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Assessing Women's Negative Commentary on Their Own Bodies: A Psychometric Investigation of the Negative Body Talk Scale

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Abstract

Our article details the development of the self-report Negative Body Talk (NBT) scale and five studies (all conducted with samples of U.S. undergraduate women) supporting the psychometric soundness of scores on this measure. The NBT scale measures women's tendency to engage in negatively valenced commentary about the weight and shape of their own bodies (including upward comparisons that comprise implicit negative commentary) when speaking with others. Two subscales were identified using a combination of exploratory and confirmatory factor analyses. The body concerns subscale assesses women's tendency to make comments expressing worries over the size/shape of their bodies. The body comparison subscale assesses women's tendency to vocalize unfavorable comparisons of their body with the bodies of other women. Scores on the NBT scale demonstrated strong internal consistency and moderate test–retest reliability with these samples of U.S. college women. Evidence of convergent, discriminant, and incremental validity is presented. The NBT scale may be useful in the growing body of research examining how the social norm of women expressing body dissatisfaction in conversation with others both reflects and fuels body image disturbance in women.

Keywords

fat talk, body image, body image disturbances, physical appearance, interpersonal communication, measurement

> Oh, women, why do we allow ourselves to play such silly games? As the mother of a teenage daughter, I've become increasingly aware of how often I tend to fall into fat talk with my friends. I've been trying hard to quit: It's a waste of time, for one thing, and sets a terrible, perhaps harmful, example for my daughter.
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> –Jennifer Huget, *Washington Post* (Huget, 2011, para. 6)

This *Washington Post* blogger is not the only one who worries about how often she engages in fat talk and the negative consequences fat talk might have for girls and women. In 2009, Caitlin Boyle left a post-it note with the message, "You are beautiful," on a mirror in a public restroom. This launched the beginning of Operation Beautiful, a campaign to end fat talk by leaving positive messages on the mirrors of public restrooms (and other public places) for women to find (http://operationbeautiful.com/). Since 2008, Tri Delta Sorority has sponsored Fat Talk Free Week©, an effort to decrease body image disturbance in college women by advocating for fat talk free conversations (http://endfattalk.org/).

Research demonstrates that these concerns about harmful effects of fat talk (speaking negatively about the weight-related size/shape of one's body) are well founded. The frequency with which women engage in fat talk conversations is positively correlated with body dissatisfaction and eating disordered behavior (Clark, Murnen, & Smolak, 2010; Ousley, Cordero, & White, 2008; Salk & Engeln-Maddox, 2011a, 2011b). Women with higher trait-level body dissatisfaction are more likely to engage in fat talk after hearing a peer complain about her body (Salk & Engeln-Maddox, 2011b), and women who overhear fat talk experience increased state body dissatisfaction and guilt (Gapinski, Brownell, & LaFrance, 2003; Salk & Engeln-Maddox, 2011b; Stice, Maxfield, & Wells, 2003). Importantly, the women who engage in fat talk often weigh what the Centers for Disease Control ([CDC] cdc.gov) consider a healthy weight (Salk & Engeln-Maddox, 2011a). (The CDC defines

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a healthy weight with the criterion of a body mass index [BMI] between 18.5 and 24.9; but see Cogan, Smith, & Maine, 2008, for a review of critiques of this criterion.) In other words, it is not unusual for women who are not overweight to complain about feeling fat, to lament the size or shape of a specific body part, or to denigrate their bodies by comparing them to others (Barwick, Bazzini, Martz, Rocheleau, & Curtin, 2012; Nichter, 2000; Ousley et al., 2008; Salk & Engeln-Maddox, 2011a).

Fat talk is not only a reflection of body discontent, but also part of a cycle that perpetuates body dissatisfaction in women. Over 25 years ago, Rodin, Silberstein, and Striegel-Moore (1985) decried the extent to which it had become normal for women to struggle with serious body dissatisfaction. Today, researchers, journalists, and bloggers are drawing attention to fat talk—an expression of this discontent—as a potentially deleterious social norm. Indeed, evidence suggests that undergraduate men and women believe that fat talk among women is normative (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006). Britton, Martz, Bazzini, Curtin, and LeaShomb (2006) also found that undergraduate women like other women who engage in self-disparagement about their bodies more than they like women who are accepting of, and make positive comments about their bodies. A major factor in the maintenance of fat talk may be that women's body dissatisfaction acts as an injunctive norm, not only explaining how women *do* feel but also dictating how they *should* feel. Women might feel they need to engage in fat talk to be liked and accepted by their peers. Consistent with this idea, Nichter (2000) found that many adolescent girls actually feel the need to qualify or deny positive comments they receive about their bodies to avoid seeming arrogant or overly confident.

Whereas fat talk may be normative when women are in groups of peers engaging in fat talk, when in groups of peers who do not fat talk, women are expected to conform to the group's body presentation style (Salk & Engeln-Maddox, 2011b; Tompkins, Martz, Rocheleau, & Bazzini, 2009; Tucker, Martz, Curtin, & Bazzini, 2007). Some research supports the idea that although women actually like a woman who talks positively about her body, they still think this woman would be liked more by others if she engaged in the style of body talk that is consistent with the group (Barwick et al., 2012; Tompkins et al., 2009). In an experimental study of this effect, Salk and Engeln-Maddox (2011b) found that women only engaged in fat talk (after viewing and discussing an ad featuring a highly attractive and thin female model) when they first heard a confederate fat talk in response to the ad. These studies illustrate the power of fat talk as a social norm.

A nuanced understanding of how fat talk is associated with body dissatisfaction and how the tendency to engage in fat talk varies by important demographic variables (e.g., age, ethnicity) has been limited by the lack of a flexible and well-validated measure to assess the frequency with which women engage in this type of negative body talk (NBT). Such a measure becomes especially important as efforts to reduce the frequency of fat talk among women (particularly college women) become more common.

In their ethnographic research on middle and high school-aged girls in the United States, Nichter and Vuckovic (1994) defined fat talk as a highly ritualized type of conversation that occurs among groups of female peers. They described fat talk as women and girls speaking with each other about the size and shape of their bodies (typically in a negative manner focused on being overweight or heavier than they wish to be). A key component of fat talk is its role in interpersonal relations. Tucker, Martz, Curtin, and Bazzini (2007, p. 158) argued that "fat talk can be conceptualized as the extension of body image into the realm of interpersonal relations." Nichter (2000) speculated that fat talk could be viewed as a call for social support from peers. Indeed, Salk and Engeln-Maddox (2011a) found that the majority of college women who engage in fat talk do so (at least in part) because they want reassurance that they are not fat. Additionally, it is important to understand the role that context plays in fat talk conversations because this context can clarify the motivation for girls and women to engage in this body disparagement. For example, Nichter (2000) found that some adolescent girls engaged in fat talk immediately before eating to provide a preemptive apology for indulging. Additionally, when women are already experiencing concern about their bodies, they actually may derive comfort from hearing another woman engage in fat talk (Gapinski et al., 2003).

Although different researchers have defined fat talk in somewhat distinctive ways, most acknowledge the following: fat talk occurs among groups of female peers, fat talk involves weight-related conversations (typically focused on being heavier than one's ideal), and fat talk plays an important role in interpersonal relations. Craig, Martz, and Bazzini (2007, p. 244) defined fat talk as "women discussing their bodies disparagingly for impression management while interacting with one another." Gapinski, Brownell, and LaFrance (2003, p. 378) explained that fat talk "describes the self-disparaging body talk that occurs in peer groups and appears to contain an element of social influence." In the current studies, we define fat talk as conversations in which women disparage their bodies with weight and physique-related comments derived from the thin body ideal. Although women may experience dissatisfaction with non–weight-related elements of their bodies (e.g., breast size, body hair), a focus on these concerns deviates from the traditional focus of the literature on fat talk because fat talk is intimately tied to the "struggles involving discipline, guilt, and self-control that characterize weight-related concerns" (Salk & Engeln-Maddox, 2011a, p. 9). Given that fat talk has been conceptualized as a social extension of normative body discontent and objectified body consciousness (Martz, Petroff, Curtin, & Bazzini, 2009; Salk & Engeln-Maddox, 2011a), our definition includes comments about other women's bodies that act as implicit negative comments about one's own body weight/shape (e.g., "I wish my

stomach looked like hers") but do not contain explicit references to "fatness." We have named the scale presented in the present article the Negative Body Talk scale in recognition that even though fat talk comprises commentary about one's deviation from the thin ideal, not all fat talk explicitly mentions fat per se.

Fat Talk Manipulations

Several experimental and vignette studies have manipulated fat talk to understand its consequences. In Stice, Maxfield, and Wells (2003), participants interacted with a thin confederate who expressed dissatisfaction with her weight and discussed her extreme diet and exercise routine. In Gapinski et al.'s (2003) research, participants overheard a confederate make self-disparaging comments about her body while trying on clothes in a dressing room. The confederate said, "This (swimsuit/ sweater) looks so horrible on me. Do you have to try this thing on, too? I look totally fat in this! My stomach is sticking out" (p. 381). Tucker et al. (2007) asked participants to discuss feelings about their classes, roommates, and bodies with an average weight confederate, who either talked in a positive, neutral, or negative manner about her own body. In the self-derogation condition, the confederate engaged in fat talk, saying, ". . . There are a lot of things I don't like about my body. I mean, I hate the way my stomach looks in a bathing suit. . . so I never wear a bikini. Oh, and I think my thighs are huge. . . . " (p. 160).

Salk and Engeln-Maddox (2011b) extended this experimental work by recording the conversations of participants and confederates who engaged in fat talk while viewing magazine advertisements. For example, one of the confederate's responses to an advertisement with a thin, attractive model was, "Ugh, look at her thighs. Makes me feel so fat." For the purposes of coding the audio recordings of the participants' responses to this comment, fat talk was defined as a participant making a negative comment about the size/shape of her own body, directly expressing insecurity about her body, or expressing the need to change her body through diet or exercise.

Craig et al. (2007) employed a different operationalization of fat talk in their experiment. After telling participants that their body image questionnaires would be shown to a specific audience type, the authors reasoned that participants' responses to this questionnaire were a type of fat talk, given that participants believed their responses would be shared with others. In other words, this operationalization of fat talk included no dialogue or even references to talking with peers.

Fat talk has also been manipulated in the context of vignettes to which a participant provides some sort of response or evaluation. In a vignette study of fat talk (Britton et al., 2006, p. 249), three undergraduate women studying for a biology exam were described as saying, "Yeah, I'm pretty unhappy with my weight also, I should really go on a diet too." Participants then indicated how they believed the fourth female in the conversation (the target female) would respond: either self-degrade her body, self-accept her body, or provide no information about her body. The authors called this questionnaire the Norm for Fat Talk Assessment (NFTA). Similarly, a vignette study by Tompkins, Martz, Rocheleau, and Bazzini (2009, p. 294) included a negative body presentation style condition marked by a woman (in a group of peers) saying, "I've been feeling really fat lately." Martz, Petroff, Curtin, and Bazzini (2009) also used vignettes to explore gender differences in fat talk among U.S. adults. Participants read three different vignettes and were asked to imagine friends/coworkers engaging in fat talk, self-accepting body talk, or positive body talk. The fat talk vignette was "Imagine you are in a group of friends/coworkers who were saying negative things about their bodies (For example, 'My butt is fat')" (p. 36). Although these experimental and vignette methodologies have added important findings to the literature on fat talk, the frequently idiosyncratic or occasionally unrealistic nature of the language used (or the context that surrounds the language) limits the conclusions one can draw about how common fat talk is and makes it difficult to compare and contrast the findings from different studies.

Self-Report Measurement of Fat Talk

Several researchers have created their own fat talk surveys. Ousley, Cordero, and White (2008) developed items that reflected the five most frequently discussed topics based on transcripts of undergraduate discussions about eating, exercise, and body image: self-comparison to ideal eating and exercise habits, fears of becoming overweight, evaluating others' appearance, comparing exercise and eating habits to others, and meal replacements and muscle-building strategies. These items covered a much broader range of topics than is typically included in the definition of fat talk and are difficult to evaluate without specific psychometric evidence. Additionally, the frequency-based response scale used in this survey may be problematic. Participants indicated how often they engaged in each type of fat talk conversation on a scale from 1 (*more than once daily*) to 6 (*rarely/never*), but the authors had to collapse response options due to infrequent use of the points at the low end of the scale.

White, Park, Israel, and Cordero (2009) assessed the frequency of fat talk as part of a study evaluating the effects of peer health education on health behaviors in undergraduates. They broadly defined fat talk as conversations that related to weight, shape, or appearance in general (but not explicit or implicit negative comments about one's body shape/size). The 5-item scale includes items such as, "How many days per month do you and your friends discuss what your eating and exercise habits should be?" (p. 500). These types of items provide a broad assessment of body and health-related conversations but are less focused in terms of fat talk. Specifically, conversations about ideal eating and exercise habits do not necessarily comprise fat talk. For

example, a conversation about whether eating red meat is linked with heart disease would be well outside a definition of fat talk, as would a discussion of the health benefits of yoga. Additionally, though the response scale is more of a true frequency scale, it may tax the memory of participants in a manner that suggests possible validity concerns. The scale asked participants to report the number of days per month during which they engaged in these types of conversations.

Salk and Engeln-Maddox (2011a) used a single-item measure of fat talk frequency. Participants read a definition of fat talk (based on Nichter, 2000) and rated how commonly they engage in fat talk when they are with their female friends (1 = *it's extremely rare* to 5 = *it's extremely common*). Clark, Murnen, and Smolak (2010) provided a quantitative assessment of fat talk (the Fat Talk scale [FTS]) that included reliability and validity information. The scale comprises nine items detailing specific scenarios that are described as occurring among stimulus persons "Naomi and her friends" who are described as being "of average weight" (p. 6). Although scores on the scale showed the predicted correlations with measures of body image disturbance and eating disordered behavior, the scenarios included in the scale are highly specific in terms of language and context (e.g., "Naomi is sitting with her friend on a bench when she looks down at her thighs and exclaims that her thighs might as well take up the entire seat"; p. 7). Participants indicate how often they would behave similarly to the women in the scenario. The specification that participants in the conversation are of average weight may limit the flexibility of this scale. Additionally, the inclusion of relatively idiosyncratic situations in the scale's vignettes may lead to issues with some women being able to identify with these specific contexts (or even the name "Naomi"). Finally, the nature of the items combined with the type of factor analysis conducted (principal components analysis) provides little information about the possibly multidimensional nature of fat talk.

The Current Research

The varied methodologies described above suggest the need for a flexible, valid, and reliable self-report scale measuring the frequency with which women engage in fat talk. Researchers wishing to assess this construct have generally had to rely on cumbersome qualitative data or unvalidated survey questions written specifically for individual studies. Although the Clark et al. (2010) measure shows some promise, we maintain that the scenario-based structure of the scale and the fact that respondents are asked to identify with a specifically named stimulus woman ("Naomi") to complete the scale makes it less than ideal. The purpose of the current studies was to develop a brief, psychometrically sound self-report measure of the frequency with which women engage in fat talk. Such a measure could facilitate research on the associations between the frequency with which women engage in fat talk and a variety of body image-related and clinical outcomes (e.g., eating disorders, depression). Additionally, this type of measure could play an important role in intervention/prevention efforts (such as Fat Talk Free Week) as a pre- and posttest assessment. Finally, this type of measure could be used to assess fat talk frequency at different developmental stages, in different contexts, and across different ethnic groups, providing important information about the nature of fat talk as a social norm.

In the studies below, the process through which initial scale items were generated is first described, followed by a preliminary item analysis. Next, we describe a revised version of the scale. Half the data collected using this revised scale were subjected to exploratory factor analysis (EFA) and the other half to confirmatory factor analysis (CFA). After two subscales addressing different types of NBT were identified, the associations between scores on these subscales (and overall NBT scores) and several measures of related constructs were explored to provide initial evidence for convergent and discriminant validity of scores on the newly developed measure. We also assessed test–retest reliability. An additional study assessed whether participants were able to appropriately follow the scale's instructions. A final study used scores on the NBT scale to predict the extent to which women included fat talk when writing scripts for conversations they would have with female peers.

Study 1

All of the following studies were approved by the Institutional Review Board of Northwestern University. No participants completed more than one of the studies. Anonymity was assured in all studies. In studies where participants were obtained from an introductory psychology participant pool, participants were randomly assigned to the study by a participant pool coordinator (rather than choosing the study based on information about the research topic). The purpose of Study 1 was to create an initial set of items designed to measure the frequency with which women engage in fat talk with female peers and to conduct a preliminary item analysis to refine and shorten this initial version of the scale.

Method

Generation of Initial Item Pool

Prior to the generation of items for this scale, a team of 12 undergraduate research assistants (both men and women and varying in sexual orientation) with experience working in a body image lab reviewed the published literature on fat talk and engaged in informal observation of the content/wording of fat talk they overheard (or generated) in groups of female peers. Additionally, open-ended data from fat talk conversations written by participants in Salk and Engeln-Maddox's (2011a) study were considered. Multiple types of fat talk were identified: weight-related complaints about the size/shape of one's own body (e.g., "I wish my stomach was

flatter''); positive and negative commentary about the size/shape of other women's bodies (e.g., ''She has a perfect body'' or ''She's too big to be wearing that''); expressions of body-related upward social comparison (e.g., ''I wish my body looked like hers''); and expressions of the need to reshape one's body through diet or exercise (''I need to go on a diet''). The team of research assistants together edited 48 such items until they agreed all items were face valid and clearly expressed.

Instructions for the scale emphasized that responses should be based on the frequency of actually making NBT comments out loud to another person rather than simply having thoughts consistent with the items: ''When talking with your friends, how often do you *say* things like. . . . 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 with your friends. 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 with your friends.''

The response scale ranged from 1 (*never*) to 7 (*always*), with descriptive anchors for each number in between (see Appendix). Although this is not a true frequency scale (i.e., it does not assess, for example, how many times a day a participant makes such comments), it is consistent in format with other published scales related to body image that aim to assess the frequency of feelings of body dissatisfaction (e.g., Garner, 1991), eating disordered behaviors (Garner, Olmstead, & Polivy, 1983), and critical processing of media images of beauty ideals (Engeln-Maddox & Miller, 2008).

Participants

Participants for the first administration of the scale were 172 women from an introductory psychology participant pool at a private, Midwestern university and who ranged in age from 18 to 22 ($M = 18.80$, $SD = 0.92$). The majority of the participants (54%) identified themselves as White/Caucasian, 28% as East Asian, 7% as Hispanic/Latina, 7% as multiracial, and 5% as Black/African American. The vast majority were in their first year of college (79%), with 12% in their second year and the remaining participants in their third or fourth years.

Procedure

The initial 48-item survey was included in a large packet of surveys on a variety of topics in a group testing session for an introductory psychology course. Materials within the survey were counterbalanced. Participants received course credit in exchange for completing the surveys but could opt out of completing any or all of the surveys contained in the packet.

Results and Discussion

Although the full 7-point scale was used for each item, 15 items were dropped for having low means (below 2) and little variance. The majority of these low-mean items were negative comments about the weight of other women (e.g., ''She needs to lose some weight''). Others may have been too specific (using a colloquial term for a body part like ''stomach rolls'') or too strongly worded (e.g., ''I hate my thighs''). The revised version of the scale included 33 items with a Cronbach's α of .97. Corrected item-total correlations ranged from .41 to .80. Thus, results indicated that scores on this initial version of the scale had acceptable internal consistency with this sample.

Study 2

Purpose and Method

The purpose of Study 2 was to evaluate the factor structure of the revised (33-item) scale using both EFA and CFA and to use these analyses to shorten the scale. The procedure paralleled that of Study 1 except that students completed the 33-item NBT scale surveys during group testing sessions of several sections of an introductory psychology course and they could opt out of completing a specific measure.

Participants

Participants included 367 women college students in an introductory psychology participant pool who received course credit in exchange for participation. Participants ranged in age from 17 to 22 ($M = 18.52$, $SD = 0.81$). The majority of participants (68%) were first year students, 24% were sophomores, with the remaining participants being juniors or seniors. Most (56%) identified as White/Caucasian, 26% as Asian, 6% as multiracial, 5% as Black/African American, 4% as Latina, 1% as Middle Eastern/Arab, and 1% as Native American/American Indian.

Results and Discussion

Exploratory Factor Analysis (EFA)

The data from Study 2 were randomly split into two halves; the first half was used for EFA ($n = 171$ after removing those with missing data) and the second for CFA ($n = 182$ after removing those with missing data). In total, 14 cases (3.8%) with one or more missing data points on the NBT scale were removed, which falls within Tabachnick and Fidell's (2007) guidelines, suggesting that it is acceptable to remove missing data when less than 4% of participants have missing data. In terms of sample size for the EFA, Gorsuch (1983) recommends a minimum of five participants per measured variable (and never less than 100), placing the current sample in the low but acceptable size range. Although we predicted that multiple factors would emerge given the

Table 1. Pattern Matrix Coefficients for EFA ($N = 171$) and Loadings for CFA ($N = 175$)

	EFA Loadings		CFA Loadings (Standardized)	
Item	F1	F2	F1	F2
I need to go on a diet. 32[a]	**.89**	−.07	.78	–
I need to lose weight.	**.85**	−.003		
I need to lose a few pounds.	**.83**	−.09		
I feel fat. 31[a]	**.80**	−.03	.82	–
This outfit makes me look fat. 33[a]	**.78**	−.10	.67	–
I think I'm getting fat. 27[a]	**.76**	.08	.84	–
I need to start watching what I eat. 28[a]	**.72**	.12	.77	–
I wish I was thinner. 26[a]	**.70**	.22	.79	–
You never have to worry about gaining weight. 21[a]	**.68**	−.09	.52	–
I should pay more attention to what I eat.	**.63**	.09	–	–
You're so skinny.	**.63**	.07	–	–
I'm not happy with my body.	**.62**	.26	–	–
I shouldn't be eating this.	**.59**	.11	–	–
She's in such good shape. 18[a]	−.16	**.78**	–	.68
She has a perfect stomach. 11[a]	.10	**.74**	–	.83
I wish my abs looked like hers. 19[a]	.02	**.74**	–	.82
She has a perfect body. 25[a]	.08	**.72**	–	.83
Why can't my body look like hers? 17[a]	.21	**.67**	–	.85
I wish my body looked like hers. 3[a]	.26	**.63**	–	.80

Note. Boldface indicates the factor on which an individual item loaded. EFA = exploratory factor analysis; CFA = confirmatory factor analysis. For CFA, all loadings are significant at $p < .001$.
[a] Item retained in final scale.

variety of types of fat talk addressed in the items, no specific factor structure was hypothesized.

Consistent with recommendations on the use of factor analysis for scale creation (e.g., Gorsuch, 1997; Preacher & MacCallum, 2003), principal axis factoring with direct oblimin rotation was used to examine the factor structure of the scale. Examination of Kaiser–Meyer–Olkin's (KMO; Kaiser, 1970, 1974) measure of sampling adequacy (MSA) revealed that these items had a high degree of common variance, KMO = .91. Researchers generally recommend parallel analysis for identifying how many factors to retain when conducting EFAs (Kahn, 2006; Zwick & Velicer, 1986). In parallel analysis, random sets of data with dimensions matching those of the actual data set are generated and factor analyzed. Factors from the actual data set with eigenvalues larger than those from the randomly generated data sets (i.e., where plots of eigenvalues for the randomly generated and actual data sets cross at a 95% confidence interval [CI]) are retained. Parallel analysis was conducted using Watkins' (2006) MonteCarlo program, which suggested a two-factor structure. After removing two items that loaded on a third factor, an examination of the pattern matrix revealed that the remaining items all cleanly loaded on one of the two factors. To shorten the scale, all items with loadings below .60 were deleted and the analysis was re-run. For the remaining 19 items, eigenvalues prior to rotation were 9.82 and 2.13, respectively. The cumulative common variance accounted for was 63%. The factors correlated at .55. See Table 1 for rescaled pattern matrix coefficients from the EFA with the 19 items that were retained in this step.

Confirmatory Factor Analysis (CFA)

CFA using maximum likelihood estimation with robust standard errors via Mplus (Muthén & Muthén, 1988-2009) was conducted on the second subsample. Kline (2010) suggests a minimum sample size of five participants per parameter. With 27 parameters estimated in the present CFA, our sample size was considered adequate. To assess fit, Hu and Bentler's (1999) two-index strategy of presenting the standardized root mean squared residual (SRMR) and the confirmatory fit index (CFI) was utilized. The Root Mean Square Error of Approximation (RMSEA) was also examined (Bentler, 2007). SRMR should be approximately .08 and CFI approximately .95 to conclude a relatively good fit (Hu & Bentler, 1999), and RMSEA should be less than .08 (Steiger & Lind, 1980). The first model tested included the 19 items (two factors) identified during EFA. Because this model did not demonstrate adequate fit with the data, items were trimmed iteratively from the model, with empirically redundant items being removed first. This strategy was based on the fact that redundant scale items would require correlated error structures for scales to demonstrate optimal fit. Scales with highly redundant items are statistically undesirable and may frustrate participants who believe they are answering the same item multiple times. The final model contained 13 items (7 on Factor 1 and 6 on Factor 2). See Table 2 for fit indices. Because robust estimation was used, a corrected χ^2 difference test was required to compare nested models (Bryant & Satorra, in press; Satorra, 2000; Satorra & Bentler, 2001). This

Table 2. Fit of Models Examined in Confirmatory Factor Analyses

	χ^2	*df*	CFI	SRMR	RMSEA
Untrimmed 19-item, 2-factor model	400.66	151	.85	.065	.097
Trimmed 13-item, 2-factor model	106.42	64	.96	.047	.062
1-Factor model	294.58	65	.77	.096	.142

Note. CFI = confirmatory fit index; SRMR = standardized root mean squared residual; RMSEA = Root Mean Square Error of Approximation. All coefficients were statistically significant at $p < .001$. All R^2 values were greater than .28. $N = 182$. Phi, Theta, Delta, and Lambda matrices and R^2 values are available by contacting the first author.

trimmed two-factor model demonstrated adequate fit and was superior to the one-factor model (corrected $\Delta\chi^2 = 18.13$, $\Delta df = 1$, $p < .0001$).

Factor 1 (seven items), named body concerns, comprises items noting worries about the size of one's body and the need to reshape one's body, particularly with respect to losing weight. The second factor (six items), named body comparison, is composed of items admiring the shape of other women's bodies and expressing a desire for one's body to look more like another woman's. Each factor was treated as a subscale, with the score for each subscale being the mean of items loading on that factor. The latent factors correlated at .67. Cronbach's αs for subscales were high (.90 and .85, respectively). The overall α (for all 13 items) was .94. Thus, the combination of EFA and CFA was successful in identifying two meaningful and internally consistent subscales. Because a hierarchical model would be underidentified, we did not include such a model for comparison purposes. However, we imposed equality constraints on higher order factor loadings in order to create an estimable hierarchical model. This model also fit well (RMSEA = .083). Future research should examine whether NBT scores are best treated as assessing a single construct or whether the two subscales described above are useful in terms of differentially predicting variables of interest. We consider this an open question at this point, and thus we include total scores along with scores for each subscale in the rest of our article. The complete NBT scale is described in the Appendix.

Supplementary Analyses

Scores on the body concerns subscale ($M = 2.90$, $SD = 1.42$) were highly correlated with scores on the body comparison subscale ($M = 2.88$, $SD = 1.34$), $r(364) = .81$, $p < .001$. In her original ethnographic work with middle school girls, Nichter (2000) reported that African American girls were less likely to engage in fat talk. Thus, we examined whether scores varied by participant race/ethnicity. Three analyses of variance (ANOVAs) were conducted with the four groups with the highest individual sample sizes (White/Caucasian, Asian, Latina, and Black/African American) entered as a four-level independent variable (one with total NBT scale scores as the dependent variable and one for each of the subscale scores). Results indicated no overall effect of race/ethnicity, $F(3, 329) = 1.29$, $p = .28$, on total NBT scores. There was also no overall effect of race/ethnicity on scores on the body concerns, $F(3, 327) = 1.48$, $p = .22$, or body comparison, $F(3, 329) = 1.96$, $p = .12$, subscales. However, these analyses were somewhat underpowered given the relative homogeneity of the sample in terms of ethnicity (observed power of approximately .50) and the extremely small effect size for race, indicating the need for future research with a sample that is both large and ethnically diverse. Additionally, these analyses do not address whether fat talk may be expressed differently by different racial/ethnic groups. Although tests for structural invariance of scores on this measure (across these different groups) are certainly warranted in future research, the sample sizes in our studies prohibited such analyses.

Study 3

The purpose of Study 3 was to establish evidence in support of the NBT's convergent, discriminant, and incremental validity (beyond the previously described FTS) and to examine the temporal stability of NBT scores by examining test–retest reliability. The revised NBT scale was administered during a group testing session of introductory psychology. Between 4 and 6 weeks later, participants completed the NBT scale and a number of self-report measures hypothesized to be related to fat talk (measures are described in detail below). An additional sample of online participants completed the NBT and related measures.

Hypothesis 1: Tests of Convergent Validity

Consistent with the literature reviewed above (e.g., Clark et al., 2010; Ousley et al., 2008), we predicted that scores on the NBT scale would correlate positively with body dissatisfaction scores and scores on a measure of eating disordered behavior/attitudes. Because fat talk is an expression of body monitoring, we also expected positive correlations between NBT scale scores and scores on two components of objectified body consciousness (McKinley & Hyde, 1996)—body surveillance and body shame. Because those who fat talk are also vocalizing support for the thin ideal and because previous research has demonstrated an association between these two variables (Salk & Engeln-Maddox, 2011a), we predicted a positive association between NBT scores and scores on a measure of internalization of the thin ideal. Finally, we predicted a strong, positive correlation between NBT scores and scores on the FTS (Clark et al., 2010).

Hypothesis 2: Tests of Discriminant Validity

Previous research suggests that women are quite willing to admit to fat talking. However, given that some women (at

least occasionally) find fat talk annoying or disingenuous (e.g., Salk & Engeln-Maddox, 2011a; Smith & Ogle, 2006), we wanted to provide evidence that responses on the NBT scale were not unduly influenced by socially desirable responding. One might argue also that those who simply talk more with peers (about any topic) would score higher on the NBT scale. In order to provide evidence that NBT scores are not simply reflecting this general tendency to engage in conversation, we included a measure of extraversion. Likewise, in order to demonstrate that fat talk is not just a reflection of a more general tendency toward negative affective states, we included a measure of neuroticism. Given the restricted BMI range in this sample (89% falling into the CDC-defined healthy weight range) and consistent with previous research, we did not anticipate an association between NBT scores and BMI. In general, previous findings suggest that fat talk is a phenomenon most closely associated with women who are not actually overweight. In sum, we did not expect significant correlations between NBT scores and scores on measures of socially desirable responding, extraversion, neuroticism, or BMI.

Hypothesis 3: Incremental Validity

Thin ideal internalization is highly associated with (and prospectively predicts) body dissatisfaction (Thompson & Stice, 2001), which is one of the strongest predictors of eating disordered behavior (Stice, 2002). Vocalizing concerns about being fat could be conceptualized as simply verbal endorsement of the thin ideal. Fat talk is undoubtedly an expression of body dissatisfaction for many women. However, research suggests that engaging in fat talk has negative affective outcomes (in terms of increased guilt and state body dissatisfaction) beyond simply feeling (but not expressing) body dissatisfaction (Salk & Engeln-Maddox, 2011b). Thus, we predicted that, controlling for BMI, (a) NBT scores would predict significant variance in body dissatisfaction above and beyond that predicted by thin ideal internalization and (b) NBT scores would predict significant variance in eating disordered behavior above and beyond that predicted by body dissatisfaction.

As noted above, Clark et al. (2010) provided the first measure of fat talk (the FTS) with detailed validity evidence. Given our concerns about the format of the FTS, we conducted additional analyses to assess whether scores on the NBT could predict variance in the key variables of body dissatisfaction and eating disordered behavior above and beyond that predicted by FTS scores.

Method

Participants

Participants in this phase of the research were recruited in two separate samples. The first portion of the sample comprised 48 women college students in an introductory psychology participant pool who received course credit in exchange for their participation. These participants ranged in age from 18 to 22 ($M = 18.66$, $SD = 0.81$); 76% were first year students and 12% second year students; and 59% identified as White/Caucasian, 25% as Asian, 7% as Latina, 7% as multiracial, and 2% as "other." An additional anonymous sample of 95 women college students was recruited using snowball sampling, listservs from a wide variety of student groups, and social networking sites for female students. Most (80%) of this online sample identified as White/Caucasian, 9% as Latina, 7% as multiracial, 3% as Asian, and 1% as Black/African American. Ages ranged from 18 to 27 ($M = 20.05$, $SD = 1.53$), and 18% were first year students, 23% second year students, 25% juniors, and 34% seniors. Although the majority of this sample (64%) was recruited from a U.S. Midwestern, private University, snowball sampling resulted in students from an additional eight states and a mix of public and private institutions. The total sample size exceeded the general guidelines for regression analyses with a medium effect size ($50 + 8k$ participants, with k being the number of predictors; Tabachnick & Fidell, 2007).

Procedure and Measures

Participants from the first portion of the sample completed the revised NBT scale during a group testing session of an introductory psychology course. Between 4 and 6 weeks after the initial administration, these participants completed the NBT scale a second time, in addition to the measures described below. These participants completed the measures at a private computer station in a lab and received course credit for doing so. Participants from the online portion of the sample completed the NBT scale and the measures described below at one time point. Thus, for test–retest analyses, only participants from the first portion of the sample were included. For the remaining analyses, the two samples were combined. All measures were presented in random order for each participant (in both portions of the total sample). Table 3 contains Cronbach's αs for all measures for the combined sample. A validity check was included to assess whether participants were carefully reading/responding to each item. This validity item (which was embedded in the middle of a measure of body shame) read, "When I think about my body, please select 'strongly agree' for this item if you are reading this." Nine participants were removed from the data set for failure to respond appropriately to this item (four from the first portion of the sample and five from the second portion).

Body dissatisfaction. The 9-item body dissatisfaction subscale of the Eating Disorders Inventory-2 (Garner, 1991) assesses participants' dissatisfaction with the overall size and shape of specific body regions. On a scale ranging from 1 (*always*) to 6 (*never*), participants indicate how often they

Table 3. Correlations Between NBT Scores and Convergent and Discriminant Validity Indicators

Measure	α	Possible Range	Mean (*SD*)	Total NBT	NBT Body Concerns	NBT Body Comparison
Total NBT	.93	1–7	3.08 (1.24)	–		
NBT body concerns	.88	1–7	3.10 (1.30)		–	
NBT body comparison	.91	1–7	3.05 (1.42)			–
BMI	–	–	21.59 (2.34)	.14	.17	.08
Body dissatisfaction	.88	0–27	8.08 (6.53)	.40***	.42***	.31***
Eating attitudes/behaviors	.89	0–3	1.89 (0.47)	.44***	.42***	.39***
Body shame	.75	1–7	3.28 (0.97)	.29**	.29**	.24**
Body surveillance	.81	1–7	4.78 (0.98)	.30**	.30**	.26**
Thin Ideal Internalization	.95	9–45	29.49 (8.78)	.43***	.39***	.41***
Physical appearance comparison	.83	1–5	3.15 (0.83)	.43***	.36***	.44***
Fat Talk scale	.88	9–45	22.55 (7.23)	.68***	.68***	.55***
Socially desirable responding	.71	0–40	6.75 (3.49)	−.16	−.10	−.18
Neuroticism	.77	8–40	24.66 (5.91)	.06	.04	.08
Extraversion	.88	8–40	27.23 (6.80)	.22*	.24**	.15

Note. $N = 135$. The complete correlation matrix is available from the first author.
*$p < .05$. **$p < .01$. **$p < .001$.

feel satisfied/unsatisfied with various body areas (e.g., "I think my hips are too big"). Scores were calculated using Garner and Garfinkel's (1979) originally proposed method of assigning 3 points for *always* responses, 2 points for *usually* responses, and 1 point for *often* responses. All other responses were assigned zero points. After reverse scoring the appropriate items, responses to individual items were summed to create total scores. Higher scores indicate greater dissatisfaction. Scores on this scale are positively correlated with previously established measures of body dissatisfaction (Garner, 1991) and symptoms of eating disorders in undergraduate men and women (Spillane, Boerner, Anderson, & Smith, 2004). Reported α coefficients for the body dissatisfaction subscale range from .83 to .93 for college women (Garner et al., 1983).

Eating disordered attitudes and behavior. The Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) is a shortened revised version of the original 40-item test. The EAT-26 is highly correlated ($r = .98$) with the original 40-item test (Garner et al., 1982). Total scores form a continuous measure of disordered eating (e.g., "I find myself preoccupied with food") and distinguish between college women diagnosed with anorexia nervosa and those without diagnoses (Garner et al., 1982; Mintz & O'Halloran, 2000). The response scale ranges from 1 (*always*) to 6 (*never*). Using Garner and Garfinkel's (1979) recommended scoring method, scores were calculated by assigning 3 points for *always* responses, 2 points for *usually* responses, and 1 point for *often* responses. All other responses were assigned zero points. Responses to individual items were summed to create total scores, with higher scores indicating higher levels of eating disordered attitudes and behavior. This scale has been especially useful to assess eating disorder risk in high-risk samples, including high school and college women as well as female athletes (Garner, Rosen, & Barry, 1998). In college women, EAT-26 total scores are correlated with body esteem, appearance satisfaction, internalization of the thin ideal, and other common measures of bulimia and eating disorder symptoms (Mazzeo, 1999; Tylka & Hill, 2004; Tylka & Subich, 2004). Reported internal consistency coefficients range from .83 to .90 (Garner et al., 1982).

Body surveillance and body shame. The Objectified Body Consciousness scale (OBCS; McKinley & Hyde, 1996) is a 24-item measure of three constructs associated with women's experiences of their bodies. Only the body shame and body surveillance subscales were used in our study. The body shame subscale measures the tendency to feel badly about oneself when cultural beauty standards are not achieved (e.g., "I feel ashamed of myself when I haven't made my best effort to look my best"). The body surveillance scale assesses the tendency to view one's body as an outside observer (e.g., "During the day, I think about how I look many times"). Scores on the body surveillance subscale are positively correlated with public self-consciousness. Scores from both the body surveillance and body shame subscales are negatively correlated with body esteem in undergraduate women (McKinley & Hyde, 1996). McKinley and Hyde (1996) reported a Cronbach's α of .75 for scores on the body shame subscale and .89 for the body surveillance subscale.

Thin-ideal internalization. The 30-item Sociocultural Attitudes Toward Appearance Questionnaire-3 (SATAQ-3; Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004) assesses social influences on body image with four subscales. We used only the internalization-general subscale (nine items) in our study. This subscale measures general internalization of media influence with regard to body ideals (e.g., "I would like my body to look like the models who appear in magazines"). Response options range from 1 (*completely disagree*) to 5 (*completely agree*). After reverse

scoring the appropriate items, the responses to each relevant item are summed to create a subscale score. Scores on the internalization-general scale are positively correlated with measures of body image disturbance among undergraduate women, and women with eating disordered behavior score higher on this subscale compared to controls (Thompson et al., 2004). Reliability coefficients for this scale are consistently above .90 (e.g., Engeln-Maddox & Miller, 2008; Thompson et al., 2004).

Social comparison tendencies. The 5-item Physical Appearance Comparison Scale (PACS; Thompson, Heinberg, & Tantleff, 1991) assesses the tendency to engage in physical appearance–based social comparisons (e.g., ''In social situations, I compare my figure to the figures of other people''). The response scale is a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). In samples of college women, scores on this scale correlate with several measures of body image disturbance (Thompson et al., 1991). The original authors reported a Cronbach's α of .78 and a test–retest coefficient of .72 over 2 weeks (with a sample of college women).

Fat Talk Scale (FTS). The FTS (Clark et al., 2010) is a 9-item measure assessing fat talk among women. As noted above, the scale consists of nine items/scenarios, each including a specific example of a fat talk conversation among a group of average-weight female friends. After reading each scenario (e.g., ''Naomi is hanging out with a friend when she looks in the mirror and says, 'I really need to start working out again. Honestly, I am so flabby'''), participants rate the frequency with which they would behave in a manner similar to the women in each scenario. The 5-point response scale ranges from 1 (*never*) to 5 (*always*). A total score is created by summing responses to the items, with higher scores indicating a greater frequency of fat talk. Scores on the FTS are correlated with measures of eating disordered behavior, body esteem, and objectified body consciousness (Clark et al., 2010). The scale's authors reported a Cronbach's α of .90, and a 5-week test–retest coefficient of .82 with a sample of college women.

Socially desirable responding. The Balanced Inventory of Desirable Responding (BIDR-7; Paulhus, 1988) assesses both self-deceptive positivity (the tendency to give self-reports that are honest but positively biased) and impression management (deliberate presentation to an audience). The scale includes statements such as, ''I always obey laws, even if I'm unlikely to get caught.'' Response options range from 1 (*totally disagree*) to 7 (*totally agree*). After reverse scoring appropriate items, one point is added for each extreme score (6 or 7). Scores on the BIDR-7 correlate highly with other measures of social desirability in samples of college students (Paulhus, 1991). Global scores from the BIDR-7 (summing both subscales) have demonstrated internal consistency ($\alpha = .83$) in a sample of undergraduate men and women and strong test–retest reliability over a 5-week period (Paulhus, 1991).

Extraversion and neuroticism. We used a subset of items from the 44-item Big Five Inventory (BFI; John, Donahue, & Kentle, 1991) to assess neuroticism (8 items) and extraversion (8 items). Instructions include the prompt ''I see myself as someone who . . . '' Participants then rate their agreement with each of the short, descriptive phrases that compose the items (e.g., ''worries a lot'') on a scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*). After reverse scoring appropriate items, scores are the sum of the items on each subscale. Scores on the BFI subscales are highly correlated with longer, established measures of the Big Five (John & Srivastava, 1999). In the U.S. and Canadian samples, Cronbach's αs for these two subscales are generally between .80 and .90 and the 3-month test–retest reliabilities average .85 (John & Srivastava, 1999; Srivastava, John, Gosling, & Potter, 2003).

Results and Discussion

Hypothesis 1: Convergent Validity

Descriptive statistics and the correlation matrix for all scales are listed in Table 3. As predicted, total NBT scores and scores on the two NBT subscales demonstrated moderate-to-strong positive correlations with all measures of body image disturbance as well as the Clark et al. (2010) fat talk measure. NBT total and subscale scores were also significantly positively correlated with the tendency to engage in physical appearance–related comparisons. However, even though the second subscale of the NBT scale specifically addresses comparisons, the association between scores on this subscale and scores on the social comparison measure was not amplified (compared to the associations between social comparison tendencies and scores on the body concerns subscale).

Hypothesis 2: Discriminant Validity

Evidence for discriminant validity was generally strong, with small, nonsignificant associations between NBT scale scores and scores on socially desirable responding and neuroticism. In other words, evidence suggests that scores on the NBT scale in this sample were relatively free from the influence of socially desirable responding and independent of the tendency toward negative affective states (neuroticism). Consistent with previous research, there was not an association between BMI and the tendency to engage in fat talk. However, care should be taken in interpreting this finding because the vast majority of participants in our sample (89%) were in the CDC-defined healthy weight range. Testing for a quadratic (i.e., curvilinear) association between BMI and NBT scores resulted in a marginal effect ($p = .06$). Thus, there was

Table 4. Summary of Incremental Validity Regression Analyses Predicting Body Dissatisfaction and Eating Disordered Behavior/Attitudes

	B	*SE B*	β	*t*	R^2	*F*	ΔR^2
Predicting body dissatisfaction							
Step 1							
BMI	1.36	.19	.48	7.25***			
Thin ideal internalization	.35	.05	.45	6.82***	.44	49.86***	
Step 2							
BMI	1.27	.19	.45	6.79***			
Thin ideal internalization	.29	.06	.37	5.17***			
NBT total scores	.90	.39	.17	2.31*	.46	36.15***	.02*
Predicting eating disordered attitudes/behavior							
Step 1							
BMI	−.02	.02	−.13	−1.39			
Body dissatisfaction	.03	.006	.46	4.91***	.17	12.72***	
Step 2							
BMI	−.02	.02	−.12	−1.34			
Body dissatisfaction	.02	.006	.32	3.35**			
NBT total scores	.11	.03	.31	3.65***	.25	13.76	.07***
Predicting body dissatisfaction							
Step 1							
Fat Talk scale	.37	.07	.41	5.04***	.17	25.37***	
Step 2							
Fat Talk scale	.21	.10	.23	2.17*			
NBT total score	1.40	.57	.26	2.43*	.20	16.14***	.04*
Predicting eating disordered attitudes/behavior							
Step 1							
Fat Talk scale	.03	.005	.44	5.60***	.20	31.25***	
Step 2							
Fat Talk scale	.02	.007	.27	2.61*			
NBT total score	.10	.04	.26	2.45*	.23	19.23***	.04*

Note. $N = 135$. BMI = body mass index; NBT = negative body talk; SE = standard error.
*$p < .05$. ***$p < .001$.

some evidence that both overweight and underweight women were less likely to engage in fat talk. This finding should be interpreted with caution, given the small number of overweight or underweight women in our sample. However, the finding certainly points toward an area for future research, particularly in terms of how women respond to fat talk by other women who are either underweight or overweight.

A small but significant positive correlation was found between NBT scores and scores on the measure of extraversion. Although this correlation was small enough not to be a serious concern for the NBT scale, it does point to interesting considerations. Extraversion is associated with higher levels of social interaction. However, in terms of speech, extraversion is associated with a positivity bias (Augustine, Mehl, & Larsen, 2011) that seems inconsistent with the negative content in fat talk. Given that some women report using fat talk as a means for soliciting social support, this result could be interpreted as consistent with the findings that extraversion is associated with a greater tendency to seek out social support when coping with stress (e.g., Amirkhan, Risinger, & Swickert, 1995). Perhaps the social ritual of fat talk is especially appealing to those who already tend toward this method of coping.

Hypothesis 3: Incremental Validity

Using hierarchical regression, body dissatisfaction scores were first predicted by BMI and thin ideal internalization (Step 1) and then by BMI, thin ideal internalization, and NBT scores (Step 2). NBT scores predicted significant variance in body dissatisfaction beyond that predicted by thin ideal internalization and BMI. In a similar analysis, NBT scores predicted significant variance in eating disordered attitudes/behavior scores above and beyond that predicted by body dissatisfaction and BMI (see Table 4). In other words, fat talk matters as more than simply a manifestation of thin ideal internalization or the body dissatisfaction one is feeling. Although fat talk certainly reflects underlying body image–related attitudes, actually vocalizing body concerns with peers was associated with unique variance in body dissatisfaction and eating disorder symptoms. Although scores on the FTS (Clark et al., 2010) predicted significant variance in body dissatisfaction and eating disordered behavior/attitudes, the addition of NBT scores to these regression models predicted additional variance above and beyond that predicted by FTS scores alone (see Table 4)—an important demonstration of incremental validity over this alternative measure.

Table 5. Comparison of NBT Scores for Original (Talk) Instructions Versus "Thought" Instructions

	Original Instructions *M* (*SD*)	Thought Instructions *M* (*SD*)	*t* (*df* = 46)	Cohen's *d*
NBT total	3.01 (0.97)	4.14 (1.09)	−10.36***	−1.53
Body concerns	3.06 (1.15)	4.25 (1.15)	−6.57***	−0.97
Body comparison	2.95 (1.14)	4.00 (1.15)	−11.08***	−1.63

***$p < .001$.

Test–Retest Reliability

Total NBT scores showed a moderate degree of temporal stability across 4–6 weeks, $r(43) = .74$, $p < .001$. The body concerns subscale, $r(43) = .68$, $p < .001$, and body comparison subscale, $r(43) = .61$, $p < .001$, showed less temporal stability than total scores. These moderate temporal stability coefficients suggest that fat talking tends to be relatively consistent over time, but it is likely influenced by contextual factors identified by previous research as having an influence on fat talk (e.g., the company of peers who fat talk or contexts that draw attention to the body). Salk and Engeln-Maddox (2011a) noted that a significant proportion of fat talk centered on expressing temporary feelings of fatness associated with being bloated or having recently overeaten. This state-level body dissatisfaction could also contribute to the moderate test–retest reliability of scores on the NBT scale.

Study 4

Because the instructions are essential to the proper completion of the NBT scale, Study 4 was conducted to evaluate the extent to which participants were following these instructions and to examine the impact of altering the instructions. Participants completed the NBT scale twice: once with the original set of instructions and once with a set of instructions asking participants how often they have thoughts similar to those on the NBT scale. The goal of this methodology was to provide evidence that participants were able to distinguish between how often they have thoughts similar to the items on the NBT scale and how often they actually say things similar to these items. When treated as thoughts instead of statements, items on the NBT should tap into both the cognitive/evaluative and affective components of body dissatisfaction. Although body dissatisfaction and the tendency to fat talk are correlated, it is likely that women are more likely to feel (or think about) body dissatisfaction than to vocalize it. Thus, we predicted that scores on the NBT should be significantly higher when the thought instructions were utilized compared to the original instructions emphasizing talk.

Method

Participants

Participants were 47 female undergraduate students ranging in age from 18 to 21 ($M = 18.50$, $SD = 0.81$) who took part in the study to receive course credit as part of an introductory psychology participant pool. A majority (52%) identified as White/Caucasian, 30% as Asian, 6% as Latina, 6% as Black/African American, 5% as multiracial, and 6% as "other"; 61% were first year students, 32% were second year students, and the remainder were juniors or seniors.

Procedure

Participants completed the NBT scale twice at a private computer station in a lab. In one administration, participants were given the original instructions (focusing on talk). After completing this version of the scale, participants responded to an open-ended question asking them to recall the instructions for the scale. In a second version of the NBT scale, instructions were altered to the following, "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 NBT scale were presented was counterbalanced.

Results and Discussion

For the "talk" instructions, 92% ($n = 43$) of participants accurately remembered the instructions for the scale after completing it; 8% ($n = 4$) indicated they did not remember the instructions. For the "thoughts" instructions, 98% ($n = 46$) correctly remembered the instructions and 2% ($n = 1$) did not remember. Paired sample *t* tests revealed that for NBT total scores and both subscale scores, scores for the "thought" instructions were significantly higher than scores for the "talk" instructions (see Table 5). This effect was quite large (over one and a half standard deviations for total NBT scores).

Although it would be difficult to conduct the type of observation necessary to determine the exact frequency with which women make fat talk comments throughout the day, it makes sense to assume that vocalizing such comments should occur less frequently than having thoughts consistent with those comments. Thoughts centered on body dissatisfaction may occur when alone or when in the company of others with whom one is not comfortable sharing such thoughts. The social comparison thoughts in particular are not socially acceptable types of comments to make in many situations. Thus, these data support the assumption that when

responding to NBT items, women were accurately considering how frequently they engage in fat talk rather than simply how frequently they experience body dissatisfaction or social comparison tendencies.

Study 5

To provide additional evidence that NBT scores capture the frequency with which women engage in fat talk with their peers, college women wrote scripts indicating the conversation they would have with a close female friend in several different scenarios. These scripts were coded for the presence of fat talk, and script fat talk was correlated with scores on the NBT scale (which was administered earlier as a pretest). We predicted that NBT scores would predict the number of scenarios in which participants imagined they would engage in fat talk with a friend.

Method

Participants

Participants were 74 college women ranging in age from 17 to 21 ($M = 18.46$, $SD = 0.71$), who participated in the study in exchange for course credit in an introductory psychology course. Most (54%) identified as White/Caucasian, 24% as Asian or Asian American, 7% as Latina, 7% as multiracial, 4% as Black/African American, 3% as Middle Eastern or Arab, and 1% Biracial; 60% were first year students, 32% were second year students, and the remainder were juniors or seniors.

Procedure and Materials

Participants completed the NBT during a group testing session for an introductory psychology participant pool. Within 2–6 weeks of pretesting, participants completed the second portion of the study. While seated at a private computer station, participants read descriptions of six scenarios in which two women might find themselves. For each scenario, they wrote a script for a conversation that might occur between themselves and a female friend in that context. The scenarios were designed such that they provided a context in which fat talk might occur but was not inevitable. They included (a) getting ready for a date, (b) looking at pictures of oneself on Facebook, (c) eating ice cream, (d) watching a women's track team run by, (e) looking at magazine advertisements, and (f) shopping for bathing suits. The order of scenarios was counterbalanced. Participants typed the hypothetical conversation into an open-ended form. The form was designed such that participants indicated how they would start the conversation. Then participants wrote a response they would receive from their friend, followed by the reply they would give to the friend. They continued this dialogue, writing both sides of the conversation. The form allowed for a total of 14 responses (7 for oneself and 7 for one's friend). Two female research assistants independently coded responses to each vignette for the presence or absence of fat talk from the participant. Interrater reliability was acceptable for each scenario (all $\kappa s \geq .83$). Disagreement was resolved through discussion with a third research assistant. Total fat talk scores were created by summing the number of scenarios in which fat talk occurred, ranging from 0 (*no fat talk in any scenario*) to 6 (*fat talk in every scenario*).

Results and Discussion

Participants were most likely to include fat talk in their scripts in the shopping scenario (76% of participants) and least likely in the Facebook and magazine scenarios (23% of participants for both). For example, in the shopping scenario, participants wrote conversations that included comments such as "My ass looks really big. Your stomach is amazing. I would kill to have it," or "I look enormous . . . I really should work out more." In the Facebook scenario, one participant wrote, "Look at this one [picture]. My thighs look like they could be their own planet!" As predicted, total NBT scores were significantly associated with the number of scripts in which participants fat talked, $r(73) = .33$, $p = .004$. Scores on each of the two NBT subscales were also significantly correlated with script fat talk: $r(73) = .33$, $p = .04$, for body concerns; $r(73) = .34$, $p = .004$, for body comparison.

General Discussion

Overall, these studies provide strong initial evidence that the newly created, 13-item NBT scale is an appropriate and useful tool for assessing the frequency with which women engage in the type of NBT typically referred to as fat talk. Both EFA and CFA supported the existence of two meaningful subscales on the NBT scale (the body concerns subscale with items addressing women's tendency to make negative comments about their own weight/body shape and the body comparison subscale with items addressing women's tendency to make both explicit and implicit upward social comparisons between their bodies and the bodies of other women). However, an initial test of a hierarchical structure for this measure also fits well. Scores on the two subscales behave similarly to total scales in terms of their correlations with related constructs. Thus, at this point, there is no strong evidence to support scoring and analyzing these subscales separately. However, given that ours are the first studies using this measure, we reported data for both subscales in addition to total scores to leave the door open for future investigations of this measure's structure and studies examining whether scores on the two subscales may diverge in certain contexts/populations or in response to intervention. In particular, there is a need to examine the properties of this scale with a more diverse sample of women, both in terms of age and race/ethnicity. Given Nichter's (2000) finding that White/Caucasian girls seemed especially prone to fat talking

and the relative paucity of research on the association between age and fat talk, this research is especially important.

These initial data indicated that scores on the NBT scale were sufficiently reliable in these samples (both in terms of internal consistency and test–retest reliability). Several types of validity evidence supported the construct validity of scores on the scale and its subscales with samples of college women. Scores on the NBT scale were correlated with scores on a variety of measures of body image disturbance and predicted variance in body dissatisfaction and eating disordered behavior above and beyond other known predictors. Altering the instructions for the NBT scale to address thoughts rather than talk demonstrated that women can reliably distinguish between thinking body-dissatisfied thoughts and actually vocalizing these thoughts to others. Importantly, scores on the NBT scale were not correlated with scores on a measure of socially desirable responding or with neuroticism, although they did demonstrate a small but significant correlation with extraversion.

The NBT scale offers researchers interested in body image disturbance an efficient way to assess what a growing body of research suggests is a key variable in understanding how social forces and peer relations shape and reflect body dissatisfaction. The term ''fat talk'' entered the research literature relatively recently (with Nichter & Vuckovic, 1994). A number of questions remain unanswered with respect to the correlates and effects of fat talk; our scale should aid researchers in asking and answering these questions.

For example, the vast majority of research on fat talk has been conducted in the United States and the United Kingdom with samples of young (predominantly college age) women who are more likely to be in the CDC-defined healthy weight range than older women. This short, self-report scale could be used to assess how variables such as age, ethnicity, body size, or consumption of thin-ideal media are associated with the tendency to fat talk. Of particular interest is whether and how often fat talk occurs among women from cultures outside of the United States and the United Kingdom. Although the language used in our items is simple and jargon free, future research should investigate the extent to which the scale can be used in other cultures (and other groups in the United States beyond college women) whose language for discussing body dissatisfaction may differ.

Groups of U.S. college women have shown interest in interventions designed to encourage healthier body image, but the components of these programs specifically focused on reducing fat talk have not been empirically evaluated. Our scale could be useful in such evaluation research and could be used to track changes in fat talk frequency over time or identify groups in particular need of intervention. Because fat talk is likely both an expression of body discontent and an implicit expression of a group's social norms (particularly with respect to internalization of the thin body ideal), social groups such as sororities, various types of teams, or other defined peer groups should provide particularly interesting contexts for future research. The instructions to the scale could be easily modified to assess how often women fat talk with members of specific social groups (e.g., female relatives, members of an athletic team). Using the scale in this manner could help to illuminate how different social groups engage in conversations about body-related concerns and perhaps how time spent with these groups can help explain the elastic nature of women's body image (Myers & Biocca, 1992).

Additionally, it will be important to investigate whether fat talk is more frequently used among women with eating disorders compared to controls. Although the frequency with which women engage in fat talk is positively correlated with eating disordered behavior (Clark et al., 2010; Ousley et al., 2008), researchers have not investigated the frequency of fat talk in patient populations. This is an important future direction because peer influences are an established risk factor for eating disordered attitudes and behavior, and they also play a role in the development of eating disorders (Chiodo & Latimer, 1983; Eisenberg, Neumark-Sztainer, Story, & Perry, 2005; Mitchell, Hatsukami, Pyle, & Eckert, 1986; Paxton, Schutz, Wertheim, & Muir, 1999; Schutz & Paxton, 2007). Better understanding fat talk in clinical populations may be important for informing treatment. Despite the lack of research on fat talk in individuals with eating disorders, fat talk is a major focus in cognitive behavior treatment of eating disorders (Fairburn, Cooper, Shafran, & Wilson, 2008).

The NBT scale might most accurately be described as a pseudofrequency scale because actual counts of fat talk comments made over a period of time are not directly assessed. However, support of the contention that women can use the NBT scale to accurately gauge how frequently they engage in fat talk was demonstrated by the significant correlation between scores on the NBT scale and the frequency with which women made fat talk comments when writing scripts of conversations in which they would engage with female friends. Future researchers might use experience sampling methods to more directly examine day-to-day frequency of fat talk.

As the introduction to our article indicated, both researchers and laypeople are worried about fat talk. The last two decades of psychological research have included an explosion of studies examining sociocultural influences on women's body image disturbance. A media culture that elevates an ultrathin body ideal as a marker of both success and beauty in women has been the primary target of concern in such research (see Levine & Murnen, 2009) and in mainstream media discussions of the topic. Fat talk may be a particularly pernicious outcome of cultures that put inordinate emphasis on the size and shape of women's bodies. When conversations centering on dissatisfaction with one's body become the norm, it becomes more difficult for women with healthy body attitudes to speak up and influence others positively. Furthermore, the sense of what constitutes a healthy body size for women may become dangerously distorted when healthy-weight or extremely thin women engage in fat talk.

Intervening with respect to a relatively circumscribed behavior like fat talk may provide a viable route for reducing women's body image disturbance and a means for shifting social norms with respect to how women talk about their bodies. We hope the NBT scale will facilitate the evaluation of these programs and provide a quick and simple method for researchers interested in body image to assess this important variable.

Appendix

Negative Body Talk Scale

When talking with your friends, how often do you **say** things like . . .

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 with your friends. 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 with your friends.

When talking with your friends, how often do you **say** things like . . .

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

1 I wish my body looked like hers.[b]
2 I need to go on a diet.[a]
3 I feel fat.[a]
4 She has a perfect stomach.[b]
5 This outfit makes me look fat.[a]
6 Why can't my body look like hers?[b]
7 She has a perfect body.[b]
8 I need to start watching what I eat.[a]
9 She's in such good shape.[b]
10 I wish I was thinner.[a]
11 I wish my abs looked like hers.[b]
12 I think I'm getting fat.[a]
13 You never have to worry about gaining weight.[a]

[a]Body concerns subscale. [b]Body comparison subscale.

Authors' Note

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