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Perceived Norms for Thinness and Muscularity among College Students: What Do Men and Women Really Want?

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Abstract

Background—Perceived norms are related to health-related attitudes and behaviors, including body image. The current study examined body dissatisfaction and perceived norms for thinness and muscularity among male and female college students.

Method—Participants included 842 undergraduate students (64.5% female) who completed an online survey assessing body image and other health-related attitudes and behaviors. A series of independent sample and paired sample t-tests were conducted to document sex differences in body dissatisfaction and misperceptions of thinness and muscularity norms.

Results—Based on pictorial ratings, both males and females reported discrepancies between their ideal and actual figures. Females perceived other females as significantly thinner and less muscular than the actual norms. Males perceived other males as significantly heavier than their own figures, but the difference between men's self-reported muscularity and perceived norm was not significant. Both males and females misperceived opposite-sex attractiveness norms for thinness and muscularity.

Discussion—Results suggest the importance of evaluating same-sex and opposite-sex perceived norms of thinness and muscularity in the etiology of body dissatisfaction, and this research informs social norms interventions targeting misperceptions of body image norms among both males and females.

Keywords

Body image; Social norms; Muscularity; Thinness; Gender

1. Introduction

Body image is a significant developmental concern for both men and women, and research has established cross-sectional and longitudinal associations between body dissatisfaction and low self-esteem, risky body-change strategies, and disordered eating (Ivezaj, Saules, et al., 2010; Stice, 2002; Westerberg-Jacobson et al., 2010). Etiological models have

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consistently identified the role of sociocultural factors (e.g. peer influence) in the development and maintenance of body dissatisfaction and disordered eating patterns (Cash & Pruzinsky, 2002; Jones & Crawford, 2005). Adolescents and young adults are susceptible to pressure to conform to perceived standards of physical appearance, as these developmental periods are critical for the formation of one's identity related to physical self-evaluation and self-worth (Arnett, 2000; Jones, 2004).

The social environment of college students in particular engenders a heightened awareness of social norms related to appearance and attractiveness that increases their risk for engaging in unhealthy body-change strategies (e.g., disordered eating) (Brunet, Sabiston, Dorsch, & McCreary, 2010; Bergstrom, Neighbors, & Lewis, 2004). The goal of the current study is to extend previous research by systematically evaluating perceived thinness and muscularity norms among both male and female college students, in conjunction with levels of body dissatisfaction. Research examining perceptions of thinness and muscularity norms in men and women informs the development of interventions aimed at correcting misperceptions of body image norms and reducing the negative consequences associated with body dissatisfaction (Bergstrom & Neighbors, 2006; Lynch & Zellner, 1999).

Historically, research has primarily focused on body dissatisfaction among females indicative of a drive for thinness. The onset of eating disorder symptoms typically occurs between 15 and 20 years of age (Striegel-Moore & Bulik, 2007), and college women are at high risk for engaging in risky weight-loss behaviors including dieting, using laxatives, self-induced vomiting, and excessive exercise (Mintz & Bentz, 1988; Wharton, Adams, & Hampl, 2008). Recent research also indicates that men have become increasingly dissatisfied with their physical appearance, and whereas women are predominantly concerned about their weight, men report concerns about both weight and muscularity (Frederick, Buchanan, et al., 2007; Jones & Crawford, 2005; Pope, Olivardia, & Phillips, 2000). Correlates of body dissatisfaction among males resemble those reported by females, including negative affect and disordered eating, but consistent with a drive for muscularity, men are considerably more likely than women to engage in excessive weightlifting and anabolic steroid and dietary supplement use (Cafri, Van den Berg, & Thompson, 2006; Cash & Pruzinsky, 2002; McCreary & Sasse, 2000). Given the apparent social pressures related to the acceptability and approval of idealized physical appearance among college students (Jackson, 2002), further examination of body image norms related to thinness and muscularity informs etiological models and prevention efforts targeting both male and female students.

Social norms approaches to the study of health-related behaviors have documented misperceptions of perceived norms for drinking (Borsari & Carey, 2001; Lewis & Neighbors, 2004), tobacco use (Perkins, Meilman, Leichter, Cashin, & Presley, 1999), gambling (Larimer & Neighbors, 2003), sexual behavior (Lewis, Lee, Patrick, & Fossos, 2007), and illicit drug use (Kilmer, Walker, Palmer, Mallett, & Larimer, 2006). In the context of body image, self-discrepancy theory posits that body dissatisfaction reflects a discrepancy between self-perceived body size/figure and the ideal figure one would like to have (Bessenoff & Snow, 2006; Cohn & Adler, 1992; Fallon & Rozin, 1985; Glauert, Rhodes, Bryne, Fink, & Grammer, 2009). Additionally, distress may result from a discrepancy between one's perceived figure and one's perception of the cultural standard or norm for such physical attributes (Bergstrom & Neighbors, 2006; Lynch & Zellner, 1999). Thus, misperceiving social norms for thinness or muscularity are likely associated with body dissatisfaction and body change strategies consistent with efforts to achieve the perceived norm (Clemens, Thombs, Olds, & Gordon, 2008; Eisenberg, Neumark-Sztainer, & Perry, 2005).

Little research has examined the influence of body image norms for both thinness and muscularity among male and female college students (see Bergstrom & Neighbors, 2006 for a review). Results of such work consistently show that females overestimate the extent to which other females want to be thinner, and mistakenly believe males find thinner females to be more attractive than what males actually find attractive (Bergstrom, Neighbors, & Lewis, 2004; Sanderson, Darley, & Messenger, 2002). Findings for males appear to be more complex, as some research reveals males accurately perceive the male body type females find attractive (e.g., Bergstrom et al., 2004), while other studies suggest men believe women prefer larger or more muscular males than what women actually find attractive (Demarest & Allen, 2000; Fallon & Rozin, 1985).

Thus, while misperceptions of thinness norms are associated with a greater drive for thinness and disordered eating among college females (Bergstrom et al., 2004; Sanderson et al., 2002), research has yet to evaluate same-sex and opposite-sex normative perceptions of thinness and muscularity for college males. Although body image has been indicated as a robust predictor in the development of eating disorders and other risky body-change strategies, to our knowledge no previous study has documented both same-sex and opposite-sex normative misperceptions of thinness and muscularity norms among a sample of male and female college students. In order to address this gap in the literature on body image and social norms, the current study aims and hypotheses are as follows:

Aim 1

Document differences in actual-ideal self-perceptions (body dissatisfaction) regarding thinness and muscularity among male and female college students.

Hypothesis 1

Female ideal figures will be thinner and less muscular than their actual figures, and male ideal figures will be thinner and more muscular than their actual figures. Self-discrepancies between actual and ideal ratings will be greater for females than males for thinness, with the reverse being true for muscularity.

Aim 2

Evaluate sex differences in misperceptions of actual same-sex thinness/muscularity norms and opposite-sex attractiveness norms for thinness/muscularity.

Hypothesis 2

Females will misperceive thinness norms such that their perceptions of the typical female will be thinner than the actual descriptive thinness norm. Females will also misperceive opposite-sex injunctive norms whereby they will believe males are attracted to/prefer a thinner female figure than actual preferences. Males will also misperceive both same-sex and opposite sex muscularity and thinness norms. Misperceptions of thinness norms will be greater for females compared to males, although males will exhibit greater misperceptions of muscularity norms compared to females.

2. Method

2.1 Participants and Procedures

Participants were selected from a larger sample of college students from two large public universities participating in the “Motivating Campus Change” (MC²) project. The MC² study invited a random sample of 7,000 undergraduates (3,500 at each institution), using participants’ names, addresses, email addresses and phone numbers provided by the

registrar's office. Students in the MC² study completed a 30-minute online survey assessing alcohol use and normative perceptions of drinking and relevance of different normative reference groups. Students were asked if they would like to be considered for future studies of college students. By agreeing to be considered, students' names, student IDs (for identification purposes), and contact information (address, phone number, and email address) would be forwarded to investigators conducting relevant studies. A total of 3592 students (51.3%) completed the MC² survey, and 3156 (87.9% of those participating) consented to be considered for future studies. A randomly selected sample of 1200 participants was selected for invitation by letter and email to the current study about body image attitudes and other health-related behaviors. Participants in this study were asked to complete an online survey that would take approximately 30–40 minutes to complete for which they would be paid \$25. Of the 1200 students invited, 842 (70% response rate) provided consent and completed the online survey. Participants ranged in age from 18 to 22 years ($M = 20.1$, $SD = 1.5$), and the majority of the sample was female (64.5%). The ethnic distribution was 58.4% Caucasian, 18.0% Asian, 12.7% Hispanic, 11.0% Multiracial, 3.2% African American, 1.5% Native Hawaiian/Pacific Islander, and 0.5% American Indian/Alaskan Native.

All data were collected via a confidential web-based data collection software program, DatStat Illume, which allows for the creation and modification of surveys for use with internet assessment. Previous studies have indicated no significant differences between paper and Web administration of alcohol assessment measures, and web-based assessment has been shown to be a feasible method of data collection in university settings (Miller et al., 2002).

2.2 Measures

Demographics included participants' age, sex, race/ethnicity, and height and weight. Participants' body mass index (BMI) was computed based on participants' self-reported sex and weight using the formula, $BMI = \text{kilograms/meters}^2$ ($M = 27.1$, $SD = 4.2$ for men; $M = 25.8$, $SD = 4.5$ for women).

Thinness dissatisfaction and perceived thinness norms were measured with the Body Rating Scale (BRS, Stunkard, Sorenson, & Schulsinger, 1983), a pictorial scale assessing perceptions of body shape, image, and size. The scale consists of nine male and female figures (sex-specific) ranging in size from very thin to very large, with scores ranging from 10 (very thin) to 90 (very large). Participants were asked the following: 1) Select the figure that looks most like their own (Actual); 2) Select the figure they would most like to have (Ideal); 3) Select the figure they find most attractive (Attractiveness Norm); 4) Select the figure they think represents the typical male/female student (Perceived Same Sex Norm); 5) Select the figure they think represents the most attractive to the opposite-sex (Perceived Opposite-Sex Attractiveness Norm). The BRS is a widely used measure of body dissatisfaction based on self-ideal discrepancy scores with well-established psychometric properties (Stunkard et al., 1983).

Muscularity dissatisfaction and perceived muscularity norms were assessed with a modified version of the Stunkard et al. (1983) figure rating scale that includes figures varying in muscularity (Lynch & Zellner, 1999). The same procedures described above with respect to body size were followed to assess muscularity dissatisfaction among males and females. This scale has demonstrated adequate reliability in previous research with college samples (Lynch & Zellner, 1999).

3. Results

3.1 Data Analytic Plan

Actual-ideal thinness and muscularity discrepancies were operationalized as the difference between one's self-reported actual figure compared to their ideal figure. A negative value corresponded to one's ideal as being thinner or less muscular than one's current figure and a positive value corresponded to one's ideal being heavier or more muscular. Discrepancies between actual and perceived norms for thinness and muscularity were operationalized as differences in the sample means of students' self-reported figure ratings and their perception of the "average male/female student." Discrepancies between actual and perceived norms for attractiveness were represented by differences in sample means of the figure rated as most attractive by potential opposite sex romantic partners compared to the opposite sex figure students selected as being most attractive to them.

In order to evaluate actual-ideal discrepancies, paired sample *t* tests were conducted comparing actual-ideal discrepancy scores for thinness and muscularity for men and women. Next, a series of paired sample *t* tests were conducted for men and women to evaluate discrepancies between perceived norms and actual norms for thinness and muscularity. We also conducted two independent samples *t* tests to evaluate potential discrepancies between perceptions of what the opposite sex finds attractive and what the opposite sex actually preferred with respect to thinness and muscularity. Effect size (*d*) for paired samples *t* tests was calculated as the mean difference divided by the standard deviation of the difference, and for independent samples *t* tests was calculated using the formula $2t/\sqrt{df}$ (Cohen, Cohen, Aiken, & West, 2003). Effect sizes in the .2 range are considered small, .5 medium, and .8 large (Cohen, 1988). Given the multiple comparisons noted above were planned and *a priori* comparisons, we did not adjust the alpha level in these analyses (Kirk, 1995). Table 1 presents means and standard deviations for actual and perceived thinness and muscularity norms for males and females.

Thinness dissatisfaction and perceived norms—Figure 1 illustrates the actual and ideal figures and perceived norms for thinness for men and women. On average, men reported being smaller than other college men, $t(300) = -2.59, p = .01, d = .15$, but the difference between their current and ideal size was not significant, $t(300) = -1.18, p = ns, d = .07$. On average, men's ideal size was significantly smaller than their perceptions of other men's ideal size, $t(300) = -4.03, p < .001, d = .23$, and men believed that other men would ideally like to be smaller than what other men actually reported, $t(300) = 2.73, p < .01, d = .16$. In contrast to men, women reported being heavier than other women, $t(540) = 5.76, p < .001, d = .25$, and their ideal size was significantly smaller than their current size, $t(540) = 24.94, p < .001, d = 1.07$. On average, women's ideal size was significantly heavier than their perceptions of other women's ideal size, $t(540) = 12.64, p < .001, d = .54$, and women believed that other women would ideally like to be smaller than other women's actual reported size, $t(540) = 29.75, p < .001, d = 1.28$. In sum, women perceived other women to be thinner and desire a thinner figure than what women actually reported, whereas men thought other men were heavier and desired a heavier figure than the actual norms.

Muscularity dissatisfaction and perceived norms—Figure 2 illustrates the actual and ideal figures and perceived norms for muscularity for men and women. The difference between men's reported muscularity and perceptions of muscularity among other men was not significant, $t(299) = 1.09, p = ns, d = .06$, although their current figure was significantly less muscular than their ideal figure, $t(299) = -21.80, p < .001, d = 1.26$. On average, men's ideal figure was significantly less muscular than their perceptions of other men's ideal figure, $t(299) = -4.53, p < .001, d = .26$, and men believed that other men would ideally

like to be more muscular than what other men actually reported, $t(299) = -23.83, p < .001, d = 1.38$. In contrast to men, women reported being significantly more muscular than other women, $t(539) = 8.42, p < .001, d = .36$, and their ideal figure was significantly less muscular than their current figure, $t(540) = 9.97, p < .001, d = .43$. On average, women's ideal figure was significantly more muscular than their perceptions of other women's ideal figure, $t(538) = 8.47, p < .001, d = .36$, and women believed that other women would ideally like to be less muscular than what other women actually reported, $t(538) = 7.73, p < .001, d = .33$. Thus, whereas women perceived other women to be less muscular and desire a less muscular figure than what women actually reported, men wanted to be more muscular and thought other men desired a more muscular figure than the actual norms.

Actual and perceived attractiveness norms—Figure 3 illustrates the actual and perceived attractiveness norms for men and women for thinness. On average, women believed that men preferred women who were significantly thinner than the female figure that men actually preferred, $t(836) = -12.03, p < .001, d = .83$. In contrast, men believed that on average, women preferred men who were significantly larger than the male figure that women actually preferred, $t(835) = -5.45, p < .001, d = .38$. In sum, women tend to exaggerate men's preferences for thinner women whereas men exaggerate women's preferences for larger men. In terms of the actual and perceived attractiveness norms for muscularity (see Figure 4), women believed that men preferred women who were significantly less muscular than the female figure that men actually preferred, $t(832) = -9.94, p < .001, d = .69$. In contrast, men believed that women preferred men who were significantly more muscular than the male figure that women actually preferred, $t(835) = 10.96, p < .001, d = .76$. Thus, men tend to exaggerate women's preferences for greater muscularity whereas women exaggerate men's preferences for less muscularity.

4. Discussion

Key Findings and Conclusions

The current study extends previous research on perceived body image norms (e.g., Cohn & Adler, 1992; Fallon & Rozin, 1985) by documenting misperceptions of both thinness and muscularity norms among a sample of male and female college students. Consistent with Hypothesis 1a, females' self-reported ideal figure was significantly thinner than their reported actual figure, indicating thinness dissatisfaction. Females also demonstrated levels of dissatisfaction with muscularity based on findings indicating significantly less muscular ideal figures compared to their current self-reported figures. Also as expected, males' reported their ideal figure as being significantly more muscular than their current figure. However, the overall difference between ideal and current levels of thinness among males was not significant. The magnitudes of the self-discrepancies between actual and ideal thinness (i.e. dissatisfaction) were larger for females compared to males, whereas levels of muscularity dissatisfaction was greater among males. Thus, whereby males exhibit a greater desire for a more muscular figure, females may not differentiate between body size and muscularity illustrated by their preferences to be thinner, both in terms of body size/weight and muscularity.

The goal of the next set of analyses was to evaluate sex differences in discrepancies between same-sex and opposite-sex perceived and actual norms for thinness and muscularity, extending previous research that has primarily focused on females (Darley & Messenger, 2002; Glauert et al., 2009). In support of Hypothesis 1b, the current sample of college females perceived "the typical female college student" to be significantly thinner than the actual thinness norm. Findings extend previous work by also documenting normative misperceptions for muscularity among females whereby the perceived muscularity norm

was less muscular than the actual norm. Consistent with previous research (Bergstrom et al., 2004), females mistakenly thought that men were attracted to women who were significantly thinner and less muscular than the actual preferences reported by males. Contrary to expectations, males perceived other male students as being heavier than the actual thinness/body size norm for males, and men did not exhibit misperceptions in muscularity norms. Additionally, findings extend previous work (Bergstrom et al., 2004) by documenting misperceptions in opposite-sex muscularity norms, as males exaggerated the level of muscularity that females actually found most attractive.

In terms of the theoretical and clinical implications of these findings, self-discrepancy theory asserts that when people believe they are failing to achieve what they would like to be, they are likely to experience psychological distress particularly if this failure is in a domain that is central to their self-worth (Higgins, 1987, Crocker & Wolfe, 2001). It is plausible that perceiving a self-discrepancy between one's actual vs. ideal body image may result in varying levels of affective distress and behavioral consequences related to efforts to reduce the perceived discrepancy. The extent to which women in the current study preferred a notably thin figure as depicted on the scales for both thinness and muscularity is concerning given evidence supporting the role of drive for thinness and internalization of a thin-ideal in the development of eating disorders. Women who prefer to be significantly thinner and mistakenly believe others prefer and are attracted to this extreme may be at increased risk for disordered eating and other risky weight-loss strategies. Our findings also suggest the importance of identifying men who desire a more muscular figure and think women are more attracted to this muscular ideal, as they may be risk for engaging in unhealthy muscle-enhancing strategies. Greater understanding of social, cognitive, and behavioral factors that contribute to the development of these perceptions informs prevention efforts targeting adolescents and young adults hoping to have an ideal figure that is potentially unrealistic and unhealthy.

Limitations and Future Directions

In light of the clinical implications of these results, limitations of the current study should be noted. First, all data were based on self-report, and thus it is possible that social desirability or demand characteristics influenced participants' responses. However, participants were informed that their responses would remain confidential, and college student samples have been found to provide relatively accurate self-reports of health-related behaviors (LaForge, 2005). Research has also supported the validity of self-reported height and weight for computing BMI (Jones, 2004). Second, the study sample included primarily Caucasian and heterosexual college students, thus limiting the generalizability of findings (Demarest & Allen, 2000). Further research is necessary to assess body image norms within a more diverse sample of students, in terms of ethnicity and sexual orientation, in order to tailor the development of group-specific norms-based interventions.

In addition, due to the cross-sectional design of this study, we are unable to make inferences on the directional relationship between perceived body image norms and individual body dissatisfaction. A longitudinal design would allow for a more comprehensive evaluation of the stability and temporal associations of perceived norms and body dissatisfaction. From a clinical perspective, future research should also evaluate the cross-sectional and prospective influence of body dissatisfaction and perceived body image norms on related mental health problems, including eating disorder symptoms, substance use, and depression (e.g., Dunn, Larimer, & Neighbors, 2002; Stice & Shaw, 2003). Finally, although the current study included separate scales to assess body size/thinness and muscularity, further consideration of fat free mass index (FFMI) would provide a more rigorous methodological approach for examining relations between body dissatisfaction and muscularity. Future studies may consider using the Somatomorphic Matrix (SMM; Gruber, Pope, Borowiecki, & Cohane,

2000), a pictorial rating scale that includes separate axes representing levels adiposity and muscularity.

Despite these limitations, the current findings provide evidence of misperceptions of thinness and muscularity norms among both male and female college students. Normative feedback-based interventions have targeted misperceptions of alcohol, marijuana, and gambling norms among college students. For example, brief interventions that have provided accurate feedback to students to correct misperceptions of college student drinking patterns have been effective in reducing heavy drinking among college students (e.g., Neighbors, Larimer, & Lewis, 2004). The current study provides evidence to support further research on the use of personalized feedback regarding body image norms for males and females. For example, this type of norms-based intervention could be structured in a way that provides students, based on their self-report, with feedback describing their actual figure, their perception of the average student's figure, as well as the actual norm. Feedback regarding perceptions of the figure students of the opposite sex find most attractive compared to the figure that the opposite sex actually finds most attractive could also be provided in order to correct the type of normative misperceptions found in the current study.

Previous research also demonstrates perceived norms of more proximal or relevant reference groups may have a stronger impact on individual behaviors (e.g., alcohol consumption) for members of such groups, including one's gender (Lewis & Neighbors, 2004), fraternity/sorority membership (Larimer et al., 2003), and athlete status (Martens, Dams-O'Connor, Duffy-Paiement, & Gibson, 2006). With respect to body image, future research is necessary to evaluate whether gender identity and identification with relevant social groups (e.g., Greeks, athletes) may influence perceptions of gender and group-specific body image norms. For example, it is possible that affiliation with a sorority that emphasizes the importance of physical appearance may enhance the relevance or saliency of thinness norms for females, particularly among those more likely to engage in appearance-related social comparison (Patrick, Neighbors, & Knee, 2004). Future research is necessary to evaluate theory-informed moderators of social normative influences on body image over time, including social comparison, self-esteem, and depression.

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Research Highlights

1. Results suggest misperceptions of body image norms in male and female college students.
2. Females' ideal figures were thinner and less muscular than their current figures.
3. Males' ideal figures were more muscular than their current figures.
4. Females exaggerated the degree of thinness males found most attractive in females.
5. Males exaggerated the degree of muscularity females found most attractive in males.

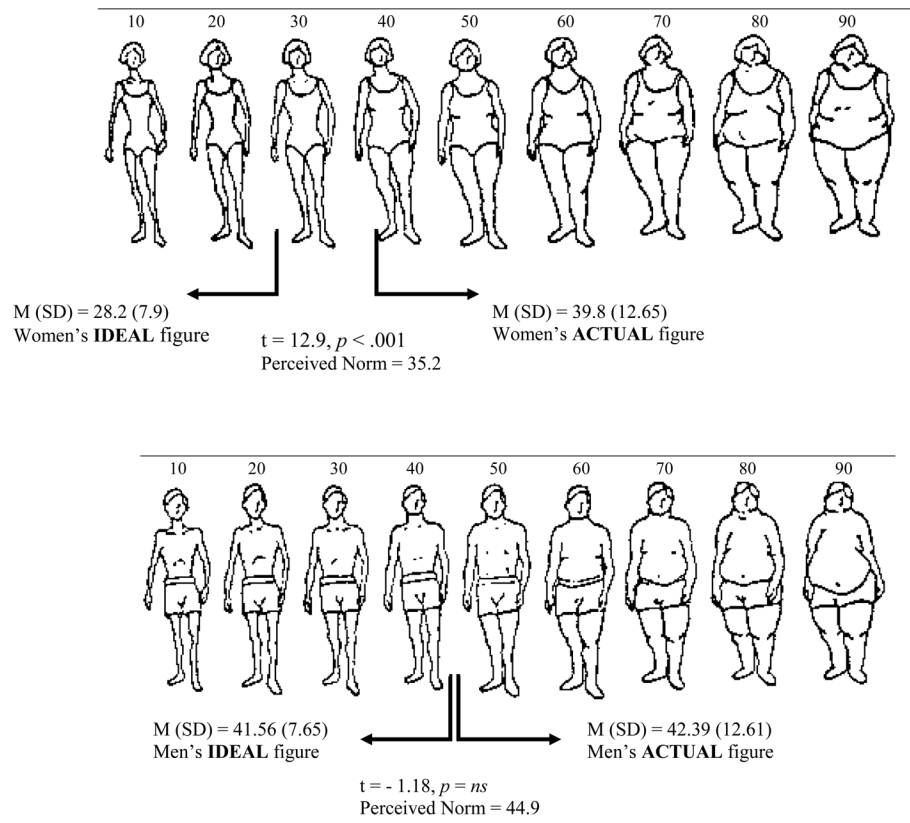


Figure 1.
Actual-Ideal Discrepancies and Same-Sex Norms for Thinness in Females and Males.

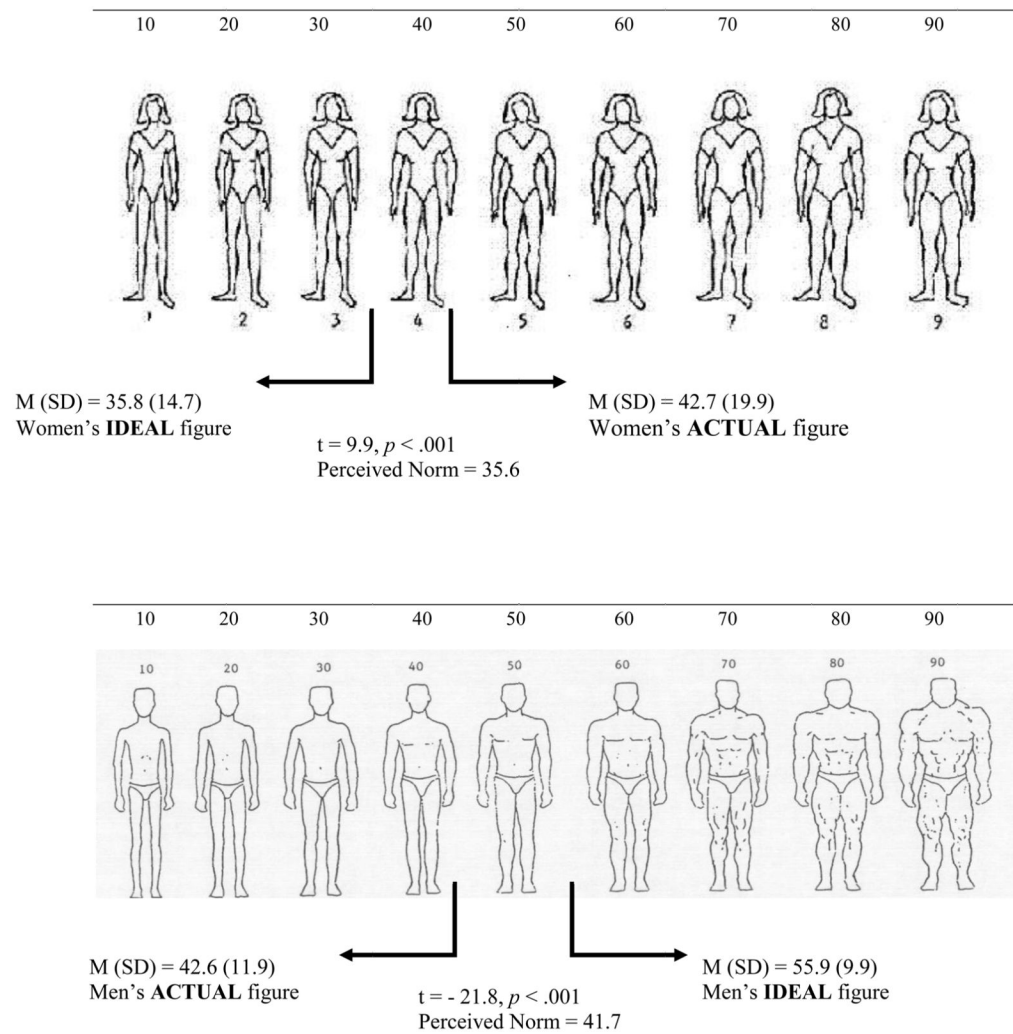


Figure 2. Actual-Ideal Discrepancies and Same-Sex Norms for Muscularity in Females and Males.

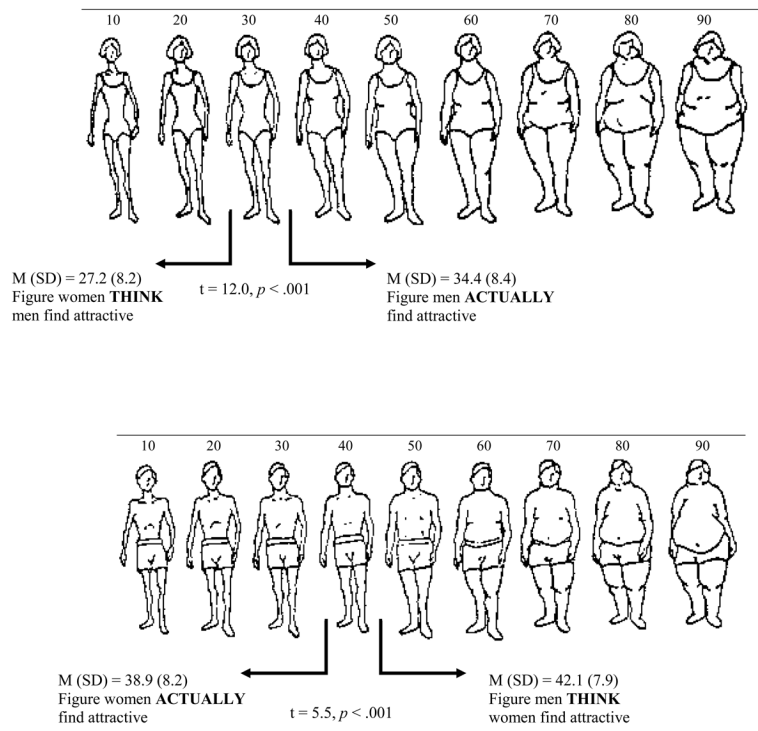


Figure 3.
Discrepancies in Opposite Sex Attractiveness Norms for Thinness in Females and Males.

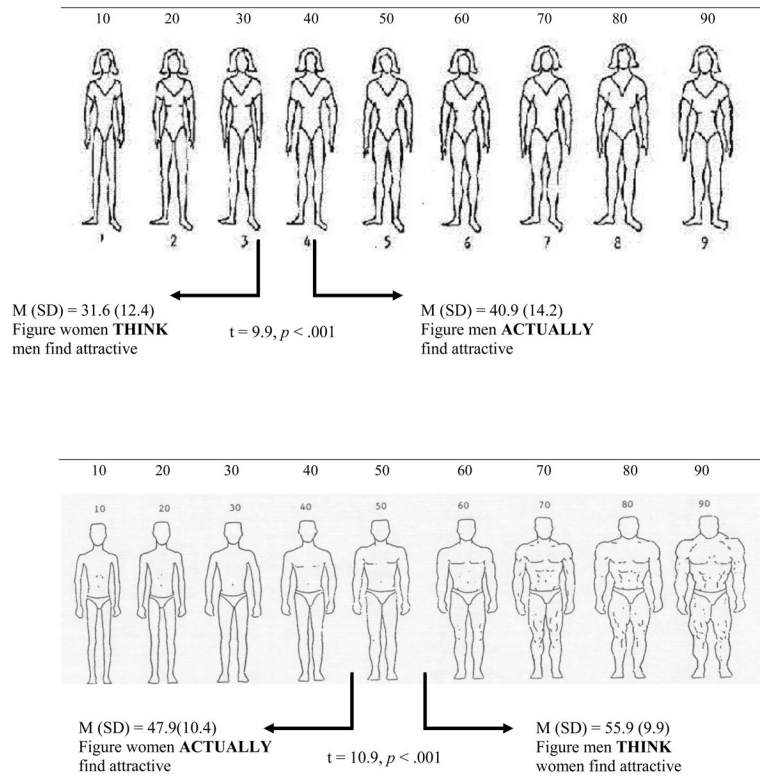


Figure 4. Discrepancies in Opposite Sex Attractiveness Norms for Muscularity in Females and Males.

Table 1

Means and standard deviations of thinness and muscularity discrepancies by gender

Males (<i>n</i> = 301)		
	Actual	Ideal
Actual vs. Ideal Thinness	42.4 (12.6)	41.6 (7.7)
Actual vs. Ideal Muscularity	42.6 (11.9)	55.2 ^a (12.1)
	Actual	Perceived
Same-Sex Thinness Norms	42.4 (12.6)	44.9 ^c (10.6)
Same-Sex Muscularity Norms	42.6 (11.9)	41.7 (8.1)
	Actual (females)	Perceived (males)
Opp-Sex Thinness Preference	38.9 (8.2)	42.1 ^a (7.9)
Opp-Sex Muscularity Preference	47.9 (10.4)	55.9 ^a (9.9)
Females (<i>n</i> = 541)		
	Actual	Ideal
Actual vs. Ideal Thinness	39.1 (12.7)	28.2 ^a (7.9)
Actual vs. Ideal Muscularity	42.7 (19.7)	35.8 ^a (14.7)
	Actual	Perceived
Same-Sex Thinness Norms	39.1 (12.7)	35.2 ^a (9.4)
Same-Sex Muscularity Norms	42.7 (19.7)	35.6 ^a (15.3)
	Actual (males)	Perceived (females)
Opp-Sex Thinness Preference	34.4 (8.4)	27.2 ^a (8.2)
Opp-Sex Muscularity Preference	40.9 (14.2)	31.5 (12.4)

Note.

^{a b c} represent significant differences between Actual and Ideal/Perceived figures values^a $p < .001$.^b $p < .01$.^c $p < .05$. Lower values for thinness correspond to a thinner figure and larger values for muscularity correspond to a more muscular figure.