

Note. Estimated marginal means (adjusting for BMI) and standard errors from MANCOVAs. Different superscripts denote significant post-hoc pairwise comparisons using Bonferroni's correction ($p < .05$).

examined the test-retest reliability of scores on the NBT and MBT scales, expecting that the temporal stability would not differ significantly across ethnic groups. We also examined correlations among ERI exploration and resolution and scores on the NBT and MBT scales. To our knowledge, this is the first study to examine how ERI might covary with negative body talk for women and men of diverse backgrounds. Theoretically, compared to majority group members, ethnic minorities experience additional complexity as they navigate the process of identity formation due to their status as members of marginalized groups within majority culture (Markstrom-Adams, 1992). Given that ERI tends to be more salient and linked with positive psychological adjustment to a greater extent for minorities (Phinney, 1989; Umaña-Taylor et al., 2004), we expected that Asian and Latina(o) university students who have engaged in greater exploration of their racial/ethnic background ("exploration") and have made greater sense or meaning of their race/ethnicity ("resolution") would engage in negative body talk less frequently relative to their same-ethnic peers lower on these respective dimensions or majority White peers.

3.1. Participants and procedure

Four hundred participants were recruited from Study 1, all of whom attended the same large, public university in the southwestern U.S. Participants received course credit for completing online questionnaires about "how you communicate with others"; procedures were approved by the university Institutional Review Board. Similar to Study 1, participants were excluded from analyses for failing to correctly respond to validity check questions ($n = 23$), being over the age of 35 ($n = 4$), and for untenable height/weight combinations ($n = 5$). Additionally, one participant who identified as neither female nor male was excluded from analyses. Participants who did not identify with one of the three focal ethnic groups were also excluded due to insufficient group sizes for the present analyses ($n = 44$). After these exclusions, the final sample comprised 197 women ($M_{age} = 19.04$; $SD = 1.81$; range: 18–33) with an average BMI of 22.56 ($SD = 3.66$; range: 15.73–37.13); 102 (51.8%) identified

as non-Hispanic White/Caucasian, 48 (24.4%) as Latina/Hispanic, and 47 (23.9%) Asian/Asian American. The final sample comprised 126 men (M_{age} = 19.78; *SD* = 2.50; range: 18–31) with an average BMI of 23.90 (*SD* = 3.99; range: 16.50–38.21); 62 (49.2%) identified as non-Hispanic White/Caucasian, 32 (25.4%) Latino/Hispanic, and 32 (25.4%) Asian/Asian American. In addition to the NBT and MBT scales, participants completed a self-report measure of ERI counterbalanced using online survey software, followed by demographic questions. Participants completed these measures in a separate session, 2–10 weeks after their participation in Study 1 (*M* = 5.15 weeks; *SD* = 2.58).

3.2. Measures

3.2.1. Ethnic-racial identity

The Ethnic Identity Scale is a widely used measure that assesses ERI exploration (7 items; "I have participated in activities that have taught me about my ethnicity") and resolution (4 items; "I know what my ethnicity means to me"; Umaña-Taylor et al., 2004). Participants respond to each statement on a 4-point Likert scale from 1 (*does not describe me at all*) to 4 (*describes me very well*). After reverse scoring the appropriate items, scores were averaged for each subscale. Subscale scores were positively correlated ($r = .60$, $p < .001$ for women; $r = .39$, $p < .001$ for men) but kept separate for analyses following recommendations to treat these constructs as separate components of ERI (Umaña-Taylor et al., 2014). Scores on the Ethnic Identity Scale have demonstrated strong psychometric properties (i.e., internal consistency, convergent validity) in multiple diverse samples of ethnic minority and White adolescents and young adults. For example, exploration and resolution scores have been positively correlated with self-esteem and familial ethnic socialization among Asian, Latina(o), and White university students (Umaña-Taylor et al., 2004; Umaña-Taylor & Shin, 2007). Further, a review of ERI measurement has identified this measure as an "exemplar" of strong development and validation (Ponterotto & Park-Taylor, 2007). The original authors reported alphas of .91 and .92 for exploration and resolution, respectively, among university students. In the current sample, alphas for exploration and resolution were .91 and .93 for women, and .86 and .86 for men, respectively.

3.3. Analytic strategy

Three participants did not report BMI and one participant did not report ethnic group. Little's MCAR test (1988) indicated that women's, $\chi^2(5) = 7.80$, $p = .17$, and men's, $\chi^2(5) = 0.67$, $p = .99$, responses could be considered missing completely at random. Thus, it was acceptable to treat missing data with pairwise deletion in analyses using SPSS version 23. First, Pearson's correlations were used to assess test-retest reliability of negative body talk scores. Next, we fit a series of multiple regression models to test whether the extent to which ERI exploration and resolution (separately) predicted negative body talk differed by race/ethnicity, adjusting for BMI. Race/ethnicity was dummy coded, with separate codes for Asian (1 = Asian, 0 = all other groups) and Latina(o) (1 = Latina(o), 0 = all other groups) and White as the reference group (0 = all Whites). ERI was centered at the grand mean, and then interaction terms were formed from the product of group dummy codes and centered ERI (Aiken & West, 1991). Simple slopes for significant interactions were plotted using an online utility (Preacher, Curran, & Bauer, 2006). Sample sizes for women and men surpassed guidelines for regression analyses with an anticipated medium effect size (50 + 8k participants, with k being the number of predictors; Tabachnick & Fidell, 2007).

3.4. Results

3.4.1. Reliability

Internal consistency of the NBT and MBT subscales was uniformly high across ethnic groups (alphas for women > .92; alphas for men > .90). NBT Body Concerns and Body Comparison scores showed a moderately high degree of temporal stability across 2–10 weeks for White (.82, .83), Asian (.77, .74), and Latina (.86, .78) women, all *ps* < .001. MBT Muscle Talk and Fat Talk scores also showed a moderately high degree of temporal stability across 2–10 weeks for White (.73, .85), Asian (.59, .47), and Latino (.79, .76) men, all *ps* < .001. Based on Fisher's *r*-to-*z* transformations, the Fat Talk test-retest coefficient was slightly lower for Asian compared to White men, $z = 3.06$, $p < .01$; there were no other significant group differences, all *ps* > .25.

3.4.2. Ethnic-racial identity and negative body talk

Consistent with prior research (e.g., Umaña-Taylor et al., 2004), ANOVA with Bonferroni's post-hoc comparisons revealed that ERI exploration was higher for Asian ($M = 2.59$; $SD = 0.92$), $p = .01$, $d = 0.51$, and Latina women ($M = 2.74$; $SD = 0.80$), $p < .001$, $d = 0.74$, compared to White women ($M = 2.17$; $SD = 0.73$). ERI resolution was higher for Latina women ($M = 3.20$; $SD = 0.80$) compared to White women ($M = 2.63$; $SD = 0.90$), $p < .01$, $d = 0.67$, but Asian women ($M = 2.95$, $SD = 0.76$) did not differ significantly from either group, *ps* > .10. Table 4 presents results from multiple regression models predicting women's negative body talk from ERI, race/ethnicity, and their interaction, adjusting for BMI. Plotting simple slopes for significant interactions revealed that ERI exploration was negatively associated with NBT Body Concerns to a greater extent for White women, $b = -0.53$, $p = .01$, compared to Latina, $b = -0.35$, $p = .21$, or Asian women, $b = -0.32$, $p = .21$ (see Fig. 1). In contrast, ERI resolution was negatively associated with NBT Body Concerns for Latina, $b = -0.74$, $p < .01$, and Asian, $b = -0.89$, $p < .01$, but not White women, $b = -0.06$, $p = .71$. ERI resolution was also negatively associated with NBT Body Comparison to a greater extent for Asian women, $b = -1.21$, $p < .01$, compared to White, $b = -0.16$, $p = .34$, or Latina women, $b = -0.40$, $p = .15$. Results were highly similar from models not adjusting for BMI and interactions remained statistically significant.

Turning to results for men, ANOVA with Bonferroni's post-hoc comparisons revealed that ERI exploration was higher for Asian ($M = 2.71$; $SD = 0.61$), $p = .03$, $d = 0.51$, and Latino men ($M = 2.68$; $SD = 0.85$), $p = .047$, $d = 0.74$, compared to White men ($M = 2.30$; $SD = 0.70$). ERI resolution did not significantly differ between White ($M = 3.05$; $SD = 0.78$), Asian ($M = 2.88$; $SD = 0.58$), and Latino men ($M = 3.20$; $SD = 0.72$), *ps* > .25. Table 5 presents results from multiple regression models predicting men's negative body talk, adjusting for BMI. In direct contrast to the results for women, ERI exploration was *positively* associated with MBT Muscle Talk to a greater extent for White, $b = 0.76$, $p < .01$, and Asian men, $b = 0.81$, $p = .10$, compared to Latino men, $b = 0.23$, $p = .49$ (see Fig. 2). ERI resolution was positively associated with MBT Muscle Talk for Asian, $b = 0.98$, $p = .049$, but not White, $b = -0.26$, $p = .32$, or Latino men, $b = -0.01$, $p = .99$. Results were highly similar from models not adjusting for BMI and interactions remained statistically significant.

4. General discussion

Researchers are increasingly considering the important role of negative body talk in body image disturbance and disordered eating (Mills & Fuller-Tyszkiewicz, 2017; Shannon & Mills, 2015). However, available negative body talk measures were developed using samples of predominantly White university students (Shannon & Mills, 2015), making it difficult for researchers to confidently assess

Table 4
Multiple regression analyses predicting women's negative body talk from BMI, ERI, race/ethnicity, and their interaction.

	NBT Body Concerns			NBT Body Comparison		
	b	*SE b*	*β*	*b*	*SE b*	*β*
Intercept	3.53**	0.16		3.91**	0.16	
BMI	0.10**	0.03	.09	0.02	0.03	.01
ERI Exploration	−0.53*	0.21	−.11	−0.41†	0.21	−.08
Latina	−0.01	0.28	−.002	0.16	0.29	.02
ERI Exploration x Latina	0.18	0.34	.02	0.12	0.35	.01
Asian	0.44	0.28	.05	0.48†	0.28	.05
ERI Exploration x Asian	0.21	0.32	.02	−0.19	0.33	−.02
Overall Model: $F(6, 188) = 3.25$, $p < .01$, $R^2 = .07$				$F(6, 188) = 1.96$, $p = .07$, $R^2 = .03$		
	NBT Body Concerns			NBT Body Comparison		
	b	*SE b*	*β*	*b*	*SE b*	*β*
Intercept	3.66**	0.15		3.98**	0.16	
BMI	0.09**	0.03	.09	0.02	0.03	.01
ERI Resolution	−0.06	0.16	−.01	−0.16	0.17	−.03
Latina	−0.003	0.28	−.001	0.13	0.28	.01
ERI Resolution x Latina	−0.68*	0.32	−.07	−0.24	0.32	−.02
Asian	0.30	0.27	.04	0.40	0.27	.04
ERI Resolution x Asian	−0.83*	0.34	−.08	−1.05**	0.34	−.09
Overall Model: $F(6, 188) = 4.52$, $p < .001$, $R^2 = .10$				$F(6, 188) = 3.48$, $p < .01$, $R^2 = .07$		

Note. $N = 198$. Race/ethnicity dummy coded separately for Latina and Asian groups (1) with White as the reference group (0). *b* = partial regression coefficient. *SE b* = standard error of the partial regression estimate. β = standardized beta.
† $p < .10$.
* $p < .05$.
** $p < .01$.

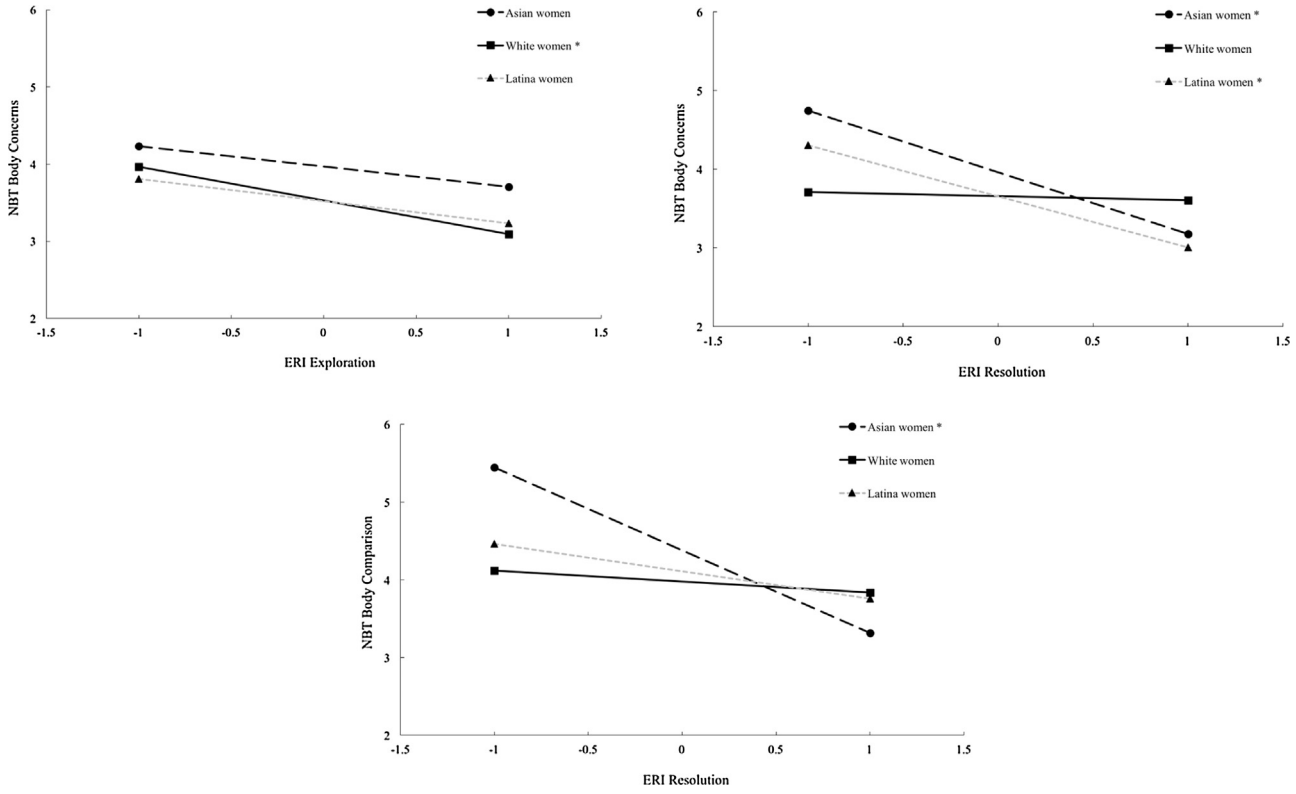

Fig. 1. Associations between women's ERI and negative body talk moderated by race/ethnicity.
Note. Simple slopes of ERI (+/− 1 *SD* from grand mean) with
NBT subscale scores plotted by race/ethnicity. *$p < .05$.

negative body talk in other racial/ethnic groups. To address this critical limitation, we used stringent multiple group CFA models to examine whether there is empirical support for measurement equivalence of the Negative Body Talk scale (designed for women; Engeln-Maddox et al., 2012) and the Male Body Talk scale (designed for men; Sladek et al., 2014) among Asian, Latina(o), and White university students. On average, ethnic groups were more similar than different in their reports of how often they make negative body-related comments aloud, and the few differences that emerged had small effect sizes. In a follow-up study, we provided additional evi-

Table 5
Multiple regression analyses predicting men's negative body talk from BMI, ERI, race/ethnicity, and their interaction.

	MBT Muscle Talk			MBT Fat Talk		
	b	*SE b*	*β*	*b*	*SE b*	*β*
Intercept	3.94**	0.21		2.91**	0.21	
BMI	−0.05	0.04	−.04	0.22**	0.04	.01
ERI Exploration	0.76*	0.29	.13	0.16	0.29	.03
Latino	−0.13	0.35	−.02	0.43	0.35	.06
ERI Exploration x Latino	−0.53	0.44	−.05	0.07	0.43	.01
Asian	0.34	0.37	.04	0.52	0.36	.07
ERI Exploration x Asian	0.05	0.56	.004	−0.08	0.56	−.01
Overall Model: $F(6, 118) = 2.76$, $p = .02$, $R^2 = .08$				$F(6, 118) = 7.60$, $p < .001$, $R^2 = .24$		

	MBT Muscle Talk			MBT Fat Talk		
	b	*SE b*	*β*	*b*	*SE b*	*β*
Intercept	3.79**	0.21		2.88**	0.20	
BMI	−0.04	0.04	−.03	0.23**	0.04	.25
ERI Resolution	−0.26	0.26	−.04	−0.20	0.26	−.04
Latino	0.05	0.35	.01	0.54	0.34	.08
ERI Resolution x Latino	0.25	0.48	.02	−0.17	0.47	−.02
Asian	0.84*	0.36	.10	0.57	0.35	.08
ERI Resolution x Asian	1.24*	0.56	.09	0.12	0.54	.01
Overall Model: $F(6, 118) = 1.79$, $p = .11$, $R^2 = .04$				$F(6, 118) = 7.74$, $p < .001$, $R^2 = .25$		

Note. $N = 126$. Race/ethnicity dummy coded separately for Latino and Asian groups (1) with White as the reference group (0). *b* = partial regression coefficient. *SE b* = standard error of the partial regression estimate. *β* = standardized beta.
* $p < .05$.
** $p < .01$.

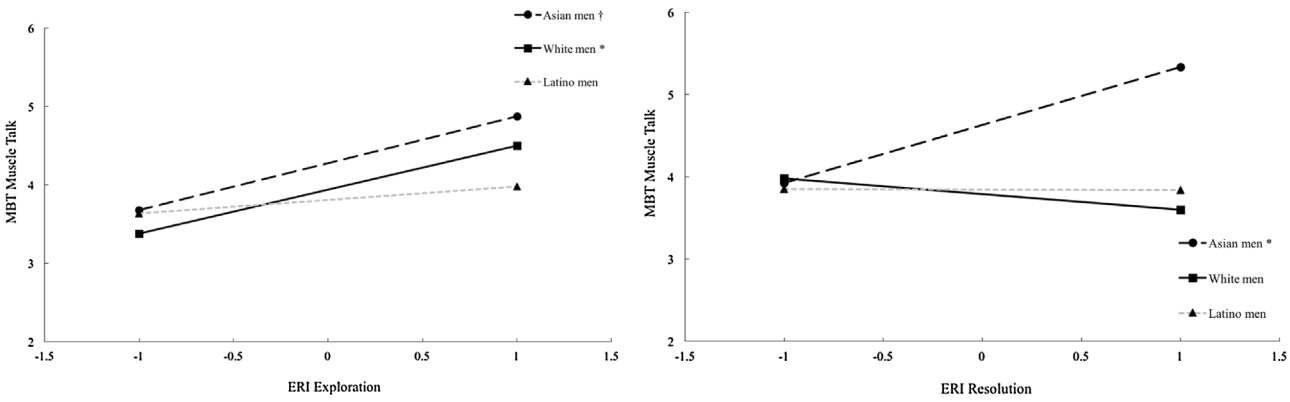

Fig. 2. Associations between men's ERI and negative body talk moderated by race/ethnicity.
Note. Simple slopes of ERI (+/− 1 *SD* from grand mean) with MBT Muscle Talk scores plotted by race/ethnicity. †$p < .10$. *$p < .05$.

dence for the reliability of these measures for use with these three ethnic groups; we also conducted the first examination of associations between ethnic-racial identity and negative body talk in a diverse sample.

Our results provide a key contribution to the measurement of negative body talk, especially as researchers continue to question whether this social phenomenon varies across race/ethnicity and how culture shapes the nature of body-focused conversations (Engeln & Salk, 2016; Fiery et al., 2016; Sladek et al., 2014). Our analyses provided support for strong invariance (i.e., measurement equivalence) of the Negative Body Talk and Male Body Talk scales for Asian, Latina(o), and White women and men, a critical prerequisite for tests of mean group differences (Milfont & Fischer, 2010). In other words, any observed ethnic group differences of the relative frequency of negative body talk assessed using these scales are unlikely to be due to inappropriate measurement. We also confirmed that scores on these scales are reliable (i.e., internally consistent, relatively stable over time) to the same degree for Asian, Latina(o), and White women and men. Although this is an important step forward, future research should continue to explore how contexts and the time period under study influence frequency reports of negative body talk (e.g., experience sampling methods).

Ethnic group comparisons adjusting for body mass index revealed no average differences in how frequently women make comments comparing their bodies to those of other women nor how frequently men express conerns about their degree of muscularity. However, the small differences that did emerge suggested that Asian women voice body concerns more often than Latina and White women, whereas Asian and Latino men complain about being too fat or express needing to lose weight more often than White men. It is notable that Asian women and men had the lowest body mass indices yet they reported more negative body talk than their counterparts. Prior studies of women and men of a wider age range were limited by smaller and more ethnically homogenous samples (Engeln & Salk, 2016; Sladek et al., 2014), and thus potentially underpowered to detect the small differences found here.

The small but significant ethnic group differences are consistent with research describing a strong Asian cultural emphasis on thinness for women, especially as it relates to traditional expectations of

femininity (Smart & Tsong, 2014; Swami et al., 2010), which could be one reason why Asian women reported voicing body concerns aloud slightly more frequently than their White and Latina peers. Other research points to perceived discrimination and pressure to achieve for family recognition as factors contributing to Asian women's body image disturbance and disordered eating (Cheng, 2014; Tsong & Smart, 2015), which could also contribute to a greater tendency to make disparaging body-related comments. The ethnic group differences we detected are further consistent with work documenting elevated body image disturbance and extreme weight-control practices among young men of color (Neumark-Sztainer et al., 2002; Ricciardelli et al., 2007), which may manifest in Asian and Latino men's greater willingness to complain about being too heavy compared to their White peers. Our findings extend the available body image and disordered eating literatures by showing that how often women and men engage in the social practice of voicing body concerns aloud may vary by ethnicity in small but important ways, and, more importantly, that the phenomenon of negative body talk is not limited to White women. However, these findings may be specific to university students, who are at elevated risk for disordered eating compared to community samples (e.g., Eisenberg et al., 2011).

To our knowledge, we were also the first to examine how the frequency of negative body talk varies with ethnic-racial identity, a multi-faceted construct generally related to improved psychological adjustment (e.g., Umaña-Taylor et al., 2014) and greater body satisfaction (Cotter et al., 2015; Rakhkovskaya & Warren, 2016). Consistent with expectations, ethnic minority women in our sample who have made greater sense of what their race/ethnicity means to them tended to engage in negative body talk less frequently, even when adjusting for group differences in average body size. These findings are consistent with theory recognizing ethnic-racial identity as a salient cultural factor that fosters self-esteem and also lend support to the notion that stronger ethnic-racial identity resolution may offer comparatively greater benefits for minority women (Phinney, 1989; Umaña-Taylor et al., 2004).

Similar to work showing broader conceptualizations of beauty ideals and positive body image among minority women (e.g., Swami, Airs, Chouhan, Leon, & Towell, 2009) it could be that Asian and Latina women who have developed a greater sense of themselves as members of their non-White, minority groups feel less pressure to conform to the mainstream cultural expectations of making disparaging comments about their bodies. It is also possible that Asian and Latina women with strong ethnic-racial identity resolution engage in negative body talk less often based on guiding collectivistic (versus individualistic) values in these cultures, which may motivate a potentially beneficial "other" (rather than "self") orientation (e.g., Campos & Kim, 2017). Interestingly, ethnic-racial identity exploration also predicted less frequent negative body talk, but this association was most pronounced for White women. Despite differing from our expectations, this finding does highlight the universal nature and importance of the identity exploration process for all (Umaña-Taylor et al., 2014). More research is certainly needed, but it is possible that women in the majority group who have explored their racial/ethnic background to a greater extent have found supportive groups of other women (either from their own ethnic group, or others) who help place the phenomenon of negative body talk in a larger context, resulting in greater appreciation for the dangers of this co-ruminative behavior. It is also possible that White women who have explored their ethnic-racial identity to a greater extent are more critically aware of cultural influences more generally (Helms, 1994), and thereby resist dominant cultural pressures to disparage their bodies.

In contrast to these findings for women, our results suggest that men may not receive the same benefit from ethnic-racial identity with respect to negative body talk. Indeed, even when adjusting for average differences in body size, men's ethnic-racial identity exploration and resolution were related to engaging in muscularity-focused negative body talk *more frequently*, specifically for White and Asian men (respectively). For these men, spending more time exploring one's ethnic heritage may coincide with heightened attention to the masculine mesomorphic body ideal. If (or when) men perceive their bodies discrepant from this ideal, they may seek out contexts that foster conversations about gaining body mass and muscularity (e.g., the gym, athletic groups; Engeln et al., 2013). Men's ethnic-racial identity was not similarly linked with how often Latino men engage in muscularity-focused negative body talk, or with the tendency for men of any ethnic group to complain about being too fat. Future research might consider how specific cultural manifestations of masculinity pressures relate to negative body talk, such as *machismo* or acculturative stressors for Latino men (Saez, Casado, & Wade, 2010; Warren & Rios, 2013). Our findings highlight the importance of continuing to examine different components of negative body talk and ethnic-racial identity separately, as well as exploring differential associations by gender and race/ethnicity. Future research should also test whether self-esteem or other indices of psychological adjustment may indeed mediate the associations reported here.

Despite notable strengths of our studies, they are not without limitations. First, participants were recruited from university psychology courses, limiting generalizability of our findings. Second, the large sample size requirements for measurement invariance tests limited the number of racial/ethnic groups we were able to include (e.g., we could not include African American, Native American, or Middle Eastern students). Further, sample size issues also precluded us from considering participants' ethnic heritage(s) more specifically, which limited our comparisons to broad pan-ethnic labels that mask substantial within-group diversity. Future negative body talk research should continue to focus efforts on recruiting diverse, representative samples that allow for nuanced consideration of race, ethnicity, and culture. An intriguing avenue for future research might be to consider the role of same-ethnic and cross-ethnic friendships in negative body talk, which we were not able to measure in these studies. Third, associations between ethnic-racial identity and negative body talk were based on cross-sectional data. Thus, it is unclear which of these factors might precede the other, if they reciprocally influence one another, or if a third variable might account for both. Experimental and longitudinal designs are required moving forward to disentangle the order of effects. Qualitative research will also be advantageous moving forward, particularly to consider whether there is a need for ethnic-specific negative body talk measures that capture body-related talk unique to particular ethnic groups. For example, Black and Latina women may prefer a curvier ideal than White women (Overstreet, Quinn, & Agocha, 2010; Viladrich, Yeh, Bruning, & Weiss, 2009), but existing measures do not capture body talk related to curves.

5. Conclusion

Despite the fact that much negative body talk research has focused on White women, the current results suggest that negative body talk is not a phenomenon limited to this group. Further, two easily administered assessments (the Negative Body Talk scale and the Male Body Talk scale) evidenced strong psychometric properties for Asian, Latina(o), and White university students. The strengths of our approach included recruiting both women and men in these studies of negative body talk, using sophisticated multiple group confirmatory factor analysis models to systematically test measurement invariance across ethnic groups, and providing the first examination of how various components of ethnic-racial identity are related to how often university students engage in negative

body talk. Those conducting research in this area should feel confident that the Negative Body Talk and Male Body Talk scales can be effectively employed with ethnically diverse groups of university students.

Conflicts of interest

None.

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References

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Sage: Newbury Park, CA.

Arroyo, A., & Brunner, S. R. (2016). Negative body talk as an outcome of friends' fitness posts on social networking sites: Body surveillance and social comparison as potential moderators. *Journal of Applied Communication Research*, *44*, 216–235. http://dx.doi.org/10.1080/00909882.2016.1192293

Barwick, A., Bazzini, D., Martz, D., Rocheleau, C., & Curtin, L. (2012). Testing the norm to fat talk for women of varying size: What's weight got to do with it? *Body Image*, *9*, 176–179. http://dx.doi.org/10.1016/j.bodyim.2011.08.003

Bearman, S. K., Presnell, K. P., Martinez, E., & Stice, E. (2006). The skinny on body dissatisfaction: A longitudinal study of adolescent girls and boys. *Journal of Youth and Adolescence*, *35*, 217–229. http://dx.doi.org/10.1007/s10964-005-9010-9

Belon, K. E., Smith, J. E., Bryan, A. D., Lash, D. N., Winn, J. L., & Gianini, L. M. (2011). Measurement invariance of the Eating Attitudes Test-26 in Caucasian and Hispanic women. *Eating Behaviors*, *12*, 317–320. http://dx.doi.org/10.1016/j.eatbeh.2011.07.007

Berg, K. C., Frazier, P., & Sherr, L. (2009). Change in eating disorder attitudes and behavior in college women: Prevalence and predictors. *Eating Behaviors*, *10*, 137–142. http://dx.doi.org/10.1016/j.eatbeh.2009.03.003

Cachelin, F. M., Rebeck, R. M., Chung, G. H., & Pelayo, E. (2002). Does ethnicity influence body-size preference? A comparison of body image and body size. *Obesity*, *10*, 158–166. http://dx.doi.org/10.1038/oby.2002.25

Cafri, G., Yamamiya, Y., Brannick, M., & Thompson, J. K. (2005). The influence of sociocultural factors on body image: A meta-analysis. *Clinical Psychology: Science and Practice*, *12*, 421–433. http://dx.doi.org/10.1093/clipsy.bpi053

Campos, B., & Kim, H. S. (2017). Incorporating the cultural diversity of family and close relationships into the study of health. *American Psychologist*, *72*, 543–554. http://dx.doi.org/10.1037/amp0000122

Chen, F. F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling*, *14*, 464–504. http://dx.doi.org/10.1080/10705510701301834

Cheng, H. L. (2014). Disordered eating among Asian/Asian American women: Racial and cultural factors as correlates. *The Counseling Psychologist*, *42*, 821–851. http://dx.doi.org/10.1177/0011000014535472

Chow, C. M., & Tan, C. C. (2016). Weight status, negative body talk, and body dissatisfaction: A dyadic analysis of male friends. *Journal of Health Psychology*, *21*, 1597–1606. http://dx.doi.org/10.1177/1359105314559621

Clarke, P. M., Murnen, S. K., & Smolak, L. (2010). Development and psychometric evaluation of a quantitative measure of fat talk. *Body Image*, *7*, 1–7. http://dx.doi.org/10.1016/j.bodyim.2009.09.006

Cotter, E. W., Kelly, N. R., Mitchell, K. S., & Mazzeo, S. E. (2015). An investigation of body appreciation, ethnic identity, and eating disorder symptoms in Black women. *Journal of Black Psychology*, *41*, 3–25. http://dx.doi.org/10.1177/0095798413502671

Crago, M., Shisslak, C. M., & Estes, L. S. (1996). Eating disturbances among American minority groups: A review. *International Journal of Eating Disorders*, *19*, 239–248. http://dx.doi.org/10.1002/(SICI)1098-108X(199604)19:3<239:AID-EAT2>3.0.CO;2-N

Croll, J., Neumark-Sztainer, D., Story, M., & Ireland, M. (2002). Prevalence and risk and protective factors related to disordered eating behaviors among adolescents: Relationship to gender and ethnicity. *Journal of Adolescent Health*, *31*, 166–175. http://dx.doi.org/10.1016/S1054-139X(02)00368-3

Dimitrov, D. M. (2010). Testing for factorial invariance in the context of construct validation. *Measurement and Evaluation in Counseling and Development*, *43*, 121–149. http://dx.doi.org/10.1177/0748175610373459

Eisenberg, D., Nicklett, E. J., Roeder, K., & Kirz, N. E. (2011). Eating disorder symptoms among college students: Prevalence, persistence, correlates, and treatment-seeking. *Journal of American College Health*, *59*, 700–707. http://dx.doi.org/10.1080/07448481.2010.546461

Enders, C. K., & Bandalos, D. L. (2001). The relative performance of full information maximum likelihood estimation for missing data in structural equation models. *Structural Equation Modeling*, *8*, 430–457. http://dx.doi.org/10.1207/S15328007SEM0803_5

Engeln, R., & Salk, R. H. (2016). The demographics of fat talk in adult women: Age, body size, and ethnicity. *Journal of Health Psychology*, *21*, 1655–1664. http://dx.doi.org/10.1177/1359105314560918

Engeln, R., Sladek, M. R., & Waldron, H. (2013). Body talk among college men: Content, correlates, and effects. *Body Image*, *10*, 300–308. http://dx.doi.org/10.1016/j.bodyim.2013.02.001

Engeln-Maddox, R., Salk, R. H., & Miller, S. A. (2012). Assessing women's negative commentary on their own bodies: A psychometric investigation of the negative body talk scale. *Psychology Women Quarterly*, *36*, 162–178. http://dx.doi.org/10.1177/0361684312441593

Erikson, E. H. (1968). *Identity: youth and crisis*. New York: Norton.

Fiery, M. F., Martz, D. M., Mary, R., & Curtin, L. (2016). A preliminary investigation of racial differences in body talk in age-diverse U.S. adults. *Eating Behaviors*, *21*, 232–235. http://dx.doi.org/10.1016/j.eatbeh.2016.03.004

Frederick, D. A., Peplau, L. A., & Lever, J. (2006). The swimsuit issue: Correlates of body image in a sample of 52, 677 heterosexual adults. *Body Image*, *4*, 413–419. http://dx.doi.org/10.1016/j.bodyim.2006.08.002

Frederick, D. A., Forbes, G. B., Grigorian, K., & Jarcho, J. M. (2007). The UCLA Body Project I: Gender and ethnic differences in self-objectification and body satisfaction among 2, 206 undergraduates. *Sex Roles*, *57*, 317–327. http://dx.doi.org/10.1007/s11199-007-9251-z

Frederick, D. A., Kelly, M. C., Latner, J. D., & Sandhu, G. (2016). Body image and face image in Asian American and White women: Examining associations with surveillance, construal of self, perfectionism, and sociocultural pressures. *Body Image*, *16*, 113–125. http://dx.doi.org/10.1016/j.bodyim.2015.12.002

Fredrickson, B. L., & Roberts, T. A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*, *21*, 173–206. http://dx.doi.org/10.1111/j.1471-6402.1997.tb00108 x

Grabe, S., & Hyde, J. S. (2006). Ethnicity and body dissatisfaction among women in the United States: A meta-analysis. *Psychological Bulletin*, *132*, 622–640. http://dx.doi.org/10.1037/0033-2909.132.4.622

Greene, M. L., Way, N., & Pahl, K. (2006). Trajectories of perceived adult and peer discrimination among Black, Latino, and Asian American adolescents: Patterns and psychological correlates. *Developmental Psychology*, *42*, 218–236. http://dx.doi.org/10.1037/0012-1649.42.2.218

Helms, J. E. (1994). The conceptualization of racial identity and other racial constructs. In E. J. Trickett, R. J. Watts & D. Birman (Eds.), *Human diversity: Perspectives on people in context* (pp. 285–311). San Francisco, CA: Jossey-Bass Publishers.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, *6*, 1–55. http://dx.doi.org/10.1080/10705519909540118

Karazsia, B. T., Murnen, S. K., & Tylka, T. L. (2017). Is body dissatisfaction changing across time? A cross-temporal meta-analysis. *Psychological Bulletin*, *143*, 293–320. http://dx.doi.org/10.1037/bul0000081

Kelloway, E. K. (1998). *Using LISREL for structural equation modeling: A researcher's guide*. Thousand Oaks, CA: Sage.

Kimber, M., Couturier, J., Georgiades, K., Wahoush, O., & Jack, S. M. (2015). Ethnic minority status and body image dissatisfaction: A scoping review of the child and adolescent literature. *Journal of Immigrant and Minority Health*, *17*, 1567–1579. http://dx.doi.org/10.1007/s10903-014-0082-z

Kline, R. B. (2010). *Principles and practice of structural equation modeling* (3rd ed.). New York: Guilford.

Knight, G. P., Roosa, M. W., & Umaña-Taylor, A. J. (2009). *Methodological challenges in studying ethnic minority or economically disadvantaged populations*. Washington, DC: American Psychological Association.

Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*, 1198–1202.

Little, T. D. (1997). Mean and covariance structures (MACS) analyses of cross-cultural data: Practical and theoretical issues. *Multivariate Behavioral Research*, *32*, 53–76. http://dx.doi.org/10.1207/s15327906mbr3201_3

Markstrom-Adams, C. (1992). A consideration of intervening factors in adolescent identity formation. In G. Adams, T. Gullotta & R. Montemayor (Eds.), *Adolescent identity formation* (pp. 173–192). Newberry Park, CA: Sage.

McCreary, D. R. (2007). The Drive for Muscularity Scale: Description, psychometrics, and research findings. In J. K. Thompson & G. Cafri (Eds.), *The muscular ideal: Psychological, social, and medical perspectives* (pp. 87–106). Washington, DC: American Psychological Association.

McKinley, N. M. (2006). Longitudinal gender differences in objectified body consciousness and weight-related attitudes and behaviors: Cultural and developmental contexts in the transition from college. *Sex Roles*, *54*, 159–173. http://dx.doi.org/10.1007/s11199-006-9335-1
Milfont, & Fischer, R. (2010). Testing measurement invariance across groups: Applications in cross-cultural research. *International Journal of Psychological Research*, *3*, 111–121. http://dx.doi.org/10.21500/20112084.857
Miller, K. J., Gleaves, D. H., Hirsch, T. G., Green, B. A., Snow, A. C., & Corbett, C. C. (2000). Comparisons of body image dimensions by race/ethnicity and gender in a university population. *International Journal of Eating Disorders*, *27*, 310–316. http://dx.doi.org/10.1002/(SICI)1098-108X(200004)27:3<310:AID-EAT8>3.0.CO;2-Q
Mills, J., & Fuller-Tyszkiewicz, M. (2017). Fat talk and body image disturbance: A systematic review and meta-analysis. *Psychology of Women Quarterly*, *41*, 114–129. http://dx.doi.org/10.1177/0361684316675317
Muthén, L. K., & Muthén, B. O. (1998-2012). *Mplus user's guide* (7th ed.). Los Angeles, CA: Muthén & Muthén.
National Center for Education Statistics [NCES]. (2016). *Status and trends in the education of racial and ethnic groups 2016. NCES 2016-007*. Washington, DC: U.S Department of Education.
Neumark-Sztainer, D., Croll, J., Story, M., Hannan, P. J., French, S. A., & Perry, C. (2002). Ethnic/racial differences in weight-related concerns and behaviours among adolescent girls and boys: Findings from project EAT. *Journal of Psychosomatic Research*, *53*, 963–974. http://dx.doi.org/10.1016/S0022-3999(02)00486-5
Nichter, M., & Vuckovic, N. (1994). Fat talk. In N. Sault (Ed.), *Many mirrors: Body image and social relations* (pp. 109–131). New Brunswick, NJ: Rutgers University Press.
Nichter, M. (2000). *Fat talk*. Cambridge, MA: Harvard: University Press.
Overstreet, N. M., Quinn, D. M., & Agocha, V. B. (2010). Beyond thinness: The influence of a curvaceous body ideal on body dissatisfaction in Black and White women. *Sex Roles*, *63*, 91–103. http://dx.doi.org/10.1007/s11199-010-9792-4
Phinney, J. S. (1989). Stages of ethnic identity development in minority group adolescents. *Journal of Early Adolescence*, *9*, 34–49. http://dx.doi.org/10.1177/0272431689091004
Phinney, J. S. (1996). When we talk about American ethnic groups, what do we mean? *American Psychologist*, *51*, 918–927. http://dx.doi.org/10.1037/0003-066X.51.9.918
Ponterotto, J. G., & Park-Taylor, J. (2007). Racial and ethnic identity theory, measurement, and research in counseling psychology: Present status and future directions. *Journal of Counseling Psychology*, *54*(282), 294. http://dx.doi.org/10.1037/0022-0167.54.3.282
Pope, H. G., Gruber, A., Mangweth, B., Bureau, B., deCol, C., & Jouvent, R. (2000). Body image perceptions among men in three countries. *American Journal of Psychiatry*, *157*, 1297–1301. http://dx.doi.org/10.1176/appi.ajp.157.8.1297
Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interaction effects in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of Educational and Behavioral Statistics*, *31*, 437–448. http://dx.doi.org/10.3102/10769986031004437
Rakhkovskaya, L. M., & Warren, C. S. (2016). Sociocultural and identity predictors of body dissatisfaction in ethnically diverse college women. *Body Image*, *16*, 32–40. http://dx.doi.org/10.1016/j.bodyim.2015.10.004
Ricciardelli, L. A., McCabe, M. P., Williams, R. J., & Thompson, J. K. (2007). The role of ethnicity and culture in body image and disordered eating among males. *Clinical Psychology Review*, *27*, 582–606. http://dx.doi.org/10.1016/j.cpr.2007.01.016
Ridgeway, R. T., & Tylka, T. L. (2005). College men's perceptions of ideal body composition and shape. *Psychology of Men and Masculinity*, *6*, 209–220. http://dx.doi.org/10.1037/1524-9220.6.3.209
Rivas-Drake, D. (2011). Ethnic-racial socialization and adjustment among Latino college students: The mediating roles of ethnic centrality, public regard, and perceived barriers to opportunity. *Journal of Youth and Adolescence*, *40*, 606–619. http://dx.doi.org/10.1007/s10964-010-9564-z
Royal, S., MacDonald, D. E., & Dionne, M. M. (2013). Development and validation of the Fat Talk Questionnaire. *Body Image*, *10*, 62–69. http://dx.doi.org/10.1016/j.bodyim.2012.10.003
Saez, P. A., Casado, A., & Wade, J. C. (2010). Factors influencing masculinity ideology among Latino men. *The Journal of Men's Studies*, *17*, 116–128. http://dx.doi.org/10.3149/jms.1702.116
Salk, R. H., & Engeln-Maddox, R. (2011). If you're fat then I'm humongous!: Content and impact of fat talk among college women. *Psychology of Women Quarterly*, *35*, 8–28. http://dx.doi.org/10.1177/0361684310384107
Salk, R. H., & Engeln-Maddox, R. (2012). Fat talk among college women is both contagious and harmful. *Sex Roles*, *9*, 636–645. http://dx.doi.org/10.1007/s11199-011-0050-1
Satorra, A., & Bentler, P. M. (2001). A scaled difference chi-square test statistic for moment structure analysis. *Psychometrika*, *66*, 507–514. http://dx.doi.org/10.1007/bf02296192
Saunders, J. F., & Frazier, L. D. (2017). Body dissatisfaction in early adolescence: The coactive roles of cognitive and sociocultural factors. *Journal of Youth and Adolescence*, *46*, 1246–1261. http://dx.doi.org/10.1007/s10964-016-0559-2
Shannon, A., & Mills, J. S. (2015). Correlates, causes, and consequences of fat talk: A review. *Body Image*, *15*, 158–172. http://dx.doi.org/10.1016/j.bodyim.2015.09.003
Sharpe, H., Naumann, U., & Treasure, J. (2013). Is fat talking a causal risk factor for body dissatisfaction? A systematic review and meta-analysis. *International Journal of Eating Disorders*, *46*, 643–652. http://dx.doi.org/10.1002/eat.22151
Sladek, M. R., Engeln, R., & Miller, S. A. (2014). Development and validation of the Male Body Talk scale: A psychometric investigation. *Body Image*, *11*, 233–244. http://dx.doi.org/10.1016/j.bodyim.2014.02.005
Smart, R., & Tsong, Y. (2014). Weight, body dissatisfaction, and disordered eating: Asian American women's perspectives. *Asian American Journal of Psychology*, *5*, 344–352. http://dx.doi.org/10.1037/a0035599
Striegel-Moore, R. H., & Smolak, L. (2000). The influence of ethnicity on eating disorders in women. In R. M. Eisler & M. Hersen (Eds.), *Handbook of gender, culture, and health* (pp. 227–253). Mahwah, NJ: Lawrence Erlbaum Associates.
Swami, V., Airs, N., Chouhan, B., Leon, M. A. P., & Towell, T. (2009). Are there ethnic differences in positive body image among female British undergraduates? *European Psychologist*, *14*, 288–296. http://dx.doi.org/10.1027/1016-9040.14.4.288
Swami, V., Frederick, D. A., Aavik, T., Alcalay, L., Allik, J., Anderson, D., & Zivcic-Becirevic, I. (2010). The attractive female body weight and female body dissatisfaction in 26 countries across 10 world regions: Results of the International Body Project I. *Personality & Social Psychology Bulletin*, *36*, 309–325. http://dx.doi.org/10.1177/0146167209359702
Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Allyn and Bacon.
Tajfel, H. (1981). *Human groups and social categories*. Cambridge, UK: Cambridge University Press.
Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, *35*, 293–304. http://dx.doi.org/10.1002/eat.10257
Thompson, J. K. (2004). The (mis)measurement of body image: Ten strategies to improve assessment for applied and research purposes. *Body Image*, *1*, 7–14. http://dx.doi.org/10.1016/S1740-1445(03)00004-4
Tiggemann, M. (2015). Considerations of positive body image across various social identities and special populations. *Body Image*, *14*, 168–176. http://dx.doi.org/10.1016/j.bodyim.2015.03.002
Tsong, Y., & Smart, R. (2015). The role of cultural beliefs in disordered eating among Asian-American women. *Asian American Journal of Psychology*, *6*, 342–349. http://dx.doi.org/10.1037/aap0000029
Tylka, T. L., & Wood-Barcalow, N. L. (2015). The Body Appreciation Scale: Item refinement and psychometric evaluation. *Body Image*, *12*, 53–67. http://dx.doi.org/10.1016/j.bodyim.2014.09.006
Tylka, T. L. (2013). Evidence for the Body Appreciation Scale's measurement equivalence/invariance between US college women and men. *Body Image*, *10*, 415–418. http://dx.doi.org/10.1016/j.bodyim.2013.02.006
Umaña-Taylor, A. J., & Shin, N. (2007). An examination of ethnic identity and self-esteem with diverse populations: Exploring variation by ethnicity and geography. *Cultural Diversity and Ethnic Minority Psychology*, *13*, 178–186. http://dx.doi.org/10.1037/1099-9809.13.2.178
Umaña-Taylor, A. J., & Updegraff, K. A. (2013). Latino families in the United States. In G. W. Peterson & K. R. Bush (Eds.), *Handbook of marriage and family* (3rd ed., pp. 723–747). New York: Springer.
Umaña-Taylor, A. J., Yazedjian, A., & Bámaca-Gomez, M. (2004). Developing the Ethnic Identity Scale using Eriksonian and social identity perspectives. *Identity: An International Journal of Theory and Research*, *4*, 9–38. http://dx.doi.org/10.1207/s1532706xid0401_2
Umaña-Taylor, A. J., Quintana, S. M., Lee, R. M., Cross, W. E., Rivas-Drake, D., Schwartz, S. J., & Seaton, E. (2014). Ethnic and racial identity during adolescence and into young adulthood: An integrated conceptualization. *Child Development*, *85*, 21–39. http://dx.doi.org/10.1111/cdev.12196
Viladrich, A., Yeh, M. C., Bruning, N., & Weiss, R. (2009). Do real women have curves? Paradoxical body images among Latinas in New York City. *Journal of Immigrant Minority Health*, *11*, 20–28. http://dx.doi.org/10.1007/s10903-008-9176-9
Warren, C. S., & Rios, R. M. (2013). The relationships among acculturation, acculturative stress, endorsement of Western media, social comparison, and body image in Hispanic male college students. *Psychology of Men & Masculinity*, *14*, 192–201. http://dx.doi.org/10.1037/a0028505
Yang, C. F. J., Gray, P., & Pope, H. G., Jr. (2005). Male body image in Taiwan versus the West: Yanggang Zhiqi meets the Adonis complex. *American Journal of Psychiatry*, *162*, 263–269. http://dx.doi.org/10.1176/appi.ajp.162.2.263