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The Personal and Relational Impact of Varying Responses to Fat Talk in the Context of Female Friendship

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THE PERSONAL AND RELATIONAL IMPACT OF VARYING RESPONSES TO FAT TALK IN THE CONTEXT OF FEMALE FRIENDSHIP

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ABSTRACT

The current study aimed to measure the immediate impact of various responses to Fat Talk on college women. Participants were given trait-level questionnaires followed by prompts to imagine a scenario in which they engaged in Fat Talk. Participants were presented with four counterbalanced audio response conditions followed by several single-item measures. Repeated-measures one-way ANOVAs examined the impact of response and significant differences in personal and relational factors across the four response conditions were found. A mixed-model ANOVA demonstrated that baseline variables did not impact participants' reactions to the different Fat Talk responses. Finally, frequency of Fat Talk was correlated with body dissatisfaction, and the frequency of Fat Talk within a friendship was correlated with one's own use of Fat Talk. These results indicate that some responses may be more effective than others as far as their impact on personal and relational factors.

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INTRODUCTION

Background

There are many behaviors that are normative in the general population that are also present within clinical populations, only to greater degrees of frequency or intensity. These normative behaviors are meaningful to target through research in order to better understand how to prevent them from leading to significant future impairment or distress. Engagement in Fat Talk is an example of this type of behavior that is common in those with body image disturbances or eating disordered pathology (Arroyo & Harwood, 2012; Pollet, Dawson, Tovee, Cornelissen & Cornelissen, 2021; Sharpe, Naumann, Treasure, & Schmidt, 2013). The term Fat Talk, which was born in the late nineties, is used to identify self-disparaging remarks made to others about one's *own* body shape, weight, or appearance (Nichter & Vuckovic, 1994). Statements such as, "I feel so fat" or "My thighs look huge in these shorts" are commonly used examples of Fat Talk (Salk & Engeln- Maddox, 2011; Shannon & Mills, 2015). Studies have found that 81% (Becker, Diedrichs, Jankowski, & Werchan, 2013) to 93% (Salk & Engeln-Maddox, 2011) of their female samples report engaging in Fat Talk at least occasionally. The frequency and the reinforcing nature of Fat Talk, combined with the expectation to engage in Fat Talk that exists in Western society, explains its normalcy throughout conversation, specifically among female peers (Britton, Martz, Bazzini, Curtin, & LeaShomb, 2006; Cruwys, Leverington, & Sheldon, 2016; Shannon & Mills, 2015). Fat Talk is a critical behavior to target due to its strong correlation with body image disturbances that can increase the risk of developing an eating disorder (Britton, et al., 2006; Mills & Fuller-Tyszkiewicz, 2017; Rodin, Silberstein, & Striegel-Moore, 1984).

As the research on Fat Talk has advanced, the description of Fat Talk and the methods for examining it have continued to evolve. However, the Fat Talk literature predominantly has consisted of correlational studies, and primarily has examined characteristics of the individual who initiates the Fat Talk and the detrimental effects it has on one's body image (Mills & Fuller-Tyszkiewicz, 2017; Shannon & Mills, 2015). More recent research has begun to explore the reciprocal nature of Fat Talk (Mills & Fuller-Tyszkiewicz, 2018; Mills et al., 2021; Salk & Engeln-Maddox, 2012; Shannon & Mills, 2015). The act of engaging in Fat Talk with another individual invariably elicits a spoken response, the type of which may differ widely dependent upon environmental, personal, and contextual factors (Cruwys, et al., 2016; Engeln & Salk, 2016). In turn, the type of response one receives may have varying effects on the person initiating the Fat Talk, as well as on the relationship between the individuals involved (Mills et al., 2019). There are many gaps in the literature regarding the types of responses that follow Fat Talk and their immediate and long-term consequences (Mills & Fuller-Tyszkiewicz, 2018; Mills et al., 2021; Salk & Engeln-Maddox, 2011). Studying the immediate consequences of responses to Fat Talk by measuring their personal and relational impact should pave the way for future research to study the long-term consequences. This type of research ultimately can inform prevention efforts as well as enhance psychoeducation around Fat Talk.

Tripartite Model of Body Image

The Tripartite Model of body image provides a framework for Fat Talk and its role in the development and maintenance of a negative body image (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999). As one of the most widely validated models of body image, it holds sociocultural factors, such as the pressure from the media to be thin, to play a key role in the

development of body image concerns (Amaral & Ferreira, 2017; Grabe, Ward, & Hyde, 2008; Johnson, Edwards, & Gidycz, 2015; Thompson & Stice, 2001). These sociocultural pressures, which primarily come from one's parents, one's peers, and the mass media, can negatively affect one's body image by setting unrealistic and unachievable standards (Mills & Fuller-Tyszkiewicz, 2017; Thompson et al., 1999). These standards can then place pressure on an individual's weight and appearance goals, thereby encouraging internalization of an appearance ideal (Mills & Fuller-Tyszkiewicz, 2017; Menzel et al., 2011; Rodgers, McLean, & Paxton, 2015). Fat Talk can represent a manifestation of these internalized Western societal and cultural ideals (Arroyo & Harwood, 2012; Shannon & Mills, 2015). According to the Tripartite Model, Fat Talk is a direct means by which the appearance ideal can be perpetuated by friends or family, and ultimately contribute to the worsening of body image disturbances (Mills et al., 2019; Thompson et al., 1999).

Demographics of Fat Talk

Although the act of engaging in Fat Talk to express body dissatisfaction or to perpetuate the thin ideal primarily has been associated with thin, young Caucasian women (Engeln & Salk, 2016), recent research suggests that Fat Talk is used in broader and more diverse populations as well (Engeln & Salk, 2016; Herbozo, Stevens, Moldovan, & Morrell, 2017; Payne, Martz, Tompkins, Petroff, & Farrow, 2011). In terms of BMI, precise correlations with Fat Talk have yet to be established (Arroyo & Harwood, 2012; Barwick, Bazzini, Martz, Rocheleau, & Curtin, 2012). A study examining a sample of women of varying weights showed that regardless of BMI, a woman's use of Fat Talk was positively correlated with her weight dissatisfaction (Engeln & Salk, 2016). Perhaps not surprisingly, women of different ages were found to engage in Fat Talk to varying degrees, with frequency

peaking around young adulthood (Engeln & Salk, 2016). College-aged women in particular endorsed struggling with body dissatisfaction as well as disordered eating, both of which are correlated with elevated rates of Fat Talk usage (Arroyo & Harwood, 2012; Hoffman, Policastro, Quick, & Lee, 2006; Mills & Fuller- Tyszkiewicz, 2017; Ousley, Cordero, & White, 2008).

Additionally, since there is research supporting the general similarity of body dissatisfaction across racially and ethnically diverse women (Smith et al., 2021), one might expect a similar pattern of Fat Talk usage as well. The Fat Talk research that has recognized and prioritized racially and ethnically diverse samples has produced mixed findings. One study showed that Black women reported using less Fat Talk than White, Hispanic, and Asian women (Fiery, Martz, Webb, & Curtin, 2016). In contrast, another study detected no differences between African American, European American, and Latina American women in terms of frequency of Fat Talk, positive weight/shape commentary, or positive appearance commentary (Herbozo et al., 2017). Importantly, sociocultural models note that the adoption of appearance ideals may vary between racial and ethnic populations, thereby partially explaining any existing group differences in Fat Talk (Ordaz et al., 2018; Quick & Byrd-Bredbenner, 2014; Webb, Warren- Findlow, Chou, & Adams, 2013). As far as gender, women's higher frequencies of Fat Talk compared to men's may reflect the consistent and unique societal pressures placed on women regarding appearance (Britton et al., 2006; Martz, Petroff, Curtin, & Bazzini, 2009; Payne et al., 2011). Objectification Theory (Fredrickson & Roberts, 1997) reports that women have been socialized to view and evaluate their bodies as objects to be judged and valued based on appearance, which may contribute to increased

body checking, body shame, anxiety about one's appearance, and Fat Talk (Arroyo, Segrin, & Harwood, 2014; Shannon & Mills, 2015).

Fat Talk in Female Friendships

Friendship groups are a key source of influence on the internalization of the thin ideal, and thus they often are the focus of research on Fat Talk (Matera, Nerini, & Stefanile, 2013; Mills & Fuller-Tyszkiewicz, 2017; Tiggemann, 2011; Thompson et al., 1999). Close relationships tend to offer a level of intimacy that allows individuals to disclose concerns, including those related to one's body, shape, weight, or appearance (i.e., Fat Talk) (Bardone-Cone, Balk, Lin, Fitzsimmons-Craft, & Goodman, 2016; Cruwys et al., 2016). Friendships become particularly salient for college-aged females, as these women are likely to be in closer social and physical proximity to friends than ever before (Bardone-Cone et al., 2016; Martinez Aleman, 2010). Importantly, when studying Fat Talk between female friends it is essential to assess the normalcy of Fat Talk within the friendship group, since this factor has been shown to predict whether an individual in that group will herself use Fat Talk (Cruwys et al., 2016). This finding aligns with the Tripartite Model, as it emphasizes the influence that one's peers can have on one's body image via their frequency of Fat Talk (Thompson et al., 1999).

Functions of Fat Talk

There is no single function that Fat Talk plays for all women, as its function is dependent upon the individual engaging in Fat Talk *and* her environment at the time of the Fat Talk (Mills et al., 2021; Salk & Engeln-Maddox, 2011, Shannon & Mills, 2015). More specifically, an individual's subscription to the thin ideal, and her current level of shame, body dissatisfaction, and overall body image all may contribute to the varying functions of

Fat Talk (Salk & Engeln-Maddox, 2011; Shannon & Mills, 2015; Sharpe et al., 2013). Likewise, the environment in which individuals engage in Fat Talk, as well as the response they expect to receive, may also influence Fat Talk's function. Over time, theories have attempted to justify *why* individuals express self-disparaging appearance remarks to others so frequently (Bem, 1967; Cruwys et al., 2016; Festinger, 1954; Guertin, Barbeau, Pelletier, & Martinelli, 2017). One qualitative study found that the majority of participants reported feeling better about their bodies when they shared how they felt among friends (Salk & Engeln-Maddox, 2011). Expressing one's body dissatisfaction aloud among a close group of friends may function to relieve anxiety, allow one to feel more socially accepted, increase group cohesion, or gain reassurance (Arroyo & Harwood, 2012; Barwick et al., 2012; Cruwys, Haslam, Fox, & McMahon, 2015). In many instances then, Fat Talk may be functioning to reduce negative emotions in the short term, despite the well-established detrimental effect to one's body image in the long term (Mills et al., 2019; Sharpe et al., 2013).

Responses to Fat Talk

It is important to understand the differences in impact that various responses to Fat Talk have on the individual who initiated the Fat Talk *and* on the friendship in which they occur, as this may elucidate which responses are potentially the most effective at reducing one's future use of Fat Talk. Only four studies to date have begun to examine which responses to Fat Talk may be more effective than others to reduce future Fat Talk (Ambwani et al., 2017; Mills et al., 2019; Mills et al., 2021; Salk & Engeln-Maddox, 2011). One study showed that the most common response to Fat Talk was "*Denial*" that the Fat Talk was true (e.g., "Oh, come on, you are not fat at all.") (Salk & Engeln-Maddox, 2011). *Denial* also

was the response that most participants reported they would prefer to receive from others if they were to engage in Fat Talk themselves (Salk & Engeln-Maddox, 2011). "*Reassurance"* that the Fat Talk was not true is often paired with or used in place of the *Denial* response (e.g., "You're definitely not fat. You look great just the way you are.") (Mills et al., 2019). *Denial/Reassurance* may be the most commonly used and preferred Fat Talk response due to its ability to mollify the individual's anxiety or concern in the short term (Salk & Engeln-Maddox, 2011; Mills et al., 2019; Mills et al., 2021). Yet this type of response falls short in the long term by contributing to one's body dissatisfaction, and potentially increasing the frequency of future Fat Talk (Calogero, Herbozo, & Thompson, 2009; Mills et al., 2019; Mills & Fuller- Tyszkiewicz, 2017; Mills & Fuller-Tyszkiewicz, 2018; Salk & Engeln-Maddox, 2011).

Another common response to Fat Talk is to be "*Empathic*" towards the person by relating that one experiences similar feelings (e.g., "I know what you mean. I feel that way sometimes too.") (Salk & Engeln- Maddox, 2011). The expression of *Empathy* followed by a "*Reciprocation*" of the Fat Talk (e.g., "I actually feel really fat today too."), has been identified as the most expected response to Fat Talk (Britton, et al., 2006; Salk & Engeln-Maddox, 2011; Mills et al., 2019). The *Empathize/Reciprocate* response to Fat Talk has been hypothesized to increase emotional support and create a bonding experience between friends (Britton et al., 2006; Mills et al., 2019; Nichter & Vuckovic, 1994; Salk & Engeln-Maddox, 2011). One study found that receiving an *Empathize/Reciprocate* response led to increased levels of body satisfaction, potentially because the continuation of the Fat Talk allowed individuals to feel understood by their friends (Mills et al., 2019).

The response of "*Ignoring*" the Fat Talk altogether, such as deflecting or making a remark completely unrelated to the original comment (e.g., "Guess what my plans are for the weekend?") (Mills et al., 2019), adheres to several intervention and prevention program's recommendations. However, these recommendations have no evidence-based research support (Mills et al., 2021). The Butterfly Foundation, an organization that specializes in support for individuals with eating disorders and negative body image, recommends changing the subject, thereby *Ignoring* the Fat Talk (The Butterfly Foundation, 2019). A mobile app intervention which promotes positive body image, BodiMojo, encourages its users to "Drop the fat chat!" (Rodgers et al., 2018). Yet, women whose Fat Talk was *Ignored* instead of acknowledged reported low levels of body satisfaction and support, and high levels of shame (Mills et al., 2019). In fact, *Ignoring* an individual during any social interaction has consistently been found to be associated with negative affect and shame (Geller, Goodstein, Silver, & Sternberg, 1974; Park, 2017).

An interesting response to Fat Talk that is utilized by certain body image programs is to "*Challenge"* it (e.g., "I think feeling happy and healthy with who I am as a person is so much more important that focusing on how I look.") (Ambwani et al., 2017; Stice, Butryn, Rohde, & Shaw, & Marti 2013). The Body Project, an intervention that relies on cognitive dissonance to promote positive body image and challenge the thin-ideal, teaches individuals to combat Fat Talk comments by challenging them (Stice et al., 2013). The goal of the *Challenge* response is to focus less on short-term appeasement or anxiety relief, and more so on making long-term reductions in society's overall use of Fat Talk and overevaluation of appearance (Mills et al., 2021). All four of the studies that examine the impact of responses to Fat Talk include the *Challenge* response in their study design (Ambwani, et al., 2017;

Mills et al., 2019; Mills et al., 2021; Salk & Engeln-Maddox, 2012). One study found that although *Challenging* Fat Talk did *not* have a significant impact on one's immediate level of body satisfaction, participants *did* report high levels of support (Mills et al., 2019). A more recent study by Mills and colleagues found support for the *Challenge* response resulting in less negative affect and a lower anticipated likelihood of engaging in future Fat Talk when compared to the *Reciprocate* response (Mills et al., 2021). Similar findings have shown that participants who were exposed to a Fat Talk vignette that included a *Challenge* response reported less negative affect, as well as a lower likelihood of using Fat Talk in the future, than those exposed to a Fat Talk vignette *without* a *Challenge* response (Ambwani et al., 2017). As noted, it is conceivable that *Challenging* Fat Talk does not promote an immediate improvement in body satisfaction, but instead works over time to reduce Fat Talk by challenging societal norms (Becker & Stice, 2017).

Various responses to Fat Talk have begun to be characterized, and yet it is unclear which responses are most promising in terms of going beyond the simple alleviation of negative affect in the moment, and instead functioning to reduce one's tendency to want to continue Fat Talk in the future while still maintaining the support felt in the context of the relationship. Based on the current research, the *Challenge* type of response may be the most promising response in terms of reducing the behavior of Fat Talk. Finally, it is possible that responses to Fat Talk that occur in day-to-day life are more nuanced and complex such that the most effective response may depend on the context and the motivation of the individual who engaged in the Fat Talk (Mills et al., 2021).

The Current Study

The goal of the current study was to measure the impact that various responses to Fat Talk have on both the individual who is initiating the Fat Talk *and* on the relationship within which the Fat Talk occurs. This study aimed to replicate and extend two studies by Mills and colleagues (Mills et al., 2019; Mills et al., 2021). Although similar methodology was used in these two studies, the responses to Fat Talk were altered slightly to reflect a wider range of responses, and additional variables were included to measure the unique aims of the study. For the current study, the four chosen responses were: *Deny/Reassure*, *Empathize/Reciprocate*, *Ignore*, and *Challenge*. Prior to any study manipulation, participants were presented with several measures to assess frequency of Fat Talk usage, body appreciation, weight and shape concern, and thin ideal internalization. Participants were then prompted to recall a scenario of personal engagement in Fat Talk with a female friend. After recalling and reporting their Fat Talk and the response they received from their friend, they were prompted to imagine receiving alternative responses to their Fat Talk. From there they were presented with recordings of the above four responses as alternatives to the response they recalled receiving. After receiving each response, participants were presented with several single-item questions addressing their current body satisfaction, shame, the degree of support they felt, and the likelihood of engaging in Fat Talk again upon receiving the particular response. Finally, brief psychoeducational statements based on current research regarding responses to Fat Talk were presented to each participant. This was followed by single item measures to assess the likelihood of using each response condition in the future.

Hypotheses

Aim 1: The current study measured the personal (body satisfaction and shame) and relational (perceived support and likelihood of future Fat Talk) impact of four different responses to Fat Talk (*Deny/Reassure, Empathize/Reciprocate, Ignore, and Challenge)* within the context of female friendship.

Hypothesis 1: It was hypothesized that the *Deny/Reassure* and *Empathize/Reciprocate* responses would lead to higher levels of body satisfaction (single item: "To what extent do you feel satisfied with your body right now?") in comparison to the levels of body satisfaction reported after the *Ignore* and *Challenge* responses.

Hypothesis 2: It was hypothesized that the *Deny/Reassure* and *Empathize/Reciprocate* responses would lead to higher levels of perceived support (single item: "To what extent do you feel supported in your friendship right now?") in comparison to the levels of support reported after the *Ignore* and *Challenge* responses.

Hypothesis 3: It was hypothesized that the *Ignore* and *Challenge* responses would lead to higher levels of shame (single item: "To what extent do you feel ashamed right now?") in comparison to the levels of shame reported after the *Deny/Reassure* and *Empathize/Reciprocate* responses.

Hypothesis 4: It was hypothesized that the *Ignore* and *Challenge* responses would lead to a lower anticipated likelihood of engagement in future Fat Talk with the participant's friend (single item: "If you were to receive this response, how likely are you to engage in Fat Talk with this friend again?") in comparison to the likelihood of

engagement in future Fat Talk with the participant's friend after the *Deny/Reassure* and *Empathize/Reciprocate* responses.

Aim 2: The current study measured the quality of relationship between the participant and her chosen friend prior to experimental manipulation, in order to see how it affected the personal and relational impact of receiving a *Challenge* response.

Hypothesis 5: It was hypothesized that a higher relationship quality with one's friend (Quality of Relationship Inventory, QRI) prior to experimental manipulation would be associated with higher levels of support (single item: "To what extent do you feel supported in your friendship right now?") and lower levels of shame (single item: "To what extent do you feel ashamed right now?") after receiving the *Challenge* response in comparison to a lower quality of relationship.

Exploratory analyses were run to examine the interaction between baseline quality of relationship and the other response conditions (*Ignore, Empathize/Reciprocate, Deny/Reassure).*

Aim 3: The current study examined how endorsement of the thin ideal prior to experimental manipulation affected the personal and relational impact upon receiving a *Challenge* response.

Hypothesis 6: It was hypothesized that higher endorsement of the thin ideal internalization (Sociocultural Attitudes Towards Appearance Questionnaire-3, SATAQ-3) prior to experimental manipulation would be associated with higher levels

of shame (single item: “To what extent do you feel ashamed right now?”), lower levels of support (single item: “To what extent do you feel supported in your friendship right now?”), and lower levels of body satisfaction (single item: “To what extent do you feel satisfied with your body right now?”) after receiving the *Challenge* response, in comparison to lower endorsement of the thin ideal internalization.

Exploratory analyses were run to examine the interaction between baseline thin ideal internalization and the other response conditions (*Ignore, Empathize/Reciprocate, Deny/Reassure)*.

Hypothesis 7: It was hypothesized that a more positive body image (higher scores on the Body Appreciation Scale-2 and lower scores on the Body Shape Questionnaire) prior to experimental manipulation would be associated with lower levels of shame (“To what extent do you feel ashamed right now?”) and higher levels of body satisfaction (“To what extent do you feel satisfied with your body right now?”) after receiving the *Challenge* response, in comparison to a more negative body image.

Exploratory analyses were run to examine the interaction between baseline body image and the other response conditions (*Ignore, Empathize/Reciprocate, Deny/Reassure)*.

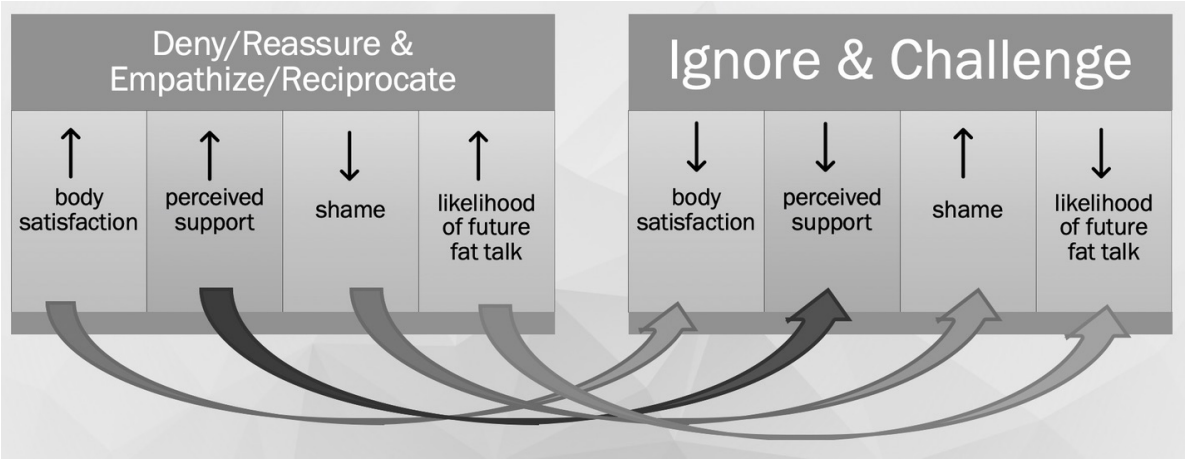
Aim 4: The current study examined the relationship between body image and frequency of Fat Talk engagement.

Hypothesis 8: It was hypothesized that higher levels of body dissatisfaction (BSQ) prior to experimental manipulation would be associated with more frequent use of Fat Talk (Negative Body Talk Scale, NBT) prior to experimental manipulation.

Aim 5: The current study examined whether the norms of Fat Talk within a friendship were associated with the participant's frequency of Fat Talk usage.

Hypothesis 9: It was hypothesized that those who reported lower levels of Fat Talk usage within their friend group (one item from the Descriptive Norms for Pursuit of Thinness Scale) prior to experimental manipulation would also report lower levels of Fat Talk usage themselves (NBT).

Figure 1. Overview of Study Hypotheses



METHOD

Participants

The study population consisted of 160 undergraduate women from the University of New Mexico. Only males and pregnant females were excluded. Participants were recruited via advertisement on the SONA Experiment Management Systems, a university specific secure online system for research studies. Due to COVID-19 limitations, announcements in university psychology undergraduate classrooms were not possible, yet several instructors agreed to present the study flier to their classrooms via sharing capabilities over Zoom. All participants received one research credit or one extra credit point in a class for their involvement in this online study.

Measures

Refer to Appendix A for an overview of the various measures that were utilized throughout the three phases of the study.

Demographics. A standard demographic form (see Appendix B) was used to obtain basic information such as age, BMI, race, ethnicity, living situation, employment status, social economic status, and education. Additionally, participants were asked if they had ever been diagnosed with or treated for an eating disorder.

Negative Body Talk Scale (**NBT;** Engeln-Maddox, Salk, & Miller, 2012). The NBT (see Appendix C) assessed an individual's usage of Fat Talk among a group of friends. This brief self-report measure consists of 13 items, each of which is rated on a 7-point Likert-type scale ranging from 1 (Never) to 7 (Always). Participants were asked to rate each item based on how often they say things like, "I wish my body looked like hers" (Engeln-Maddox et al., 2012). The scale has been shown to have high internal consistency, construct validity and

moderate test-retest reliability (Engeln-Maddox et al., 2012). Additionally, confirmatory factor analyses have indicated scalar invariance across Asian, Latina, and White female university students (Sladek, Salk, & Engeln, 2018). The NBT data provided a baseline frequency of Fat Talk usage for participants prior to going through any study manipulation.

Body Appreciation Scale – 2 (**BAS-2;** Tylka & Wood-Barcalow, 2015). The BAS-2 (see Appendix D) is a newly developed version of the original Body Appreciation Scale (Avalos, Tylka, & Wood-Barcalow, 2005) that was used to assess individual's acceptance and appreciation of their bodies. This commonly used self-report measure of positive body image consists of 10 items, each of which are rated on a 5-point Likert-type scale ranging from 1 (Never) to 5 (Always). Participants were asked to rate each item based on how often each statement is "true about you"; for example, "I feel good about my body" (Tylka & Wood- Barcalow, 2015). This scale has been shown to have strong internal consistency and moderate test-retest reliability, as well as strong structural validity (Kling et al., 2019). Additionally, it has been shown to be invariant across varying BMI statuses and ethnic groups (Kling et al., 2019). The BAS-2 was used to measure participants' *positive* body image prior to any study manipulation.

Body Shape Questionnaire (**BSQ**; Cooper, Taylor, Cooper, & Fairburn, 1987). The BSQ (see Appendix E) was used to assess body dissatisfaction and body shape preoccupations. This self-report measure consists of 34 items, each measured on a 6-point Likert-type scale ranging from 1 (Never) to 6 (Always). An example of one of the items which participants rate with regard to the last four weeks is, "Have you ever felt so bad about your shape that you cried?" (Cooper et al., 1987). High internal consistency, test-retest reliability, and robust construct validity have been indicated for the 34-item BSQ (Warren et

al., 2008). The BSQ is one of the most commonly used self-report measures of body dissatisfaction and has been shown to be invariant across Euro- American, Hispanic-American, and Spanish women (Warren et al., 2008). The BSQ was used to measure participants' body *dissatisfaction* prior to any study manipulation.

Sociocultural Attitudes Towards Appearance Questionnaire-4 (**SATAQ-4**; Schaefer et al., 2015). The SATAQ-4 (see Appendix F) is a revised version of the original Sociocultural Attitudes Towards Appearance Questionnaire (Heinberg, Thompson, & Stormer, 1995) that assessed internalization of appearance ideals and appearance-related pressures. This self-report measure consists of 22 items, each measured on a 5-point Likert-type scale ranging from 1 (Definitely Disagree) to 5 (Definitely Agree). An example of one of the items in which participants rate to what extent they agree is, "I want my body to look very thin" (Schaefer et al., 2015). This measure has been shown to have acceptable to excellent internal consistency, preliminary support of reliability and validity, and good model fit across a diverse group of women (Schaefer et al., 2015). This iteration was chosen as it contains an added internalization subscale that aligns with the Tripartite model by including appearance-related pressures from peers, family, and the media (Schaefer et al., 2015). The SATAQ-4, specifically the Internalization subscale, was used to measure participant's internalization of appearance ideals prior to any study manipulation.

Descriptive Norms for Pursuit of Thinness Scale (Cruwys, Haslam, Fox, & McMahon, 2015). This instrument (see Appendix G) assessed the existing norms regarding the pursuit of thinness that are present within participants' friendship groups. This self-report measure consists of 6 items each rated on a 7-point Likert-type scale ranging from 1 (Never) to 7 (Frequently). With a specific reference group in mind, in this case a friendship group,

participants rated each item based on how often the identified group "speaks negatively about their appearance, goes on a diet, etc." (Cruwys et al., 2015). This measure has been used previously to assess group norms around thin ideal internalization and contains one item specifically designed to assess the norm of Fat Talk used within the one's friendship group (Cruwys et al., 2015; Cruwys et al., 2016).

Quality of Relationships Inventory (**QRI**; Pierce, 1994; Pierce et al., 1991). The 25-item QRI (see Appendix H) was used to measure friendship quality and perceived support between participants and one of their close female friends. Each item was rated on a 4-point Likert-type scale ranging from 1 (Not at All) to 4 (Very Much). Participants were asked to reflect on the relationship with their friend of choice, rating items such as, "To what extent could you turn to this person for advice about problems?" In addition to measuring perceived support within a close relationship, the QRI also measures perceived conflict and depth. The support, conflict, and depth reported regarding a particular relationship have been shown to be strong predictors of one's current social behavior towards the individual in the relationship (Verhofstadt, Buysse, Rosseel, & Peene, 2006). Good reliability and discriminant and predictive validity have been shown for the QRI. The factor structure also has been examined in undergraduates who completed the measure for their mother, father, and friend (Pierce, Sarason, Sarason, Solky- Butzel, & Nagle, 1997; Verhofstadt et al., 2006). This measure served to describe the existing quality of relationship between participants and their friend of choice prior to any study manipulation. The QRI, specifically the support subscale, was used to measures participant's quality of friendship prior to any study manipulation.

Current body satisfaction. A single study-specific item was used to assess current body satisfaction ("To what extent do you feel satisfied with your appearance right now?") multiple times throughout the study, both prior to and during the study manipulation. Participants rated their body satisfaction on a 5-point Likert-type scale ranging from 1 (Completely Dissatisfied) to 5 (Completely Satisfied). Many previous studies have used a single item to measure body satisfaction and have shown construct validity as well as sensitivity (Drutschinin, Fuller-Tyszkiewicz, De Paoli, Lewis, & Krug, 2017; Durkin, Paxton, & Sorbello, 2007; Fitzsimmons, Ciao, & Accurso, 2016; Mills & Fuller-Tyszkiewicz, 2018; Mills et al., 2019; Pomerleau & Saules, 2007; Rogers, Fuller-Tyszkiewicz, Lewis, Krug, & Richardson, 2017).

Current shame. A single study-specific item was used to assess current shame ("To what extent do you feel ashamed right now?") multiple times throughout the course of the study, both prior to and during the study manipulation. Shame has been known to play a key role in many psychological disorders, specifically those related to body image and maladaptive eating behaviors (Duarte, Pinto-Gouveia, Ferreira, & Batista, 2014; Oliveira, Trindade, & Ferreira, 2018). Participants rated the item on a 5-point Likert-type scale ranging from 1 (Not ashamed at all) to 5 (Extremely ashamed). A related study used a similar single item to assess current shame (Mills et al., 2019).

Current support. A single study-specific item was used to assess current support ("To what extent do you feel supported in your friendship right now?") multiple times throughout the study, both prior to and during the study manipulation. Participants rated the item on a 5-point Likert-type scale ranging from 1 (Not supported at all) to 5 (Very well

supported). A related study used a similar single item to assess current support (Mills et al., 2019).

Future Fat Talk. A single study-specific item was used to assess the likelihood of participants engaging in Fat Talk again with their friend of choice ("If you were to receive this response, how likely are you to engage in Fat Talk with this friend again?"). Participants rated the item on a 5-point Likert-type scale ranging from 1 (Not likely) to 5 (Very likely). This item was presented each time participants received one of the four specific types of responses to self-initiated Fat Talk during Phase 3 of the study (see below).

Procedure

Phase 1: Pre-Response Conditions. The study was completed online within one sitting. For the initial phase, participants were provided with a brief introduction to the study, and a description of their role should they decide to participate. After providing informed consent following standardized guidelines for online studies, participants completed a demographic questionnaire, several trait-level measures, and a series of single-item study-specific questions (see Appendix A). The trait-level measures that were completed prior to the study manipulation consisted of the Negative Body Talk Scale (NBT), the Body Appreciation Scale- 2 (BAS-2), the Body Shape Questionnaire (BSQ), and the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4). A counterbalancing method was utilized to guard for sequencing and order effects. The single study-specific items consisted of current ratings of body satisfaction, shame, and support. Next, a basic definition of Fat Talk was presented on the computer screen: "Fat Talk refers to negative verbal comments an individual makes in the presence of another individual regarding one's own body, weight, or general appearance". This was followed by examples of Fat Talk,

specifically: “I’m so fat”, “I wish I had your body”, “I really need to start dieting” (Mills et al., 2019).

Phase 2: Response Conditions (Part A). The second stage of the study began with participants being asked to imagine a time in which they engaged in Fat Talk with a female friend. The following prompt was presented on the computer screen: “Think back to a recent time in which you were engaging in Fat Talk with a female friend”. In order to aid with memory recall of the situation, several questions were presented to participants, starting with “What did you say?”. Participants were instructed to type their Fat Talk, to the best of their recollection, into an empty text box. Four additional questions were then presented in multiple-choice format, which prompted participants to answer: “Where were you?”, “How many people were you around?”, “How long ago did this situation occur?” and “How upsetting was this exchange?” Finally, participants were provided with a blank text box and asked to recall, to the best of their recollection, what response they received to their Fat Talk. Specifically, they were presented with the following question: “What did your friend say to you in return?”. In order to assess friendship group norms, participants were asked to fill out the Descriptive Norms for Pursuit of Thinness Scale in relation to the friend group to which their previously chosen friend belonged. Finally, participants completed a relationship quality questionnaire (Quality of Relationships Inventory – QRI) with regard to the friend with whom they imagined engaging in the Fat Talk.

Phase 2: Response Conditions (Part B). At this point, participants viewed their own line of Fat Talk that they provided. This was followed with a counterbalanced alternative audio response condition. Each audio response condition was recorded by an undergraduate female in order to be both realistic and immersive for the participant. The presentation of the

participants' Fat Talk, followed by an alternative audio response condition, took place four times. The four audio responses conditions were as follows:

Deny/Reassure: "There's definitely nothing wrong with your body. You look great just the way you are."

Challenge: "I think feeling healthy and happy with who you are as a person is much more important than how you look."

Empathize/Reciprocate: "I feel the same way too sometimes, in fact, lately I've been really hating the way I look."

Ignore**:** "Have you been to see the new movie theater they built downtown? It's really nice!" Each response was presented one at a time, and each was followed with a series of study-specific single-item measures of body satisfaction, shame, support, and likelihood to engage in Fat Talk with their friend in the future. By requiring participants to fill out single-item measures after each response, the personal and relational impact of the responses were captured in real time. To prevent carry-over effects, a basic cognitive distractor task was introduced after participants completed each of these sets of study-specific single items. The 60-second distractor tasks involved counting backwards from 100 in increments of five, recalling the alphabet backwards starting from Z, and counting to 100 in increments of three (Burstin, Doughtie, & Raphaeli, 1980).

Phase 3: Post-Response Conditions. The final phase of the study began immediately after the audio response conditions were completed. Participants were presented again with each of the four audio responses. This time each response was followed by a 5-point Likert-type scale ranging from 1 (Very unlikely) to 5 (Very likely), which participants used to rate how likely they would be to use each of the four *responses* in the future in response to a

friend's Fat Talk. These likelihood ratings were followed by a brief psychoeducation piece (see Appendix I) outlining which responses to Fat Talk are most effective as far as leading to lower rates of body dissatisfaction over time. In order to confirm that the information had been clearly understood by participants, the psychoeducation segment was followed by a brief quiz (see Appendix J). This step was necessary to determine whether the information provided in the psychoeducation segment might have had an impact on participants' choices of Fat Talk response in the next task. Finally, participants were asked once again to rate on a 5-point Likert-type scale ranging from 1 (Very unlikely) to 5 (Very likely) how likely they would be to use each of the four responses in the future in response to a friend's Fat Talk. Care was taken to lessen the social demand on participants to rate these items in a way that was more pleasing than authentic. For example, participants were told that there were no "right" or "wrong" answers; that the questions were only meant to gauge their honest opinions on the matter.

Data Analytic Strategy

Principle Analyses: To test the primary aim of the study (**Hypotheses 1-4**), a one-way ANOVA with repeated measures was used to determine if response condition (e.g., *Challenge, Ignore*, *Empathize/Reciprocate, Deny/Reassure*) impacts the dependent variables of the study (e.g., shame/body satisfaction/support/future Fat Talk). Because a significant effect was detected, follow-up comparisons were used to determine which response conditions were significantly different from one another in how they affect study dependent variables.

To address the secondary aims of the study (**Hypotheses 5-7**), a two-way ANOVA with repeated measures was used to determine how baseline variables (quality of

relationship, thin ideal internalization, and body image) affect personal and relational factors (shame, support, and body satisfaction) after receiving a *Challenge* response. The two-way ANOVA with repeated measures was also utilized to examine how baseline variables affect personal and relational factors after receiving the *Ignore, Empathize/Reciprocate, and Deny/Reassure* responses for exploratory purposes. Median Splits were used to create two groups (high and low) for each baseline variable (quality of relationship, thin ideal internalization, body appreciation, and body dissatisfaction). These groups were treated as a between-subjects factor, response conditions were the within-subject factors, and the dependent variables were the same as in Hypotheses 1-4 (e.g., shame, body dissatisfaction, support, future Fat Talk). For this set of analyses, the interaction between response condition and scoring high or low on baseline variables was of most interest. Follow-up comparisons were used to determine how baseline variables differentially interact with the response conditions to impact the dependent variables of interest.

Correlational analyses were used to examine the association between positive and negative body image and frequency of Fat Talk (**Hypothesis 8),** and between Fat Talk frequency and descriptive norms of Fat Talk usage (**Hypothesis 9)**.

Power Analyses: A priori statistical power analyses were run using Gpower (3.0.10) to estimate the sample size needed to detect a significant effect. For the repeated measures ANOVA, to achieve a power of 0.95 with type I error set to 0.05 and an estimated effect size of 0.25, it was projected that 36 participants would need to be included in the study in order to reject the null hypothesis. For the second repeated measures ANOVA, within-between interaction, to achieve a power of 0.95 with type I error set to 0.05 and an estimated effect size of 0.25, it was projected that 36 participants would need to be included in the study to

reject the null hypothesis. For the correlational analyses, to achieve a power of 0.95 with type I error set to 0.05 and a medium effect size, 134 participants would need to be included in the study.

RESULTS

Characteristics of the Sample

Listwise deletion was used to handle missing data. This method was chosen to appropriate for this study because the data that was missing was at random and because there was sufficient power even after losing some data. The final sample consisted of 160 female undergraduate women who had a mean age of 23 years (*SD* = 7.41) and a mean BMI of 26.40 (*SD* = 7.13). The average BMI of the sample was in the overweight range. While a large portion of the sample identified as heterosexual or straight (*n* = 116, 72.5%), approximately one fifth identified as bisexual (*n* = 34, 21.3%). The sexual orientation of the remainder of the sample was either lesbian or gay (*n* = 6, 3.7%), or not listed (*n* = 3, 1.9%). Most of the participants had never been married (*n* = 111, 69.4%), did not have any children (*n* = 136, 85.0%) and none of the participants reported being pregnant.

In terms of ethnicity, approximately half of the sample was not of Hispanic, Latino, or Spanish origin (*n* = 178, 48.8%) while the other half primarily consisted of participants who identified as either Hispanic, Latino, or of Spanish origin (*n* = 38, 23.8%) or Mexican, Mexican American, or Chicano (*n* = 40, 25.0%). In combining these groups, approximately 49% of the sample is Hispanic. This is generally reflective of the larger population in New Mexico. Over half of the sample characterized their race as White (*n* = 105, 65.5%), followed by Asian (*n* = 17, 10.6%), American Indian/Alaska Native (*n* = 16, 10.0%), some other race (*n* = 9, 5.6%), Black or African American (*n* = 7, 4.4%), unavailable/unknown (*n* = 5, 3.1%) and Native Hawaiian/Other Pacific Islander (*n* = 1, 0.6%). Additionally, while all participants spoke English, almost 40% indicated that they were bilingual (*n* = 62, 38.8%). Only a small percentage of the entire sample had been diagnosed in the past with an eating

disorder (n = 12, 7.5%) and even fewer had received eating disorder specific treatment (n = 6, 3.8%). Lastly, over half of the participants considered themselves as overweight (n = 97, 60.6%). See Table 1 for further details on the various demographic variables.

Table 1

Participant Characteristics (*N*=160)

Demographic Categories	**Frequency**	**Percentage**	***M***	***SD***	**Range**
Age			23.00	7.41	18-64
BMI			26.40	7.13	16.83-65.77
Sexual Orientation					
Bisexual	34	.6			
Gay	1	21.3			
Heterosexual or Straight	116	.6			
Lesbian	5	72.5			
Not listed	3	3.1			
Marital Status					
Cohabitating but not married	31	19.4			
Divorced	5	3.1			
Married	10	6.3			
Never Married	111	69.4			
Separated	3	1.9			
Children Status					
Has children	24	15.0			
No children	136	85.0			
Pregnancy Status					
Yes	0	0.0			
No	160	100.0			
Ethnicity					
Non-Hispanic White	78	48.8			
Hispanic	79	49.4			
Unavailable/Unknown	3	1.9			
Race					
American Indian/Alaska Native	16	10.0			
Asian	17	10.6			
Black or African American	7	4.4			
Native Hawaiian/Other Pacific Islander	1	.6			
Some other race	9	5.6			
Unavailable/Unknown	5	3.1			
White	105	65.6			
Bilingual Status					
Yes	62	38.8			
No	96	60.0			
Eating Disorder Dx. Status					
Yes	12	7.5			
No	148	92.5			
Past Eating Disorder Tx.					
Yes	6	3.8			
No	154	96.3			
Perception of being overweight					
Yes	97	60.6			
No	63	39.4			

M = Mean, *SD* = Standard Deviation

To control for possible order effects, response conditions were counterbalanced. Participants were randomly assigned to one of four possible response condition orders: 1. [C, D/R, E/R, I] 2. [D/R, I, C, E/R] 3. [I, E/R, D/R, C] 4. [E/R, C, I, D/R]. To assess whether participants assigned to a particular order differed on demographic variables, one-way ANOVAs were used to examine differences on continuous variables (age and BMI) and chi-square differences tests were used to examine differences on categorical variables (race, ethnicity, and education). No significant differences for race $\chi 2$ (1, N = 160) = 19.89, p = .34, ethnicity $\chi 2$ (1, N = 160) = 12.02, p = .44, education $\chi 2$ (1, N = 159) = 24.68, p = .26, BMI, F(3, 159) = .42, p = .739, or age F(3, 159) = .82, p = .48 were detected between participants assigned to the different orders.

Additionally, to assess if participants assigned to a particular order differed on trait level baseline measures, one-way ANOVAs were used to examine differences. No significant differences were detected between participants assigned to the order conditions for any of the trait level measures used in the study including, the Negative Body Talk Scale (NBT), F(3, 156) = .95, p = .42, the Body Appreciation Scale (BAS), F(3, 156) = .50, p = .68, and the Body Shape Questionnaire (BSQ), F(3, 147) = .76, p = .52. Additionally no significant differences were detected between participants on the Descriptive Norms for Pursuit of Thinness Scale (DNPTS), F(3, 156) = 1.61, p = .19, the support subscale of the Quality of Relationships Inventory (QRI), F(3, 158) = 1.9, p = .19, and the thin/low body fat internalization subscale of the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4), F(3, 156) = 1.69, p = .17).

Impact of Fat Talk Response on Personal and Relational Factors

Aim 1: The primary aim of the current study was to measure the impact of various responses to Fat Talk on both personal and relational factors within the context of female friendships. Personal factors were defined as the participant's perception of how satisfied she was with her body and how shameful she felt generally after hearing each response. Relational factors were defined as the participant's perceived level of support and her perception of how likely she would be to engage in future Fat Talk after hearing each response. Separate repeated measures one-way ANOVAs with 4 within-subject levels (*Challenge, Empathize/Reciprocate, Deny/Reassure, Ignore*) were used to examine the impact of response to Fat Talk on shame, body satisfaction, social support, and future fat talk. BMI was controlled for in the following analyses as it was highly correlated with the response option ($p = .005$).

Shame. There was no missing data for this variable across all four response conditions. A repeated-measures one-way ANOVA with BMI as a covariate was conducted to examine the impact of response (*Challenge, Empathize/Reciprocate, Deny/Reassure, Ignore*) on shame. Mauchly's Test of Sphericity ($p = .007$) was violated and the Huynh-Feldt correction was used. A significant effect of response type on shame was found, $F(2.87, 454.35) = 31.05$, $p < .001$. Pairwise comparisons using a Bonferroni-adjusted correction ($p < .05/6 = p < .008$) for multiple comparisons indicated that after the *Ignore* response, participants reported greater shame compared to all other conditions including the *Challenge* response ($p < .001$), the *Empathize/Reciprocate* response ($p < .001$) and the *Deny/Reassure* response ($p < .001$). Relative to the *Deny/Reassure* condition ($M = 2.16$, $SD = 1.06$), participants reported greater shame after the *Challenge* ($M = 2.43$, $SD = 1.12$, $p = .022$) and

Empathize/Reciprocate ($M = 2.58$, $SD = 1.12$, $p < .001$) conditions. There was no difference in shame between the *Challenge* and the *Empathize/Reciprocate* response conditions. Finally, the *Deny/Reassure* response resulted in the least self-reported shame relative to other conditions. These findings support the hypothesis that a *Challenge* and *Ignore* response may lead to increased shame while a *Deny/Reassure* response may lead to decreased shame. However, these findings did not support our hypothesis regarding the *Empathize/Reciprocate* response's impact on shame. It was hypothesized that shame would decrease, not increase after receiving this response. Refer to Tables 2 and 3 for a summary of the analyses.

Body Satisfaction. There was no missing data for this variable across all four response conditions. A repeated-measures one-way ANOVA with BMI as a covariate was conducted to examine the impact of response on body satisfaction. Mauchly's Test of Sphericity ($p = .039$) was violated and the Huynh-Feldt correction was used. There was a significant effect of response type on body satisfaction, $F(2.90, 459.57) = 68.40$, $p < .001$. Pairwise comparisons using a Bonferroni-adjusted correction for multiple comparisons indicated that after the *Ignore* response, participants reported less body satisfaction compared to all other conditions including the *Challenge* response ($p < .001$), the *Empathize/Reciprocate* response ($p < .001$) and the *Deny/Reassure* response ($p < .001$). Relative to the *Empathize/Reciprocate* condition ($M = 2.88$, $SD = 1.00$), participants reported higher body satisfaction after receiving both the *Challenge* condition ($M = 3.38$, $SD = 1.12$, $p < .001$) and the *Deny/Reassure* condition ($M = 3.59$, $SD = 1.05$, $p < .001$). No significant differences emerged between the *Challenge* and *Deny/Reassure* conditions on body satisfaction. These findings support the hypothesis that an *Ignore* response to Fat Talk may decrease one's body satisfaction while a *Deny/Reassure* response may increase one's body

satisfaction. However, these findings do not support initial hypotheses regarding the *Challenge* response or the *Empathize/Reciprocate* response. Contrary to the hypotheses, the *Challenge* response increased body satisfaction whereas the *Empathize/Reciprocate* response did not. Refer to Tables 2 and 3 for a summary of the analyses.

Perceived Support. There were two missing data points for this variable across all four response conditions. A repeated-measures one-way ANOVA with BMI as a covariate was conducted to examine the impact of response (*Challenge, Empathize/Reciprocate, Deny/Reassure, Ignore*) on perceived support. Mauchly's Test of Sphericity ($p = .006$) was violated and the Huynh-Feldt correction was used. There was a significant effect of response type on perceived support, $F(2.88, 452.32) = 129.26$, $p < .001$. Pairwise comparisons using a Bonferroni-adjusted correction for multiple comparisons indicated that after the *Ignore* response participants reported the least perceived support in comparison to the other conditions including the *Challenge* response ($p < .001$), the *Empathize/Reciprocate* response ($p < .001$) and the *Deny/Reassure* response ($p < .001$). Compared to the *Deny/Reassure* condition ($M = 4.08$, $SD = 1.08$), participants reported less perceived support after receiving both the *Challenge* condition ($M = 3.67$, SD = 1.29, $p = .003$) and the *Empathize/Reciprocate* condition ($M = 3.38$, $SD = 1.12$, $p < .001$). There were no differences between the *Challenge* and the *Empathize/Reciprocate* conditions on perceived support. The *Deny/Reassure* condition reported the greatest perceived support in comparison to all other response conditions including the *Challenge* response ($p = .003$), the *Empathize/Reciprocate* response ($p < .001$) and the *Ignore* response ($p < .001$). These findings support the hypothesis that the *Ignore* response and the *Challenge* response to Fat Talk may decrease one's perceived support while a *Deny/Reassure* response may increase one's perceived support. However,

the hypothesis regarding the hypothesis regarding the *Empathize/Reciprocate* response was not supported in that it did not significantly increase one's perceived support. Refer to Tables 2 and 3 for a summary of the analyses.

Likelihood of Future Fat Talk. There were three missing data points for this variable across all four response conditions. A repeated-measures one-way ANOVA with BMI as a covariate was conducted to examine the impact of response on the likelihood of future Fat Talk. Mauchly's Test of Sphericity ($p = .154$) was not violated and therefore no corrections need to be used. There was a significant effect of response type on future Fat Talk, $F(2.97, 468.80) = 79.12$, $p < .001$. Pairwise comparisons using a Bonferroni-adjusted correction for multiple comparisons indicated that after the *Ignore* response, participants were the least likely to use Fat Talk with that friend again in the future relative to the other conditions including the *Challenge* response ($p < .001$), the *Empathize/Reciprocate* response ($p < .001$) and the *Deny/Reassure* response ($p < .001$). Compared to the *Challenge* response condition ($M = 2.96$, $SD = 1.15$), participants were more likely to use Fat Talk in the future after receiving the *Empathize/Reciprocate* condition ($M = 3.38$, $SD = 0.95$, $p = .001$). There were no significant differences between the *Challenge* response and the *Deny/Reassure* response conditions. The *Empathize/Reciprocate* condition resulted in the highest likelihood of using future Fat Talk relative to all other response conditions. These findings support the hypotheses that the *Ignore* and the *Challenge* responses would result in a decreased likelihood of Fat Talk usage with one's friend and that the *Empathize/Reciprocate* response would result in an increased likelihood to use Fat Talk with one's friend. However, contrary to what was hypothesized, the *Deny/Reassure* response did not lead to increased likelihood of

using Fat Talk in the future with one's friend. Refer to Tables 2 and 3 for a summary of the analyses.

Summary. Overall, the results for the first aim indicate that differences do indeed emerge for personal and relational factors as a function of the response that one receives after using Fat Talk with a close female friend. Generally, the *Ignore* response consistently resulted in increased shame, decreased body satisfaction, and decreased perceived support. Perhaps not surprisingly then, the *Ignore* response also resulted in the lowest perceived likelihood of using Fat Talk in the future with that specific friend. Similar to the *Ignore* response, the *Empathize/Reciprocate* response resulted in higher levels of shame, less body satisfaction and perceived support, yet led to a higher likelihood of participants using Fat Talk in the future with that specific friend. On the other hand, the *Deny/Reassure* response appeared to lead to the least shame and the highest levels of body satisfaction and perceived support among participants when compared with the other response conditions. Additionally, the *Deny/Reassure* response led to a lower likelihood of using Fat Talk in the future with that specific friend. Finally, the *Challenge* response resulted in increased shame, higher body satisfaction, less perceived support, and less of a likelihood to use Fat Talk in the future. See Table 2 and 3 for a summary of these results.

Table 2

Means and Standard Deviations for Personal and Relational Variables across Response Conditions.

	Challenge *M(SD)*	**Empathize/ Reciprocate** *M(SD)*	**Deny/Reassure** *M(SD)*	**Ignore** *M(SD)*	**Significance**	**Pairwise Comparisons**
Body Satisfaction	3.38 (1.12)	2.88 (1.00)	3.59 (1.05)	2.26 (1.21)	F(2.92, 458.602) = 6.52, p <.001	D/R = C > E/R, I E/R > I
Perceived Support	3.67 (1.29)	3.38 (1.13)	4.08 (1.09)	1.81 (1.26)	F(2.89, 450.901) = 5.81, p <.001	D/R > C, E/R, I C = E/R > I
Shame	2.43 (1.12)	2.58 (1.12)	2.16 (1.06)	3.15 (1.31)	F (2.89, 453.42) = 4.275, p = .006	I > C, E/R, D/R C = E/R > D/R
Likelihood of Future Fat Talk	2.96 (1.15)	3.38 (0.95)	3.10 (1.01)	1.81 (1.13)	F(2.99, 469.08) = 3.50, p = .016	E/R > C, D/R, I C = D/R > I

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*). C = *Challenge,* E/R = *Empathize/Reciprocate,* D/R = *Deny/Reassure,* I = *Ignore.*

Table 3

Estimated Marginal Means and Standard Errors for Personal and Relational Variables across Response Conditions.

	Challenge	***Empathize/Reciprocate***	***Deny/Reassure***	***Ignore***
	Estimated Marginal M (SE)	*Estimated Marginal M (SE)*	Estimated Marginal *M (SE)*	*Estimated Marginal M (SE)*
Body Satisfaction	3.39 (.09)	2.88 (.08)	3.59 (.08)	2.25 (.10)
Perceived Support	3.67 (.10)	3.39 (.09)	4.08 (.09)	1.82 (.10)
Shame	2.42 (.09)	2.58 (.09)	2.16 (.08)	3.15 (.10)
Likelihood of Future Fat Talk	2.96 (.09)	3.38 (.08)	3.10 (.08)	1.80 (.09)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Baseline Variables Impact on Receiving Various Responses

Aim 2: The secondary aim of the study was to measure the quality of relationship between the participant and her chosen friend prior to experimental manipulation, in order to see how it affects the personal and relational impact of receiving a *Challenge* response from that individual. The support subscale of the QRI was utilized to assess quality of relationship and the personal and relational factors were defined in the same manner as in Aim 1. There was only one participant with missing data whose QRI support subscale score could not be calculated. Median Splits were used to create two groups (high and low) for the baseline variable (quality of relationship (QRI)). Those below the median (n = 98) were coded as .00 and those above the median (n = 60) were coded as 1.00. A mixed ANOVA with group (2 conditions: high or low quality of relationship) as the between subject factor and response condition as the within-subjects factor was conducted to examine the impact of quality of relationship on shame, body satisfaction, perceived support, and likelihood of future Fat Talk. See Table 4 for a summarization of the below results.

Quality of Relationship

Shame. To examine if pre-manipulation quality of relationship, as measured by perceived level of support within the relationship, impacted degree of shame in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects and the quality of relationship as the between-subjects factor (2 levels: high and low quality of relationship). A median-split was conducted to divide participants into high and low support within the relationship. Mauchly's Test of Sphericity ($p = .006$) was violated and the Huynh-Feldt correction was used. There was no significant condition x

quality of relationship interaction effect, F (2.91, 450.45) = .07, p = .98. Participants' shame was not affected by the quality of relationship with their chosen friend when responding to the specific Fat Talk response conditions. There was no significant main effect of level of quality of relationship on shame, F (1, 155) = 2.53, p = .114.

Body Satisfaction. To examine if pre-manipulation quality of relationship impacted body satisfaction in response to each of the Fat Talk scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of quality of relationship as the between-subjects factor (2 levels: high and low quality of relationship). A median-split was conducted to divide participants into high and low quality of relationship. Mauchly's Test of Sphericity (p = .04) was violated and the Huynh-Feldt correction was used. There was no significant condition x quality of relationship interaction effect, F (2.94, 456.14) = .23, p = .87. Participants' body satisfaction was not affected by the quality of relationship with their chosen friend when responding to the specific Fat Talk response conditions. There also was no significant main effect of quality of relationship on body satisfaction, F (1, 155) = 1.73, p = .19.

Perceived Support. To examine if pre-manipulation quality of relationship impacted level of perceived support in response to each of the Fat Talk scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of quality of relationship as the between-subjects factor (2 levels: high and low quality of relationship). A median-split was conducted to divide participants into high and low quality of relationship. Mauchly's Test of Sphericity (p = .005) was violated and the Huynh-Feldt correction was

used. There was no significant condition x quality of relationship interaction effect, F (2.91, 451.54) = .63, p = .59. Participants' perceived support was not affected by the quality of their relationship when reacting to the four different response conditions. There was, however, a significant main effect of quality of relationship, F (1, 155) = 4.71, p = .031, suggesting that participants with a higher quality of relationship with their friend at baseline reported greater average perceived support across all conditions.

Likelihood of Future Fat Talk. To examine if pre-manipulation quality of relationship impacted the likelihood of future Fat Talk use in response to each of the Fat Talk scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of quality of relationship as the between-subjects factor (2 levels: high and low quality of relationship). A median-split was conducted to divide participants into high and low quality of relationship. Mauchly's Test of Sphericity (p = .141) was not violated and therefore no corrections were needed. There was no significant condition x quality of relationship interaction effect, F (3, 468) = .517, p = .671. Participants' likelihood of future Fat Talk use was not influenced by their quality of relationship when experiencing the four Fat Talk response conditions. There was no main effect of relationship quality, F (1, 156) = 2.51, p = .115.

Summary. Overall, these results indicate that the pre-manipulation quality of the relationship with the female friend who was imagined as delivering the four responses to the participant's Fat Talk, did not impact participants' body satisfaction, shame, perceived support, or future Fat Talk after receiving a *Challenge* response. Pre-manipulation quality of relationship also did not impact participants' body satisfaction, shame, perceived support, or

future Fat Talk after receiving the other three responses (*Deny/Reassure, Empathize/Reciprocate, Ignore).* Additionally, participants with a higher quality of relationship reported greater average perceived support across conditions in comparison to those with a lower quality of relationship. See Table 4-7 for a summary of these results.

Table 4

Quality of Relationship (QRI) Support Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Challenge Response.

	Challenge			
	High Quality of Relationship M (SD)	***Low Quality of Relationship M (SD)***	***High Quality of Relationship Estimated Marginal M (SE)***	***Low Quality of Relationship Estimated Marginal M (SE)***
Body Satisfaction	3.49 (1.06)	3.30 (1.16)	3.52 (.14)	3.30 (.11)
Perceived Support	3.74 (1.20)	3.62 (1.35)	3.73 (.17)	3.64 (.13)
Shame	2.36 (.98)	2.46 (1.21)	2.33 (.15)	2.48 (.12)
Likelihood of Future Fat Talk	3.02 (1.10)	2.92 (1.18)	3.01 (.15)	2.93 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 5

Quality of Relationship (QRI) Support Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Empathize/Reciprocate Response.

	Empathize/Reciprocate			
	High Quality of Relationship M (SD)	***Low Quality of Relationship M (SD)***	***High Quality of Relationship Estimated Marginal M (SE)***	***Low Quality of Relationship Estimated Marginal M (SE)***
Body Satisfaction	2.97 (.98)	2.82 (1.02)	2.99 (.13)	2.81 (.10)
Perceived Support	3.64 (1.03)	3.22 (1.16)	3.65 (.15)	3.22 (.11)
Shame	2.46 (1.07)	2.65 (1.16)	2.43 (.15)	2.67 (.12)
Likelihood of Future Fat Talk	3.44 (.83)	3.35 (1.03)	3.43 (.12)	3.36 (.10)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 6

Quality of Relationship (QRI) Support Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Deny/Reassure Response.

	Deny/Reassure			
	High Quality of Relationship M (SD)	***Low Quality of Relationship M (SD)***	***High Quality of Relationship Estimated Marginal M (SE)***	***Low Quality of Relationship Estimated Marginal M (SE)***
Body Satisfaction	3.66 (1.05)	3.55 (1.07)	3.71 (.13)	3.51 (.11)
Perceived Support	3.74 (1.20)	4.00 (1.10)	4.22 (.14)	3.99 (.11)
Shame	2.07 (1.00)	2.20 (1.09)	2.00 (.13)	2.24 (.11)
Likelihood of Future Fat Talk	3.31 (.87)	2.98 (1.07)	3.30 (.13)	2.99 (.10)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 7

Quality of Relationship (QRI) Support Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Ignore Response.

	Ignore			
	High Quality of Relationship M (SD)	***Low Quality of Relationship M (SD)***	***High Quality of Relationship Estimated Marginal M (SE)***	***Low Quality of Relationship Estimated Marginal M (SE)***
Body Satisfaction	2.25 (1.23)	2.27 (1.21)	2.28 (.16)	2.23 (.12)
Perceived Support	1.97 (1.38)	1.72 (1.18)	2.01 (.16)	1.71 (.13)
Shame	3.03 (1.34)	3.21 (1.30)	3.01 (.17)	3.23 (.13)
Likelihood of Future Fat Talk	1.93 (1.24)	1.72 (1.06)	1.94 (.15)	1.72 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Aim 3: The third aim of the study was to measure the level of thin-ideal internalization as well as body appreciation (positive body image) and body dissatisfaction (negative body image) *prior* to experimental manipulation, in order to see how they affect the personal and relational impact of a receiving a *Challenge* response. The Internalization subscale of the SATAQ-4 was utilized to assess pre-manipulation thin-ideal internalization, the BAS-2 was utilized to assess pre-manipulation body appreciation, the BSQ was used to assess pre-manipulation body dissatisfaction and the personal and relational factors were defined in the same manner as in Aim 1. There were three participants with missing data for the BAS-2 and the SATAQ-4 and there were 12 participants with missing data for the BSQ. A two-way ANOVA with repeated measures followed by Median Splits were used to create two groups (high and low) for each baseline variable (thin-ideal internalization, body appreciation, body dissatisfaction). These groups were treated as a between-subjects factor and the response conditions were the within-subject factors.

Thin Ideal Internalization

Shame. To examine if pre-manipulation level of thin-ideal internalization impacted level of shame in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of thin ideal internalization as the between-subjects factor (2 levels: high and low thin-ideal internalization). BMI was included as a covariate in all analyses. A median-split was conducted to divide participants into high and low thin-ideal internalization. Mauchly's Test of Sphericity ($p = .006$) was violated and the Huynh-Feldt correction was used. There was no significant condition x thin-ideal internalization interaction effect, F (2.90, 443.55) = 1.07, $p = .362$. Participants' level of shame in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of thin-ideal internalization. However, there was a significant main effect of level of thin-ideal internalization on shame, F (1, 153) = 11.07, $p = .001$.

Body Satisfaction. To examine if pre-manipulation level of thin-ideal internalization impacted body satisfaction in response to each of the Fat Talk scenarios, a mixed-model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of thin-ideal internalization as the between-subjects factor (2 levels: high and low thin-ideal internalization). A median-split was conducted to divide participants into high and low thin-ideal internalization. Mauchly's Test of Sphericity (p = .021) was violated and the Huynh-Feldt correction was used. There was no significant condition x thin-ideal internalization interaction effect, F (2.92, 450.15) = .255, $p = .853$. Participants' level of body satisfaction

in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of thin-ideal internalization. However, there was a significant main effect of level of thin-ideal internalization on body satisfaction, F (1, 154) = 12.25, p = <.001.

Perceived Support. To determine whether pre-manipulation level of thin-ideal internalization impacted level of perceived support in response to each of the Fat Talk scenarios, a mixed model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of thin-ideal internalization as the between-subjects factor (2 levels: high and low thin-ideal internalization). A median-split was conducted to divide participants into high and low thin-ideal internalization. Mauchly's Test of Sphericity (p = .007) was violated and the Huynh-Feldt correction was used. There was no significant condition x thin-ideal internalization interaction effect, F (2.92, 443.85) = .283, p = .83. Participants' level of perceived support in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of thin-ideal internalization. There was no significant main effect of thin-ideal internalization on perceived support F (1, 152) = 1.87, p = .174.

Likelihood of Future Fat Talk. To examine if pre-manipulation level of thin-ideal internalization impacted likelihood of future Fat Talk use in response to each of the Fat Talk scenarios, a mixed model ANOVA was conducted with response conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within-subjects factor and level of thin-ideal internalization as the between-subjects factor (2 levels: high and low thin-ideal internalization). A median-split was conducted to divide participants into high and low thin-ideal internalization. Mauchly's Test of Sphericity (p = .06) was not violated and therefore no corrections were necessary. There was no significant condition x thin-ideal

internalization interaction effect, F (3, 459) = 2.55, p = .06. Participants' likelihood of future Fat Talk use in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of thin-ideal internalization. There was no significant main effect of thin-ideal internalization on future Fat Talk, F (1, 153) = .01, p = .93.

Summary. Overall, these results indicate that participants' pre-manipulation degree of thin-ideal internalization did not impact their perceived support or likelihood of future Fat Talk after receiving a *Challenge* response. Pre-manipulation thin-ideal internalization also did not impact participants' body satisfaction, shame, perceived support, or future Fat Talk after receiving the other three responses (*Deny/Reassure, Empathize/Reciprocate, Ignore).* Additionally, participants with a higher degree of thin-ideal internalization reported less average body satisfaction and more shame across conditions in comparison to those with a lower degree of thin-ideal internalization. See Tables 8-11 for a summary of these results.

Table 8

Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) Thin Ideal Internalization Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Challenge Response.

	Challenge			
	High Thin-Ideal Internalization M (SD)	***Low Thin-Ideal Internalization M (SD)***	***High Thin-Ideal Internalization Estimated Marginal M (SE)***	***Low Thin-Ideal Internalization Estimated Marginal M (SE)***
Body Satisfaction	1.13 (1.06)	3.60 (1.10)	3.14 (.13)	3.59 (.12)
Perceived Support	3.54 (1.16)	3.80 (1.35)	3.53 (.15)	3.82 (.14)
Shame	2.66 (1.02)	2.20 (1.15)	2.66 (.13)	2.20 (.12)
Likelihood of Future Fat Talk	2.94 (1.06)	3.00 (1.19)	2.93 (.14)	3.01 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 9

Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) Thin Ideal Internalization Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Empathize/Reciprocate Response.

	Empathize/Reciprocate			
	High Thin-Ideal Internalization M (SD)	***Low Thin-Ideal Internalization M (SD)***	***High Thin-Ideal Internalization Estimated Marginal M (SE)***	***Low Thin-Ideal Internalization Estimated Marginal M (SE)***
Body Satisfaction	2.62 (.96)	3.09 (1.00)	2.63 (.12)	3.08 (.10)
Perceived Support	3.32 (1.14)	3.80 (1.35)	3.32 (.14)	3.42 (.12)
Shame	2.74 (1.10)	2.50 (1.13)	2.73 (.14)	2.50 (.12)
Likelihood of Future Fat Talk	3.60 (.74)	3.23 (1.05)	3.60 (.11)	3.23 (.01)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 10

Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) Thin Ideal Internalization Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Deny/Reassure Response.

	Deny/Reassure			
	High Thin-Ideal Internalization M (SD)	***Low Thin-Ideal Internalization M (SD)***	***High Thin-Ideal Internalization Estimated Marginal M (SE)***	***Low Thin-Ideal Internalization Estimated Marginal M (SE)***
Body Satisfaction	3.40 (1.04)	3.74 (1.04)	3.43 (.12)	3.72 (.11)
Perceived Support	3.96 (1.10)	4.18 (1.09)	3.96 (.13)	4.14 (.12)
Shame	2.53 (1.09)	1.89 (.96)	2.51 (.12)	1.89 (.12)
Likelihood of Future Fat Talk	3.60 (.74)	3.16 (1.00)	2.99 (.12)	3.17 (.11)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 11

Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) Thin Ideal Internalization Subscale Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Ignore Response.

	Ignore			
	High Thin-Ideal Internalization M (SD)	***Low Thin-Ideal Internalization M (SD)***	***High Thin-Ideal Internalization Estimated Marginal M (SE)***	***Low Thin-Ideal Internalization Estimated Marginal M (SE)***
Body Satisfaction	2.00 (1.12)	2.46 (1.24)	2.02 (.14)	2.45 (.13)
Perceived Support	1.75 (1.20)	1.85 (1.30)	1.76 (.15)	1.86 (.14)
Shame	3.37 (1.23)	2.97 (1.33)	3.36 (.16)	2.97 (.14)
Likelihood of Future Fat Talk	1.74 (1.07)	1.88 (1.19)	1.73 (.14)	1.88 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Body Appreciation (BAS-2).

Shame. To examine whether pre-manipulation body appreciation impacted level of shame in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body appreciation as the between-subjects factor (2 levels: high and low body appreciation). A median-split was conducted to divide participants into high and low body appreciation. Mauchly's Test of Sphericity (p = .009) was violated and the Huynh-Feldt correction was used. There was no significant condition x body appreciation interaction effect, F (2.90, 449.02) = 2.90, p = .04. Participant's shame in reaction to the four Fat Talk responses was not influenced by their pre-manipulation level of body appreciation. However, there was a significant main effect of level of body appreciation on shame, F (1, 155) = 26.04, p = <.001.

Body Satisfaction. To examine if pre-manipulation body appreciation impacted level of body satisfaction in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body appreciation as the between-subjects factor (2 levels: high and low body appreciation). A median-split was conducted to divide participants into high and low body appreciation. Mauchly's Test of Sphericity (p = .04) was violated and the Huynh-Feldt correction was used. There was no significant condition x body appreciation interaction effect, F (2.93, 450.94) = .504, p = .68. Participant's body satisfaction in reaction to the four Fat Talk responses was not influenced by their pre-manipulation level of body appreciation. However, there was a significant main effect of level of body appreciation on body satisfaction, F (1, 154) = 24.15, p = <.001.

Perceived Support. To examine if body appreciation impacted level of perceived support in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body appreciation as the between-subjects factor (2 levels: high and low body appreciation). A median-split was conducted to divide participants into high and low body appreciation. Mauchly's Test of Sphericity ($p = .01$) was violated and the Huynh-Feldt correction was used. There was no significant condition x body appreciation interaction effect, F (2.91, 447.63) = 0.48, $p = .69$. Participant's perceived support in reaction to the four Fat Talk responses was not influenced by their pre-manipulation level of body appreciation. However, there was a significant main effect of level of body appreciation on perceived support, F (1, 154) = 11.87, $p = <.001$.

Likelihood of Future Fat Talk. To examine if body appreciation impacted likelihood of future Fat Talk use in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body appreciation as the between-subjects factor (2 levels: high and low body appreciation). A median-split was conducted to divide participants into high and low body appreciation. Mauchly's Test of Sphericity ($p = .15$) was not violated and therefore no correction was necessary. There was no significant condition x body appreciation interaction effect, F (3, 465) = 1.82, $p = .14$. Participant's likelihood of future Fat Talk use in reaction to the four Fat Talk responses was not influenced by their pre-manipulation level of body appreciation. Also, there was no significant main effect of level of body appreciation on likelihood of future Fat Talk use, F (1, 155) = .03, $p = <.88$.

Summary. Overall, these results indicate that one's pre-manipulation level of body appreciation, did not impact the likelihood of future Fat Talk after receiving a *Challenge* response. Pre-manipulation body appreciation also did not impact participants' body satisfaction, shame, perceived support, or future Fat Talk after receiving the other three responses either (*Deny/Reassure, Empathize/Reciprocate, Ignore).* Additionally, participants with a higher level of body appreciation reported higher degrees of body satisfaction and perceived support and lower levels of shame across conditions in comparison to those with a lower level of body appreciation. See Tables 12-15 for a summary of these results.

Table 12

Body Appreciation Scale – 2 (BAS-2) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Challenge Response.

	Challenge			
	High Body Appreciation M (SD)	***Low Body Appreciation M (SD)***	***High Body Appreciation Estimated Marginal M (SE)***	***Low Body Appreciation Estimated Marginal M (SE)***
Body Satisfaction	3.62 (1.17)	3.21 (1.08)	3.67 (.15)	3.21 (.11)
Perceived Support	3.81 (1.34)	3.57 (1.26)	3.81 (.17)	3.57 (.13)
Shame	2.09 (1.14)	2.63 (1.07)	2.09 (.15)	2.63 (.11)
Likelihood of Future Fat Talk	2.93 (1.15)	2.97 (1.16)	2.93 (.15)	2.97 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 13

Body Appreciation Scale – 2 (BAS-2) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Empathize/Reciprocate Response.

	Empathize/Reciprocate			
	High Body Appreciation M (SD)	***Low Body Appreciation M (SD)***	***High Body Appreciation Estimated Marginal M (SE)***	***Low Body Appreciation Estimated Marginal M (SE)***
Body Satisfaction	3.21 (1.11)	2.68 (.89)	3.21 (.13)	2.68 (.10)
Perceived Support	3.64 (1.12)	3.23 (1.12)	3.64 (.15)	3.24 (.11)
Shame	2.34 (1.21)	2.71 (1.07)	2.35 (.15)	2.71 (.11)
Likelihood of Future Fat Talk	3.19 (1.08)	3.51 (.86)	3.19 (.13)	3.51 (.10)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 14

Body Appreciation Scale – 2 (BAS-2) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Deny/Reassure Response.

	Deny/Reassure			
	High Body Appreciation M (SD)	***Low Body Appreciation M (SD)***	***High Body Appreciation Estimated Marginal M (SE)***	***Low Body Appreciation Estimated Marginal M (SE)***
Body Satisfaction	3.98 (.85)	3.35 (1.11)	3.98 (.14)	3.35 (.10)
Perceived Support	4.36 (.89)	3.90 (1.17)	4.36 (.14)	3.90 (.11)
Shame	1.74 (.95)	2.39 (1.05)	1.74 (.13)	2.39 (.10)
Likelihood of Future Fat Talk	3.17 (.88)	3.07 (1.08)	3.17 (.13)	3.07 (.10)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 15

Body Appreciation Scale – 2 (BAS-2) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Ignore Response.

	Ignore			
	High Body Appreciation M (SD)	***Low Body Appreciation M (SD)***	***High Body Appreciation Estimated Marginal M (SE)***	***Low Body Appreciation Estimated Marginal M (SE)***
Body Satisfaction	2.71 (1.36)	1.98 (1.05)	2.68 (.16)	1.98 (.12)
Perceived Support	2.16 (1.54)	1.62 (1.03)	2.16 (.16)	1.62 (.13)
Shame	2.52 (1.27)	3.56 (1.21)	2.52 (.16)	3.52 (.12)
Likelihood of Future Fat Talk	1.91 (1.22)	1.73 (1.07)	1.91 (.15)	1.73 (.11)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Body Dissatisfaction (BSQ).

Shame. To examine if pre-manipulation body dissatisfaction impacted level of shame in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body dissatisfaction as the between-subjects factor (2 levels: high and low body dissatisfaction). A median-split was conducted to divide participants into high and low body dissatisfaction. Mauchly's Test of Sphericity ($p = .01$) was violated and the Huynh-Feldt correction was used. There was no significant condition x body dissatisfaction interaction effect, F (2.90, 420.33) = 1.28, $p = .28$. Participant's level of shame in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of body dissatisfaction. However, there was a significant main effect of level of body dissatisfaction on shame, F (1, 145) = 40.78, $p = <.001$.

Body Satisfaction. To examine if pre-manipulation body dissatisfaction (BSQ) impacted level of body satisfaction (single item) in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body dissatisfaction as the between-subjects factor (2 levels: high and low body dissatisfaction). A median-split was conducted to divide participants into high and low body dissatisfaction. Mauchly's Test of Sphericity (p = .06) was violated and the Huynh-Feldt correction was used. There was no significant condition x body dissatisfaction interaction effect, F (2.93, 428.20) = .61, p = .60. Participant's level of body satisfaction in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of body dissatisfaction. However, there was a significant main effect of level of pre-manipulation body dissatisfaction on body satisfaction, F (1, 146) = 34.9, p = <.001.

Perceived Support. To examine whether pre-manipulation body dissatisfaction impacted level of perceived support in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body dissatisfaction as the between-subjects factor (2 levels: high and low body dissatisfaction). A median-split was conducted to divide participants into high and low body dissatisfaction. Mauchly's Test of Sphericity (p = .21) was violated and the Huynh-Feldt correction was used. There was no significant condition x body dissatisfaction interaction effect, F (2.92, 420.45) = .05, p = .99. Participant's level of perceived support in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of body dissatisfaction. However, there was a

significant main effect of level of body dissatisfaction on perceived support, F (1, 144) = 6.1, p = .02.

Likelihood of Future Fat Talk. To examine if pre-manipulation body dissatisfaction impacted likelihood to use Fat Talk in the future in response to each of the Fat Talk response scenarios, a mixed-model ANOVA was conducted with conditions (4 levels: *Ignore, Deny/Reassure, Empathize/Reciprocate, Challenge*) as the within subjects and level of body dissatisfaction as the between-subjects factor (2 levels: high and low body dissatisfaction). A median-split was conducted to divide participants into high and low body dissatisfaction. Mauchly's Test of Sphericity (p = .11) was not violated and therefore no corrections were used. There was no significant condition x body dissatisfaction interaction effect, F (2.97, 431.00) = 1.54, p = .20. Participant's likelihood of future Fat Talk use in reaction to the four Fat Talk responses was not influenced by the pre-manipulation level of body dissatisfaction. There was not a significant main effect of level of body dissatisfaction on future Fat Talk use, F (1, 145) = 1.94, p = .17.

Summary. Overall, these results indicate that one's pre-manipulation degree of body dissatisfaction, does not impact one's likelihood future Fat Talk after receiving a *Challenge* response. Pre-manipulation body dissatisfaction also did not impact participants' body satisfaction, shame, perceived support, or future Fat Talk after receiving the other three responses either (*Deny/Reassure, Empathize/Reciprocate, Ignore).* Additionally, participants with a higher degree of pre-manipulation body dissatisfaction as measured by the BSQ reported lower degrees of body satisfaction and perceived support and higher degrees of shame across all conditions in comparison to those with a lower degree of pre-manipulation body dissatisfaction. See Tables 16-19 for a summary of these results.

Table 16

Body Shape Questionnaire (BSQ) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Challenge response.

	Challenge			
	High Body Dissatisfaction M (SD)	***Low Body Dissatisfaction M (SD)***	***High Body Dissatisfaction Estimated Marginal M (SE)***	***Low Body Dissatisfaction Estimated Marginal M (SE)***
Body Satisfaction	3.03 (1.03)	3.74 (1.09)	3.03 (.12)	3.74 (.12)
Perceived Support	3.53 (1.24)	3.86 (1.35)	3.53 (.15)	3.86 (.15)
Shame	2.84 (1.02)	1.99 (1.09)	2.84 (.12)	1.95 (.12)
Likelihood of Future Fat Talk	2.99 (1.14)	2.92 (1.15)	3.00 (.13)	2.92 (.13)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 17

Body Shape Questionnaire (BSQ) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Empathize/Reciprocate response.

	Empathize/Reciprocate			
	High Body Dissatisfaction M (SD)	***Low Body Dissatisfaction M (SD)***	***High Body Dissatisfaction Estimated Marginal M (SE)***	***Low Body Dissatisfaction Estimated Marginal M (SE)***
Body Satisfaction	2.58 (.92)	3.11 (1.01)	2.58 (.11)	3.11 (.11)
Perceived Support	3.20 (1.07)	3.46 (1.17)	3.21 (.13)	3.47 (.13)
Shame	2.85 (1.04)	2.35 (1.15)	2.85 (.13)	2.34 (.13)
Likelihood of Future Fat Talk	3.61 (.72)	3.16 (1.08)	3.61 (.11)	3.16 (.11)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Table 18

Body Shape Questionnaire (BSQ) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for a Deny/Reassure response.

	Deny/Reassure			
	High Body Dissatisfaction M (SD)	***Low Body Dissatisfaction M (SD)***	***High Body Dissatisfaction Estimated Marginal M (SE)***	***Low Body Dissatisfaction Estimated Marginal M (SE)***
Body Satisfaction	3.27 (1.11)	3.88 (.94)	3.27 (.12)	3.88 (.12)
Perceived Support	3.93 (1.12)	4.19 (1.09)	3.93 (.13)	4.19 (.13)
Shame	2.51 (1.06)	1.77 (.93)	2.51 (.13)	1.75 (.12)
Likelihood of Future Fat Talk	3.08 (1.03)	3.01 (1.02)	3.08 (.12)	3.01 (.12)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*

Table 19

Body Shape Questionnaire (BSQ) Median Split Means, Estimated Marginal Means, and Standard Deviations or Standard Errors for an Ignore response.

	Ignore			
	High Body Dissatisfaction M (SD)	***Low Body Dissatisfaction M (SD)***	***High Body Dissatisfaction Estimated Marginal M (SE)***	***Low Body Dissatisfaction Estimated Marginal M (SE)***
Body Satisfaction	1.85 (.96)	2.65 (1.30)	1.85 (.13)	2.65 (.13)
Perceived Support	1.59 (.99)	1.92 (1.40)	1.60 (.14)	1.93 (.14)
Shame	3.61 (1.11)	2.73 (1.35)	3.61 (.14)	2.73 (.14)
Likelihood of Future Fat Talk	1.78 (1.09)	1.78 (1.18)	1.78 (.13)	1.78 (.13)

Note. Body Satisfaction, Perceived Support, Shame, and Likelihood of Future Fat Talk = (*single item measures*)

Fat Talk Frequency Correlates

Aim 4: The fourth aim of the study was to examine the relationship between body image and the frequency of Fat Talk engagement. There were two participants with missing data for the NBT and there were 12 participants with missing data for the BSQ. A bivariate Pearson correlation analysis detected a significant positive relationship ($p = <.001$) between Fat Talk usage and negative body image, r = .652, n = 146. This demonstrates that the higher one's negative body image, the higher their Fat Talk frequency.

Aim 5: The fifth aim of the study was to examine whether the norm of using Fat Talk within a friendship are associated with the participant's frequency of Fat Talk usage. There were three participants with missing data for the NBT and no missing data for the DNPTS measure. A bivariate Pearson correlation analysis detected a significant positive correlation between a participants' frequency of Fat Talk usage and the norm of Fat Talk being used within the context of the individual's friendship group r = .301, n = 156, ($p = <.001$). This finding was in agreement with the study's hypothesis.

DISCUSSION

Overview

The current study investigated the personal and relational impact of various responses to Fat Talk within a non-clinical sample of undergraduate women. Each participant was presented with four types of responses to Fat Talk: *Deny/Reassure, Empathize/Reciprocate, Ignore,* and *Challenge* for the purposes of clarifying the impact of each response on an individual's body satisfaction, perceived support, shame, and likely use of future Fat Talk (Ambwani et al., 2017; Mills et al., 2019; Mills et al., 2021; Salk & Engeln- Maddox, 2011). Emphasis was placed on the *Challenge* response in particular, due to indications from previous research and prevention programs that the *Challenge* response may be the most effective response in terms of shifting the conversation away from body disparaging comments (Ambwani, et al., 2017; Mills et al., 2019; Mills et al., 2021; Salk & Engeln-Maddox, 2012). The study also aimed to understand whether participants' baseline level of thin-ideal internalization, body appreciation, and body dissatisfaction impacted the way in which they were affected by a *Challenge* response to their Fat Talk (Ambwani et al., 2017; Salk & Engeln-Maddox, 2012). Additionally, the study sought to determine whether the quality of relationship each participant had with their friend of choice impacted the way in which they were affected by a *Challenge* response (Bardone-Cone et al., 2016; Cruwys et al., 2016). Finally, this study examined whether one's frequency of Fat Talk usage was associated with one's body image (Arroyo & Harwood, 2012; Pollet et al., 2021; Sharpe et al., 2013) and the norm of Fat Talk within a friendship group (Cruwys et al., 2016).

Participants

This all-female college sample had an average age of 23 and an average BMI (26.40) that placed them at the low end of the overweight category. Although the majority of the sample identified as White, almost half of the sample (49%) consisted of individuals who identified as being of Hispanic, Latino, or Spanish origin. Thus, the ethnicity of the sample was quite diverse in comparison to similar studies on Fat Talk that had young adult women who primarily identified as Australasian (Mills et al., 2019) or English (Mills et al., 2021). The majority of the sample had no current or past eating disorder diagnosis or treatment.

Aim 1 Findings

The main findings from this study suggest that different responses to Fat Talk do, in fact, impact both personal factors (body satisfaction, shame) related to the individual using the Fat Talk, and relational factors (perceived support, likelihood of future Fat Talk) regarding the relationship in which the Fat Talk is occurring. Based on these patterns of impact observed after each response condition, this study was able to establish a more nuanced understanding regarding the impact of different responses to Fat Talk. As was demonstrated in both the Mills 2019 study and the findings from the current study, there are costs and benefits that accompany different types of responses to Fat Talk (Mills et al., 2019). And while there is no one response that is entirely "cost free", there are some responses that seem to result in more immediate positive outcomes than others, such as higher body satisfaction and support, lower shame, and less likelihood to use Fat Talk in the future (Mills et al., 2019). However, both the positive and negative outcomes of each response ought to be considered when attempting to understand which response types are more effective than others. Interestingly, Mills and colleagues (Mills et al., 2021) suggested

that none of the responses included in both their own study as well as the current one were individualized enough to impact the personal and relational factors in a meaningful way. Finally, the use of a within subject design in the current study versus a between subject design used in previous work (Mills et al., 2019; Mills et al., 2021) could have partially accounted for participants' different reactions to the four response conditions.

Both the *Ignore* and the *Empathize/Reciprocate* responses to Fat Talk generally seemed to result in several negative outcomes for participants. As was hypothesized, the *Ignore* response in particular was detrimental to one's body satisfaction, feelings of shame, and sense of feeling supported by one's friend in comparison to the other responses. These findings are in alignment with the Mills and colleagues 2019 study (Mills et al., 2019). Nonetheless, counter to the study hypothesis, the *Ignore* response also resulted in *less* of a likelihood to use Fat Talk again in the future with that particular friend. A response that may lead to less future Fat Talk use is preferrable, given that increased Fat Talk usage has been correlated with increased body dissatisfaction (Mills & Fuller-Tyszkiewicz, 2017; Salk & Engeln-Maddox, 2012; Shannon & Mills, 2015).

Conceivably the negative impact of the *Ignore* response may have motivated individuals simply to plan on using Fat Talk with a different friend; one who routinely responds in a more reinforcing manner. If this was the case, it would *not* necessarily signal a decrease in the individual's overall likelihood of future Fat Talk. Consequently, despite this response being recommended by some interventions (The Butterfly Foundation, 2019; Rodgers et al., 2018) as the optimal way to respond to Fat Talk, the results from this study and previous work suggest otherwise. In addition to the *Ignore* response's resulting decreased body satisfaction, decreased perceived support and increased shame (Mills et al.,

2019; Mills et al., 2021), the question about a reduction in the overall likelihood of using Fat Talk in the future remains unanswered.

The *Empathize/Reciprocate* response had a similar negative impact on participants' shame, body satisfaction, and level of perceived support, which was contrary to the study hypotheses and previous findings (Mills, 2019; Nichter & Vuckovic, 1994). In addition, the *Empathize/Reciprocate* response also led to the highest likelihood of future Fat Talk compared to the other responses. Since the *Empathize/Reciprocate* response is essentially a continuation of Fat Talk (Britton et al., 2006), it is plausible that both individuals participating in the exchange are simply left feeling dissatisfied with their bodies, more shameful, and less supportive towards one another. At the same time, the empathic and understanding components of this response may lead individuals to feel more comfortable with the thought of engaging in future Fat Talk with that individual. This result highlights the danger of increased Fat Talk usage related to the reciprocal nature of Fat Talk (Britton et al., 2006; Shannon & Mills, 2015). While this may be the one of the more common (Salk & Engeln-Maddox, 2011) and most expected responses to Fat Talk (Britton et al., 2006), it did not demonstrate any redeeming qualities in this study. Overall, the *Empathize/Reciprocate* response seems to almost imitate Fat Talk itself and therefore may be the least effective of the four response choices.

Unlike the *Ignore* and the *Empathize/Reciprocate* response conditions, the *Deny/Reassure* response had a positive impact on each variable measured. In fact, the *Deny/Reassure* response was the *only* response not to result in any negative outcomes across body satisfaction, perceived support, shame, and likelihood of future Fat Talk use. This finding was in support of the study hypotheses, given that it resulted in increased body

satisfaction and perceived support while also leading to increased shame compared to the other responses. However, it was not hypothesized that this response would lead to a lower likelihood of Fat Talk. In terms of earlier work in this area, the current study's results are in contrast to those of Mills and colleagues who found no significant change in body satisfaction after a reassuring type of response (Mills et al., 2019) yet did find similar effects on perceived support.

According to the literature, *Deny/Reassure* is *the* most common and the most preferred response to Fat Talk (Salk & Engeln-Maddox, 2011; Mills et al., 2019). A *Deny/Reassure* response may feel familiar and comforting while simultaneously functioning to temporarily relieve one's body dissatisfaction (Salk & Engeln- Maddox, 2011; Mills et al., 2019; Mills et al., 2021). However, given that body satisfaction was only measured immediately after receiving the response, one cannot be sure of the impact this response may have on long-term body satisfaction (Salk & Engeln-Maddox, 2011). Based on previous studies (Mill et al., 2019; Salk & Engeln Maddox, 2011) it is probable that the *Deny/Reassure* response is only a temporary solution to one's body image concerns. In summary, this response seems effective in terms of its impact on the personal and relational factors examined in this study, however it likely only *temporarily* mollifies one's body image concerns, thereby contributing to ongoing body dissatisfaction.

Finally, the *Challenge* response led to increased shame and less perceived support, and at the same time resulted in an increase in body satisfaction and a decrease in the likelihood of future Fat Talk compared to other responses. These findings were in partial support of the study hypotheses in that the *Challenge* response did result in less perceived support, increased shame, and less of a likelihood to use Fat Talk in the future. However,

contrary to what was hypothesized, the *Challenge* response also resulted in increased body satisfaction, which is in line with some previous literature (Salk & Engeln-Maddox, 2012). As with the *Deny/Reassure* response, it is unclear whether the improved body satisfaction is temporary. Longitudinal research is needed to understand the longer-term impacts of various responses to Fat Talk. One of the primary reasons why various programs stress the training of *Challenge* responses to Fat Talk is to decrease the future use of Fat Talk (Mills et al., 2019; Salk & Engeln-Maddox, 2012). The results from this study support the use of the *Challenge* response for the purposes of reducing the likelihood of future Fat Talk, and therefore support programs like the Body Project which stress the training of this response (Stice, Rohde, & Shaw, 2013).

As noted, while a *Challenge* response had the negative effects of increasing one's immediate sense of shame and making one feel less supported in the moment, it also had the positive effects of increasing one's current body satisfaction and decreasing one's likelihood to use Fat Talk in the future (Ambwani et al., 2017; Mills et al., 2019; Mills et al., 2021; Salk & Engeln-Maddox, 2012). Research should investigate ways to increase the support and decrease the shame experienced after receiving a *Challenge* response, particularly when used with close female friends. Intervention programs that promote the use of a *Challenge* response should attempt to incorporate specific guidelines regarding how to deliver a successful *Challenge* response.

Aim 2 & 3 Findings

Results from this study also suggest that an individual's baseline levels of thin-ideal internalization, body appreciation, and body dissatisfaction do not necessarily impact the way in which the individual reacts to receiving various responses to Fat Talk. This finding was

not in support of the study hypotheses. Similarly, the quality of one's relationship with one's friend does not seem to impact how one reacts to various responses to Fat Talk. However, more broad patterns were observed, such as those individuals with a higher quality of relationship generally reported higher levels of perceived support regardless of the response type received. Those with higher degrees of thin-ideal internalization tended to report less body satisfaction and more shame in general, regardless of the response. And those with more baseline body dissatisfaction and less body appreciation generally reported lower levels of body satisfaction, lower levels of perceived support, and higher levels of shame after receiving all four response types. These results are important for understanding how one's body image and tendency to embrace the thin-ideal could impact the ability to receive a variety of responses to Fat Talk. It also suggests that having a high quality of relationship with the friend with whom one is engaging in Fat Talk might allow one to feel more supported overall, regardless of the type of response received. This finding is consistent with previous literature demonstrating that close friendships facilitate support between individuals (Bardone-Cone et al., 2016).

Aim 4 & 5 Findings

In alignment with the study hypothesis and previous research, the current study demonstrated that higher levels of body dissatisfaction were correlated with higher levels of Fat Talk (Shannon & Mills, 2015; Sharpe et al., 2013). This result may reflect a vicious cycle of increased body dissatisfaction contributing to the use of more Fat Talk, and in turn, the use of more Fat Talk contributing to the worsening of one's body dissatisfaction (Sharpe et al., 2013). Also in alignment with the study hypothesis, a correlation was found between one's frequency of Fat Talk and the norm for Fat Talk use within one's friendship group. This

finding is supported by a study that used the frequency of Fat Talk in a friendship group to predict an individual's own Fat Talk frequency (Cruwys et al., 2016). More broadly, this finding emphasizes the importance of considering context when studying Fat Talk usage. It may be important in both research and clinical work to explore the extent to which Fat Talk is used not only within an individual's close friendship group, but also within the individual's immediate family and larger community.

Limitations and Strengths

This study has several limitations to be acknowledged and considered when interpreting the overall findings. First, the results are specific to female undergraduates at a university in the Southwestern region of the United States. Therefore, they may not generalize to other dissimilar groups, such as males, individuals who do not attend college, older individuals, or those with differing races and or ethnicities. Additionally, several limitations exist related to the methodology used in this study, including its reliance on participants' ability to understand the concept of Fat Talk. However, an effort was made to minimize any possible misunderstanding by providing participants with a definition and examples of Fat Talk. The methodology also relied on participants' ability to clearly recall an instance of Fat Talk usage with a female friend. It is likely that this would not have been difficult for participants, based on how common Fat Talk is among college-aged women (Becker et al., 2013; Salk & Engeln-Maddox, 2011). Additionally, it is impossible to ensure that participants fully immersed themselves in the tasks related to imagining receiving various responses to Fat Talk. For example, the study's within-subject design raises concern regarding the amount of time between the presentation of each audio response condition. While specific 60-second cognitive tasks were implemented to ensure an adequate amount of

time and distraction between each response, it is not entirely clear whether this allowed participants to treat each response type as a unique event that was uninfluenced by their reactions to the other response presentations. However similar cognitive tasks are common throughout research and are generally thought to help prevent carryover effects (Burstin et al., 1980; Sanders & Baron, 1975; Wickens, 1973).

The use of single-item measures to assess a participant's body satisfaction, shame, perceived support, and likelihood to use future Fat Talk is an additional limitation of the study methodology. While this method of measurement has been used in previous studies for similar purposes (Drutschinin et al., 2018; Durkin et al., 2007; Fitzsimmons et al., 2016; Mills & Fuller-Tyszkiewicz, 2018; Mills et al., 2019; Pomerleau & Saules, 2007; Rogers, Fuller-Tyszkiewicz, Lewis, Krug, & Richardson, 2017), it may not completely capture the constructs of interest. Finally, although effort was taken to ensure that the responses to Fat Talk included in the study were realistic, they most likely failed to perfectly replicate the responses participants encounter in their own lives.

Future work should aim to improve the realistic nature of the responses to Fat Talk in order to increase the overall ecological validity of the study. One recommendation from Mills and colleagues to increase the validity of each response is to combine several responses or attempt to make them experienced as more individualized (Mills et al., 2021). Similar to other studies (Mills et al., 2019; Mills et al., 2021), the current study chose to prioritize the *immediate* impact of various responses to Fat Talk as opposed to also assessing the more long-term impact. Future studies should attempt to measure how various responses to Fat Talk impact individuals across time. An additional limitation that should be considered is the use of median splits in the analyses for Aim 2, given concerns about losing individual-level

information and the tendency to produce Type 1 errors (Iacobucci, Posavac, Kardes, Schneider, & Popovich, 2015). However, median splits can be a useful statistical strategy for understanding data (Iacobucci et al., 2015). Finally, the single item used to measure Fat Talk specifically asked participants about the likelihood of using Fat Talk with their one specific friend in the future, not Fat Talk overall. Future research may want to consider adding a second item to measure anticipated future Fat Talk more generally.

This study has many strengths to highlight as well, including the reliance on a within-subjects design instead of the between-subjects design used in previous Fat Talk studies (Mills et al., 2019; Mills et al., 2021). As stated above, although this design presents certain complications, it also gave the opportunity to compare participants to themselves by giving each participant all four responses. This choice in study design allowed for a more nuanced understanding of each participant's reaction to each response. Additionally, this study recruited an ethnically diverse group of participants. This study also chose to measure various baseline characteristics, such as one's quality of relationship and the degree of thin ideal internalization, in order to gain further understanding of how various responses to Fat Talk function within the context of female friendships. Finally, this study provided participants with a brief psychoeducation segment around the consequences of different responses to Fat Talk, which may have proven beneficial to their learning and understanding regarding responses to Fat Talk.

Summary and Clinical Implications

The results from this study provide evidence that four unique responses to Fat Talk have different and meaningful impacts on the receiver of these responses in terms of both personal and relational factors. Additionally, it appears that the particular response used can

impact the likelihood that the person who engaged in Fat Talk will continue to do so in the future. Specifically, a *Deny/Reassure* response may be the most effective in terms of increasing one's body satisfaction and perceived support, decreasing one's shame, and decreasing one's likelihood to use Fat Talk. However, it is probable that this response is only beneficial in the short term, and it is unclear whether the anticipated decrease in future Fat Talk applies only to the one friend identified for the study. As noted, there also is evidence to support the use of a *Challenge* response, which in comparison to the *Deny/Reassure* response may function to de-emphasize the importance of appearance. While the *Deny/Reassure* response may feel natural to deliver to a friend, the *Challenge* response may pose more of a difficulty to use in real world settings. Therefore, guidance on how to deliver a *Challenge* response, particularly one that does not result in an increase in shame and a decrease in perceived support for a close friend who receives it, would be useful to establish and incorporate into intervention programs.

While the results from this study show the *Deny/Reassure* response to result in the most positive outcomes, it may be that the most effective response overall is somewhat context dependent in that there is not a single response that is always ideal or preferable (Mills et al., 2021). In addition to continuing to discourage the use of Fat Talk in general, intervention programs could train individuals to consider context when choosing how to respond to the Fat Talk that they encounter. Alternatively, the most effective response may instead be a combination of responses, such as the *Deny/Reassure* paired with the *Challenge* (Mills et al., 2021). Programs like the Body Project may benefit from incorporating specific training on how to combine various responses to Fat Talk or how to enhance their current use of *Challenge* type responses. Finally, due to Fat Talk's correlation with body dissatisfaction

and negative affect, it seems important to address Fat Talk and associated responses with clients coming into treatment for an eating disorder or body-image related concerns. Working with clients to recognize various Fat Talk responses in both themselves and others could be helpful in training individuals to adjust the way in which they respond to Fat Talk, thereby ultimately leading to a decrease in the emphasis placed on appearance in in society more broadly.

APPENDICES

Appendix A

Measures displayed by phase of study.

Phase 1: Pre-Response Conditions	Phase 2: Response Conditions	Phase 3: Post-Response Conditions
• Negative Body Talk Scale (**NBT**) • Body Appreciation Scale-2 (**BAS-2**) • Body Shape Questionnaire (**BSQ**) • Social Attitudes Towards Appearance Questionnaire- 4 (**SATAQ-4**) • Current body satisfaction • Current shame • Current support	**<u>Part A</u>** • Descriptive Norms for Pursuit of Thinness Scale • Quality of Relationships Inventory (**QRI**) **<u>Part B</u>** • Current body satisfacti on • Current shame • Current support • Future Fat Talk	• Likelihood of using a *Challenge* response (prior to psychoeducation) • Likelihood of using an *Ignore* response (prior to psychoeducation) • Likelihood of using an *Empathize/Recipro cate* response (prior to psychoeducation) • Likelihood of using a *Deny/Reassure* response (prior to psychoeducation) • Likelihood of using a *Challenge* response (post psychoeducation) • Likelihood of using an *Ignore* response (post psychoeducation) • Likelihood of using an *Empathize/Recipro cate* response (post psychoeducation) • Likelihood of using a *Deny/Reassure* response (post psychoeducation)

Appendix B

Demographics Questionnaire

1. Your age: _____years

2. Height: _____(ft.)_____(in.) Weight:_____(lbs.)

3. What sex were you assigned at birth, such as on an original birth certificate?

    a. Male

    b. Female

4. How do you describe yourself?

    a. Female

    b. Trans Female/Trans Woman

    c. Genderqueer/Nonconforming

    d. Different Identity

5. Sexual Orientation: Do you consider yourself to be… (*Select one)*

    a. Heterosexual or straight

    b. Gay

    c. Lesbian

    d. Bisexual

    e. Not listed above

6. What is your marital status? (*Select one)*

    a. Married and living with partner

    b. Married but not living with partner

    c. Cohabitating with partner but not married

    d. Never married

e. Divorced

f. Separated

g. Widowed

7. Do you have any kids? (*Select one)* Yes. No.

a. If yes, how many? _____

8. Ethnicity and race *(Select one)*

a. **Ethnicity:** Are you Hispanic, Latino, or Spanish origin?

1. No, not of Hispanic, Latino, or Spanish origin

2. Yes, Mexican, Mexican American, or Chicano

3. Yes, Puerto Rican

4. Yes, Cuban

5. Yes, another Hispanic, Latino, or Spanish origin

6. Unavailable/Unknown

b. **Race:** Which category best describes your race?

1. American Indian/Alaska Native (Indicate tribe:_____)

2. Asian

3. Black or African American

4. Native Hawaiian/Other Pacific Islander

5. White

6. Some other race (Please indicate: _____)

7. Unavailable/Unknown

9. In your own terms, how would you describe your racial/ethnic identity:

_____

10. What is your highest level of education? *(Select one)*

    1. Completed junior year in high school (11th grade)
    2. Graduated from high school (12th grade) or GED
    3. Completed at least 1 year of college
    4. Completed an associate's degree or equivalent (4 years of college)
    5. Completed 3 years of college
    6. Completed a bachelor's degree or equivalent (4 years of college)
    7. Completed some graduate school (but did not receive a degree)
    8. Completed a master's degree
    9. Other *(Please specify):* _____

11. What is your current employment status? *(Select one)*

    1. Work 40 hours or more a week
    2. Work fewer than 40 hours a week
    3. Homemaker
    4. Retired
    5. Unemployed

12. Occupation: _____

13. Which category best describes your current annual income? *(Select one)*

    1. Less than 10,000 per year
    2. Between 10,000 and 20,000 per year
    3. Between 20,000 and 30,000 per year
    4. Between 30,000 and 40,000 per year
    5. Between 40,000 and 50,000 per year

6. Between 50,000 and 60,000 per year

7. Between 60,000 and 70,000 per year

8. Over 70,000 per year

14. What is the first language you spoke? _____

15. Are you bilingual? *(Select one)* Yes. No.

16. Have you ever been diagnosed with an eating disorder? *(Select one)* Yes. No.

17. Have you ever received treatment for an eating disorder? *(Select one)* Yes. No.

a. If YES: please indicate the type of eating disorder: _____

b. If YES: please indicate *when* you were treated: _____

c. If YES: please indicate *where* you were treated: _____

18. Do you think you are overweight? *(Select one)* Yes. No.

a. If YES: how many pounds do you think you should lose? _____

19. do you think you are underweight? *(Select one)* Yes. No.

a. If YES: how many pounds do you think you should gain?

Appendix C

The Negative Body Talk Scale (NBT)

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. 1 2 3 4 5 6 7

2. I need to go on a diet. 1 2 3 4 5 6 7

3. I feel fat. 1 2 3 4 5 6 7

4. She has a perfect stomach. 1 2 3 4 5 6 7

5. This outfit makes me look fat. 1 2 3 4 5 6 7

6. Why can't my body look like hers? 1 2 3 4 5 6 7

7. She has a perfect body. 1 2 3 4 5 6 7

8. I need to start watching what I eat. 1 2 3 4 5 6 7

9. She's in such good shape. 1 2 3 4 5 6 7

10. I wish I was thinner. 1 2 3 4 5 6 7

11. I wish my abs looked like hers. 1 2 3 4 5 6 7

12. I think I'm getting fat. 1 2 3 4 5 6 7

13. You never have to worry about gaining weight. 1 2 3 4 5 6 7

Appendix D

Body Appreciation Scale – 2 (BAS-2)

For each item, the following response scale should be used:

1 = Never
2 = Seldom
3 = Sometimes
4 = Often
5 = Always

Please indicate whether the question is true about you never, seldom, sometimes, often, or always.

1. I respect my body. 1 2 3 4 5

2. I feel good about my body. 1 2 3 4 5

3. I feel that by body has at least some good qualities. 1 2 3 4 5

4. I take a positive attitude towards my body. 1 2 3 4 5

5. I am attentive to my body's needs. 1 2 3 4 5

6. I feel love for my body. 1 2 3 4 5

7. I appreciate the different and unique characteristics of my body. 1 2 3 4 5

8. My behavior reveals my positive attitude toward my body; for example, I hold my head high and smile. 1 2 3 4 5

9. I am comfortable in my body. 1 2 3 4 5

10. I feel like I am beautiful even if I am different from media images of attractive people (e.g., models, actresses/actors). 1 2 3 4 5

Appendix E

Body Shape Questionnaire (BSQ)

We should like to know how you have been feeling about your appearance over the **PAST FOUR WEEKS.** Please read each question and circle the appropriate number to the right. Please answer all the questions.

Never = 1
Rarely = 2
Sometimes = 3
Often = 4
Very often = 5
Always = 6

1. Has feeling bored made you brood about your shape? 1 2 3 4 5 6

2. Have you been so worried about your shape that you have been feeling you ought to diet?
1 2 3 4 5 6

3. Have you thought that you thighs, hips or bottom are too large for the rest of you?
1 2 3 4 5 6

4. Have you been afraid that you might become fat (or fatter)? 1 2 3 4 5 6

5. Have you worried about your flesh not being firm enough? 1 2 3 4 5 6

6. Has feeling full (e.g. after eating a large meal) made you feel fat? 1 2 3 4 5 6

7. Have you felt so bad about your shape that you have cried? 1 2 3 4 5 6

8. Have you avoided running because your flesh might wobble? 1 2 3 4 5 6

9. Has being with thin women made you feel self-conscious about your shape?
1 2 3 4 5 6

10. Have you worried about your thighs spreading out when sitting down? 1 2 3 4 5 6

11. Has eating even a small amount of food made you feel fat? 1 2 3 4 5 6

12. Have you noticed the shape of other women and felt that you own shape compared unfavorably? 1 2 3 4 5 6

13. Has thinking about your shape interfered with your ability to concentrate (e.g. while watching television, reading, listening to conversations)? 1 2 3 4 5 6

14. Has being naked, such as when taking a bath, made you feel fat? 1 2 3 4 5 6

15. Have you avoided wearing clothes which make you particularly aware of the shape of your body? 1 2 3 4 5 6

16. Have you imagine cutting off fleshy areas of your body? 1 2 3 4 5 6

17. Has eating sweets, cakes, or other high calorie food made you feel fat? 1 2 3 4 5 6

18. Have you not gone out to social occasions (e.g. parties) because you have felt bad about your shape? 1 2 3 4 5 6

19. Have you felt excessively large and rounded? 1 2 3 4 5 6

20. Have you felt ashamed of your body? 1 2 3 4 5 6

21. Has worry about your shape made you diet? 1 2 3 4 5 6

22. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)? 1 2 3 4 5 6

23. Have you thought that you are in the shape you are because you lack self-control? 1 2 3 4 5 6

24. Have you worried about other people seeing rolls of fat around your waist or stomach? 1 2 3 4 5 6

25. Have you felt that it is not fair that other woman are thinner than you? 1 2 3 4 5 6

26. Have you vomited in order to feel thinner? 1 2 3 4 5 6

27. When in company have you worried about taking up too much room (e.g. sitting on a sofa, or a bus seat)? 1 2 3 4 5 6

28. Have you worried about your flesh being dimply? 1 2 3 4 5 6

29. Has seeing your reflection (e.g. in a mirror or shop window) made you feel bad about your shape? 1 2 3 4 5 6

30. Have you pinched areas of your body to see how much fat there is? 1 2 3 4 5 6

31. Have you avoided situations where people could see your body (e.g. communal changing rooms or swimming baths)? 1 2 3 4 5 6

32. Have you taken laxatives in order to feel thinner? 1 2 3 4 5 6

33. Have you been particularly self-conscious about your shape when in the company of other people? 1 2 3 4 5 6

34. Has worry about your shape made you feel you ought to exercise? 1 2 3 4 5 6

Appendix F

Sociocultural Attitudes Towards Appearance Questionnaire – 4 (SATAQ-4)

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

Definitely Disagree = 1
Mostly Disagree = 2
Neither Agree nor Disagree = 3
Mostly Agree = 4
Definitely Agree = 5

1. It is important for me to look athletic. 1 2 3 4 5

2. I think a lot about looking muscular. 1 2 3 4 5

3. I want my body to look very thin. 1 2 3 4 5

4. I want my body to look like it has a little fat. 1 2 3 4 5

5. I think a lot about looking thin. 1 2 3 4 5

6. I spend a lot of time doing things to look more athletic. 1 2 3 4 5

7. I think a lot about looking athletic. 1 2 3 4 5

8. I want my body to look very lean. 1 2 3 4 5

9. I think a lot about having very little body fat. 1 2 3 4 5

10. I spend a lot of time doing things to look more muscular. 1 2 3 4 5

11. I feel pressure from family members to look thinner. 1 2 3 4 5

12. I feel pressure from family members to improve my appearance. 1 2 3 4 5

13. Family member encourage me to decrease my level of body fat. 1 2 3 4 5

14. Family members encourage me to get in better shape. 1 2 3 4 5

15. My peers encourage me to get thinner. 1 2 3 4 5

16. I feel pressure from my peers to improve my appearance. 1 2 3 4 5

17. I feel pressure from my peers to look in better shape. 1 2 3 4 5

18. I get pressure from my peers to decrease my level of body fat. 1 2 3 4 5

19. I feel pressure from the media to look in better shape. 1 2 3 4 5

20. I feel pressure from the media to look thinner. 1 2 3 4 5

21. I feel pressure from the media to improve my appearance. 1 2 3 4 5

22. I feel pressure from the media to decrease my level of body fat. 1 2 3 4 5

Appendix G

Descriptive Norms for Pursuit of Thinness Scale (DNPTS)

Using the scale below, how often do you think your friend group (specifically the friend group that you chosen friend is in)…

1	2	3	4	5	6	7
Never						Frequently

Go on a diet	1	2	3	4	5	6	7
Feel bad about their bodies	1	2	3	4	5	6	7
Plan to lose weight	1	2	3	4	5	6	7
Wish they were thinner	1	2	3	4	5	6	7
Speak negatively about their appearance	1	2	3	4	5	6	7
Feel jealous of thin women	1	2	3	4	5	6	7

Appendix H

Quality of Relationships Inventory (QRI)

4-point Likert-type scale ranging from 1 (Not at All) to 4 (Very Much)

1	2	3	4
Not at All			Very Much

1. To what extent could you turn to this person for advice about problems? 1 2 3 4

2. How often do you have to work hard to avoid conflict with this person? 1 2 3 4

3. To what extent could you count on this person for help with a problem? 1 2 3 4

4. How upset does this person sometimes make you feel? 1 2 3 4

5. To what extent can you count on this person to give you honest feedback, even if you might not want to hear it? 1 2 3 4

6. How much does this person make you feel guilty? 1 2 3 4

7. How much do you have to "give in" in this relationship? 1 2 3 4

8. To what extent can you count on this person to help you if a family member very close to you died? 1 2 3 4

9. How much does this person want you to change? 1 2 3 4

10. How positive a role does this person play in your life? 1 2 3 4

11. How significant is this relationship in your life? 1 2 3 4

12. How close will your relationship be with this person in 10 years? 1 2 3 4

13. How much would you miss this person if the two of you could not see or talk with each other for a month? 1 2 3 4

14. How critical of you is this person? 1 2 3 4

15. If you wanted to go out and doe something this evening, how confident are you that this person would be willing to do something with you? 1 2 3 4

16. How responsible do you feel for this person's well-being? 1 2 3 4

17. How much do you depend on this person? 1 2 3 4

18. To what extent can you count on this person to listen to you when you are very angry at someone else? 1 2 3 4

19. How much would you like this person to change? 1 2 3 4

20. How angry does this person make you feel? 1 2 3 4

21. How much do you argue with this person? 1 2 3 4

22. To what extent can you really count on this person to distract you from your worries when you feel under stress? 1 2 3 4

23. How often does this person make you feel angry? 1 2 3 4

24. How often does this person try to control or influence your life? 1 2 3 4

25. How much more do you give than you get from this relationship? 1 2 3 4

Appendix I

Psychoeducation

You will now be provided with some research-based information about different responses to Fat Talk:

- Based on the current research, when responding to a female friend who is Fat Talking, we know that…
    - Responding to her Fat Talk comment by denying what she said and reassuring her **("There's definitely nothing wrong with you. You look great just the way you are."**) might make her feel good in the moment, but it can lead to the use of *more* Fat Talk in the future. Women who engage in *more* Fat Talk tend to dislike their bodies more and have a higher chance of developing a poor body image.
    - Responding to her Fat Talk comment by showing empathy and reciprocating with another Fat Talk comment **("I feel the same way too sometimes, in fact lately I've been really hating the way I look."**) might make her feel understood, but it can lead to the use of *more* Fat Talk in the future. Women who engage in *more* Fat Talk tend to dislike their bodies more and have a higher chance of developing a poor body image.
    - Responding to her Fat Talk comment by ignoring it and changing the subject **("Have you been to see the new movie theatre? It's really nice!")** tends to make her feel shameful and dislike her body more. Women who engage in

more Fat Talk and dislike their bodies have a higher chance of developing a poor body image.

- Responding to her Fat Talk by challenging it **("I think feeling healthy and happy with who you are as a person is much more important than how you look.")** might make her feel uncomfortable in the moment, but it leads to *less* use of future Fat Talk. Women who use *less* Fat Talk tend to like their bodies *more,* which may lead to the development of a more positive body image.

Appendix J

Psychoeducation Quiz

Based on the knowledge that you just received…

- Which response/responses to Fat Talk has/have been shown to lead to the *least* amount of future Fat Talk?
    - A. **Deny/Reassure:** "There's definitely nothing wrong with you. You look great just the way you are."
    - B. **Empathize/Reciprocate:** "I feel the same way to sometimes, in fact lately I've been really hating the way I look."
    - C. **Ignore:** "Have you been to see the new movie theatre? It's really nice!"
    - D. **Challenge:** "I think feeling healthy and happy with who you are as a person is much more important than how you look."
- Which response/responses to Fat Talk has/have been shown to lead to the *most* future Fat Talk?
    - A. **Deny/Reassure:** "There's definitely nothing wrong with you. You look great just the way you are."
    - B. **Empathize/Reciprocate:** "I feel the same way to sometimes, in fact lately I've been really hating the way I look."
    - C. **Ignore:** "Have you been to see the new movie theatre? It's really nice!"
    - D. **Challenge:** "I think feeling healthy and happy with who you are as a person is much more important than how you look."

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