A NATURALISTIC STUDY OF FAT TALK AND ITS BEHAVIORAL AND
AFFECTIVE CONSEQUENCES

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A Naturalistic Study of Fat Talk and its Behavioral and Affective Consequences

Over the past two decades, a distinct style of verbal expression has become prevalent among adolescent and young adult women. This form of expression, referred to as “fat talk”, can be used to describe a conversation involving negative self-statements, complaints about physical appearance, and weight management (Nichter & Vuckovic, 1994). Fat talk often involves self-statements about being fat or overweight, even when not objectively true (Clarke, Murnen, & Smolak, 2010) and can be accompanied by additional statements regarding behaviors women might use to change their bodies, such as dieting or exercise.

Based upon their anthropological research, Nichter and Vuckovic (1994) coined the term “fat talk” to describe the statements and conversations observed in adolescent girls about their bodies. Fat talk was first defined as a highly ritualized conversation involving explicit negative self-statements, complaints about physical appearance, and weight management (Nichter & Vuckovic, 1994). Various authors have provided alternatives to this definition. Other definitions of fat talk include “women discussing their bodies disparagingly for impression management while interacting with one another” (Craig, Martz, & Bazzini, 2007, p.244), “dialogues among women involving negative body-focused discussions” (Tompkins, Martz, Rocheleau, & Bazzini, 2009, p. 292), and “the tendency of many girls and women to disparage their own bodies by claiming they are ‘so fat’ even if it is not objectively true” (Clarke et al., 2009, p.1). Despite the existence of

multiple definitions of fat talk, Nichter and Vuckovic's definition remains the most prominent and widely used in fat talk research and is the definition selected for use in this research.

Existing Research on Fat Talk

From the beginning of anthropological and formal research on fat talk, it has been apparent that fat talk is much more common among women than men (Martz, Petroff, Curtin, & Bazzini, 2009; Payne, Martz, Tompkins, Petroff, & Farrow, 2011). The frequency of fat talk has a slightly negative relationship with age, making it more common among adolescents and young adults than with older women (Martz et al., 2009). The practice of engaging in fat talk often begins in middle school, but persists into the high school and college years (Nichter, 2000). Nichter and Vuckovic (1994) observed fat talk occurrences most commonly among Caucasian women, although it is used by girls and women of other races and ethnicities. Fat talk generally occurs among girls and women of average weight (Craig et al., 2007). Overweight girls are not observed engaging in fat talk frequently, as it makes them feel more self-conscious about their flaws that are more objective than the perceived flaws of normal weight adolescents (Nichter, 2000). Women report more perceived pressure to engage in fat talk compared to men, regardless of their level of body dissatisfaction, and it is well recognized as a norm for females in adolescent and young adult populations (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006). Males often have a low tolerance for fat talk (Nichter, 2000), but recognize the social expectation

for women to engage in these conversations (Britton et al., 2006). Women with eating disorders engage in fat talk more frequently than their non-eating-disordered counterparts (Ousley, Cordero, & White, 2008), suggesting a relationship between fat talk, body image disturbance, and disordered eating practices.

Through focus groups and more general interactions with adolescent and young adult women, Nichter found that fat talk has a wide range of functions that extend well beyond the surface expressions of body dissatisfaction (Nichter, 2000), many of which may be perceived negatively. Adolescent girls use statements of fat talk to express distress and negative feelings that they are experiencing about themselves, their shape and weight, and their eating and exercise habits. Those who engage in fat talk typically view themselves as overweight, although the majority are of normal weight, and believe that it is beneficial to call attention to their own perceived imperfections before others can do so in a way that might be more damaging (Nichter, 2000). Making this type of statement can serve as a method of gauging how others feel about them through their response. Fat talk is also used to apologize for or excuse food indulgence—an act which is viewed as shameful for a large number of adult women and adolescent girls. In a similar self-protective manner, this type of expression is frequently used for impression management in interactions with other females, regardless of actual body image or body satisfaction of the individual making the statement (Tucker, Martz, Curtin, & Bazzini, 2007). This is likely the result of the persistent and pervasive belief that self-degradation leads to greater liking and acceptance from other women.

Although the overall tone of fat talk is negative, it can have some uses that may be viewed as somewhat positive. A primary function of fat talk appears to be the building and maintenance of social relationships with peers. Engaging in fat talk often creates and maintains group affiliation by disclosing vulnerability and by providing positive feedback and reassurance to others. Although fat talk typically occurs with females who know each other (Tucker et al., 2007), these statements and conversations can also function as consensus building outside the immediate group of friends by expressing what most adolescents and young adults view as common and expected sentiments among women in their peer group (Nichter, 2000).

Laboratory Research

Several studies have examined the impact of fat talk exposure in a laboratory setting. The earliest of these studies relied on the use of confederates to manipulate participants' fat talk experiences. The first published laboratory study involving fat talk investigated the effects of fat talk on body dissatisfaction and negative affect by examining differences in outcome following exposure to fat talk as compared to engaging in a conversation about a neutral topic (Stice, Maxfield, & Wells, 2003). Participants in this study by Stice and colleagues (2003) engaged in a pre-scripted conversation with an attractive female confederate lasting three to five minutes during which the confederate complained about her weight and discussed an extreme diet and exercise routine she was using to lose weight or she discussed her college classes and her upcoming plans for the

weekend. Participants who were exposed to the fat talk conversation experienced significant increases in body dissatisfaction from pre- to post-conversation, whereas participants exposed to the neutral topic experienced no change in body dissatisfaction. No change in negative affect was observed in either group, nor were there moderation effects for trait thin-ideal internalization, body dissatisfaction, or social support on the relationship between fat talk and body dissatisfaction or negative affect (Stice et al., 2003). Researchers proposed that the experimental conditions might have been too subtle in fat talk presentation to elicit some of the hypothesized effects, particularly in relation to effects of fat talk exposure on negative affect. Additionally, post-conversation measures were completed within an hour of the exposure, and significant changes in negative affect may take a longer period of time to surface (Stice et al., 2003). Another possible explanation is that any change in negative affect following fat talk exposure may be brief and transitory and the methodology used in this study may not have been able to capture these effects.

Gapinski and colleagues (2003) examined the impact of fat talk exposure on women in objectifying situations by having participants overhear a confederate engaging in fat talk while trying on a swimsuit. These effects were compared to the experience of individuals in a control condition, who were instructed to try on a sweater rather than a swimsuit (Gapinski, Brownell, & LaFrance, 2003). As hypothesized, participants in the objectifying condition experienced higher levels of negative emotional states compared to those in the non-objectifying condition. Somewhat surprisingly, for women in the objectifying condition, hearing fat talk resulted in less negative emotion than when the confederate made neutral comments. In contrast, women in the control condition

experienced greater negative emotion when the confederate used fat talk compared to overhearing neutral comments. These results suggest that, although fat talk does appear to have a negative impact on women's affective state at times, it may serve as a protective factor when women are in objectifying situations.

Tucker and colleagues (2007) utilized confederate manipulation to understand the impact of the way in which a woman talks about her body on her perceived likeability, the impact of social context on women's tendency to engage in fat talk, and the effect of body esteem on participants' responses in fat talk conversations. In this study, participants participated in a videotaped interview with a confederate research assistant. Confederates and participants responded to an open-ended question asking about their feelings about their bodies and physical appearance and to provide a numerical rating representing how satisfied they are with their bodies. The confederate provided either a negative, neutral, or positive comment about her own body and provided either a low, moderate, or high body satisfaction rating based on the type of comment she made. Participants with lower trait body esteem had significantly lower body satisfaction ratings compared to those with higher body esteem and participants in the negative body talk condition had the lowest body satisfaction ratings during the interview (Tucker et al., 2007). Participants in the study responded in a similar manner to the confederate (i.e., if the confederate engaged in negative body talk, the participant also made negative comments about her own body).

A recent study conducted by Salk and Engeln-Maddox (2012) assessed participant responses following different types of fat talk exposure from two confederates while viewing a picture of a thin, attractive female model in a bikini. There were three separate

conditions: one in which both confederates engaged in fat talk (fat talk condition), a second where the first confederate engaged in fat talk and the second confederate challenged the first woman's fat talk response (challenge condition), and a third condition where both confederates had a neutral response (control condition). Results found overall negative effects of fat talk, with participants in the fat talk condition providing higher ratings of body dissatisfaction and guilt compared to the other two conditions. Participants were also more likely to engage in fat talk when exposed to others participating in fat talk and women who chose to engage in fat talk had higher trait body dissatisfaction than those who did not engage in fat talk. Salk and Engeln-Maddox concluded that, based on these results, fat talk with strangers appears to be qualitatively different from fat talk with friends or acquaintances (2012).

Vignette Studies

Other studies have utilized alternative methods of varying the presence and nature of fat talk in the laboratory environment. Britton and colleagues (2006) developed a series of vignettes describing interactions among a small group of college women that were subsequently used in a series of studies examining the impact of fat talk (Barwick, Bazzini, Martz, Rocheleau, & Curtin, 2012; Tompkins et al., 2009). These vignettes described a group of four young women, three of whom initially made negative body-focused comments. The response by the fourth young woman, the target individual, was varied by the researchers across conditions. In the first of the studies using these vignettes (Britton et

al., 2006), participants were provided with three possible responses that the target individual might make: a positive, self-accepting comment; a neutral response or no comment; and a negative, self-degrading comment. Participants were asked to indicate how they themselves would typically respond in a similar situation, how they thought most women would typically respond, which option they thought would result in the target being viewed most positively by other women, and which option they thought would result in the target being viewed most negatively by men. Participants in a second part of this study were also allowed an opportunity to provide an open-ended response with what they thought the target individual might say to her friends in the situation described in the vignette. Both male and female participants in this study indicated they thought that others would self-degrade in the vignette situation; however, there were no differences in rates of the three responses regarding how women thought they themselves would respond. Both men and women rated the self-degrading option as most attractive to other women and the self-acceptance option as most attractive to men. The open-ended responses revealed that both male and female participants expected the target to self-degrade (Britton et al., 2006).

In a follow-up vignette study, Tompkins and colleagues (2009) proposed that fat talk and body talk may be a function of conforming to other women in order to be liked and accepted. They examined this hypothesis by providing four possible conditions using various scenarios in which the target individual in the vignette engaged in positive or negative body talk that either conformed or did not conform with the type of body talk used by the other individuals in the scenario. Participants rated how likeable they found the target and how likely they believed the target's companions found her based on the target's

response. Tompkins and colleagues found that, in general, participants rated their personal liking of the target higher than their expectations of the target's companions liking.

Although they found no difference between personal liking and the expectation of others' liking when the target conformed with her peers, personal liking was significantly higher than expected others' liking when the target's response did not conform with her peers' style of body talk, regardless of whether or not the target responded with positive or negative body talk.

A third study utilizing this vignette protocol examined the effects of varying weight of the target individual and the valence of the target's body talk on participants' judgments of the target's likeability and personality traits (Barwick et al., 2012). Participants in this study read a vignette in which the response of the target to her friends' fat talk was either positively or negatively valenced. Participants were also able to view a photograph of either a normal weight or overweight individual and were told that the woman in the photograph was the target individual in the vignette they read. In general, results found that participants found it unsurprising, typical, and likely that women would speak negatively rather than positively about their bodies. They did indicate that it was more surprising when the target was of average weight compared to the overweight condition. The target was rated as having more favorable personality traits when she engaged in positive body talk; however, participants thought they themselves were more likely to make a similar comment in the negative talk scenario compared to the positive talk scenario.

Only one study to date has examined the effects of fat talk longitudinally. Arroyo and Harwood (2012) conducted a study focused on the communication mechanisms

underlying fat talk to explore both the causes and outcomes of engaging in fat talk.

Participants in the first part of this two-part study completed frequency measures of fat talk at six time points over a three week span in addition to completing several psychological measures at the first and last of these time points. They found that fat talk frequency predicted decreased levels of body satisfaction and higher levels of depression, but found no evidence that fat talk impacts self-esteem or sociocultural pressure to be thin.

Additionally, there was no evidence that fat talk was an outcome of existing body image and mental health issues. Participants in the second part of this study completed the same fat talk frequency and psychological measures as those in the first part of the study, but completed all measures at two time points spaced two weeks apart. Participants were asked to indicate both how frequently they themselves made fat talk comments as well as how frequently they heard others use fat talk comments. They found that low body satisfaction and low self-esteem at time one predicted using more fat talk comments, but no variables predicted hearing more fat talk comments. Increased frequency of using fat talk at time one predicted higher levels of depression and pressure to be thin at the later time point and hearing fat talk at time one predicted higher perceived pressure to be thin at time two.

Compared to the first part of this study, which took place over three weeks, researchers found more significant effects of body satisfaction on frequency of fat talk over the two week span in the second part of the study.

To summarize briefly, existing research on fat talk has identified this type of expression as one that is both common and normative among women (Arroyo & Harwood, 2012; Martz et al., 2009, Payne et al., 2011). Fat talk communication between women

operates based on reciprocity, such that when one woman engages in fat talk, any female companions are expected to also make a negative statement about their own bodies (Barwick et al., 2012; Britton et al., 2006; Salk & Engeln-Maddox, 2012; Tucker et al., 2007). Exposure to fat talk is also associated with increases in psychological variables, including body dissatisfaction (Arroyo & Harwood, 2012; Salk & Engeln-Maddox, 2012; Stice et al., 2003; Tucker et al., 2007; Warren, Holland, Billings, & Parker, 2012), and negative emotional states (Arroyo & Harwood, 2012; Gapinski et al., 2003; Salk & Engeln-Maddox, 2012). For those women higher in risk for body dissatisfaction, fat talk likely has greater negative consequences. Two potential variables may be related to women's fat talk experiences: self-objectification and thin-ideal internalization.

Objectification Theory

Fat talk has been described as a “social extension of body objectification” (Martz, Petroff, Curtin, & Bazzini, 2009), making objectification theory a useful framework for understanding the function and effects of engaging in fat talk. Fredrickson and Roberts (1997) suggest that women's bodies are sexualized by our society and culture and by men as a whole. This sexual objectification involves viewing a woman's body or sexual functions as representative of her person. Sexual objectification of women exists in the media, culture, and in everyday situations, and the potential for objectification by others is virtually unavoidable for most women. The current culture socializes women to view and value themselves based on their physical appearance and to treat themselves, to some

extent, as objects. When this practice becomes incorporated into a woman's self-concept, it is referred to as self-objectification. The tendency for women to self-objectify often begins during or shortly after puberty and continues throughout the lifespan. Although the extent to which an individual experiences self-objectification varies, it is generally considered to be an unfortunately common experience.

Self-objectification has many consequences that affect women's mental health and psychological well-being (Fredrickson & Roberts, 1997). When individuals do not measure up to an internalized or cultural ideal or standard, they typically experience shame. Many women also experience appearance-related anxiety regarding the evaluation of their bodies by others, particularly when they are uncertain of how and when their bodies will be evaluated. Activities and thoughts are typically disrupted when attention is called to appearance. When a woman becomes self-conscious as a result of objectification, whether self- or otherwise, her concentration is derailed, interfering with her ability to fully engage in productive and rewarding activity. Fitting in with the standards of the self and culture often requires ignoring internal cues, such as disregarding hunger signals during periods of strict dieting, which may result in a lack of awareness of internal bodily states. Self-objectification is also believed to contribute to various mental health problems, such as depression, sexual dysfunction, and eating disorders. Given the relationship that fat talk may be conceptualized as an expression of self-objectification and that self-objectification is related to various psychological outcomes, self-objectification may strengthen the impact of fat talk.

Internalization of the Thin Ideal

In addition to the potential effects that self-objectification may have on the impact of fat talk, internalization of the thin ideal may also affect the relationship between fat talk and potential psychological and behavioral outcomes. Women often experience pressure to be thin and current societal values often dictate that women must be thin and attractive in order to be valuable. Thin-ideal internalization occurs when women incorporate this societal value of thinness into their system of self-evaluation, such that they only view themselves as more or less valuable based on how well they conform to this standard of appearance (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). Because the thin ideal promoted by the media and Western society as a whole is unattainable for most women, those who internalize this ideal often experience body dissatisfaction (Cafri, Yamimya, Brannick, & Thompson, 2004; Stice, 2002; Stice, Shaw, & Nemeroff, 1998; Thompson & Stice, 2001) due to the discrepancy between their actual bodies and the bodies they believe they should have. Given that internalization of the thin ideal has a strong relationship to body dissatisfaction, it is unsurprising that it is also believed to be a causal factor of eating disorder symptomatology (Stice, 2002; Stice & Shaw, 1994). Fat talk may function to activate the thin-ideal schema in women who have internalized the thin ideal, which may increase the negative impact that fat talk has on psychological functioning.

Present Study

Despite the prevalence of fat talk, the negative implications that fat talk has for women, particularly adolescent girls and college students, and the context within which it seems to occur, very little empirical research has been conducted to examine the nature of this type of conversation and its emotional and behavioral consequences. Fewer than 30 articles containing the term “fat talk” have been published since the term was first coined nearly two decades ago (Nichter & Vuckovic, 1994), and many of these are anthropological or non-empirical in nature.

Current studies generally focus on body dissatisfaction, the norm of reciprocity of fat talk, and social consequences of fat talk. Two types of empirical studies have emerged: laboratory-based studies and vignette studies. Laboratory studies, which typically rely on the use of confederates to present or elicit engagement in fat talk, maximize internal validity at the expense of external validity. Vignette studies use pre-written examples of fat talk that do not directly involve the participant; thus, the direct impact of participation in fat talk cannot be assessed. Both laboratory and vignette studies only allow for subtle manipulation of variables and responses and may not adequately reflect how fat talk occurs in daily life. Only one study has assessed fat talk longitudinally (Arroyo & Harwood, 2012); however, they only assessed fat talk outcomes as baseline and post-study measures and did not utilize repeated measures of these variables to determine more nuanced outcomes of fat talk exposure. Additionally, participants in the study by Arroyo and Harwood (2012) reported data retrospectively over a period of up to several days and data

was analyzed in an aggregate fashion. In addition, behaviors directly or indirectly resulting from fat talk have never been formally examined or assessed.

To date, there are no published naturalistic studies of the frequency and impact of fat talk. Some evidence suggests that the impact of fat talk on body evaluation, affect, self-esteem, and depression may be stronger when it occurs between close female friends (Rudiger, 2010), which points to the need for evaluation of this communication style in a naturalistic setting. It is also important to note that the resulting behaviors and long-term (e.g., two or more hours following fat talk exposure) affective and psychological consequences of fat talk have not yet been assessed empirically.

This study was designed to better describe and understand the nature of fat talk as it occurs on a day-to-day basis among college women. Specifically, the present investigation sought to determine the frequency with which fat talk occurs and identify the affective and behavioral consequences of fat talk. Ecological momentary assessment (EMA) was used in order to assess fat talk experiences as they occur (Stone & Shiffman, 1994). It was hypothesized that 1) engaging in fat talk will be followed by increases in body dissatisfaction, body checking, negative affect, and disordered eating behaviors, 2) episodes of participating in fat talk will be associated with greater body dissatisfaction, body checking, negative affect, and disordered eating behaviors than episodes of overhearing fat talk, and 3) the relationships between fat talk and body dissatisfaction, body checking, negative affect, and disordered eating behaviors will be moderated by trait thin-ideal internalization and trait self-objectification.

Method

Participants

Participants were 67 female college students. The initial intent of the researchers was to recruit participants based on their living arrangements, with a focus on sorority membership. However, upon evaluation of mass testing data, it was determined that this would not be feasible. Thus, participants were volunteers who agreed to participate in a study about thoughts and feelings related to fat talk experiences. The study was open to college women, 18 years of age or older; no other selection criteria were used. The mean age of the sample was 21.08 (SD = 7.607; Range = 18-60 years). Of these women, 30.3% were first year students, 21.1% were sophomores, 13.6% were juniors, and 9.1% were seniors. Two students (3.0%) were non-degree-seeking students. The majority of the sample was Caucasian (82.4%), and the remaining participants identified themselves as African-American (9.8%) or Asian (7.8%). Body mass index (BMI) of the sample ranged from 15.45 to 42.98, with a mean BMI of 24.21 (SD = 4.28).

Apparatus

Palm Centro Personal Data Assistant (PDA). All participants were given a Palm Centro PDA that was programmed to sound an alarm whenever they were to complete a

series of questionnaires. The measures were programmed into the PDA using the Purdue Momentary Assessment Tool (PMAT; Weiss, Beal, Lucy, & McDermid, 2004) software so that participants could complete the questionnaires directly on the PDA device.

Measures

Baseline Questionnaire Battery

Thin-Ideal Internalization. The Sociocultural Attitudes Towards Appearance Questionnaire – 3 (SATAQ-3; Thompson et al., 2004) is a self-report measure that measures influence from and acceptance of the sociocultural appearance ideal. Participants respond to 30 items on a 5-point Likert scale ranging from 1 = *definitely disagree* to 5 = *definitely agree*. Responses are then summed to create a total score, with higher scores reflecting higher recognition and acceptance of this ideal. The SATAQ-3 also has four subscales: Information, Pressures, Internalization – Athlete, and Internalization – General. The SATAQ-3 shows good internal consistency ($\alpha = .96$). The 9-item Internalization – General subscale was selected for use in this study to measure internalization of the thin ideal. This subscale demonstrates good internal consistency ($\alpha = .94$). Additionally, samples of eating disordered and eating-disturbed individuals exhibit higher scores on this subscale than normal controls (Thompson et al., 2004). In this sample, internal consistency was .94

Trait Self-Objectification. The Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998) measures tendency toward self-objectification. Participants are asked to rank a list of 10 body attributes based on impact on physical self-concept from greatest (rank = 1) to least (rank = 10). When scoring this measure, each item is assigned a value based on the participant's rank (i.e., an item ranked first received a value of 9, an item ranked second received a value of 8, etc.), with each item receiving a value between 0 and 9. Two subscales were calculated by separately summing five appearance-focused items and five competence-focused items. Total SOQ scores were then calculated by subtracting the competence-focused subscale from the appearance-focused subscale. Possible scores ranged from -25 to 25, with higher scores representing greater self-objectification. Scores on the SOQ positively correlate with measures of body-size dissatisfaction and physical appearance anxiety (Noll & Fredrickson, 1998).

Palm Pilot Measures

Qualitative Fat Talk Questions. Participants were initially asked if they have overheard fat talk since the last alarm and, if so, how many instances of fat talk they overheard. They were also asked if they have engaged in fat talk since the last alarm, and if so, they were asked to indicate the number of times they had engaged in fat talk. If they endorsed engaging in fat talk, participants were instructed to respond to several questions assessing qualitative aspects of the most salient experience of fat talk since the last alarm sounded. These questions were chosen based on pilot data collected through structured

interviews with undergraduate women. The following question asked if participants found themselves comparing themselves to others during this participation in fat talk. If they endorsed comparison, participants were then asked to rate how attractive they feel compared to the primary individual to whom they compared during the conversation on a 5-point Likert scale ranging from 1 = *much less attractive* to 5 = *much more attractive* and to indicate their level of satisfaction with their body size and shape after this conversation on a 5-point Likert scale ranging from 1 = *very unsatisfied* to 5 = *very satisfied*. All participants were asked to indicate if they engaged in the following disordered eating behaviors since the last alarm: exercise, diet restriction, self-induced vomiting, laxative use, diuretic use, and bingeing. These items were summed to compute a total frequency of disordered eating behaviors variable.

State Body Dissatisfaction. The State Self-Esteem Scale (SSES; Heatherton & Polivy, 1991) is a self-report measure that assesses momentary self-esteem. The SSES contains three subscales: Performance, Social, and Appearance. The 6-item Appearance subscale was chosen to assess state body dissatisfaction for the purposes of this study. Participants indicate how true an item is for them at that time using a 5-point Likert scale ranging from 1 = *not at all* to 5 = *extremely*. This subscale has been shown to correlate with measures of dietary restraint, satisfaction with current figure, body size estimation, depression, and global self-esteem (Heatherton & Polivy, 1991), and the overall scale shows good internal consistency ($\alpha = .92$).

Body Checking. The Body Checking Questionnaire (BCQ; Reas, Whisenhunt, Netemeyer, & Williamson, 2002) is a self-report measure in which participants indicate

how frequently they have engaged in checking the size, shape, and appearance of various body parts since the last alarm sounded using a 5-point Likert scale ranging from 1 = *never* to 5 = *very often*. The original 23-item scale shows good psychometric properties, including internal consistency ($\alpha = .83-.92$) and test-retest reliability ($r = .94$). A brief version consisting of the 10 most commonly endorsed items has been successfully adapted for Palm Pilot use in previous studies (Ridolfi, Myers, Crowther, & Ciesla, 2011). The brief version was selected for use during the PDA portion of this study.

Affect. The Positive and Negative Affective Scale – Extended Form (PANAS-X; Watson & Clark, 1994) is a self-report measure used to assess state affect. Participants indicate how strongly they are currently experience a feeling or emotion that is presented to them using a 5-point Likert scale ranging from 1 = *very slightly or not at all* to 5 = *extremely*. The Negative Affect subscale was chosen for the purposes of this study, totaling 10 items.

Procedure

Participants registered for two separate appointments using the university's online psychological research website. During the initial appointment, participants provided informed consent and completed baseline measures, including the SATAQ-3 and the SOQ. After completing the initial measures, participants were provided with a Palm Centro PDA and trained on its use. They then completed daily assessments in response to 25 random signals over the next five days, with five random signals occurring per day.

Signals occurred between the hours of 8:30 am and 11:30 pm, and there was a minimum spacing of two hours between random signals. Participants were allowed up to 10 minutes to respond to the initial signal when each random signal sounded before the signal was considered missed and participants were no longer able to respond to questionnaires. When these signals occurred, participants responded to several questions pertaining to their experiences of fat talk since the last alarm, questions assessing binge eating and compensatory weight control strategies, the Appearance subscale of the SSES, the brief version of the BCQ, and the Negative Affect subscale of the PANAS-X. Following the completion of the PDA portion of the study, participants attended their second scheduled appointment and responded to four open-ended follow-up questions assessing problems that may have occurred with the PDA device, changes in thoughts and behaviors during the course of the study, and suggestions for changes to the study. Following their second appointment, participants were contacted via e-mail to notify them about their compliance during the PDA portion of the study and their resulting compensation.

Participants received seven research points toward their psychology research requirements for taking part in this study. In order to increase compliance rates, participants received entries into a raffle for an iPad 2 in addition to research points based on their level of compliance. Participants who responded to more than 75% of signals received four raffle entries, participants who responded to 51 to 75% of signals received two raffle entries, participants who responded to 25 to 50% signals received one raffle entry, and participants who responded to less than 25% of signals received no raffle

entries in addition to their research points. Similar methods and level of compensation have been successful in increasing compliance in previous naturalistic studies conducted by our lab (Myers, Ridolfi, Crowther, & Ciesla, 2012; Ridolfi et al., 2011).

Statistical Analyses

Preliminary exploratory analyses examined normality, outliers, and missing data. Multilevel modeling (MLM) was used to analyze the relationship between fat talk and its consequences (i.e., body dissatisfaction, body checking, negative affect, and disordered eating behaviors) and to examine whether this relationship was moderated by trait thin-ideal internalization and trait self-objectification. In MLM, intra-individual Level-1 equations are used to model within-subject relationships. In this analysis, fat talk and its consequences, as well as whether the participant engaged in or overheard fat talk, will be examined using Level-1 equations. Level-2 equations use the between-subject predictors to model inter-individual differences in the Level-1 relationships. In this analysis, trait thin-ideal internalization and trait self-objectification were examined as Level-2 variables. MLM is appropriate for use with longitudinal data and allows for analysis of multiple time points of data for each participant (Bryk & Raudenbush, 1992), making it ideal for use with ecological momentary assessment data.

Data Preparation

The data were examined for missing data prior to running analyses. MLM analyses can handle a large amount of missing data in the level-1 dataset, but not the level-2 dataset (Bryk & Raudenbush, 1992). As a result of participants not responding to random signals, missing data was found in the level-1 dataset; however, this data was left as missing for analysis. In the level-2 dataset, one participant did not respond to any items on the SOQ. This participant's data was removed from the level-2 dataset that included SOQ. Because of the removal of this participant's data, her data at level-1 was not included in any analyses that included SOQ as a level-2 variable. This participant's data was not excluded from any other analyses.

Results

Quality Analyses

Participant cooperation with the study requirements was determined by computing compliance rates. Entries were assessed on a per participant basis. The maximum number of completed entries possible was 25, as participants could be signaled up to five times per day by the PDA over the course of the five day study. Participants responded to an average of 16.28 signals ($SD = 4.20$), with number of responses ranging from 3 to 25 for each participant. Two participants responded to less than 25% of random signals (12% and 16% respectively). This response rate was determined to be inadequate for analysis and these two participants were excluded from further analyses, leaving 65 participants who were included in all statistical analyses. This reduced the total number of signals to 1610. Of these signals, 1058 were completed entries, 441 were skipped entries, and 111 were *do not disturb* entries. Entries missed due to participants utilizing the *do not disturb* feature on the PDA device were considered to be in compliance with the study protocol because they were not simply ignoring or missing questionnaires. Thus, compliance rates were calculated by dividing the sum of the completed entries and the sum of the *do not disturb* entries by the total number of entries, resulting in a compliance rate of 72.6% for the current sample.

Aggregate and Descriptive Analyses

Descriptive statistics were examined to evaluate the amount and nature of fat talk episodes reported by the analysis sample. Results indicated that 96.9% of participants reported experiencing at least one fat talk episode during the course of the study, with 3.1% reporting no fat talk experiences during the study. Total number of fat talk episodes reported by participants over the course of five days ranged from zero to 27. On average, participants experienced 9.92 episodes of fat talk ($SD = 6.89$) during the five days of the study. When they had experienced at least one fat talk episode, participants indicated participating in the fat talk 80.0% of the time and overhearing fat talk by others 74.2% of the time. Participants' responses to questions assessing the nature of the most salient experiences of fat talk during the study reveal that participants initiated 26.2% of these experiences. The remaining 73.8% of the most salient fat talk experiences were initiated by someone other than the participant (i.e., a family member, friend, acquaintance, or stranger).

Effect of fat talk experience on body dissatisfaction, body checking, negative affect, and disordered eating behaviors

Separate Multilevel Modeling (MLM) analyses were used to determine whether experiencing fat talk resulted in a statistically significant increase in body dissatisfaction (BD), body checking (BC), negative affect (NA), and disordered eating behaviors (EB). Prior to running analyses to test study hypotheses, four separate unconditional models were conducted. These four models, one for each outcome variable, included no level-1

or level-2 variables entered into the equations in order to determine whether adequate variance existed in the intercepts of these variables. Statistically significant variance components were found for BD ($\chi^2(63) = 2980.82, p < 0.001$), BC ($\chi^2(63) = 3495.74, p < 0.001$), NA ($\chi^2(63) = 698.45, p < 0.001$), and EB ($\chi^2(63) = 548.32, p < 0.001$). These results indicate adequate variance on each outcome variable and indicate that it was appropriate to add level-1 variables (Bryk & Raudenbush, 1992).

Four separate MLM models were conducted, one for each outcome variable, to determine whether statistically significant main effects were present for fat talk exposure. For these analyses, a dummy-coded fat talk variable was added uncentered to the level-1 equation. This variable was calculated by summing the two variables assessing whether or not the participant participated in fat talk or overheard fat talk since the last alarm. This fat talk variable (FT) was then re-coded such that a value of 1 indicated experiencing one or more fat talk episodes since the last alarm and a value of 0 indicated not experiencing fat talk since the last alarm. The reference group for these analyses was no fat talk experience. The following level-1 equation was used for these analyses:

$$Y_{it} = \beta_{00} + \beta_{10}(FT) + r_{0i} + e$$

Statistically significant positive coefficients for the slope of fat talk for BD, BC, NA, and EB indicate a main effect for exposure to fat talk. Results indicate that participants exposed to fat talk experienced a statistically significant 0.399 unit increase in body dissatisfaction ($SE = 0.200, t(991) = 1.996, p = 0.046$), a statistically significant 1.608 unit increase in body checking ($SE = 0.286, t(991) = 5.617, p < 0.001$), a statistically significant 0.811 unit increase in negative affect ($SE = 0.271, t(991) = 2.995$,

$p = 0.003$), and a statistically significant 0.133 unit increase in disordered eating behaviors ($SE = 0.032$, $t(991) = 4.112$, $p < 0.001$) as compared to participants who were not exposed to fat talk.

Effects of participating in and overhearing fat talk

MLM analyses were used to determine whether participating in fat talk and overhearing fat talk significantly predicted BD, BC, NA, and EB. For these analyses, two dummy-coded variables, one of which represented participating in fat talk and the other represented overhearing fat talk, were added uncentered to the level-1 equation. The overheard variable was coded such that a value of 1 indicated overhearing fat talk since the last alarm and a value of 0 indicated not overhearing fat talk since the last alarm. The participation variable was coded such that a value of 1 indicated participating in fat talk since the last alarm and a value of 0 indicated not participating in fat talk since the last alarm. The reference group for these analyses was no fat talk experience. The following level-1 equation was used for these analyses:

$$Y_{it} = \beta_{00} + \beta_{10}(\text{Overheard}) + \beta_{20}(\text{Participated}) + r_{0i} + e$$

A statistically significant positive coefficient for the slope of the participated variable for BC indicate that participation in fat talk resulted in a statistically significant 1.156 unit increase in body checking ($SE = 0.401$, $t(990) = 2.881$, $p = 0.004$). However, non-statistically significant positive coefficient for the slope of the overheard variable indicates that overhearing fat talk does not result in a statistically significant change in

BC ($\beta_{10} = -0.126$, $SE = 0.383$, $t(990) = -0.328$, $p = 0.743$). Hypothesis testing indicated that participation in fat talk was associated with significantly greater body checking than overhearing fat talk ($\chi^2 = 4.730$, $p = 0.028$). Overhearing fat talk was non-significant for BD ($\beta_{10} = 0.361$, $SE = 0.261$, $t(990) = 1.380$, $p = 0.168$), NA ($\beta_{10} = 0.018$, $SE = 0.362$, $t(990) = 0.051$, $p = 0.959$), or EB ($\beta_{10} = 0.060$, $SE = 0.044$, $t(990) = 1.364$, $p = 0.173$). Participating in fat talk was not significant for BD ($\beta_{20} = 0.163$, $SE = 0.275$, $t(990) = 0.594$, $p = 0.553$), NA ($\beta_{20} = 0.539$, $SE = 0.379$, $t(990) = 1.423$, $p = 0.155$), or EB ($\beta_{20} = 0.065$, $SE = 0.046$, $t(990) = 1.406$, $p = 0.160$).

Evaluation of moderation by trait thin-ideal internalization

MLM analyses were used to determine whether trait thin-ideal internalization (TI) moderated the relationship between exposure to fat talk and body dissatisfaction, body checking, negative affect, and disordered eating behaviors. Fat talk was entered uncentered as a level-1 variable. Because TI is a continuous between-subjects variable, it was grand-mean centered and entered as a level-2 variable. Separate MLM models were conducted for each of the four outcome variables. The following level-2 equations were used for these analyses:

$$Y_{it} = \beta_{00} + \beta_{01}(TI) + \beta_{10}(FT) + \beta_{11}(TI*FT) + r_{0i} + r_{1i}(FT) + e$$

Statistically significant positive coefficients for the slope of fat talk exposure for body checking, negative affect, and disordered eating behaviors indicated exposure to fat talk at the average level of trait thin-ideal internalization resulted in a statistically

significant 1.589 unit increase in BC ($SE = 0.340$, $t(62) = 4.668$, $p < 0.001$), 0.754 unit increase in NA ($SE = 0.279$, $t(62) = 2.702$, $p = 0.009$), and 0.143 unit increase in EB ($SE = 0.047$, $t(62) = 3.069$, $p = 0.003$). A statistically non-significant coefficient for the slope of fat talk exposure for body dissatisfaction indicated exposure to fat talk at the average level of trait thin-ideal internalization did not result in a statistically significant increase in BD ($\beta_{10} = 0.436$, $SE = 0.243$, $t(62) = 1.790$, $p = 0.078$). Statistically significant positive coefficients for the slope of trait thin-ideal internalization for BD, BC, NA, and EB indicate a main effect for TI. Results indicate that participants higher in trait thin-ideal internalization experienced significantly higher levels of BD ($\beta_{01} = 0.542$, $SE = 0.148$, $t(62) = 3.676$, $p < 0.001$), BC ($\beta_{01} = 0.887$, $SE = 0.259$, $t(62) = 3.420$, $p = 0.001$), NA ($\beta_{01} = 0.270$, $SE = 0.106$, $t(62) = 2.548$, $p = 0.013$), and EB ($\beta_{01} = 0.024$, $SE = 0.011$, $t(62) = 2.143$, $p = 0.036$).

Statistically non-significant coefficients for the slope of trait thin-ideal internalization on the slope of fat talk for body dissatisfaction, body checking, negative affect, and disordered eating behaviors indicated that trait thin-ideal internalization does not moderate the relationship between fat talk exposure and BD ($\beta_{11} = -0.031$, $SE = 0.073$, $t(62) = -0.423$, $p = 0.674$), BC ($\beta_{11} = 0.079$, $SE = 0.101$, $t(62) = 0.784$, $p = 0.436$), NA ($\beta_{11} = -0.055$, $SE = 0.084$, $t(62) = -0.656$, $p = 0.514$), and EB ($\beta_{11} = 0.018$, $SE = 0.014$, $t(62) = 1.308$, $p = 0.196$).

Evaluation of moderation by trait self-objectification

MLM analyses were used to determine whether trait self-objectification (SO) moderated the relationship between exposure to fat talk and body dissatisfaction, body checking, negative affect, and disordered eating behaviors. Fat talk was entered uncentered as a level-1 variable. Self-objectification, a continuous between-subjects variable, was grand-mean centered and entered as a level-2 variable. Separate MLM models were conducted for each of the four outcome variables. The following level-2 equations were used for these analyses:

$$Y_{it} = \beta_{00} + \beta_{01}(SO) + \beta_{10}(FT) + \beta_{11}(SO*FT) + r_{0i} + r_{1i}(FT) + e$$

Statistically significant positive coefficients for the slope of fat talk exposure for body checking, negative affect, and disordered eating behaviors indicated exposure to fat talk at the average level of trait self-objectification resulted in a statistically significant 1.554 unit increase in BC ($SE = 0.329$, $t(62) = 4.717$, $p < 0.001$), 0.774 unit increase in NA ($SE = 0.275$, $t(62) = 2.813$, $p = 0.007$), and 0.147 unit increase in EB ($SE = 0.047$, $t(62) = 3.120$, $p = 0.003$). A statistically non-significant coefficient for the slope of fat talk exposure for body dissatisfaction indicated exposure to fat talk at the average level of trait self-objectification did not result in a statistically significant increase in BD ($\beta_{10} = 0.415$, $SE = 0.232$, $t(62) = 1.787$, $p = 0.079$). Statistically significant positive coefficients for the slope of trait self-objectification for body checking indicate a main effect for trait self-objectification. Results indicate that participants higher in trait self-objectification experienced significantly higher levels of BC ($\beta_{01} = 0.201$, $SE = 0.070$, $t(62) = 2.872$, $p = 0.006$). Statistically non-significant coefficients for the slope of trait self-objectification for body dissatisfaction, negative affect, and disordered eating behaviors indicate that that

level of trait self-objectification is not associated with levels of BD ($\beta_{01} = 0.061$, $SE = 0.042$, $t(62) = 1.462$, $p = 0.149$), NA ($\beta_{01} = 0.056$, $SE = 0.028$, $t(62) = 1.990$, $p = 0.051$), or EB ($\beta_{01} = 0.003$, $SE = 0.003$, $t(62) = 0.863$, $p = 0.392$).

Statistically significant coefficients for the slope of trait self-objectification on the slope of fat talk for body dissatisfaction and body checking indicated that trait self-objectification moderates the relationship between fat talk exposure and BD and BC. For every unit increase in trait self-objectification for those who experienced fat talk, body dissatisfaction increased by 0.037 units ($SE = 0.018$, $t(62) = 2.035$, $p = 0.046$) and body checking increased by 0.054 units ($SE = 0.026$, $t(62) = 2.102$, $p = 0.040$). A non-statistically significant coefficient for the slope of trait self-objectification on the slope of fat talk exposure for negative affect and disordered eating behaviors indicated that trait self-objectification does not moderate the relationship between fat talk exposure and NA ($\beta_{11} = 0.038$, $SE = 0.022$, $t(62) = 1.756$, $p = 0.084$) or EB ($\beta_{11} = 0.005$, $SE = 0.004$, $t(62) = 1.262$, $p = 0.212$).

Discussion

Results of this study suggest that fat talk has a detrimental effect on young women's thoughts, feelings, and behaviors related to body image and eating habits. Specifically, exposure to fat talk is associated with a significant increase in body dissatisfaction, negative affect, and frequency of body checking and disordered eating behaviors. Participation in fat talk appears to have a greater effect on body checking behaviors as compared to merely overhearing others participating in fat talk. Additionally, fat talk exposure has a greater negative effect on body dissatisfaction and frequency of body checking for individuals higher in trait self-objectification.

One overarching conclusion that can be drawn from these results is that participation in fat talk in the naturalistic environment does have an impact on young women. Furthermore, the impact appears to be largely negative, as all findings showed significant increases in negative cognition, affect, and behavior. This finding is consistent with previous laboratory research indicating that exposure to fat talk is associated with increases in body dissatisfaction (Stice et al., 2003). This study furthers the understanding of the link between fat talk and body dissatisfaction by demonstrating that fat talk leads not only affects cognitions associated with body dissatisfaction, but it also negatively impacts the behavioral manifestation of body dissatisfaction (i.e., body checking). Additionally, the finding that fat talk exposure is associated with an increase in frequency of disordered eating behaviors complements existing knowledge that individuals with

clinically significant disordered eating engage in fat talk more frequently than those without eating disorder symptoms (Ousely et al., 2008). Results of this study suggest that participating in or overhearing fat talk may trigger thoughts of body dissatisfaction and negative affect, which may in turn lead to body checking and disordered eating.

Not only does fat talk exposure alone have a negative impact, but participating in and overhearing fat talk have different effects on those who are exposed. Fat talk participation has a significantly greater negative impact on frequency of body checking compared to merely overhearing others participating in fat talk. There are several potential explanations for why engaging in fat talk has significant negative effects as compared to overhearing fat talk conversations. Participating in fat talk may be a more salient experience than overhearing fat talk, which may make it more likely for the participants to be reminded of or express their own thoughts about body dissatisfaction. Essentially, fat talk participation may trigger underlying schemas (Vitousek & Hollon, 1990) that result in participants engaging in more frequent body checking. Individuals may also process the fat talk conversation at a deeper level when they have participated, which can contribute to the increase in salience of the conversation and the exacerbation of the negative effects of fat talk. Additionally, overhearing fat talk may be such a normative experience for most young women (Martz et al., 2009; Nichter, 2000) that they have become desensitized to the effects of merely overhearing fat talk in a naturalistic setting. If this is the case, participation in fat talk may increase sensitivity enough to elicit significant negative effects.

The relationships between fat talk and body dissatisfaction, body checking, negative affect, and disordered eating behaviors were not moderated by participants' level of trait thin-ideal internalization. The finding that thin-ideal internalization does not moderate the relationship between fat talk exposure and body dissatisfaction is consistent with the study conducted by Stice and colleagues (2003), which did not find moderating effects for this relationship. Fat talk may occur as a response to activation of thin-ideal schemas and may function as an expression of thin-ideal internalization. Thus, trait thin-ideal internalization may not moderate the relationship between fat talk and its outcomes because it is so strongly related to the construct of fat talk itself.

The relationships between fat talk exposure and body dissatisfaction and body checking were each moderated by trait self-objectification such that individuals higher in trait self-objectification experienced an exacerbation of the level of body dissatisfaction and frequency of body checking following fat talk exposure as compared to individuals lower in trait self-objectification. Previous research suggests that fat talk may serve as a protective factor in objectifying situations (Gapinski et al., 2003); however, results of the present study suggest that the broad implications of fat talk exposure are negative and that the protective nature of fat talk may only be applicable in some specific situations. It appears that fat talk, which frequently takes place in objectifying situations or may elicit objectifying thoughts, has a negative impact across many domains and, for individuals high in trait self-objectification, fat talk may have an especially negative impact on cognitions related to body dissatisfaction and frequency of body checking behaviors. The finding that trait self-objectification moderates the relationship between fat talk exposure

and body checking behavior appears to be a unique contribution to the literature. Self-objectification did not emerge as a moderator of the relationship between fat talk and negative affect or fat talk and disordered eating behaviors.

As fat talk appears to trigger negative affect and cognitions related to body dissatisfaction and lead to increases in body checking and disordered eating behaviors over the course of a few minutes to a few hours, it may be that it has even greater negative cumulative effects after many exposures over a long period of time. Individuals at risk for disordered eating may be more vulnerable to the effects of fat talk and engaging in fat talk may even contribute to the development or exacerbate existing eating disorder symptoms. Additionally, both previous research and results of the current study suggest that fat talk may be more accurately conceptualized as a causal factor in a pathway that ultimately leads to disordered eating cognitions and behaviors (Arroyo & Harwood, 2012). As such, making efforts toward fat talk prevention seems important in the larger goal that many have of decreasing body image disturbance in young women today. Fat talk rates among young women are alarmingly high (Salk & Engeln-Maddox, 2011), with nearly 97% of this sample reporting fat talk exposure during the five day study. One method that may ultimately reduce frequency of fat talk is to increase fat talk awareness. Many participants in the study anecdotally reported being surprised at how frequently they overheard and participated in fat talk and some even reported believing that this heightened awareness might ultimately have positive effects on their participation level and reaction to fat talk in the future. Given that similar prevention efforts have been successful in decreasing body dissatisfaction and disordered eating

behaviors in college populations (Becker, Ciao, & Smith, 2008; Becker, McDaniel, Bull, Powell, & McIntyre, 2012; Becker, Smith, & Ciao, 2006; Becker, Wilson, Williams, Kelly, McDaniel, & Elmquist, 2010; Perez, Becker, & Ramirez, 2010), efforts to increase awareness of fat talk and the negative effects that it has may have a similar positive impact on young women in a larger context.

Although this study produced significant and relevant findings regarding the effects of fat talk in a naturalistic environment, it was not without limitations. All measures used in the study, including both the baseline laboratory measures and those administered on the PDA, were self-report. Several inherent problems exist with the use of self-report measures, particularly when used to measure psychological variables. First, participants are reporting information on their own feelings, thoughts, and behaviors and may be reporting this information inaccurately. Second, self-report measures are subject to inaccuracies due to participants misunderstanding the question or responding in a socially desirable way. Lastly, it is possible that participants responded to self-report items in a fixed or random manner. This may be particularly likely in respect to the questions administered on the PDA as participants were aware of the question ordering and were required to respond to the same set of items on up to 25 separate occasions. In order to address this last concern, the PDA data was examined for evidence of fixed responding. None of the lines of data appeared to be the result of participants' fixed responding; however, it was not possible to fully examine the data for random responding. Thus, it is possible that random or otherwise inaccurate responses were included in the data when the study-related analyses were conducted. Even though these

limitations exist and may have interfered to some degree with the quality of the data provided, self-report remains the most efficient and cost-effective method of measuring participants' internal states and behaviors, particularly when assessing such information using EMA protocol. Additionally, there are no other known methods of accurately measuring cognitive data, such as thoughts about fat talk and state body dissatisfaction.

Another limitation of the present study is the level of participant compliance to the PDA protocol. Some participants did not respond to several of the random signals during the course of the study, despite the fact that increased compliance rates were rewarded with a greater number of raffle entries for the iPad 2. One previous daily diary study reported compliance rates of 83% to 87% (Leahey & Crowther, 2008); however, paper and pencil diaries were utilized in this study as compared to the PDA diaries used in the current study. This study's compliance rate of 72.6% is comparable to the rates reported in other ecological momentary assessment studies utilizing electronic diaries (Myers et al., 2012; Ridolfi et al., 2011). Additionally, the standards set by Hox (2010) suggest that a minimum of five data points should be collected for each participant in order to maintain statistical power in MLM. As each participant included in analyses responded to more than 6 signals, a sufficient amount of data was present for the purposes of these analyses.

A final limitation of the current research is the retroactive assessment of fat talk experiences. Although this limitation is somewhat reduced by having participants respond to fat talk-related items several times throughout each day of the PDA portion of the study, the fact remains that participants were at times reporting on events that

occurred several hours prior to the assessment time point. Participants may have experienced some difficulty accurately recalling past behaviors and experiences after such time had elapsed. Future research examining the effects of fat talk exposure or participation could utilize event sampling, which requires participants to self-initiate PDA questionnaires and would involve responding to items immediately after each fat talk experience. This methodology was not selected for this study due to concerns over participant burden. In this study, participants reported experiencing up to 27 episodes of fat talk over the course of the five day PDA protocol, and some may have reported even more had they responded to all random signals. Requiring participants to self-initiate and respond to such a large number of events would raise ethical concerns related to participant burden and would likely result in decreased compliance with the protocol.

Despite these limitations, this study expanded upon existing fat talk literature and furthered our understanding of the nature and consequences of fat talk experiences. This study examined the effects of fat talk on cognitive, emotional, and behavioral outcomes in an ecologically valid manner. Importantly, this study identified that not only does fat talk result in negative psychological outcomes, but it also impacts the frequency of behaviors associated with body image dysfunction and eating disorder symptomatology. The present study also helped to forge a connection between fat talk and over-arching theory on body image disturbance and disordered eating symptoms by examining the moderating variables of self-objectification and internalization of the thin-ideal. To our knowledge, this is the first study examining fat talk in a naturalistic setting, which has helped to illuminate facets of fat talk and its effects that were previously unable to be

identified through laboratory studies (Stice et al., 2003). Understanding fat talk as it occurs in the natural environment is critical not only in respect to assessing the impact of fat talk on participants, but also to inform prevention and intervention efforts aiming to decrease or eliminate fat talk among target groups.

Table 1

Correlations of compliance and analysis variables

	CR	FT	TI	SO	BD	BC	NA	EB
CR	---							
FT	.167	---						
TI	-.173	.131	---					
SO	-.160	.051	.397**	---				
BD	-.203	.265*	.426**	.227	---			
BC	-.294*	.188	.402**	.390**	.501**	---		
NA	-.218	.107	.158	.314*	.287*	.394**	---	
EB	-.381**	.302*	.349**	.143	.345**	.320**	.021	---

Note: CR = Compliance Rate; FT = Fat Talk; TI = Trait Thin-Ideal Internalization; SO = Trait Self-Objectification; BD = Body Dissatisfaction; BC = Body Checking; NA = Negative Affect; EB = Disordered Eating Behaviors

** Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Fig. 1

Moderation of trait self-objectification on the relationship between fat talk and body dissatisfaction

Fig. 2

Moderation of trait self-objectification on the relationship between fat talk and body checking

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Appendix A: Baseline Measures

Demographic Information

Age: _____ years

Current year: _____ Freshman _____ Sophomore _____ Junior _____ Senior
_____ Post-Undergraduate

Race/Ethnicity: _____ American Indian or Alaskan Native _____ African-American/Black
_____ Asian _____ Caucasian/White _____ Hispanic/Latina
_____ Other (please specify: _____)

Height: _____ feet _____ inches

Weight: _____ pounds

Sociocultural Attitudes Toward Appearance Questionnaire-3

Directions: Indicate how much you agree with each statement using the values below.

1	2	3	4	5
Strongly agree	Disagree	Neither agree	Agree	Strongly
agree		nor disagree		

- ___ 1. TV programs are an important source of information about fashion and “being attractive.”
- ___ 2. I’ve felt pressure from TV or magazines to lose weight.
- ___ 3. I would like my body to look like the people who are on TV.
- ___ 4. I compare my body to the bodies of TV and movie stars.
- ___ 5. TV commercials are an important source of information about fashion and “being attractive.”
- ___ 6. I’ve felt pressure from TV or magazines to feel pretty.
- ___ 7. I would like my body to look like the models who appear in magazines.
- ___ 8. I compare my appearance to the appearance of TV and movie stars.
- ___ 9. Music videos on TV are an important source of information about fashion and “being attractive.”
- ___ 10. I’ve felt pressure from TV and magazines to be thin.
- ___ 11. I would like my body to look like the people who are in the movies.
- ___ 12. I compare my body to the bodies of people who appear in magazines.

- ___ 13. Magazine articles are an important source of information about fashion and “being attractive.”
- ___ 14. I’ve felt pressure from TV or magazines to have a perfect body.
- ___ 15. I wish I looked like the models in music videos.
- ___ 16. I compare my appearance to the appearance of people in magazines.
- ___ 17. Magazine advertisements are an important source of information about fashion and being “attractive.”
- ___ 18. I’ve felt pressure from TV or magazines to diet.
- ___ 19. I wish I looked as athletic as the people in magazines.
- ___ 20. I compare my body to that of people in “good shape.”
- ___ 21. Pictures in magazines are an important source of information about fashion and “being attractive.”
- ___ 22. I’ve felt pressure from TV or magazines to exercise.
- ___ 23. I wish I looked as athletic as sports stars.
- ___ 24. I compare my body to that of people who are athletic.
- ___ 25. Movies are an important source of information about fashion and “being attractive.”
- ___ 26. I’ve felt pressure from TV or magazines to change my appearance.
- ___ 27. I try to look like the people on TV.

___ 28. Movie stars are an important source of information about fashion and “being attractive.”

___ 29. Famous people are an important source of information about fashion and “being attractive.”

___ 30. I try to look like sports athletes.

Self-Objectification Questionnaire

Directions: We are interested in how people think about their bodies. The questions below identify 10 different attributes. We would like you to rank order these body attributes from that which has the greatest impact on your physical self-concept, to that which has the least impact on your physical self-concept.

Note: It does not matter how you describe yourself in terms of each attribute. For example, fitness level can have a great impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or any level in between.

Please first read over all of the attributes. Then, record your rank by writing the letter of the attribute.

- a. physical coordination?
- b. health?
- c. weight?
- d. strength?
- e. sex appeal?
- f. physical attractiveness?
- g. energy level (e.g. stamina)?
- h. firm/sculpted muscles?
- i. physical fitness level?
- j. measurements (e.g. chest, waist, hips)?

LETTER OF ATTRIBUTE

MOST IMPORTANT.....
SECOND MOST IMPORTANT.....
THIRD MOST IMPORTANT.....
FOURTH MOST IMPORTANT
FIFTH MOST IMPORTANT.....
SIXTH MOST IMPORTANT.....
SEVENTH MOST IMPORTANT.....
EIGHT MOST IMPORTANT.....
NINTH MOST IMPORTANT.....
LEAST IMPORTANT.....

Appendix B: Palm Pilot Measures

Qualitative Fat Talk Questions

Since the last alarm, have you overheard fat talk?

___ Yes ___ No

If response to the previous question is “yes”, the following question will be asked:

How many times have you heard fat talk since the last alarm?

___ 0 ___ 1 ___ 2 ___ 3 ___ 4+

Since the last alarm, have you engaged in fat talk?

___ Yes ___ No

If response to the previous question is “yes”, the following question will be asked:

How many times have you engaged in fat talk since the last alarm?

___ 0 ___ 1 ___ 2 ___ 3 ___ 4+

If participant indicates that they have overheard and/or engaged in fat talk since the last alarm, the following questions will be asked:

Think about the most salient instance of fat talk since the last alarm. Who made the initial comment?

- ___ Self
- ___ Female family member
- ___ Male family member
- ___ Female friend
- ___ Male friend
- ___ Female acquaintance
- ___ Male acquaintance
- ___ Female stranger
- ___ Male stranger

If response to the previous question is “self”, the following question will be asked:

How strongly did you believe in the comment that you made?

1 2 3 4

Not at all
strongly

Very

How would you characterize this comment?

- ☐ General statement regarding own weight/shape
- ☐ General statement regarding other's weight/shape
- ☐ Comparison of own weight/shape to others
- ☐ Comparison of food consumption to others
- ☐ Statement about proposed action to enhance own weight/shape
- ☐ Statement about clothing fit
- ☐ Other

Were you with others?

- ☐ Alone
- ☐ With females
- ☐ With males
- ☐ With both females and males

If participant indicated that someone else initiated the fat talk, the following question will be asked:

If the comment was made by someone else, did you respond?

☐ Yes ☐ No

If response to the previous question is "yes", the following question will be asked:

How would you characterize your comment?

- ☐ General statement regarding own weight/shape
- ☐ General statement regarding other's weight/shape
- ☐ Comparison of own weight/shape to others
- ☐ Comparison of food consumption to others
- ☐ Statement about proposed action to enhance own weight/shape
- ☐ Statement about clothing fit
- ☐ Reassuring statement
- ☐ Other

How strongly did you believe in the comment that you made?

1 2 3 4

much so Not at all

Very

If you made the initial comment, did anyone respond?

___ Yes ___ No

If response to the previous question is "yes", the following question will be asked:

How would you characterize their comment?

- ___ General statement regarding own weight/shape
- ___ General statement regarding other's weight/shape
- ___ Comparison of own weight/shape to others
- ___ Comparison of food consumption to others
- ___ Statement about proposed action to enhance own weight/shape
- ___ Statement about clothing fit
- ___ Reassuring statement
- ___ Other

How long ago did the most recent incident take place?

hours ___ Less than 30 minutes ___ 30 min – 1 hour ___ 1-2 hours ___ 2-3
 ___ 3-4 hours ___ 4+ hours

During this conversation, did you find yourself comparing yourself to others?

___ Yes ___ No

If response to the previous question is "yes", the following question will be asked:

How attractive did you feel compared to the primary individual to whom you compared yourself to during this conversation?

	1	2	3	4
5				
attractive	Much less attractive		Equally attractive	Much more

How would you rate your level of satisfaction with your body size and shape during this conversation?

1

2

3

4

5

Very unsatisfied

Very

satisfied

Since the last alarm, did you engage in any of the following activities?

Exercise

Diet restriction

Self-induced vomiting

Laxative use

Diuretic use

Binge

None of the above

If the participant indicates that she engaged in any of the above behaviors, the following question will be asked:

How long ago did the most recent incident take place?

How long ago did the most recent incident take place?

Less than 30 minutes	30 min – 1 hour	1-2 hours	2-3
----------------------	-----------------	-----------	-----

hours

3-4 hours 4+ hours

State Self-Esteem Scale – Appearance Subscale

This is a questionnaire designed to measure what you are thinking at this moment. There is, of course, no right answer for any statement. The best answer is what you feel is true of yourself at this moment. Be sure to answer all of the items, even if you are not certain of the best answer. Again, answer these questions as they are true for you RIGHT NOW.

1	2	3	4	5
Not at all	A little	Somewhat	Very much	
Extremely				

- ___ 1. I feel satisfied with the way my body looks right now.
- ___ 2. I feel that others respect and admire me.
- ___ 3. I am dissatisfied with my weight.
- ___ 4. I feel good about myself.
- ___ 5. I am pleased with my appearance right now.
- ___ 6. I feel unattractive.

Body Checking Questionnaire – Brief Adapted Version

Select the number which best describes how often you have engaged in these behaviors since the last alarm went off.

	1	2	3	4	5
	Never	Rarely	Sometimes	Often	Very
	often				
1. I check to see if my thighs spread when I'm sitting down.					1 2
3 4 5					
2. I pinch my stomach to measure fatness.					1 2
3 4 5					
3. I check my reflection in glass doors or car windows to see how I look.					1 2
3 4 5					
4. I pinch my upper arms to measure fatness.					1 2
3 4 5					
5. I touch underneath my chin to make sure I don't have a "double chin".					1 2
3 4 5					
6. I check to see how my bottom looks in the mirror.					1 2
3 4 5					
7. I check to see if my thighs rub together.					1 2
3 4 5					
8. I check to see if my fat jiggles.					1 2
3 4 5					
9. I suck in my gut to see what it is like when my stomach is completely flat.					1 2
3 4 5					
10. I pull my clothes as tightly as possible around myself to see how I look.					1 2
3 4 5					

Positive and Negative Affect Schedule – Extended Form

Items from the PANAS-X were used with permission from the authors, but are not replicated here.