

## Examining body dissatisfaction in young men within a biopsychosocial framework

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### Abstract

This study examined biopsychosocial factors related to body dissatisfaction in young men within multivariate and moderator contexts. A female sample was included as a gender comparison. Male ( $n = 111$ ) and female ( $n = 236$ ) undergraduates filled out self-report questionnaires assessing body mass index (BMI), media influence, a history of weight-related teasing, and socially prescribed perfectionism, along with various indices of body dissatisfaction. Perceived pressure from the media was consistently related to body dissatisfaction in men whereas multiple biopsychosocial variables accounted for body dissatisfaction in women. Socially prescribed perfectionism and a history of weight teasing each moderated the relationship between BMI and male body dissatisfaction, identifying men low in body dissatisfaction. Findings indicate that applying a biopsychosocial framework to the study of body dissatisfaction in men is useful and suggest the need for including other factors, such as male peers and sports involvement, in understanding contributors to male body image.

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**Keywords:** Body dissatisfaction; Media influence; Teasing; Perfectionism; Body mass index; Gender

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### Introduction

Research on body dissatisfaction among males has gained momentum in recent years (Grogan, 2007; McCabe & Ricciardelli, 2004; Thompson & Cafri, 2007). Evidence indicates that rates of body dissatisfaction are increasing among males (Garner, 1997) and that body dissatisfaction is associated with unhealthy weight-control behaviors, disordered eating, and decreased self-esteem in males (Cohane & Pope, 2001; Neumark-Sztainer, Wall, Story, & Perry, 2003; Olivardia, Pope, Borowiecki, & Cohane, 2004).

Arguably, within the body image literature, more is known about female body dissatisfaction than about male body dissatisfaction, and more is known about the consequences of body dissatisfaction than about the factors associated with and contributing to negative body image (Bearman, Presnell, Martinez, & Stice, 2006; van den Berg et al., 2007). In the current study, we examine factors associated with male body dissatisfaction using a biopsychosocial framework, which has been proposed as the most comprehensive theoretical framework for understanding body image (Ricciardelli, McCabe, Holt, & Finemore, 2003). While our focus is on elucidating contributors to male body dissatisfaction, we also include a female sample to provide a gender comparison.

Body image is conceptualized as having a multi-factorial etiology, including biological, psychological, and sociocultural factors and there is theoretical and

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empirical support for examining these domains in the study of male body image (Field et al., 2001; Jones, 2004; McCabe & Ricciardelli, 2004). Furthermore, qualitative research highlights societal and interpersonal domains of influence on men's body image (Adams, Turner, & Bucks, 2005; Grogan & Richards, 2002; Morrison, Morrison, & Hopkins, 2003; Ridgeway & Tylka, 2005). In the current study we consider how the biological factor of body mass index, the sociocultural factors of media influence and weight teasing, and the psychological factor of perfectionism relate to various indices of body dissatisfaction for men. These factors were chosen because of their reliable relations with body image (e.g., body mass index) or as a way to expand the research to include theoretically compelling variables that have not yet been examined in a biopsychosocial context (e.g., perfectionism). Since little is known about what the interplay of these variables would produce (Ricciardelli & McCabe, 2004) and since, conceptually, psychosocial factors would seem to moderate the relation between body mass index and body dissatisfaction, we also test for these interactive effects.

#### *Assessing body dissatisfaction in males*

One problem noted by McCabe and Ricciardelli (2004) in their review of the male body dissatisfaction literature was the use of assessments that were more relevant to females than males. For example, since girls and women generally desire lower weights but boys and men are divided between those who want to lose weight and those who want to gain weight (e.g., Cohane & Pope, 2001; Frederick et al., 2007; Neighbors & Sobal, 2007), body dissatisfaction assessments focusing on wanting to lose weight will not capture the full picture of male body dissatisfaction. Similarly, commonly used measures like the Body Dissatisfaction subscale of the Eating Disorder Inventory (Garner, Olmsted, & Polivy, 1983), which asks about satisfaction with different body parts, do not ask about parts of the body of particular relevance to men (e.g., upper torso). The use of traditional silhouettes also has limitations since they do not provide gradations of muscle. Although the Somatomorphic Matrix has improved upon this, poor test–retest reliability is a constraint (Cafri, Roehrig, & Thompson, 2004). McCabe and Ricciardelli (2004) argue for examining shape dissatisfaction in addition to weight dissatisfaction, and global assessments of body dissatisfaction have been deemed an appropriate way to assess body dissatisfaction in both genders. In the current study, we examine weight concerns, shape concerns, and overall appearance self-esteem.

#### *Media influence*

The potential for media influence on body dissatisfaction for males has increased along with the documented increases in the depictions of lean, muscular male bodies in the media, compelling more research on the impact of the media on men (Farquhar & Wasylkiw, 2007; Morry & Staska, 2001). Males depicted in Playgirl centerfolds and even action figure toys have become more muscular over recent years (Leit, Pope, & Gray, 2001; Pope, Olivardia, Gruber, & Borowiecki, 1999), and there has been an increase in the use of lean, muscular male bodies in advertising and magazines (Frederick, Fessler, & Haselton, 2005; Pope, Olivardia, Borowiecki, & Cohane, 2001), meaning that men and boys are increasingly subjected to media images of a body ideal for males that is becoming increasingly unattainable. Men appear to be aware of this ideal, selecting muscular bodies as their ideals and as what they think women view as ideal (Jacobi & Cash, 1994). Furthermore, in laboratory settings, men are negatively affected by exposure to these male body ideals from the media, demonstrating increased body dissatisfaction and more negative mood (Agliata & Tantleff-Dunn, 2004; Grogan, Williams, & Conner, 1996). Most work on media influence has focused on the concept of internalization of body ideals depicted in the media, with evidence for internalization being associated with body dissatisfaction in males (Chen, Gao, & Jackson, 2007; Jones, 2004). In contrast, Presnell, Bearman, & Stice (2004) did not find support for ideal-body internalization predicting increases in body dissatisfaction among boys. To date, no one study has jointly examined the multiple ways that the media can influence men's body image, for example, via providing information and exerting pressure, in addition to fostering internalization.

#### *Weight teasing*

Weight-related teasing has emerged as another important factor in understanding body dissatisfaction. Experiencing teasing while growing up reflects receiving negative commentary about oneself during a vulnerable period of development and identity building. Concurrent and past appearance-related teasing is associated with body dissatisfaction and increases in body dissatisfaction for boys and men (Eisenberg, Neumark-Sztainer, Haines, & Wall, 2006; Gleason, Alexander, & Somers, 2000; Paxton, Eisenberg, & Neumark-Sztainer, 2006; van den Berg et al., 2007; Vartanian, Giant, & Passino, 2001). Indeed, Vartanian

et al. (2001) found that appearance-related teasing was the most powerful predictor, among a set of interpersonal and sociocultural predictors, of men's body dissatisfaction. While evidence implicates weight teasing in body dissatisfaction, some longitudinal work has not found a linkage between teasing and increases in body dissatisfaction (Jones, 2004).

### *Socially prescribed perfectionism*

Perfectionism rarely has been investigated in relation to body dissatisfaction (van den Berg, Thompson, Obremski-Brandon, & Coovert, 2002), but it has support as a contributor to eating pathology (Joiner, Katz, & Heatherton, 2000; Keel, Klump, Leon, & Fulkerson, 1998; Stice, 2002). Limited research has found an association between self-oriented perfectionism and drive for muscularity in men (Davis, Karvinen, & McCreary, 2005). Also, Penkal and Kurdek (2007) reported that perfectionistic self-presentation, which reflects the need to appear perfect, accounted for unique variance in physique anxiety in men above and beyond a set of biopsychosocial variables. Socially prescribed perfectionism, the perfectionism dimension of interest in the current study, is an interpersonal dimension of perfectionism that reflects the feeling that others have excessively high expectations of oneself (Hewitt & Flett, 1991). This sort of generally perfectionistic attitude may include feeling that one cannot meet sociocultural appearance ideals (i.e., expectations from media, peers, and parents for what one's body should look like are too difficult to attain), which could contribute to body dissatisfaction. Of note, prior work using a biopsychosocial framework has typically examined self-esteem and negative affect as the psychological variables, but these have been poor predictors of body dissatisfaction in males (Ricciardelli et al., 2003; Ricciardelli, McCabe, Lillis, & Thomas, 2006). We propose the inclusion of socially prescribed perfectionism as an important, yet untested, variable in a biopsychosocial model.

### *Body mass index*

Body mass index (BMI) has been identified as the most consistent biological correlate of body dissatisfaction in males (Jones, 2004; Jones & Crawford, 2005; van den Berg et al., 2007; Vincent & McCabe, 2000), with some studies finding that BMI explained unique variance in body dissatisfaction above and beyond sociocultural variables (Paxton et al., 2006; Penkal & Kurdek, 2007). Whereas the correlation between BMI

and measures of body dissatisfaction is robust across studies, the magnitude of this correlation varies, suggesting a role for moderators to identify subgroups of those with high BMI who may be especially vulnerable to body dissatisfaction. Testing potential moderators is important to identify those in greatest need of prevention efforts and to highlight points of intervention. Indeed, researchers have argued for the need to include examinations of the moderating impact of variables on the outcome of body dissatisfaction (Bearman et al., 2006; Paxton et al., 2006), but few studies have done so.

### *The current study*

The focus of the current study was to examine the relations between the biopsychosocial variables of BMI, media influences, a history of weight-related teasing, and socially prescribed perfectionism and body dissatisfaction in a sample of undergraduate men; these relations were also examined for undergraduate women as a comparison group. This study had two primary goals: (1) to examine the biopsychosocial variables in a multivariate fashion to determine which ones explain unique variance in body dissatisfaction; and (2) to examine whether the psychosocial variables of media influence, weight teasing, and socially prescribed perfectionism moderate the relation between BMI and body dissatisfaction. Based on the research cited (Penkal & Kurdek, 2007; Vartanian et al., 2001), we hypothesized that BMI, weight teasing, and perfectionism would account for unique variance in male body dissatisfaction. Given the lack of research on moderator models, no predictions were made regarding the second study goal. This study adds to the literature on male body image with its extensive examination of media influences, with its consideration of perfectionism, and with the use of multiple indices of body dissatisfaction. Also, it becomes one of only a few studies examining multiple biopsychosocial factors in concert in relation to body dissatisfaction to identify factors accounting for unique variance and to test moderator effects.

## **Method**

### *Participants*

Participants were 111 male and 236 female undergraduates from introductory psychology courses. Participants read a brief overview of the study, described as a study of perceptions of websites, and enrolled through a website managed by the psychology

department. Since participants signed themselves up, they were not selected for any characteristic. Participants ranged in age from 18 to 23; for men, the mean age was 18.67 years ( $SD = 1.00$ ) and, for women, the mean age was 18.37 years ( $SD = .62$ ). The majority of male participants (87%) self-reported as Caucasian, 5% African American, 3% Asian, and 5% biracial/other ethnicity. The majority of female participants (88%) self-reported as Caucasian, 5% African American, 1% Hispanic, 2% Asian, and 3% biracial/other ethnicity.

### Measures

#### *Biopsychosocial variables*

**Media influence.** The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) was used to assess facets of media influence and contains four subscales: information (reliance on media for information about what is attractive in terms of appearance), pressures (perceived media pressures to modify appearance), general internalization (internalization of the body ideal portrayed in the media, including a desire to look like these images and a tendency to compare oneself to these images), and athlete internalization (internalization of athletic, fit bodies seen in the media). A 1–5 rating scale is used with higher scores reflecting greater levels of media influence. The SATAQ-3 was slightly modified in two ways for use with a male population. First, “male models” were specified where original items referred to “models” (e.g., “I would like my body to look like the [male] models who appear in magazines”). Second, references to looking “pretty” were changed to looking “attractive.” The SATAQ-3 has evidence for adequate reliability and construct validity in female samples ( $\alpha > .88$ ; Thompson et al., 2004) and an earlier version of the SATAQ-3 has evidence for adequate reliability (.87) for internalization in college men (Tylka, Bergeron, & Schwartz, 2005). In the current study, alpha for the subscales ranged from .82 to .95 for men and from .83 to .94 for women.

**Weight-related teasing.** The weight-related teasing subscale of the Perception of Teasing Scale (POTS; Thompson, Cattarin, Fowler, & Fisher, 1995) was administered to assess frequency of experiences with weight-related teasing while growing up (e.g., “people made fun of you because you were heavy”). A 1 = *never* to 5 = *very often* rating scale is used with higher scores reflecting greater frequency of weight-related teasing in childhood/adolescence. The POTS has demonstrated adequate reliability ( $\alpha = .88$ ) and convergent validity in

samples of college women (Thompson et al., 1995), and has also been used in assessing history of weight-teasing among men (Womble et al., 2001). In the current study, alpha was .86 for men and .83 for women.

**Socially prescribed perfectionism.** The socially prescribed perfectionism subscale of the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991) was administered to assess interpersonal perfectionism which reflects feeling that others have high expectations of oneself. A 1–7 rating scale is used with higher scores reflecting greater levels of socially prescribed perfectionism. The MPS, one of the most commonly used measures of perfectionism, has adequate reliability ( $\alpha = .87$  for socially prescribed perfectionism) and good construct validity in samples of men and women (Hewitt & Flett, 1991). In the current study, alpha for the socially prescribed perfectionism subscale was .86 for men and women.

**Body mass index.** Body mass index (BMI) was derived from participants’ self-reported height and weight. This index controls for weight variations due to height, yielding a measure of relative weight. Meta-analytic results demonstrate that self-reported weight is sufficiently accurate for epidemiological and survey studies (Bowman and DeLucia, 1992).

#### *Body dissatisfaction*

**Appearance self-esteem.** The appearance subscale of the State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991) was used to assess overall appearance self-esteem. A 1–5 rating scale is used with higher scores reflecting greater levels of appearance self-esteem. The SSES has evidence for good validity in samples of men and women (Heatherton & Polivy, 1991), and adequate reliability ( $\alpha = .69$ ) for appearance self-esteem in a sample of adolescent males (Farquhar & Wasylikiw, 2007). In the current study, alpha for the appearance subscale was .83 for men and .87 for women.

**Body image concern.** Weight concern was assessed with two questions from the Weight Concern subscale of the Eating Disorder Examination-Questionnaire (EDE-Q; Fairburn & Beglin, 1994). These items tapped into weight dissatisfaction and how much weight impacts sense of self (e.g., “has your weight influenced how you think about (judge) yourself as a person?”). Shape concern was assessed with four questions from the Shape Concern subscale of the EDE-Q, with items tapping into shape dissatisfaction, how much shape impacts sense of

self, level of discomfort seeing one's own body, and level of discomfort with others seeing one's body. Since an abridged version of the EDE-Q was administered due to time constraints, all items of these two subscales were not administered. A 0 = *not at all* to 6 = *markedly* scale was used and items were summed, with higher scores reflecting greater weight or shape concern in reference to the past 28 days. The Weight Concern and Shape Concern subscales of the EDE-Q have good reliability ( $\alpha > .88$ ) and construct validity in female samples (Black & Wilson, 1996; Luce & Crowther, 1999), and evidence for validity in adolescent males (Lee et al., 2007). In the current study, alpha for shape concern was .85 for men and .90 for women. Since a two-item measure precludes the computation of alpha, we report the correlation between the two weight concern items:  $r = .69$  for men and  $r = .82$  for women.

### Procedure

Participants filled out questionnaires before and after viewing a website. All data reported, except for the teasing data, came from the questionnaires filled out at the very start of the study, before website viewing, and thus were unaffected by subsequent steps in this larger study. Privacy and confidentiality were ensured by having participants complete the questionnaires alone in a private room, and by having their data identified only by a code. Written informed consent was obtained and all elements of this study were approved by the university's human subject protection committee. The teasing data came from a large survey administered to introductory psychology students at the start of the semester; since not all of our participants participated in that initial survey, analyses involving the teasing variable involve a reduced number of participants (83 men and 198 women).

Participants received course credit, required of all introductory psychology students, after study completion.

### Plan for data analysis

Analyses were performed separately for men and women, given the focus on factors related to body dissatisfaction in men. To determine which biopsychosocial variables contributed uniquely to body dissatisfaction, multiple regression was used, with the media influence variables, weight teasing, socially prescribed perfectionism, and BMI entered into the regression equation together as a block, separately for each of the body dissatisfaction dependent variables. To examine whether the psychosocial variables moderated the relation between BMI and body dissatisfaction, hierarchical multiple regression analyses were performed following the guidelines of Cohen, Cohen, West, and Aiken (2003), with Step 1 containing BMI and a psychosocial variable (e.g., perfectionism) and Step 2 containing the interaction of these two variables (e.g., BMI  $\times$  perfectionism). A statistically significant ( $p < .05$ ) change in  $R^2$  at Step 2 would support a significant interaction between BMI and the psychosocial variable. As recommended by Cohen et al. (2003), BMI and the psychosocial variables were mean-centered within sex before being entered into the interactive regression analyses.

## Results

### Descriptive statistics

Table 1 includes the means and standard deviations of the study variables. Not surprisingly, men and women differed significantly on all of the body dissatisfaction

Table 1  
Means, standard deviations, and gender comparisons for study variables

	Men	Women	Comparison	Effect size (Cohen's <i>d</i> )
SATAQ-information	24.82 (9.59)	29.04 (8.88)	$t(344) = 4.02, p < .001$	-.46
SATAQ-pressures	14.64 (6.43)	22.97 (7.52)	$t(345) = 10.07, p < .001$	-1.19
SATAQ-general internalization	23.75 (8.78)	29.77 (9.26)	$t(345) = 5.74, p < .001$	-.67
SATAQ-athlete internalization	16.96 (4.50)	17.01 (4.23)	$t(345) = .11, p = .911$	-.01
Weight-related teasing	7.93 (3.55)	7.69 (3.39)	$t(279) = -.54, p = .593$	.07
Socially prescribed perfectionism	53.16 (13.11)	51.52 (13.93)	$t(344) = -1.04, p = .297$	.12
Body mass index	24.33 (4.83)	22.60 (3.51)	$t(345) = -3.76, p < .001$	.41
Appearance self-esteem	22.48 (4.02)	19.70 (4.63)	$t(344) = -5.43, p < .001$	.64
Weight concern	2.68 (2.65)	6.04 (3.45)	$t(344) = 9.05, p < .001$	-1.09
Shape concern	6.61 (5.70)	12.48 (6.62)	$t(343) = 8.03, p < .001$	-.95

Note. Means and standard deviations (in parentheses) are presented in the second and third columns. SATAQ, Sociocultural Attitudes Towards Appearance Questionnaire-3. Because not all participants had weight-related teasing data, degrees of freedom are lower for analyses involving this variable. The other small variations in degrees of freedom reflect missing data from the female sample.

variables, with men reporting higher appearance self-esteem and less concern with both weight and shape (medium to large effects; Cohen, 1988). Men reported a higher average BMI and lower levels of media influence, in particular, less use of the media for information about appearance ideals, less pressure to alter appearance to conform to ideals, and less internalization of body ideals in general (medium to large effects). Men and women did not differ on internalization of the athletic builds portrayed in the media, history of weight-related teasing, or socially prescribed perfectionism.

Table 2 contains the correlations between variables separately for men and women. Most, but not all, of the biopsychosocial variables were significantly related to body dissatisfaction for men, while all of these variables were significantly related to women's body dissatisfaction. For men, higher levels of weight-related teasing growing up, socially prescribed perfectionism, and BMI were associated with lower appearance self-esteem, higher weight concern, and higher shape concern (medium effects). Among the media influence variables, however, only the pressures subscale showed a consistent relationship with all indices of body dissatisfaction for men (medium to large effects).

#### Unique variance in body dissatisfaction

Table 3 contains the results of the multivariate analyses. For men, only the pressures subscale of the SATAQ-3 consistently accounted for a significant amount of variance in body dissatisfaction above and beyond all other variables. Although weight teasing, socially prescribed perfectionism, and BMI were significantly correlated with body dissatisfaction, these effects disappeared when considered in conjunction with the other variables. An independent effect of BMI remained only when considering weight concern, and

an independent effect of the information subscale remained only for appearance self-esteem. For the men, the set of biopsychosocial variables accounted for 26% of the variance in appearance self-esteem, 35% of the variance in weight concern, and 35% of the variance in shape concern.

In contrast, for women, general ideal-body internalization, socially prescribed perfectionism, and BMI all consistently accounted for unique variance in body dissatisfaction (see Table 3). For the women, the set of biopsychosocial variables accounted for 33% of the variance in appearance self-esteem, 41% of the variance in weight concern, and 43% of the variance in shape concern.

#### Moderator effects: psychosocial variables moderating the relation between BMI and body dissatisfaction

Significant moderator findings are reported in Table 4. For men, a significant BMI  $\times$  socially prescribed perfectionism interaction ( $t(107) = 2.11$ ,  $p = .037$ ,  $\Delta R^2 = .03$ ) predicted appearance self-esteem. Men who had a low BMI and who were low in socially prescribed perfectionism reported the highest levels of appearance self-esteem ( $M = 25.55$ ) compared to all other combinations of variables: low BMI and high socially prescribed perfectionism ( $M = 21.00$ ), high BMI and low socially prescribed perfectionism ( $M = 21.33$ ), and high BMI and high socially prescribed perfectionism ( $M = 21.84$ ). Also, BMI and a history of weight teasing interacted to predict weight concern for men ( $t(79) = -2.31$ ,  $p = .023$ ,  $\Delta R^2 = .06$ ). Men who had a low BMI and no history of weight teasing reported the lowest levels of weight concern ( $M = 1.24$ ) compared to all other combinations of variables: low BMI and high levels of history of weight teasing ( $M = 4.15$ ), high BMI

Table 2  
Correlations between biopsychosocial variables and body dissatisfaction variables

	Men			Women		
	Appearance self-esteem	Weight concern	Shape concern	Appearance self-esteem	Weight concern	Shape concern
SATAQ-information	.09	.11	.15	-.22**	.37***	.33***
SATAQ-pressures	-.27**	.42***	.48***	-.39***	.53***	.52***
SATAQ-general internalization	-.09	.21*	.28**	-.43***	.53***	.54***
SATAQ-athlete internalization	.04	.18	.23*	-.19**	.27***	.34***
Weight-related teasing	-.26*	.29**	.28*	-.33***	.30***	.36***
Socially prescribed perfectionism	-.28**	.23*	.32**	-.33***	.41***	.40***
Body mass index	-.28**	.30**	.24*	-.27***	.22**	.23***

Note. For all variables, higher values reflect higher levels of the construct (i.e., greater appearance self-esteem, greater weight concern). SATAQ, Sociocultural Attitudes Towards Appearance Questionnaire-3. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 3  
Biopsychosocial variables accounting for unique variance in body dissatisfaction

	Appearance self-esteem				Weight concern				Shape concern			
	<i>t</i>	$\beta$	<i>p</i>	<i>sr</i>	<i>t</i>	$\beta$	<i>p</i>	<i>sr</i>	<i>t</i>	$\beta$	<i>p</i>	<i>sr</i>
<b>Men</b>												
Information	2.75	.35	.008**	.27	-1.73	-.21	.089	-.16	-1.30	-.16	.198	-.12
Pressures	-2.33	-.34	.023*	-.23	3.36	.46	.001**	.31	3.63	.50	.001**	.34
Internalization	-.61	-.11	.546	-.06	-.26	-.04	.799	-.02	-.26	-.04	.793	-.03
Athlete	.21	.03	.838	.02	.98	.13	.329	.09	.30	.04	.762	.03
Teasing	-1.19	-.15	.239	-.12	1.06	.13	.291	.10	1.27	.15	.208	.12
SPP	-1.67	-.18	.099	-.17	1.02	.11	.311	.10	1.61	.16	.112	.15
BMI	-1.25	-.16	.217	-.12	2.02	.24	.047*	.19	1.30	.15	.198	.12
<b>Women</b>												
Information	1.02	.08	.308	.06	.03	.002	.974	.002	-.90	-.06	.371	-.05
Pressures	-.96	-.09	.338	-.06	2.23	.20	.027*	.13	1.94	.17	.054	.11
Internalization	-3.85	-.39	<.001***	-.23	3.29	.32	.001**	.19	3.57	.34	<.001***	.20
Athlete	.19	.01	.848	.01	-.32	-.02	.748	-.02	1.10	.07	.273	.06
Teasing	-1.80	-.13	.073	-.11	1.23	.08	.219	.07	2.49	.16	.014*	.14
SPP	-3.00	-.19	.003**	-.18	3.95	.24	<.001***	.22	3.62	.22	<.001***	.20
BMI	-3.19	-.22	.002**	-.19	3.22	.21	.001**	.18	2.78	.18	.006**	.15

*Note.* A separate multiple regression was conducted for each of the body dissatisfaction dependent variables within gender. The multivariate findings can be understood by examining, for each of the body dissatisfaction variables, which of the independent variables (information, pressures, internalization, athlete, teasing, SPP, and BMI) are significant above and beyond all others. For example, for men, when appearance self-esteem was the body dissatisfaction variable of interest, only information and pressures accounted for unique variance. Information, pressures, internalization (for general internalization), and athlete (for athlete internalization) are subscales of the SATAQ, Sociocultural Attitudes Towards Appearance Questionnaire-3. SPP, Socially Prescribed Perfectionism subscale of the Multidimensional Perfectionism Scale. BMI, body mass index. *sr*, semi-partial correlation. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

and no history of weight teasing ( $M = 3.84$ ), and high BMI and high levels of history of weight teasing ( $M = 4.30$ ).<sup>1</sup>

Two significant moderator effects also emerged for women (see Table 4). For the significant BMI  $\times$  socially prescribed perfectionism interaction, women who had a high BMI and who were high in socially prescribed perfectionism reported the lowest levels of appearance self-esteem ( $M = 16.51$ ) compared to all other combinations of variables: high BMI and low levels of socially prescribed perfectionism ( $M = 21.17$ ), low BMI and high levels of socially prescribed perfectionism ( $M = 19.92$ ), and low BMI and low levels of socially prescribed perfectionism ( $M = 21.46$ ). For the significant BMI  $\times$  media pressures interaction, women who had a high BMI and who were high in media pressure reported the lowest levels of appearance

self-esteem ( $M = 15.76$ ) compared to all other combinations of variables: high BMI and low levels of media pressure ( $M = 20.51$ ), low BMI and high levels of media pressure ( $M = 19.85$ ), and low BMI and low levels of media pressure ( $M = 22.59$ ).

## Discussion

Both the univariate and multivariate results bolster findings from prior research with younger samples that the pathway to dissatisfaction for males may be more unidimensionally determined than for females (Jones, 2004; Phares, Steinberg, & Thompson, 2004). In the multivariate analyses, only one factor, media pressures, consistently accounted for unique variance in body dissatisfaction for men. In contrast, for women several factors made unique contributions to body dissatisfaction. These results could mean that, indeed, body dissatisfaction is much less multiply determined for men than women. Researchers have suggested that males may be less responsive to external factors such as social context and media than females, thus reducing the number of influences on body image (Jones, 2004).

Alternatively, men's body dissatisfaction may emerge as more multiply determined if other factors are included. For example, there is evidence that male

<sup>1</sup> Mean values reported were derived from the regression equation with high and low values of BMI and the psychosocial variable based on one standard deviation above and below the mean, respectively. Since one standard deviation below the mean resulted in a value outside of the possible range for weight teasing scores, the value representing no teasing at all was used as the low value and the value representing two standard deviations above the mean was used as the high value.

Table 4  
Moderator results involving BMI and psychosocial variables with body dissatisfaction as the dependent variable

Order of entry of predictors	<i>F</i> for set	<i>t</i> for within set predictors	$\beta$	<i>df</i> for each test	$\Delta R^2$
<b>Men</b>					
DV: Appearance self-esteem					
1. Main effects	9.60			2, 108	.15
BMI		−3.09**	−.27	108	
Socially prescribed perfectionism		−2.99**	−.27	108	
2. Two-way interaction	4.46			1, 107	.03
BMI × socially prescribed perfectionism		2.11*	.20	107	
DV: Weight concern					
1. Main effects	5.69			2, 80	.12
BMI		1.91	.24	80	
History of weight teasing		1.17	.15	80	
2. Two-way interaction	5.35			1, 79	.06
BMI × history of weight teasing		−2.31*	−.35	79	
<b>Women</b>					
DV: Appearance self-esteem					
1. Main effects	23.55			2, 231	.17
BMI		−4.02***	−.24	231	
Socially prescribed perfectionism		−5.23***	−.31	231	
2. Two-way interaction	5.73			1, 230	.02
BMI × socially prescribed perfectionism		−2.39*	−.15	230	
DV: Appearance self-esteem					
1. Main effects	35.38			2, 232	.23
BMI		−4.87***	−.28	232	
Pressures from media		−7.02***	−.40	232	
2. Two-way interaction	4.25			1, 231	.01
BMI × pressures from media		−2.06*	−.13	231	

Note. BMI, body mass index. Because not all participants had weight-related teasing data, degrees of freedom are lower for analyses involving this variable. The small variations in degrees of freedom in the interactive results for females reflect missing data. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

peers influence male body dissatisfaction and efforts to alter one's body (Ricciardelli, McCabe, & Banfield, 2000; Stanford & McCabe, 2005; Vincent & McCabe, 2000). Arguably, in a college setting, where men are living with their male peers and spending significant time together, men would likely be influenced by their male peers via greater opportunities to receive encouragement and criticism and to observe their peers' attitudes and behaviors toward the body. Some researchers argue that men are more sensitive to the opinions of other men than women (Kimmel, 1996), and that male focus on the body, in particular on muscularity, may reflect a way to assert masculinity and status among peers (Olivardia, 2001).

The realm of sports is another area to consider as an influence on male body dissatisfaction. To the degree that sports activity focuses on the body as functional rather than aesthetic, participation in sports may be protective. Indeed, sports activity has been associated with a better body image and greater weight satisfaction for adolescent boys and men (Ferron, Narring, Cauderay, & Michaud, 1999; Petrie, 1996). Interestingly, in a qualitative study

on male body image without specific questions about sports, Ricciardelli, McCabe, and Ridge (2006) found that males often discussed their body satisfaction/dissatisfaction in terms of how their body served their sporting activities. Interest in sports itself may contribute to men's body image. van den Berg et al. (2007) suggest that boys and men may use sporting heroes as targets of comparison which could contribute to body dissatisfaction given the likely upward comparison (Festinger, 1954), and Farquhar and Wasylikiw (2007) found that the male body depicted in advertisements in sports magazines has been increasingly portrayed as "body-as-object" and thus focused on appearance rather than function.

Regarding the consistent media pressure finding: This was an interesting and unexpected finding, suggesting the power of media images on men and warranting future research. Why the pressures subscale and not the other media influence subscales? One possibility is that men are reluctant to acknowledge that the media provides information about the ideal-body (information subscale)

and that they compare themselves to media images (internalization subscales), since these may be viewed as stereotypically female domains. Another intriguing possibility emerges from the contention that feeling pressure is indicative of anxiety. The media pressures subscale may be the subscale that captures body-focused anxiety. In the context of the increasingly unattainable ideal seen for men in the media and the dramatic increase in the proportion of undressed men (e.g., chiseled chest exposed) seen in advertising (Pope et al., 2001), men may be experiencing increased pressure to look like these images, which increases body-focused anxiety and creates body dissatisfaction because men realize that their actual body is discrepant from this ideal body.

In the examination of potential moderators of the BMI–body dissatisfaction relation, the interaction effects for men accounted for 3–6% of the variance above and beyond main effects, and these results should be understood in the context of interaction effects often accounting for 1–3% of the variance (McClelland & Judd, 1993). The moderator effects for men highlighted which group of men had especially low body dissatisfaction, in contrast for women where those with especially high body dissatisfaction were identified. Thus, instead of indicating which group of men was especially vulnerable to body dissatisfaction, the moderator models identified who might be protected from negative body image. In both moderator findings for males, having low BMI was necessary but not sufficient to be highly body satisfied. The addition of low levels of psychosocial factors (socially prescribed perfectionism, history of weight teasing) combined with low BMI to influence body image. That men with high BMI and high levels of the psychosocial vulnerability factors did not exhibit markedly worse body image suggests a hardiness to these risk factors. This may be because men are less penalized for not achieving societal ideals (Neighbors & Sobal, 2007). Future work should examine other combinations of variables that may identify men with high body dissatisfaction in order to inform prevention. Given that socially prescribed perfectionism interacted with BMI for both men and women to identify levels of appearance self-esteem, this perfectionism dimension should be considered in future body image research.

The current study has several strengths including the focus on males in examining body image, the theoretical framework of a biopsychosocial model, the use of several measures of body image relevant to men, and the examination of moderator effects. Regarding the focus on males, the current study focused on college-age men, whereas much of the male body

image research has focused on boys and early adolescent males (McCabe & Ricciardelli, 2004). Within the biopsychosocial framework, other strengths are the examination of a psychological construct not previously examined in this model, socially prescribed perfectionism, and a more comprehensive test of media influences on men.

While focusing on young adult males is a strength of this study, constraints on generalizability must be noted. For example, information about sexual orientation was not collected. Meta-analytic work has shown that gay men are more body dissatisfied than heterosexual men (Morrison, Morrison, & Sager, 2004) and it is possible that more or different factors contribute to body image concerns in gay men. Indeed, Hospers and Jansen (2005) found that peer pressure was a stronger predictor of body dissatisfaction in gay men compared to heterosexual men. Another limitation is the absence of a body image assessment tailored to men that would assess muscularity concerns or being overweight versus underweight. Tylka et al. (2005) argue that the ideal-body image assessment for males should cover both body fat and muscularity. Had more male-focused body image measures been used, then gender differences in body dissatisfaction may not have been so prominent. A related limitation is that the body image and media influences measures used in this study have largely been developed for and have psychometric data based on female samples, with little or no validity data for males. Finally, the smaller male sample size was a limitation and, as with all cross-sectional studies, this study does not allow for inferences of causality.

In sum, this study demonstrates that men's body image can be better understood within a biopsychosocial framework where BMI, perceived pressure from the media to attain a body ideal, a history of weight-related teasing, and socially prescribed perfectionism were found associated with body dissatisfaction uniquely or in moderation contexts. The literature related to males and body dissatisfaction is fairly young and there are many directions for future research. Future work should consider whether the relationship between BMI and male body image concerns is better explained by a quadratic function, as suggested by some research (Jones & Crawford, 2005). Future work should also include measures that assess both muscularity and body weight/fat. For example, the Male Body Attitudes Scale (MBAS; Tylka et al., 2005) shows promise as a psychometrically sound measure of male body dissatisfaction, and silhouette measures that separately manipulate body fat and muscularity also have evidence for utility (Frederick et al., 2007). As discussed earlier,

researchers should strive to identify additional factors contributing to body image in men, including male and female peer influences, parent influences, sports involvement and interest, and self-perception of social status. Ongoing work to better understand correlates, antecedents, and consequences of body dissatisfaction in males, and to develop appropriate prevention and intervention programs, will present some unique challenges. Although men face increasing pressure to conform to body ideals (Adams et al., 2005) and, as reported in this study, this perceived pressure is associated with body dissatisfaction, there is at the same time pressure for men to not care, or not appear to care, about appearance. Thus, men are expected to be “both mindful and unconcerned” (Frith & Gleeson, 2004, p. 46) and may suffer in silence about body image concerns.

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