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Development and validation of the Male Body Talk Scale: A psychometric investigation☆

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ABSTRACT

This paper details the development of the Male Body Talk (MBT) scale and five studies supporting the psychometric soundness of scores on this new measure. Participants were 18–65-year-old men recruited via Amazon's Mechanical Turk, introductory psychology courses, and snowball sampling. The MBT scale assesses the frequency with which men engage in negatively valenced body-related conversations with others. Two subscales were identified through a combination of exploratory and confirmatory factor analysis. The Muscle Talk subscale assesses men's tendency to express concerns regarding degree of muscularity and being too small. The Fat Talk subscale assesses men's tendency to express concerns regarding level of body fat and being overweight. Scores on the MBT scale demonstrated strong internal consistency and moderate test–retest reliability. Evidence of convergent, discriminant, and incremental validity of scores on the MBT scale is presented. This new measure is a useful tool for examining how often men engage in negative body talk.

Introduction

For decades researchers have focused on the body image concerns and eating disordered behavior of women (e.g., Cafri, Yamamiya, Brannick, & Thompson, 2005; Cash & Deagle, 1997). The topic has been largely understudied in men, primarily because a sizeable literature suggests that women are more concerned with body image (e.g., Feingold & Mazzella, 1998; Frederick, Peplau, & Lever, 2006; Muth & Cash, 1997) and are more at risk for eating disordered behavior than men (e.g., Hoek, 2006; Striegel-Moore & Bulik, 2007). However, recent research demonstrates that many men are dissatisfied with various aspects of their bodies (Frederick et al., 2007; Pope et al., 2000). Up to 95% of college men report dissatisfaction with some aspect of their bodies (Labre, 2002). Striegel-Moore et al. (2009) reported that 1 in 10 men check their body size at least *very often*. In a nationally representative sample of over 52,000 adults in the U.S., 11% of men rated their body as unattractive and 16% reported they avoid wearing a swimsuit in public due to concerns with their appearance (Frederick et al., 2006).

Recently, researchers have begun examining how the way women talk about their bodies with other women influences their body image (Ousley, Cordero, & White, 2008; Salk & Engeln-Maddox, 2012). Frequently referred to as *fat talk*, initial findings suggest this type of co-ruminative negative body talk comes with a host of worrisome consequences including increased body dissatisfaction and eating disordered behaviors (Corning, Krumm, & Smitham, 2006; Sharpe, Naumann, Treasure, & Schmidt, 2013; Stice, Maxfield, & Wells, 2003). The current research extends this work to men, examining the content of male body talk and detailing the development of a self-report measure to examine the frequency with which men engage in negatively valenced conversations about their bodies.

Male Body Dissatisfaction

Almost thirty years ago, Rodin, Silberstein, and Striegel-Moore (1985) referred to female body dissatisfaction as *normative*

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discontent. More recently, however, men and women have reported that they believe body image dissatisfaction is normative for both sexes (Tantleff-Dunn, Barnes, & Larose, 2011). Body dissatisfaction has been linked with eating disordered behavior in men (Kearney-Cooke & Steichen-Asch, 1990; Ochner, Gray, & Brickner, 2009) just as it has been in women (Stice, 2002). Though women experience greater body dissatisfaction than men overall (Frederick et al., 2006), men face unique muscularity-focused body concerns. The male body ideal includes two dimensions: leanness and muscularity (Drewnowski, Kurth, & Krahn, 1995; Ridgeway & Tylka, 2005; Tiggemann, Martins, & Kirkbride, 2007). McCreary and Sasse (2000) were the first to measure the drive for muscularity, the extent to which men focus on gaining weight and increasing muscle mass. Drive for muscularity, coupled with the desire to be leaner, is now commonly viewed as a crucial component of male body image (Adams, Turner, & Bucks, 2005; Jacobi & Cash, 1994; Tylka, 2011). This drive for muscularity appears to transcend Western society, having been documented across cultures from Ghana (Frederick et al., 2007) to Fiji and Tonga (Ricciardelli, McCabe, Mavoa, et al., 2007). Several other assessments designed to include the muscularity component of male body dissatisfaction have recently been developed and validated (Mayville, Williamson, White, Netemeyer, & Drab, 2002; McFarland & Petrie, 2012; Ochner et al., 2009; Tylka, Bergeron, & Schwartz, 2005).

In general, men with higher body dissatisfaction are at increased risk for elevated eating disordered symptoms and muscle dysmorphia (Chandler, Derryberry, Grieve, & Pegg, 2009; Kanayama & Pope, 2011; Ochner et al., 2009; Pope, Gruber, Choi, Olivardia, & Phillips, 1997). Men with muscle dysmorphia, who are overcome with thoughts that they are not muscular or lean enough, share similar body image concerns and exercise behavior with men diagnosed with anorexia nervosa (Murray et al., 2012). Men dissatisfied with their degree of muscularity are more likely to use steroids (Blouin & Goldfield, 1995; Parent & Moradi, 2011). In turn, steroid use is associated with lower self-esteem, higher bulimic tendencies, and conduct disorder (Blouin & Goldfield, 1995; Pope, Kanayama, & Hudson, 2012). In a study of 11- to 16-year-old boys, 11% reported using steroids at least "sometimes" (Smolak, Murnen, & Thompson, 2005). In another study of middle school and high school boys, 6% reported using steroids and 11% reported using other muscle-enhancing substances (e.g., creatine) within the last year (Eisenberg, Wall, & Neumark-Sztainer, 2012).

Negative Body Talk

Nichter and Vuckovich (1994) originally observed negative body talk among groups of middle school girls in ethnographic interviews. Engaging in fat talk (making disparaging comments about one's body) has received empirical research attention primarily because of its association with body dissatisfaction (Salk & Engeln-Maddox, 2011, 2012; Stice et al., 2003) and disordered eating (Corning et al., 2006; Ousley et al., 2008). In addition, fat talk in women appears to be a social norm: a majority of both college men and women report that they expect women to fat talk in response to hearing another woman fat talk (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006).

Recent research suggests that men are also exposed to fat talk. Payne, Martz, Tompkins, Petroff, and Farrow (2011) reported that fat talk is more common among women than men in the U.S. and U.K., but noted that up to 22% of U.S. men report hearing fat talk "frequently" or "very frequently" among a group of friends/coworkers (gender of the group not specified). In a sample that included college men, engaging in or hearing fat talk was associated with body dissatisfaction (Arroyo & Harwood, 2012), although results were not analyzed separately by gender, making it difficult to draw conclusions for men specifically. In a study of adolescent boys in the U.S., body dissatisfaction was correlated with frequency of general appearance conversations with friends, just as it was for adolescent girls (Jones, Vigfusdottir, & Lee, 2004). In another study, muscularity concern was significantly greater among adolescent boys who reported engaging in more frequent muscle-building conversations (Jones & Crawford, 2005). Results from a recent study of adolescent boys in China indicated that appearance conversations with friends predicted disordered eating 12 months later (Jackson & Chen, 2011). Taken together, this evidence is consistent with Tylka's (2011) quadripartite influence model (an expansion of the tripartite social influence model, see Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999), which suggests that pressure to fit the male body ideal from friends uniquely contributes to men's muscularity dissatisfaction.

In a recent study, Engeln, Sladek, and Waldron (2013) reported that 75% of college men indicated they could realistically imagine hearing a male friend complain about his body shape/size and up to 25% of college men believed their male peers frequently engage in body-related talk. Furthermore, college men who heard male confederates engage in fat talk or muscle talk (negative body talk focused on a drive for muscularity) scored significantly lower on appearance state-self esteem and significantly higher on state body dissatisfaction than a control group not exposed to negative body talk. In addition, self-reported frequency of negative body talk was associated with drive for muscularity, eating disordered behavior, and appearance investment (Engeln et al., 2013). These results are consistent with research focusing on the potential negative effects of fat talk in women, as well as male body image research that has examined the unique muscularity-focused concerns of men.

Two self-report scales designed to measure how frequently women engage in fat talk have demonstrated reliability and validity. The Fat Talk Scale consists of nine items with specific scenarios occurring to hypothetical persons "Naomi and her friends" (Clarke, Murnen, & Smolak, 2010, p. 6). Participants indicate how often they would respond similarly to the women in the scenario on a 5-point Likert scale (1 = *never would respond that way* to 5 = *always would respond that way*). The Negative Body Talk Scale comprises 13 items that participants respond to on a 7-point Likert scale (1 = *never* to 7 = *always*) with how often they say comments similar to the items when talking with their friends (Engeln-Maddox, Salk, & Miller, 2012). Scores on both measures are positively correlated with measures of body dissatisfaction and eating disordered behavior and have demonstrated strong reliability with samples of college women (Clarke et al., 2010; Engeln-Maddox et al., 2012).

At this time, no such scale is available to assess how frequently men talk about their bodies. The availability of a flexible, valid, and reliable self-report measure of male body talk will aid in further research with male body dissatisfaction and be of use for clinicians encountering male body image concerns.

The Current Research

This paper details a series of studies examining the content of male body talk, creating a self-report scale of this construct, and providing initial evidence for the validity of this measure. In Study 1, qualitative responses were collected from a pilot survey of a wide age range of men in order to examine the typical content of male body talk. In Study 2, responses from the pilot survey were utilized along with previous data from a college-age sample of men (Engeln et al., 2013) in order to generate an initial pool of items. These items were analyzed for initial psychometric properties and reduced. In Study 3, exploratory and confirmatory factor analyses were conducted in order to provide factorial validity for scores on the revised Male Body Talk (MBT) scale and to demonstrate evidence for two emergent subscales. In Study 4, participants completed the MBT scale along with a battery of previously validated

measures of related body image constructs and personality in order to provide support for the convergent, discriminant, and incremental validity of scores on the new measure. In Study 5, participants completed two separate versions of the MBT scale in order to show they were able to appropriately follow instructions and distinguish between thinking and talking about body concerns.

Study 1

The primary purpose of Study 1 was to assess the ways men of varying ages discuss their bodies. Guided by previous work (Engeln et al., 2013), the data from the current pilot study were used to examine the content of male body talk, with a particular emphasis on the wording men use when discussing their bodies and the topics of focus.

Method

Participants. Participants in the online pilot study were 189 men recruited from Amazon's Mechanical Turk (MTurk) website. MTurk allows researchers to cost-effectively recruit large, diverse samples of participants to complete surveys online. This online method of recruiting participants has demonstrated success in previous body image research (Gardner, Brown, & Boice, 2012). Participants ranged in age from 18 to 56 ($M = 25.95$, $SD = 8.86$). Eighty-one percent of participants were 30 years of age or younger. The majority of participants (83%) identified themselves as White/Caucasian, 8% as Asian, 4% as Latino, 4% as Black/African American, and 1% as other. The majority (91%) of participants identified as heterosexual, 5% as gay, and 4% as other (either bisexual or unsure). All participants lived in the United States, with 38 states represented in the sample. BMI was calculated from the participants' self-reported height and weight. Though self-reported weight may not be reported with perfect accuracy, studies generally indicate men are accurate in self-reporting this information (e.g., Shapiro & Anderson, 2003). The body mass indices (BMIs) of participants ranged from 15.78 to 56.49 ($M = 27.00$, SD = 5.72). Participants were grouped into four categories based on standard BMI cutoffs established by the Centers for Disease Control and Prevention (cdc.gov): 2% had a BMI below 18.5, classified as underweight, 46% had a BMI within the normal range (18.5–24.9), 34% had a BMI between 25.0 and 30.0, classified as overweight, and 19% had a BMI above 30.0, classified as obese.

Measures and procedure. Participants were paid $0.10 for their participation in the 5-min survey. We determined this amount based on previous body image studies compensating participants via MTurk (e.g., Gardner et al., 2012). In an effort to enforce strict criteria for participation, only data from participants who correctly responded to validity check questions that assessed understanding of the instructions throughout the survey were considered in final analyses. Although 342 participants were initially recruited, data from 153 participants were excluded from final analyses for incorrect responses to one or more validity checks.

First, we asked participants if they could think of a time when they made a comment about the way their body looked when talking to other people. If they could, they then provided the comment in their own words. Two male coders with previous experience in male body image research independently coded the participants' comments according to specific themes informed by the male body dissatisfaction literature (e.g., Tiggemann et al., 2007; Tylka et al., 2005). Interrater reliability was acceptable (kappa = .78); coding discrepancies were resolved through discussion.

Results and Discussion

Ninety-five percent of participants reported they could remember a time when they made a comment about their body's appearance, indicating that men of diverse ages routinely comment about the way their bodies look. An independent samples *t*-test revealed that the BMIs of men who could remember making a comment about their bodies ($M = 26.16$, $SD = 5.80$) did not differ significantly from the BMIs of men who could not remember such a comment, $M = 24.87$, $SD = 3.70$, $t(187) = 0.66$, $p = .51$. Coding the qualitative responses of those who included a body talk comment revealed that 50% complained they were too fat (e.g., "I wish I could lose this belly fat I have"), 31% commented on their degree of muscularity (e.g., "I wish I could bulk up a little"), and 17% included both fat and muscularity themes in their comments (e.g., "I need to start losing weight and building muscle") or reported general body comments (e.g., "I think I'm getting out of shape"). In sum, the most typical conversations for men fell along two dimensions: degree of body fat and degree of muscularity. These dimensions are consistent with male body image disturbance research (e.g., Ridgeway & Tylka, 2005). Although some men reported making comments that included both of these dimensions, comments reflecting concern about being overweight were more common overall than comments reflecting concern about muscularity.

Study 2

Guided by the results of Study 1, the goal of Study 2 was to construct an initial set of items to measure the frequency with which men engage in negative body talk with others and to conduct preliminary item analysis to refine and shorten this initial version of the scale.

Method

Generation of initial item pool. To generate items, open-ended data from body talk conversations reported by participants in previous male body image studies were considered (Adams et al., 2005; Engeln et al., 2013), along with responses from Study 1 and items from previously validated measures of male body image (Mayville et al., 2002; Ochner et al., 2009). The initial list included 53 items. To establish face validity for all items prior to initial testing, a panel of individuals familiar with male body image research (undergraduate research assistants in a body image lab and graduate students and faculty members in clinical psychology who either treat or have studied men struggling with body image concerns) reviewed the items. Panel members suggested changes to wording in several places and a few additional items.

Participants. Participants were 225 men recruited through a combination of Amazon's MTurk and snowball sampling techniques (e.g., e-mail list serves, social media websites) ranging in age from 18 to 56 ($M = 26.95$, $SD = 10.06$). Participants were from the U.S., representing 38 states. Eighty-seven percent identified as heterosexual, 8% gay, and 5% other (either bisexual or unsure). Again using CDC guidelines for BMI categories, 50% were in the normal range, 1% were underweight, 32% were overweight, and 17% were obese. Seventy-seven percent identified themselves as White/Caucasian, 6% as Asian, 7% as Latino, 6% as Black/African American, 3% as multiracial, and 2% as other. Forty-nine percent of the participants were college students at the time they took the survey.

Procedure and measures. Participants recruited through MTurk received $0.10 for their participation; those recruited through snowball sampling were entered in a raffle for a $25 gift card. Fifty-five participants failed to respond correctly to questions

that checked for understanding of the instructions (a validity check) and were consequently removed prior to analyses. Participants responded to the 56 items presented in random order in an online survey. Items were designed to measure the frequency of male body talk on a 7-point scale (1 = *never* to 7 = *always*), with descriptive anchors for each number in between. Consistent with Engeln-Maddox et al. (2012), instructions for the scale emphasized that responses should be based on frequency of making body talk comments out loud to others rather than simply having thoughts consistent with the items (see Appendix for wording).

Results and Discussion

Initial item analysis revealed that participants used the entire response scale (1–7) for all of the items. Ten items were dropped for having low means (below 2.00) and little variance. These appeared to include elements of social comparison (e.g., "He has a perfect body,") or were too strongly worded (e.g., "My arms are too scrawny"). With the specific intention of shortening the scale, an additional 15 items were dropped for having means below 2.50 and positively skewed distributions, many of which appeared to also include elements of social comparison (e.g., "Why can't my upper body look like that?"). The revised version of the scale included 31 items with a Cronbach's alpha of .95. Corrected item total correlations ranged from .40 to.77. Thus, results indicated that scores on this initial version of the scale had acceptable internal consistency with this sample.

Study 3

The purpose of Study 3 was to evaluate the factor structure of the revised (31-item) scale using both exploratory and confirmatory factor analysis. These analyses were also used to shorten the scale for more practical use.

Method

Participants. Participants were recruited in two separate subsamples. The first portion of the sample comprised 510 men recruited via Amazon's MTurk. These participants ranged in age from 18 to 65 ($M = 32.21$, $SD = 12.45$); 31% reported they were in college at the time they took the survey. Most (76%) of this first subsample identified as White/Caucasian, 9% as Asian, 8% as Black/African American, 5% as Latino, and 2% as multiracial. The majority (94%) identified as heterosexual, 5% as gay, and 1% as bisexual. All participants lived in the United States, with 51 states (including the District of Columbia) represented. The BMIs of participants in this portion of the sample ranged from 15.66 to 56.96 ($M = 26.61$, $SD = 5.81$). Again using standard CDC cutoffs for BMI, 3% were classified as underweight, 42% were considered normal weight, 34% were classified as overweight, and 22% were classified as obese. The second portion of the sample comprised 217 male college students in an introductory psychology course. Ages ranged from 18 to 24 ($M = 18.89$, $SD = 1.08$). Sixty-one percent of participants in this portion of the sample identified as White/Caucasian, 25% as Asian, 4% as Black/African American, 3% as Latino, and 7% as multiracial. The majority (94%) of participants identified as heterosexual. Participants' BMIs in this portion of the sample ranged from 15.83 to 33.45 ($M = 22.81$, $SD = 3.03$). According to CDC guidelines, 5% were classified as underweight, 74% as normal weight, 18% as overweight, and 3% as obese.

Procedure. Participants recruited via MTurk were paid $.10 and those recruited from an introductory psychology course received course credit. Similar to Study 1 and Study 2, we established a strict criterion whereby data were included in final analyses only if participants demonstrated understanding of the instructions by correctly responding to several validity check questions throughout the survey (data from 33 participants were excluded from analyses for this reason).

Results and Discussion

Exploratory factor analysis. Data from the two samples in Study 3 were combined, and then randomly split into two halves. The first half was used for exploratory factor analysis (EFA; $n = 347$) and the second for confirmatory factor analysis (CFA; $n = 347$). Gorsuch (1983) recommended never less than 100 participants and a minimum of five participants per measured variable for EFA. Using these guidelines, the current sample was more than adequate. Although there was reason to predict a factor structure consistent with men's two-dimensional body image concerns (muscularity and body fat), no specific factor structure was hypothesized. Kaiser-Meyer-Olkin's (KMO; Kaiser, 1970, 1974) measure of sampling adequacy (MSA) was conducted via SPSS and indicated these items had a high degree of common variance, KMO = .96.

To account for the 4% of cases with missing data points, full information maximum likelihood estimation (FIML) was used to conduct EFA with direct oblimin rotation via Mplus (Muthén & Muthén, 1988–2009). Researchers suggest that FIML EFA is the best option when data are fairly normal (Costello & Osborne, 2005; Fabrigar, Wegener, MacCallum, & Strahan, 1999; Kahn, 2006). Parallel analysis is typically recommended for identifying how many factors to retain for EFA (Kahn, 2006; Zwick & Velicer, 1986). Parallel analysis was conducted using Watkins' (2006) MonteCarlo program, which suggested a two-factor structure. After three items loading on a third factor were removed, the pattern matrix revealed that the remaining items cleanly loaded on one of the two factors. In an effort to shorten the scale, all items with loadings below .55 were removed. At this stage, items were also removed if their content was redundant with other higher-loading items in the list. For the remaining 20 items, the analysis was conducted again. The eigenvalues of the two factors prior to rotation were 10.93 and 3.07, respectively. The factors correlated at .45. See Table 1 for rescaled pattern matrix coefficients from the EFA conducted with the 20 items remaining at this stage.

Confirmatory factor analysis. The second half of the sample was used to conduct CFA using FIML estimation with robust standard errors via Mplus (Muthén & Muthén, 1988–2009). The covariance matrix of items was analyzed. Ten participants per indicator are recommended as a minimum sample size for CFA (Kline, 2010). Thus, our sample size was considered acceptable for the current CFA. We followed Hu and Bentler's (1999) strategy of presenting two indices, the standardized root mean square residual (SRMR) and the confirmatory fit index (CFI), to assess fit. Consistent with Bentler (2007), the Root Mean Square Error of Approximation (RMSEA) was also examined. Hu and Bentler (1999) argued that SRMR should be less than .08 and CFI greater than .92 to assume a relatively good fit. Steiger and Lind (1980) suggested RMSEA should be less than .08 in a solution of good fit. The model tested first included the two-factor list of 20 items identified from EFA. Next, items were trimmed iteratively because this model did not demonstrate adequate fit with the data. Items were selected with a focus on removing redundant items from the model. The final model contained 16 items (10 on Factor 1; six on Factor 2). See Table 2 for fit indices. Previous research recommends a corrected chi square difference test to compare nested models when robust estimation is used (Bryant & Satorra, 2012; Satorra, 2000; Satorra & Bentler, 2001). The trimmed two-factor oblique (dependent) model demonstrated adequate fit and was superior to both the two-factor orthogonal (independent) model (corrected $\Delta\chi^2 = 27.22$, $\Delta df = 1$, $p < .001$) and the one-factor model (corrected $\Delta\chi^2 = 206.27$, $\Delta df = 1$, $p < .001$).

Table 1
Pattern matrix coefficients for EFA ($n = 347$) and loadings for CFA ($n = 347$).

Item	EFA loadings		CFA loadings (standardized)	
	F1	F2	F1	F2
I wish I could bulk up a little.[a]	**.90**	−.13	.81	–
I wish my chest were more muscular.[a]	**.89**	.01	.85	–
I wish I had more muscular arms.[a]	**.89**	.01	.86	–
I wish I had bigger biceps.[a]	**.88**	.01	.86	–
I want to build muscle.	**.87**	−.01		
I want to have more muscle.[a]	**.85**	.01	.84	–
I want to add bulk.[a]	**.84**	−.13	.79	–
I should work on my abs.[a]	**.75**	.16	.83	–
I need to lift weights more.[a]	**.75**	.04	.78	–
I want a six-pack.[a]	**.71**	.11	.76	–
I wish my abs were more toned.[a]	**.69**	.19	.83	–
I have to hit the gym.	**.69**	.08		
That guy is built.	**.63**	−.02		
I need to lose a few pounds.[a]	−.07	**.97**	–	.91
I need to lose some weight.[a]	−.13	**.97**	–	.91
I need to go on a diet.[a]	.06	**.76**	–	.80
I wish I could lose this gut.[a]	.14	**.76**	–	.77
I wish I could lose this belly fat.[a]	.19	**.74**	–	.78
I need to start watching what I eat.[a]	.21	**.62**	–	.70
I should start eating better.	.26	**.56**		

Note. For CFA, all loadings are significant at $p < .001$.
Bold values indicate highest factor loading.
[a] Item retained in final scale.

The first factor (10 items), called Muscle Talk, includes items relating to the desire to improve one's degree of muscularity, increase one's body size, or otherwise reshape one's body through lifting weights. The second factor (six items), called Fat Talk, comprises items noting worries about one's weight and level of adiposity (body fat). The latent factors correlated at .36. Each of the two factors was treated as a subscale, with the mean of items loading on each factor serving as the total score for each subscale. Cronbach's alphas were high for the Muscle Talk subscale (.95) and Fat Talk subscale (.92). The two subsamples ($N = 664$) were recombined in order to conduct multiple group CFAs with the goal of demonstrating measurement invariance (equivalence of the factor structure) for three group comparisons: participants 30 years of age and younger vs. 31 and older, those recruited from MTurk vs. those recruited from the psychology course, and college students vs. non-college students. For each of these three multi-group CFAs, the best model fit indicated scalar invariance or strong equivalence (i.e., equal factor loadings and intercepts), supporting our decision to combine the original subsamples.

Finally, we used item cluster analysis (Revelle, 1979) using ICLUST in the R-package "psych" (Revelle, 2013) in order to test for the presence of a hierarchical factor using the recombined sample. The two clusters were highly reliable (β for items on the Muscle Talk factor = .89; β for items on the Fat Talk factor = .92). The omega hierarchical was .46, suggesting there was not evidence for the presence of a higher-order male body talk factor. As such, scores for each of the subscales are included in subsequent analyses rather than an overall score. In sum, the utilization of both EFA and CFA was successful in identifying two internally consistent subscales that represent the two dimensions of male body image repeatedly highlighted in the literature (e.g., Muth & Cash, 1997; Ridgeway & Tylka, 2005). See Appendix for the complete MBT scale.

Table 2
Fit of models examined in confirmatory factor analysis.

	χ^2	*df*	CFI	SRMR	RMSEA
Trimmed 16-item 2 factor oblique model	319.74	103	.925	.071	.078
Trimmed 16-item 2 factor orthogonal model	347.95	104	.916	.184	.082
Trimmed 16-item 1 factor model	1089.73	104	.660	.170	.165

Note. All coefficients were statistically significant at $p < .001$. All R^2 values were greater than .12. $N = 347$.

Supplementary analyses. Scores on the Muscle Talk subscale ($M = 2.87$, $SD = 1.56$) were correlated with scores on the Fat Talk subscale, $M = 2.96$, $SD = 1.60$, $r(662) = .45$, $p < .001$. This moderate positive association is meaningful given previous research suggesting that degree of muscularity and degree of body fat may be related *or* unique dimensions of male body image concerns (e.g., Frederick et al., 2007).

Cronbach's alphas for both subscales were high across the four racial/ethnic groups comprising the largest individual sample sizes (White/Caucasian, Asian, Black/African American, and Latino; αs > .94 for the Muscle Talk subscale and >.90 for the Fat Talk subscale). Previous work has identified heightened body image concerns among men from varying cultural groups, particularly with respect to differing cultural expectations and pressures for men regarding muscularity (see Ricciardelli, McCabe, Williams, & Thompson, 2007, for a review). We examined whether scores on the MBT subscales varied as a function of participant race/ethnicity. A MANCOVA was conducted with the four largest racial/ethnic groups serving as a four-level IV and both subscales serving as DVs. Because older age was associated with lower Muscle Talk scores, $r(681) = -.23$, $p < .001$, and higher BMI was associated with higher Fat Talk scores, $r(676) = .39$, $p < .001$, age and BMI were included as covariates in the models. After controlling for age and BMI, results demonstrated a significant overall effect of race/ethnicity on Muscle Talk subscale scores, $F(3, 621) = 7.98$, $p < .001$, $\eta^2 = .04$. Post hoc tests using Bonferroni's correction revealed that Black/African American men ($M = 3.71$, $SE = .24$) and Latino men ($M = 3.61$, $SE = .27$) scored significantly higher on the Muscle Talk subscale than White men, $M = 2.74$, $SE = .07$, $ps < .01$. Cohen's d values for these pairwise comparisons were .64 and .58, respectively, which can be considered medium effects (Cohen, 1988). There was not a significant overall effect of race/ethnicity on Fat Talk subscale scores, $F(3, 621) = 1.55$, $p = .20$.

Results indicated that men of color may be more likely to speak negatively about their bodies' muscularity than White/Caucasian men. These findings are consistent with previous work suggesting that men of color are more likely than White/Caucasian men to engage in extreme body changing strategies such as steroid

use (Ricciardelli, McCabe, Mavoa, et al., 2007), although research in this area has yielded mixed results. Further research is needed to investigate if the effect of race/ethnicity is due to heightened body dissatisfaction among men from minority groups or simply a greater willingness of these men to express body concerns when they do arise.

Study 4

The purpose of Study 4 was to evaluate the convergent and discriminant validity of scores on the subscales of the MBT scale, as well as to demonstrate support for the subscales' incremental validity. The revised (16-item) MBT scale and other self-report measures that assess male body image and related constructs were administered to male college students as part of a course requirement for an introductory psychology course. An additional sample of online participants also completed these measures.

Hypothesis 1 (Tests of Convergent Validity)

Based on literature reviewed prior to the development of the MBT scale (e.g., McCreary & Sasse, 2000; Ochner et al., 2009), we hypothesized that scores on the Muscle Talk and Fat Talk subscales would correlate positively with upper body dissatisfaction, drive for muscularity, muscle dysmorphia symptoms, and eating disordered attitudes/behaviors (i.e., risk for eating disorder symptoms). Because male body talk is a social expression of one's appearance-related concerns, we predicted that subscale scores would also correlate positively with investment in appearance. Based on evidence that muscularity dissatisfaction is negatively correlated with BMI and body fat dissatisfaction is positively correlated with BMI in men (Tylka, 2011), we expected that the associations between MBT subscale scores and BMI would mirror this trend.

Hypothesis 2 (Tests of Discriminant Validity)

In order to demonstrate that MBT scores are not just a reflection of a more general tendency to talk more with others, a measure of extraversion was included. Likewise, a measure of neuroticism was included in order to demonstrate that male body talk is not just a reflection of one's inclination to experience negative affect. Given that there is a substantial stigma facing men who wish to speak about their appearance concerns (Adams et al., 2005), we wanted to assess whether participants were responding to items in a socially desirable manner. Thus, we included a measure of socially desirable responding. We did not expect significant correlations between scores on the MBT subscales and scores on measures of extraversion, neuroticism, or socially desirable responding.

Hypothesis 3 (Tests of Incremental Validity)

In a recent study, men who heard male confederates engage in negative body talk scored significantly higher on state body dissatisfaction than a control group not exposed to negative body talk (Engeln et al., 2013). Similarly, fat talk in women has consistently been linked to body dissatisfaction and eating disordered behavior (e.g., Corning et al., 2006). Men high on drive for muscularity are at increased risk for muscle dysmorphia (Pope et al., 1997). Based on previous theoretical and empirical work, we tested the incremental validity of scores on the MBT scale in predicting significant additional variance in male body image disturbance beyond other known predictors. Specifically, we predicted that, controlling for BMI, (1) Muscle Talk and Fat Talk scores would predict significant variance in upper body dissatisfaction over and above that predicted by drive for muscularity, (2) Muscle Talk scores would predict significant variance in muscle dysmorphia symptoms over and above that predicted by drive for muscularity, and (3) Fat Talk scores would predict significant variance in eating disordered attitudes/behaviors over and above that predicted by upper body dissatisfaction.

Method

Participants. Similar to Study 3, participants were recruited in two subsamples in an effort to diversify the age and background of respondents. We recruited the first portion of the sample ($n = 66$) from an introductory psychology course. These participants ranged in age from 18 to 24 ($M = 19.06$, $SD = 1.14$). Of this portion of the sample, 48% identified as White/Caucasian, 35% as Asian, 3% as Latino, 3% as Black/African American, and 2% as multiracial. The majority (98%) identified as heterosexual. The BMI of these participants ranged from 14.98 to 30.62 ($M = 22.75$, $SD = 2.64$); according to CDC guidelines, 5% were underweight, 75% were of a normal weight, 19% were overweight, and 2% were obese. Participants from the second portion of the sample ($n = 104$) were recruited via MTurk. These participants ranged in age from 18 to 64 ($M = 31.41$, $SD = 10.53$); 30% were in college at the time of completing the survey. Most (82%) of this second portion of the sample identified as White/Caucasian, 7% as Asian, 4% as Latino, 5% as Black/African American, and 1% as other. The majority of participants (96%) were heterosexual. Participants' BMIs in the second portion of the sample ranged from 16.57 to 47.25 ($M = 27.18$, $SD = 5.58$), with 3% considered underweight, 33% normal, 40% overweight, and 23% obese. All of these participants lived in the United States, with 38 states represented.

Procedure and measures. Participants from the first portion of the sample completed the MBT scale and measures described below at a personal computer station in a lab as part of a psychology course requirement. Participants from the second portion of the sample completed the same set of measures online and were paid $0.50 for completing the MBT scale and the additional battery of questionnaires. Again, data from participants who failed to correctly respond to validity check questions were removed prior to final analyses (data from two participants in the first subsample and eight participants in the second subsample). After these data were excluded, the total sample size ($N = 160$) surpassed guidelines for regression analyses with an anticipated medium effect size (50 + 8k participants, with k being the number of predictors; Tabachnick & Fidell, 2007). Measures were presented in random order. Fisher's r-to-z transformations revealed that no correlation coefficients differed significantly between the two subsamples. For this reason, data from the two subsamples were combined for all analyses. Table 3 includes Cronbach's alphas for all measures for the combined sample.

Upper body dissatisfaction. The 25-item Body Parts Satisfaction Scale for Men (BPSS-M; McFarland & Petrie, 2012) assesses the extent to which men are satisfied with various aspects of their bodies. Participants indicate their current level of satisfaction with a list of body parts on a 6-point scale (1 = *extremely dissatisfied* to 6 = *extremely satisfied*). Noting limitations of previous body image measures for men, the list of items was designed to include leanness and muscularity dimensions (e.g., "Leanness of stomach/abdomen," "Muscularity of stomach/abdomen") as well as indicators of satisfaction with overall body size and shape. The original authors identified a three-factor structure for the BPSS-M (upper body, face, legs). Given the focus of the MBT scale items identified in Studies 1 and 2, we elected to use the 17 items of the upper body factor. The original authors reported a Cronbach's alpha of .97 and a six-month test–retest reliability of .72 in samples of men. Scores on the upper body factor of the BPSS-M are negatively correlated with depressive and bulimic symptoms and positively correlated with life satisfaction (McFarland & Petrie, 2012). In the current study, items were reverse scored such that higher scores (the mean of 17 items) on the upper body factor of the BPSS-M reflected higher upper body dissatisfaction.

Drive for muscularity. The Drive for Muscularity Scale (DMS; McCreary & Sasse, 2000) is a 15-item self-report measure on which participants indicate the extent to which a series of attitudes and

Table 3
Correlations between MBT scores and indicators of convergent and discriminant validity.

Measure	α	Possible range	Mean (*SD*)	MBT Muscle Talk	MBT Fat Talk
MBT Muscle Talk	.95	1–7	2.78 (1.51)	–	.43***
MBT Fat Talk	.93	1–7	2.85 (1.61)	.43***	–
BMI	–	–	25.39 (5.10)	−.06	.49***
Upper body dissatisfaction	.97	1–6	3.43 (1.08)	.22**	.52***
Drive for muscularity	.89	1–6	2.80 (0.96)	.54***	.15
Muscle dysmorphia symptoms	.86	19–133	45.55 (12.70)	.58***	.20*
Eating disordered attitudes/behaviors	.85	0–3	0.23 (0.20)	.13	.39***
Appearance investment	.90	1–5	3.23 (0.72)	.27**	.09
Extraversion	.89	1–5	3.10 (0.88)	.17*	−.10
Neuroticism	.87	1–5	2.66 (0.81)	−.03	.05
Socially desirable responding	.73	0–13	5.25 (2.97)	−.01	−.01

Note. $N = 160$. The complete correlation matrix is available from the first author.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

behaviors about muscle and muscle building describe them. The series of statements (e.g., "I wish that I were more muscular") are rated on a 6-point scale (1 = *always* to 6 = *never*). Items were reverse scored such that higher scores (the mean of all items) indicated greater drive for muscularity. Consistent with McCreary, Sasse, Saucier, and Dorsch (2004), we excluded the item regarding anabolic steroid use when computing the total DMS score. The original authors reported a Cronbach's alpha of .84 in a sample of adolescent boys (McCreary & Sasse, 2000); Engeln et al. (2013) reported a Cronbach's alpha of .88 in a sample of college men. The DMS has been recognized as one of the most effective measures of male body image (see Cafri & Thompson, 2004, for a review); college men consistently score higher than college women on the DMS (McCreary et al., 2004).

Muscle dysmorphia symptoms. The Muscle Appearance Satisfaction Scale (MASS; Mayville et al., 2002) is a 19-item self-report measure that assesses the cognitive, affective, and behavioral manifestations of muscle dysmorphia symptoms. Items (e.g., "I often feel like I am addicted to working out with weights") are rated on a 7-point scale (1 = *never* to 7 = *always*). After reverse scoring the appropriate items, responses were summed to create a composite score of muscle dysmorphia symptoms. The original authors reported Cronbach's alphas ranging from .82 to .87 and a two-week test–retest coefficient of .87 in a sample of college men. Men who score high on the MASS report more body dysmorphic symptoms, bodybuilding dependence, and appearance-related anxiety (Mayville et al., 2002).

Eating disordered attitudes and behaviors. The 26-item Eating Attitudes Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) is one of the most widely used standardized self-report measures to screen for symptoms and concerns characteristic of eating disorders. Participants respond to statements about eating-related cognitions and habits (e.g., "I am terrified about being overweight," "I feel extremely guilty after eating") on a 6-point scale (1 = *always* to 6 = *never*) to assess eating disorder risk. Consistent with recommendations by Garner et al. (1982), after reverse scoring such that higher responses all indicated higher levels of pathology, responses of *sometimes*, *rarely*, or *never* were scored as zero points, with *often*, *usually*, and *always* given one, two, and three points, respectively. The original authors reported a Cronbach's alpha of .94 in a sample of women. Engeln et al. (2013) reported a Cronbach's alpha of .93 in a sample of college men. In college men, scores on the EAT-26 are positively correlated with drive for muscularity (Tylka et al., 2005) and frequency of negative body talk (Engeln et al., 2013).

Appearance investment. The Multidimensional Body-Self Relations Questionnaire - Appearance Subscales (MBSRQ-AS; Cash, 2000) is a 34-item self-report inventory. There are five subscales, but only the Appearance Orientation subscale was used in this study. The Appearance Orientation subscale (12 items; e.g., "I check my appearance in a mirror whenever I can") assesses how invested participants are in their appearance. Responses are made on a 5-point scale (1 = *definitely disagree* to 5 = *definitely agree*); total scores are calculated by taking the mean of items after reverse scoring where necessary. Higher scores indicate a higher level of investment in appearance. The original author reported a Cronbach's alpha of .88 and a one-month test–retest coefficient of .89 for the Appearance Orientation subscale in a national sample of U.S. men over age 18 (Cash, 2000). This subscale has demonstrated strong validity estimates in diverse samples of men (Thompson, 2004).

Extraversion and neuroticism. A subset of items from the 44-item Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) was used to assess extraversion (eight items) and neuroticism (eight items). Instructions include the prompt: "I see myself as someone who. . ." Participants then rate their agreement with a short, descriptive phrase (e.g., "is talkative") for each item (1 = *disagree strongly* to 5 = *agree strongly*). After reverse scoring appropriate items, scores are the mean of responses for each subscale. Scores on the BFI subscales are highly correlated with longer, established measures of the Big Five (John & Srivastava, 1999). Cronbach's alphas for these two subscales are generally between .80 and .90 and three-month test–retest reliabilities average .85 (John & Srivastava, 1999; Srivastava, John, Gosling, & Potter, 2003).

Socially desirable responding. The short form of the Marlowe–Crowne Social Desirability Scale (Reynolds, 1982) is a 13-item version of the widely used 33-item Marlowe–Crowne scale (Crowne & Marlowe, 1960). Participants are presented a series of statements (e.g., "I sometimes feel resentful when I don't get my way") that assess the extent to which they respond to self-report surveys in a socially desirable rather than an honest manner (responses are *true* or *false*). One point is assigned for each response that reflects a desire to respond in the socially appropriate way (e.g., *false* for the sample item above). Scores on the short form have demonstrated adequate internal consistency and are highly correlated with scores on the 33-item version (Reynolds, 1982).

Results and Discussion

Hypothesis 1 (Convergent validity). Descriptive statistics and the correlation matrix for all measures are located in Table 3. Results largely supported our hypothesis. Scores on the Muscle Talk subscale demonstrated positive correlations with all indicators of convergent validity besides eating disordered attitudes and

behaviors; scores on the Fat Talk subscale demonstrated positive correlations with all indicators besides drive for muscularity and appearance investment. Consistent with male body dissatisfaction research (Tylka, 2011), scores on the Fat Talk subscale were moderately positively correlated with BMI. However, there was no significant association between scores on the Muscle Talk subscale and BMI. These findings indicate that men's actual body sizes are associated with their willingness to make complaints about their degree of body fat but not necessarily their muscularity. Although this sample was relatively diverse in terms of BMI, this finding should still be interpreted with caution. Researchers have pointed to several limitations of using BMI as an indicator of body size, particularly because high BMI in men may reflect muscle mass rather than body fat (e.g., Eisenberg et al., 2012). Unfortunately, the resources for more nuanced anthropometric assessments, such as body fat percentage, were not available for this study. Nevertheless, evidence for convergent validity of scores on the MBT subscales was strong.

Hypothesis 2 (Discriminant validity). As expected, there were no significant correlations between MBT subscale scores and socially desirable responding or neuroticism. Fat Talk subscale scores were not significantly correlated with extraversion, but there was a small, significant positive correlation between Muscle Talk scores and extraversion. In sum, evidence for discriminant validity of scores on the MBT subscales was generally strong.

Hypothesis 3 (Incremental validity). Upper body dissatisfaction scores were first predicted by BMI and drive for muscularity (Step 1), and then by BMI, drive for muscularity, and Muscle Talk scores (Step 2) using hierarchical regression (see Table 4). Muscle Talk scores predicted additional variance in upper body dissatisfaction over and above that predicted by BMI and drive for muscularity (this relationship was marginally significant, $p = .051$). In a similar analysis, Fat Talk scores predicted significant variance in upper body dissatisfaction over and above that predicted by BMI and drive for muscularity. The extent to which men make negative comments regarding muscularity and body fat accounted for an additional 2% and 13% of the variance, respectively, in upper body dissatisfaction. Muscle Talk scores predicted significant variance in muscle dysmorphia symptoms over and above that predicted by BMI and drive for muscularity, accounting for an additional 3% of the variance. Finally, Fat Talk scores predicted significant variance in eating disordered attitudes/behaviors over and above that predicted by BMI and upper body dissatisfaction, accounting for an additional 4% of the variance. In summary, male body talk matters as more than simply a manifestation of drive for muscularity or upper body dissatisfaction. Although negative body talk reflects underlying body image-related attitudes in men, actually talking about body concerns with others was associated with unique variance in upper body dissatisfaction, muscle dysmorphia symptoms, and eating disordered attitudes/behaviors.

Study 5

The purpose of Study 5 was to examine the impact of altering instructions of the MBT scale (to focus on thoughts vs. actual talk) and to evaluate the temporal stability of MBT scores by examining test–retest reliability. The 16-item MBT scale with the original instructions was administered during a group testing session of an introductory psychology course. Following Engeln-Maddox et al. (2012), participants completed two versions of the MBT scale 2–4 weeks later: one presented with the original instructions and the other with a set of instructions asking participants how often they have *thoughts* similar to items on the MBT scale. The goal of this method was to demonstrate that participants were able to distinguish between how often they actually say things similar to the items on the MBT scale rather than have thoughts similar to the items. If the items are treated as thoughts instead of statements said aloud, the MBT scale should more closely resemble measures of body dissatisfaction. As we have demonstrated, body dissatisfaction and the tendency to engage in body talk are related in men. However, given the difficulty men face in expressing body image concerns (e.g., Adams et al., 2005) and previous findings in women (Engeln-Maddox et al., 2012), it is probable that men are more likely to think about body-related concerns than to actually voice these concerns aloud. Thus, we predicted that scores on the MBT scale after reading the "thought" instructions would be significantly higher than after reading the original "say" instructions.

Method

Participants. Participants were 34 male undergraduate students ranging in age from 18 to 22 ($M = 19.61$, $SD = 1.15$) who took part in the study as part of an introductory psychology course requirement. The majority (58%) identified as White/Caucasian, 13% as Asian, 7% as Black/African American, 10% as Latino, and 13% as multiracial. The BMI of these participants ranged from 21.11 to 35.44 ($M = 24.36$, $SD = 3.17$); according to CDC guidelines, 71% were of a normal weight, 26% were overweight, and 3% were obese.

Procedure. Participants completed the MBT scale during a group testing session of an introductory psychology course. Between 2 and 4 weeks after the initial administration, these participants completed the MBT scale twice, each with a different set of instructions. For this second administration, participants completed the measures at a private computer station in a lab. After reading the original instructions (focusing on saying comments aloud) and responding to an open-ended question asking them to recall the instructions they had just read, participants completed the MBT scale. For the second version, instructions were altered to the following: "For the following set of questions, we're interested in how often you have certain types of **thoughts**. In other words, please tell us **how often you have thoughts like these**." Participants were asked to recall the instructions for this administration of the scale as well. The order in which the two versions of the MBT scale were presented was counterbalanced.

Results and Discussion

For the original "say" instructions, 94% ($n = 32$) of participants accurately remembered the instructions for the scale before completing it; two participants did not accurately remember the instructions and their data were excluded prior to analyses. For the "thought" instructions, 97% ($n = 33$) correctly remembered the instructions (data from one participant who failed this check were excluded). A paired samples t-test revealed that Muscle Talk subscale scores for the "thought" instructions ($M = 3.77$, $SD = 1.04$) were significantly higher than the "say" instructions, $M = 2.52$, $SD = 1.11$, $t(30) = -8.15$, $p < .001$. Similarly, scores on the Fat Talk subscale were significantly higher for the "thought" instructions ($M = 3.71$, $SD = 1.71$) than for the "say" instructions, $M = 2.41$, $SD = 1.09$, $t(30) = -6.36$, $p < .001$. Consistent with findings in a similar manipulation with women (Engeln-Maddox et al., 2012), these effects were quite large (Cohen's $d = 1.06$ for Muscle Talk subscale scores and 1.14 for Fat Talk subscale scores).

It would be difficult to observe men in order to determine the exact frequency with which they make body talk comments throughout the day, particularly because men may be less likely to engage in such conversations when they are under the scrutiny of researchers. However, it is logical to assume that vocalizing such comments should occur less frequently than having thoughts

Table 4
Summary of incremental validity regression analyses predicting body image disturbance.

	B	*SE* B	β	*t*	R^2	*F*	ΔR^2
Predicting upper body dissatisfaction							
Step 1							
BMI	0.08	0.02	0.37	5.09***			
Drive for muscularity	0.28	0.08	0.25	3.39*	.17	17.38***	.18***
Step 2							
BMI	0.08	0.02	0.37	5.18***			
Drive for muscularity	0.17	0.10	0.16	1.84			
MBT Muscle Talk scores	0.12	0.06	0.17	1.97†	.19	3.88†	.02†
Step 2							
BMI	0.03	0.02	0.16	2.04*			
Drive for muscularity	0.19	0.08	0.17	2.40*			
MBT Fat Talk scores	0.28	0.05	0.42	5.31***	.30	28.17***	.13***
Predicting muscle dysmorphia symptoms							
Step 1							
BMI	0.25	0.13	0.11	1.85			
Drive for muscularity	10.23	0.73	0.79	13.94***	.62	97.71***	.63***
Step 2							
BMI	0.23	0.13	0.10	1.80			
Drive for muscularity	8.74	0.84	0.68	10.44***			
MBT Muscle Talk scores	1.72	0.53	0.21	3.28*	.65	10.76*	.03*
Predicting eating disordered attitudes/behaviors							
Step 1							
BMI	0.01	0.003	0.30	3.71***			
Upper body dissatisfaction	0.03	0.02	0.15	1.94	.13	12.88***	.14***
Step 2							
BMI	0.01	0.003	0.20	2.41*			
Upper body dissatisfaction	0.01	0.02	0.05	0.57			
MBT Fat Talk scores	0.03	0.01	0.26	2.86*	.17	8.17*	.04*

Note. $N = 160$. Values for R^2 are adjusted. Muscle Talk scores predicted upper body dissatisfaction over and above BMI and drive for muscularity, $F(3, 154) = 13.10$, $p < .001$. Fat Talk scores predicted upper body dissatisfaction over and above BMI and drive for muscularity, $F(3, 154) = 23.01$, $p < .001$. Muscle Talk scores predicted muscle dysmorphia symptoms over and above BMI and drive for muscularity, $F(3, 116) = 74.16$, $p < .001$. Fat Talk scores predicted eating disordered attitudes/behaviors over and above BMI and upper body dissatisfaction, $F(3, 154) = 11.71$, $p < .001$.

* $p < .05$.
*** $p < .001$.
† $p = .051$.

consistent with those comments. Thus, these data support the assumption that when responding to MBT scale items, men were considering how frequently they engage in body talk rather than simply how frequently they experience body dissatisfaction.

Scores on the Muscle Talk subscale showed a moderate degree of temporal stability across 2–4 weeks, $r(29) = .67$, $p < .001$, as did scores on the Fat Talk subscale, $r(29) = .65$, $p < .001$. These moderate coefficients suggest that male body talk tends to be relatively consistent over time, but it is likely influenced by contextual factors. Engeln et al. (2013) provided evidence that college men are more likely to engage in body talk in certain contexts (e.g., at the gym or during mealtimes). Information on when these college participants had most recently exercised or eaten was unavailable, although these variables may have influenced state-level body dissatisfaction during either administration of the scale. Further research examining the temporal stability of scores on the MBT scale with larger samples, particularly outside of the college demographic, is required.

General Discussion

Taken together, these studies provide strong support for the newly developed 16-item MBT scale, a useful self-report measure that assesses how often men speak negatively about their bodies with others. Evidence from both EFA and CFA support a two-factor structure of the MBT scale. The first factor, Muscle Talk, comprises 10 items that represent men's tendency to express concerns with their overall degree of muscularity, being too small, and particular body parts they wish were more muscular. The second factor, Fat Talk, includes six items that represent men's tendency to express concerns regarding their overall body fat, being overweight, and their desire to be leaner. These subscales are meaningful because they reflect the two most prominent components of the male body ideal (e.g., Mishkind, Rodin, Silberstein, & Striegel-Moore, 1986) and the two dimensions of body dissatisfaction most frequently identified by men (e.g., Tylka et al., 2005).

Scores on the MBT scale were highly internally consistent in men of a wide age range. In terms of temporal stability, scores on the MBT scale demonstrated moderate test–retest reliability in a sample of college men. Construct validity of scores on the MBT scale was also supported: muscle talk was related to upper body dissatisfaction, drive for muscularity, muscle dysmorphia symptoms, and investment in appearance and fat talk was related to upper body dissatisfaction, muscle dysmorphia symptoms, and eating disordered attitudes/behaviors. Importantly, evidence was presented for the incremental validity of scores on the MBT scale predicting upper body dissatisfaction, muscle dysmorphia symptoms, and eating disordered attitudes/behaviors over and above drive for muscularity or upper body dissatisfaction. Altering the instructions for the MBT scale to address thoughts rather than talk suggested that men can distinguish between how often they have concerning thoughts about their bodies and actually voicing these concerns aloud.

The MBT scale offers researchers interested in male body image disturbance a reliable and valid self-report measure for a construct that has previously been studied in women (e.g., Engeln-Maddox et al., 2012) but thus far has received little attention in men. This series of studies helps to build upon prior body talk research limited by relatively homogenous college-age samples. Reliability estimates were strong for multiple racial/ethnic groups, suggesting the MBT scale may prove useful in research involving these groups of men. However, all participants in these studies were from the U.S., so at present there is no evidence for how culture may

influence reliability and validity of scores on the measure. A sizeable research literature has identified the widespread endorsement of the muscular ideal, finding evidence of the drive for muscularity in men from the Ukraine, Ghana, Austria, France, Fiji, Tonga, Australia, and New Zealand (Frederick et al., 2007; Lynch & Zellner, 1999; McCabe, Fotu, & Dewes, 2011; McCabe, Ricciardelli, Waqa, Goundar, & Fotu, 2009). An open question at this point is how often men from countries outside the U.S. engage in body talk. Due to the MBT scale's simplicity and lack of jargon, it may prove useful in exploring this and other questions across cultures. In addition, because researchers have examined the role of appearance-related conversations among boys of younger ages (e.g., Jones & Crawford, 2005), future research should explore reliability and validity of scores on the MBT scale among adolescent boys.

Interventions aimed at reducing fat talk among college women as a means to improve body image have received attention in recent years (e.g., Stice, Shaw, Becker, & Rohde, 2008). College men have been largely ignored in these initiatives, which is disappointing given the evidence provided here for the association between male body talk and several indicators of body image disturbance. However, research in this area is still in its early stages. The MBT scale may prove useful for clinicians who are interested in peer influences in the etiology or maintenance of muscle dysmorphia symptoms or eating disordered behaviors. In all of these studies, the MBT scale was presented to non-clinical populations, so future work may investigate the role of body-related conversations in clinical samples suffering from more serious body image concerns.

The MBT scale may best be characterized as a pseudo-frequency scale because men respond to a series of statements indicating how often they say similar things in the relative sense (e.g., *sometimes*, *often*) rather than providing an actual count of body-related comments said aloud in a given timeframe. Given the inherent biases of retrospective report (and self-report measures more generally), this is a limitation of the current assessment. Experience sampling methods would be required to better capture how often men find themselves engaging in body talk throughout the day; results from those reports may help to validate scores on the MBT scale.

A growing body of research points to the unique body image concerns of men, including a potentially unhealthy drive for muscularity (McCreary & Sasse, 2000) and the more clinical presentations of muscle dysmorphia (Pope et al., 1997), steroid use (Parent & Moradi, 2011), and eating disordered behaviors (Bramon-Bosch, Troop, & Treasure, 2000). Measures are available to assess how often women engage in negative body talk, or fat talk, with their peers. Results from the development and initial validation of the MBT scale demonstrate that body-related comments among men are not rare and not exclusive to college men. The MBT scale is a relatively quick and practical way to assess how often men express negative body-related comments. We hope the MBT scale is a useful assessment for researchers interested in the social influences and effects of male body image concerns.

Appendix. MBT Scale

We're interested in the types of things men say about their bodies when they're talking to other people.

We're interested in what men **SAY** – not what men think. When you're answering the following questions, please only give responses that are consistent with **the way you actually talk** to other people.

Remember, we're not interested in how often you have ***thoughts*** like this. Instead, we're interested in how often you **say** things like this out loud when you're having a conversation with others. *Even if you wouldn't use these exact words*, we're interested in whether you say similar things (that mean the same thing) when you're talking to people.

On the following scale from 1 to 7, how often do you **say** things like. . .

1	2	3	4	5	6	7
never	**rarely**	**occasionally**	**sometimes**	**frequently**	**usually**	**always**

1. I want a six-pack.[a]
2. I wish I could lose this belly fat.[b]
3. I need to go on a diet.[b]
4. I wish I had bigger biceps.[a]
5. I wish my chest were more muscular.[a]
6. I want to add bulk.[a]
7. I need to lose some weight.[b]
8. I wish my abs were more toned.[a]
9. I wish I could lose this gut.[b]
10. I need to start watching what I eat.[b]
11. I need to lift weights more.[a]
12. I should work on my abs.[a]
13. I need to lose a few pounds.[b]
14. I wish I could bulk up a little.[a]
15. I want to have more muscle.[a]
16. I wish I had more muscular arms.[a]

[a] Muscle Talk Subscale.
[b] Fat Talk Subscale.

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