

AN EXPERIMENTAL INVESTIGATION OF WAYS TO NEGATE THE HARMFUL
EFFECTS OF FAT TALK

AMY SHANNON

A MASTER'S THESIS SUBMITTED TO THE DEPARTMENT OF PSYCHOLOGY IN
PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
MASTER OF ARTS IN CLINICAL PSYCHOLOGY

YORK UNIVERSITY

TORONTO, ONTARIO

AUGUST 2015

© AMY SHANNON, 2015

Abstract

Fat talk refers to self-disparaging remarks made about one's weight or shape and has been associated with a number of negative outcomes. Two experimental studies investigated the ability of different conversational responses to negate the negative impact of fat talk. Dietary restraint was also examined as a possible moderating factor of the effects of different conversational responses to fat talk. In Study 1 participants were exposed to a vignette containing either norm focused rebuttal or appearance-based reassurance in response to fat talk, and I assessed changes to food consumption, mood, and body esteem. In Study 2, participants were exposed to a vignette containing norm focused rebuttal, appearance-based reassurance, or distraction in response to fat talk, and I assessed changes to mood and body esteem. Overall, results were mixed regarding which response to fat talk resulted in the best outcomes. Moreover, restrained and unrestrained eaters responded similarly to the different vignettes.

Acknowledgements

The author would like to acknowledge that this research was supported by a Joseph-Armand Bombardier Canada Graduate Scholarship which was provided to the author by the Social Sciences and Humanities Research Council of Canada as well as an Ontario Graduate Scholarship. The author would like to thank her thesis committee member Dr. Jennifer Steele, and her supervisor Dr. Jennifer Mills for their guidance. In addition, the author would like to express her gratitude to her research assistants Kristi Mellom, Daniel Kim, Stacey Sanchez, and Kiana Torshizi for their hard work.

Table of Contents

Abstract.....	ii
Acknowledgements.....	iii
Table of Contents.....	iv
List of Tables.....	v
Study 1: Introduction.....	1
Method.....	11
Results.....	16
Discussion.....	23
Conclusions.....	31
Study 2: Introduction.....	31
Method.....	33
Results.....	36
Discussion.....	44
General Discussion.....	46
Conclusions.....	52
References.....	55
Appendices.....	65

List of Tables

Table 1: Study 1 Means (and standard deviations) of all variables of interest with ANOVA results for between condition differences	17
Table 2: Study 1 Means (and standard deviations) for all variables of interest with ANOVA results for between group differences by restraint status.....	18
Table 3: Study 2 Means (and standard deviations) of all variables of interest by condition.....	39
Table 4: Study 2 Means (and standard deviations) of all variables of interest by restraint status.....	40

An Experimental Investigation of Ways to Negate the Harmful Effects of Fat Talk

Fat talk is a term used to describe self-disparaging remarks made about one's own weight or shape (Nichter & Vuckovic, 1994). Examples include comments like, "I look so fat in this dress", comments about general feelings of "fatness", for example, "I'm having a fat day" or comments made before or after eating such as "I need to go on a diet" or "I feel so fat, I shouldn't have eaten that." Although the term was first coined over twenty years ago, research on fat talk has emerged only in the past decade and has revealed several variables that are related to fat talk. First, there are well documented gender differences in fat talk. Martz, Petroff, Curtin, and Bazzini (2009) found that women of a variety of ages in the US reported greater exposure to fat talk and greater pressure to engage in fat talk compared to men. In addition, female undergraduate students in both the US and the UK report much more frequent exposure to fat talk and far greater pressure to engage in it as compared to male students (Payne, Martz, Tompkins, Petroff, & Farrow, 2011).

In addition, research suggests that fat talk appears to be highly prevalent among young women, at least in North America. Salk and Engeln-Maddox (2011) surveyed 168 female undergraduate students and found that 76% of participants reported engaging in fat talk frequently. Furthermore, more frequent self-reported fat talk was positively correlated with internalization of the thin-ideal (i.e., how important a woman feels it is to have the thin body type which is idealized in Western society) and body dissatisfaction. Interestingly, no association between weight and fat talk frequency was documented. As such, it appears as though fat talk is a common behaviour among undergraduate female students regardless of actual body size.

The impact of weight on one's likelihood to engage in fat talk was further investigated by Barwick, Bazzini, Martz, Rocheleau, and Curtin (2012). They found that the expectation for women to engage in fat talk was equally strong among both healthy weight and overweight

women. In their study, undergraduate students were shown a video of a woman engaging in either fat talk or positive body talk. The woman in the video was either a normal weight or was overweight (Centers for Disease Control, 2011). Participants in the two conditions were equally likely to expect the woman in the video to engage in fat talk, which is consistent with the findings of Salk and Engeln-Maddox (2011). It appears as though fat talk is a common behaviour among undergraduate women regardless of weight. Moreover, there is evidence that women expect fat talk from other women, regardless of the other women's weight.

In addition to being understood as a manifestation of women's discontent with their bodies, fat talk can also be examined as a social phenomenon as it usually involves one woman telling at least one other woman that she is unhappy with her body. In general, fat talk among women appears to be reciprocal in nature (Britton, Martz, Bazzini, Curtin, & Leashomb, 2006); it appears as though the socially normative response is for the recipient to "echo" the fat talk. Britton et al. (2006) showed undergraduate students a video of four women engaged in conversation. Three of the women were engaging in fat talk and the participants were asked what the fourth woman would say when the others asked how she felt about her body. It was found that there is a norm for women to respond to fat talk in a self-degrading fashion as study participants expected the fourth woman to engage in fat talk. Salk and Engeln-Maddox (2011) replicated this norm; the most frequently reported response to fat talk in the sample of female undergraduate students they surveyed was to make a self-degrading response about one's own body. In sum, evidence shows that fat talk is a social phenomenon that occurs primarily between women and is thought to reflect the social norms in western society for women to both self-degrade and to feel bad about their body weight and shape.

Outcomes of Fat Talk

Arroyo and Harwood (2012) found that the frequency of fat talk predicted body dissatisfaction, depression, and perceived sociocultural pressure to be thin among female undergraduate students over a three week period. Amount of fat talk appeared to moderate the relationship between body image concerns and psychopathology such that those who stated they were dissatisfied with their bodies and engaged in frequent fat talk were at greater risk for depression. These findings suggest that fat talk may not be a benign social phenomenon and that, in combination with body dissatisfaction, it could be a risk factor for psychopathology. Of course one limitation of that study was that it was correlational and, as such, cause and effect relations between fat talk and adverse outcomes could not be concluded definitively.

Experimental research has shown that simply overhearing fat talk is also associated with subsequent negative psychological outcomes. Stice, Maxwell, and Wells (2003) found that hearing a confederate engage in fat talk for just three to five minutes increased body dissatisfaction in female undergraduate students compared to hearing neutral conversation. The brevity of exposure required for fat talk to produce a significant negative effect is noteworthy. Salk and Engeln-Maddox (2012) replicated this finding. They exposed 87 normal weight (Centers for Disease Control, 2011) female undergraduate students from an American university to fat talk from peers under the guise of market research. Participants were asked to comment on various advertisements alongside two normal weight (Centers for Disease Control, 2011) confederates. The study involved three conditions: both confederates engaging in fat talk (i.e., “Ugh, look at her thighs. Makes me feel so fat.” and “Yeah me too. Makes me wish my stomach was anywhere near flat like that.”), one confederate engaging in fat talk and the second confederate challenging said talk (i.e., “Ugh, look at her thighs. Makes me feel so fat.” and “Oh

come on. You're definitely not fat. I know we all say things like that but I don't understand why. I just wish we focused on other things.”), or both the confederates discussing a topic unrelated to body image. As was expected, hearing fat talk made the participants more likely to engage in fat talk themselves and increased their own state body dissatisfaction and guilt. However, participants who heard a second confederate challenge the first confederate's fat talk did not significantly differ from those in the control condition. It appears as though a recipient challenging fat talk can negate its negative effects, at least in terms of body dissatisfaction and guilt.

Another experiment illustrated that exposure to fat talk may motivate vulnerable women to restrict their food consumption in an unhealthy manner. Compeau and Ambwani (2013) found that women who scored high on dietary restraint consumed fewer calories after they read a vignette in which two females engaged in fat talk as compared to both those who did not score high on dietary restraint, and those exposed to a vignette in which two females engaged in conversation regarding the neutral topic. This finding raises the possibility that fat talk may suppress eating behaviour among dieters. Fat talk could even contribute to disordered eating, since dietary restraint (i.e., restricting one's food intake for the purpose of weight loss) has been linked to binge eating and numerous maladaptive psychological consequences (Delinsky & Wilson, 2008).

The association between fat talk and eating pathology was further documented by Ousley, Cordero, and White (2008) who found that frequent fat talk is positively correlated with eating pathology and body dissatisfaction among undergraduate students. Furthermore, participants who indicated they had been diagnosed with an eating disorder reported engaging in more frequent fat talk than did those who did not. Although one cannot imply causation from this

study, the fact that individuals with eating disorders are especially likely to engage in fat talk is further evidence of its maladaptive nature.

Theories of Fat Talk

Objectification theory (Fredrickson & Roberts, 1997) has received the most empirical support in the emerging area of fat talk research. Objectification theory posits that women in western society are socialized to see themselves as objects that are to be evaluated by others. As a result of this socialization, women learn to equate the attractiveness of their bodies with their worth in society. The importance placed upon their physical attractiveness and the constant evaluation that women feel leads to significant appearance anxiety. Women engage in a number of maladaptive behaviours in an attempt to relieve this anxiety. One of these maladaptive behaviours is fat talk. As such, according to objectification theory, fat talk is a direct result of the objectification to which women are subjected in western society.

Although objectification theory is the most widely used theory in fat talk research, the negative effects of fat talk may be best explained by cognitive dissonance theory (Festinger, 1957). This theory posits that when one engages in behaviour that is incongruent with his or her self-concept it causes dissonance that is experienced as aversive. As a result, the individual changes his or her self-concept to eliminate the dissonance. Since fat talk is a reciprocal process, it is possible that the responder who is “echoing” the fat talk, the socially normative response, does not initially feel that bad about herself, however, her feelings about her body may shift in order to become more congruent with the negative statements she has just made about her body.

In addition, self-perception theory (Bem, 1967) is also useful for understanding fat talk. This theory holds that one decides how they feel based on their actions. As such, after uttering self-deprecating responses about one’s body, a woman might then decide that she feels

negatively about her body even though she was not dissatisfied with her body prior to making the self-deprecating statement.

As such, both cognitive dissonance theory (Festinger, 1957) and self-perception theory (Bem, 1967) would predict that some of the negative impact of fat talk may be related to its socially normative reciprocal nature. Women who overhear fat talk may feel implicit pressure to make a self-disparaging response about their own body. Thus, it is possible that the negative impact of fat talk could be reduced or eliminated if females were encouraged to respond in a more adaptive way when they encounter fat talk.

The Purpose Served by Fat Talk

A number of purposes for fat talk have been hypothesized, including absolution of guilt from consumption of high calorie foods or overeating or, more generally, from being heavier than the thin ideal (Nichter, 2000). However, it seems equally or even more likely that fat talk indicates a desire for social support and reassurance in a world where women are constantly bombarded by the societal ideal of thinness; indeed, these reasons for fat talk have been cited by participants in research studies (Nichter, 2000). The fact that the expected response to fat talk is reciprocity, comments such as “You’re not fat, I’m fat” are common, (Becker, Diedrichs, Jankowski, & Werchan, 2013; Salk & Engeln-Maddox, 2011) further supports the theory that fat talk is used by women to seek reassurance since reciprocal fat talk may reduce anxiety regarding one’s body. However, while fat talk may make women feel better about their bodies in the short-term, frequent fat talk may normalize and justify an inordinate amount of concern about one’s weight and shape, and discontent with one’s body which are risk factors for the development of disordered eating (Polivy & Herman, 2002). Thus, since the reciprocal nature of fat talk seems to

be a key factor which maintains fat talk and its negative effects, interventions which aim to change the normative reciprocal response may be useful.

The Present Research

Fat talk has been targeted in interventions for individuals with eating disorders (Allison, Warin, & Bastiampillai, 2014). However, the high prevalence of fat talk and the negative outcomes associated with it demonstrate the threat that fat talk poses to the health and well-being of even non-clinical populations of young women. This has led to intervention at the population level in North America. Anti-fat talk initiatives such as Fat Talk Free Week® have been developed with the goal of eliminating fat talk, and the elimination of fat talk is encouraged by a number of eating disorder prevention programs such as the *Reflections: Body Image Program*® currently in use by Tri-Delta sororities throughout the United States. However, fat talk has become a societal norm and, as such, may be resistant to change. Due to this resistance, it may be easier to change people's responses to fat talk or to change individual difference variables that moderate the negative impact of fat talk. Unfortunately, there is currently a paucity of research on ways to negate the harmful effects of fat talk; this information could be used to improve eating disorder prevention programs and anti-fat talk initiatives. As such, the present research sought to investigate ways to negate the harmful effects of fat talk. Specifically, the ability of different conversational responses to negate the negative impact of fat talk in terms of food consumption, mood, and body esteem was investigated. In addition, dietary restraint was examined as a possible moderator of the effects of different conversational responses to fat talk in terms of food consumption, mood, and body esteem.

Study 1

Study 1 investigated the impact of appearance-based reassurance in response to fat talk (i.e., reassurance that the first speaker is not fat) versus a norm focused rebuttal of fat talk (i.e., fat talk that is not met with reassurance about the first speaker's weight, but with criticism of the social norm for women to make self-disparaging remarks about their bodies) on food consumption, mood, and body esteem in female undergraduate students. In addition, it is possible that different types of individuals respond differently to fat talk. For this reason, trait dietary restraint was included as an individual difference variable. Trait dietary restraint was investigated due to prior research conducted by Compeau and Ambwani (2013) which found that exposure to fat talk led to reduced food consumption in those who score high on measures of dietary restraint. This previous finding suggested that dietary restraint may moderate the impact of exposure to fat talk such that restrained eaters (chronic dieters) are more negatively impacted by exposure to fat talk than those who score low (unrestrained eaters). It may be that different responses to fat talk also affect restrained and unrestrained eaters differently.

A control condition (i.e., a condition in which participants were not exposed to fat talk or were exposed to fat talk where the conversational response was not intended to negate its negative impact) was not included as there was already an abundance of literature that demonstrated the negative impact of hearing any fat talk (regardless of response) on food consumption (Compeau & Ambwani, 2013), mood (Arroyo & Harwood, 2012; Salk & Engeln-Maddox, 2012), and body esteem (Arroyo & Harwood, 2012; Ousley, Cordero, & White, 2008; Salk and Engeln-Maddox, 2012; Stice, Maxwell, & Wells, 2003). As such, due to the well-documented negative effects of exposure to fat talk, Study 1 focused only on conversational responses to fat talk (i.e., norm focused rebuttal or appearance-based reassurance).

Study 1 built upon Salk and Engeln-Maddox (2012), which illustrated that one's conversational response to fat talk can have an impact on its effects in terms of emotions and cognitions about one's own body. In that study, however, appearance-based reassurance (i.e., "You're definitely not fat") was confounded with norm focused rebuttal (i.e., "I know we all say things like that but I don't understand why. I just wish we focused on other things") such that one was unable to decipher which part of their challenge condition was able to negate the negative effects of fat talk. Study 1 set out to disentangle appearance-based reassurance from norm focused rebuttal in an attempt to illuminate which response is more effective in terms of negating the negative effects of fat talk. The norm focused rebuttal condition involved criticism of the social norm for women to make self-disparaging remarks about their bodies, and did not offer any reassurance to the person who was engaging in fat talk. Appearance-based reassurance may have an unintended negative impact because it reminds women that they are constantly being evaluated by others and that their physical attractiveness is equivalent to their worth in society (Fredrickson & Roberts, 1997). According to objectification theory, this realization can lead to a host of adverse outcomes including negative mood, and increased body dissatisfaction (Fredrickson & Roberts, 1997).

In addition, Study 1 recruited participants of widely varying body sizes to complete the study whereas Salk and Engeln-Maddox (2012) study used only normal weight participants (Centers for Disease Control, 2011). Their study excluded non-healthy weight participants for ethical reasons, as participants were exposed to fat talk comments by a confederate. Instead, the current study used fat talk vignettes so that the participants themselves were not targets of fat talk. In addition, the current study sought to examine the impact that different conversational responses to fat talk have on in situ food consumption. Exposure to fat talk has been shown to

lead to decreased food consumption in women who score high on dietary restraint (Compeau & Ambwani, 2013). This is problematic because individuals who score high on measures of dietary restraint are already motivated to restrict their caloric intake, so the additional decrease in food consumption could put them at risk for pathological eating behaviours. If this potentially harmful consequence of fat talk can be negated based on one's conversational response to fat talk, it may have important implications for the treatment and prevention of eating disorders.

In summary, prior research has demonstrated that fat talk has negative consequences for women, despite the fact that it has become prevalent and socially normative in western society. Ideally, fat talk would be eliminated completely but due to its pervasive and normative nature this may not be a realistic goal. It may be easier (and more realistic) to change individuals' response to fat talk than to eliminate it altogether. Salk and Engeln-Maddox (2012) indicated that some conversational responses to fat talk are better than others. However, their investigation used a two-part response to fat talk which confounded appearance-based reassurance and norm focused rebuttal. Due to this confound it is impossible to know what part of the response (the appearance-based reassurance or the norm focused rebuttal) was able to negate the negative effects of fat talk. Furthermore, objectification theory holds that appearance-related reassurance may actually be harmful, so it is possible that the norm focused rebuttal would be more effective by itself. As such, the main goal of Study 1 was to examine the impact of exposure to different responses to fat talk (either appearance-based reassurance or norm focused rebuttal) on food consumption, mood, and body esteem among women. Dietary restraint (restraint status) was also included as a potential personality moderator of the effects of different conversational responses to fat talk, given the previous literature.

Hypotheses

Based on previous research, the appearance-based reassurance condition was expected to result in less food consumption (Compeau & Ambwani, 2013), more negative mood, and lower body esteem than the norm focused rebuttal condition. In addition, because low trait dietary restraint has been shown to moderate the impact of exposure to body-related commentary (Compeau & Ambwani, 2013; Fredrickson & Roberts, 1997), restrained and unrestrained eaters were expected to be differentially affected by the different conversational responses to fat talk. Dietary restraint was expected to moderate the impact of fat talk such that unrestrained eaters were expected to be less negatively impacted by exposure to fat talk in the appearance-based reassurance condition in terms of their scores on food consumption, mood, and body esteem as compared to restrained eaters (dieters).

Method

Participants

Female undergraduate students aged 17 to 24 who indicated that they did not have any food allergies, food sensitivities, or special dietary restrictions were recruited from the York University undergraduate research participant pool. This population was recruited because research has documented high levels of fat talk among young undergraduate women (Ousley et al., 2008; Salk & Engeln-Maddox, 2011). The average age of participants in this study was 19.34 ($SD = 1.61$). Participants received partial course credit for their participation across two testing sessions. One hundred and three participants were recruited; however, seven participants did not complete the second testing session of the study and were excluded from the analyses. No differences were found between those participants who did not complete the second part of the study and those who did in terms of trait dietary restraint, body esteem, mood, or demographic variables. In addition, two individuals who indicated they had been diagnosed with an eating

disorder and had extreme scores on all measures of body esteem were excluded. Moreover, three participants' qualitative responses indicated that they either did not read or did not understand the vignette and were therefore excluded from the study. Lastly, random and invalid responding was suspected in two participants and consequently both were excluded from the analyses. After these exclusions, the total number of participants whose data were used in the subsequent analyses was 89. The most common ethnic category with which participants self-identified was South Asian (37.1%), in addition, 9.1% of participants self-identified as Caucasian, 9.0% of participants self-identified as Black, 9.0% of participants self-identified as East Asian, 6.7% of participants self-identified as Latin American, 10.1% of participants self-identified as multi-racial or other, and 4.5% of participants chose not to respond. The average BMI was 22.80 ($SD = 4.55$, $range = 16.5$ to 34.7) which is in the normal range, but all weight categories were represented as 14.5% of participants were underweight, 58.4% were normal weight, 14.6% were overweight, and 5.7% were obese, according to the Centers for Disease Control (2011).

Materials

Exposure to fat talk was experimentally manipulated using two different written vignettes (Appendices A & B). The vignettes detailed a conversation between two female friends during which one friend engaged in fat talk (i.e., I'm worried I'm starting to get fat) but the response to this fat talk varied based on the experimental condition. In the norm focused rebuttal condition the response was: "I wish people would stop talking like that. I know everybody says things like that and it's become a part of our culture but I still hate it. Women should be worrying about more important things than whether their bodies fit with society's ideal of beauty." In the appearance-based reassurance condition the friend instead responded by saying: "You're not fat. Stop worrying about your weight. You always look so put together. Your clothes always look

nice, and your make-up always looks good.” After reading the vignette participants were encouraged to write about a similar conversation they have had. This was intended to enhance the experimental manipulation and the qualitative data was also used for exploratory analyses. Participants were also asked how often they engage in and overhear fat talk. The vignettes were written by the primary investigator in consultation with laboratory associates and were based, in part, on the script used by the confederates in Salk and Engeln-Maddox (2012). Pilot tests with laboratory associates indicated that the conversations portrayed in the vignettes were significantly different from one another on a number of pertinent dimensions¹.

Food consumption was calculated by weighing plates of fresh baked bite-sized chocolate chip cookies, double chocolate cookies, and sugar cookies (in grams) on a digital scale before and after they are given to participants. Cookies were baked using English Bay cookie dough the day before the study and then reheated in the lab. Nine bite-sized (approximately one inch in diameter) cookies of each flavour were piled on a plate and presented to participants.

Measures

Trait dietary restraint was measured using the Revised Restraint Scale (RRS; Polivy, Herman, & Howard, 1988; Appendix C). This scale consists of ten questions concerning attitudes towards eating (e.g., "do you eat sensibly in front of others and splurge alone?"), dieting (e.g., "how often are you dieting?"), and weight fluctuations (e.g., "in a typical week how much does your weight fluctuate?"). Higher scores indicate a stronger tendency to attempt to restrain one's eating, body dissatisfaction, and weight fluctuations. Scores range from 0 to 40. A score of 15 is the conventional cut-off for a restrained eater; scores of 14 and below are classified as

¹ The vignettes were rated by lab associates on a 5 point Likert scale and were found to be significantly different in terms of appearance-relatedness $F(1,24) = 3.72, p = .045$, and amount of reassurance provided $F(1,24) = 19.17, p < .001$.

unrestrained eaters (Mills & Miller, 2007; Mills, Polivy, Herman, & Tiggemann, 2002). The RRS has demonstrated good construct validity as well as test–retest reliability (Allison, Kalinsky, & Gorman, 1992). The Cronbach’s alpha for this study was .78.

Mood was measured by the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegan, 1988; Appendix D). It contains twenty words that describe feelings (e.g., interested) or emotions (e.g., afraid) and asks respondents to indicate the extent they currently feel that way on a five point Likert scale ranging from *very slightly or not at all* to *extremely*. Convergent and divergent validity have been demonstrated for each of the subscales and the scale has been deemed acceptable for use in research involving state mood fluctuations (Schmukle, Egloff, & Burns, 2002). The total scale Cronbach’s alpha was .80. For each subscale, Cronbach’s alphas ranged from .87 (positive affect subscale) to .89 (negative affect subscale).

The Body-Esteem Scale (BES; Franzoi & Shields, 1984; Appendix F) was used to assess the participant’s current feelings about her body. It asks participants to rate how they feel about twenty aspects of their body (e.g., lips, thighs, arms) on a five point Likert scale with one indicating *strong negative feelings* and five indicating *strong positive feelings*. Higher total scores indicate more satisfaction with one’s body. In addition to the total score, the BES generates five subscales which differ depending on the sex of the participant. The BES generates sexual attractiveness, physical condition, and weight concern subscales for females. The scale has demonstrated sufficient validity and reliability for use in research. Good convergent and discriminant validity have been documented (Franzoi & Herzog, 1986). In addition, the construct validity of the female subscales for use in research concerning body-image and eating disturbances has been demonstrated (Thomas & Freeman, 1990). The Cronbach’s alphas for this

study were .90 for the total scale, .78 for the sexual attractiveness subscale, .89 for the weight concern subscale, and .77 for the physical condition subscale.

In addition, participants were asked to complete a brief demographics questionnaire to assess age and whether they have an eating disorder diagnosis (Appendix G). Furthermore, pre-screen data attained by the York University undergraduate research participant pool assessed self-reported ethnicity.

Procedure

In part 1 of the study, after giving their informed consent (Appendix H) participants completed the demographics questionnaire and the Revised Restraint Scale. The Revised Restraint Scale was given at this separate testing session so as not to influence or be affected by the experimental manipulation or eating task. Part 2 was scheduled an average of 7 days after part 1 (range: 3-10 days).

In part 2 of the study, after giving their informed consent (Appendix I) participants were randomly assigned to one of two fat talk vignette conditions. Participants then read and commented on their vignette. Upon completion of the vignette (which participants had an unlimited amount of time to complete) participants were presented with a plate of cookies and a word search to complete for exactly five minutes under the cover story that this was a short break while the next part of the experiment was being prepared. The experimenter stated that the cookies were freshly baked and that the lab had an abundance of them so the participant should feel free to help herself. After five minutes the leftover cookies and word search were collected and participants were asked to complete the state measures of mood, and body esteem. Upon completion of the questionnaires participants were weighed backwards and their height was recorded by the experimenter. In order to minimize any lasting negative consequences of the

experimental manipulation, participants were given a brief article on fat talk and ways to improve one's body image (Appendix J).

Results

Data Analysis Plan

All continuous variables were examined for normality and outliers. Outliers were replaced with the most extreme score within 3.29 standard deviations (Cosineau & Charlie, 2010) which resulted in the following changes: a food score of 69 was replaced with a score of 66, a BMI of 36.8 was replaced with a BMI of 34.1 (Miller, 2003), and a PANAS negative total scale score of 40 was replaced with a score of 36. A number of skewed variables were present in the data and were corrected for using log transformations (Osborn, 2008). This affected the following variables: food (non-transformed coefficient = 1.39; transformed coefficient = .46), BMI (non-transformed coefficient = 1.10; transformed coefficient = .69), and the PANAS Negative Affect Subscale measure (non-transformed coefficient = 1.48, transformed coefficient = .84). Missing data were minimal (i.e., less than ten percent) and were found to be missing completely at random ($\chi^2(1289, N = 89) = 22.82, p = .997$) so they were not replaced (Barladi & Enders, 2010; Bennett, 2001); rather, missing data were dealt with using listwise deletion (Graham, 2009). The main hypotheses regarding group differences by experimental condition as well as the moderating effect of dietary restraint were investigated using a series of ANOVAs (experimental condition x restraint status). ANOVA models were used rather than MANOVA models due to multicollinearity (Gabriel & Hopkins, 1974; Huberty & Morris, 1989; Mansfield & Helms, 1982).

In addition, significant effects of restraint found in the ANOVA analyses were followed up with ANCOVAs to ensure that the findings held when controlling for BMI. This was done to

ensure that any observed differences between restrained and unrestrained eaters was not due to body size, as BMI and dietary restraint were highly correlated, $r = .54$, $p < .001$ (i.e., those who scored higher on dietary restraint tended to be of a higher BMI). Alpha was set at 0.05 for significance testing.

Descriptive Statistics

Table 1 displays the average scores and standard deviations for all variables of interest by experimental condition. Table 2 shows the means and standard deviations for all variables of interest by dietary restraint status. The current sample was similar to other undergraduate female samples at this and other universities.

Table 1
Means (and standard deviations) of all variables of interest with ANOVA results for between condition differences

<u>Variable</u>	<u>Appearance- Based Reassurance Condition <i>n</i> = 43</u>	<u>Norm Focused Rebuttal Condition <i>n</i> = 43</u>	<u><i>F</i></u>	<u><i>p</i></u>	<u>η^2</u>
BMI	22.80 (4.18)	22.28 (4.44)	.31	.582	<.01
Age	19.49 (1.72)	19.19 (1.50)	.75	.388	.01
Dietary Restraint	12.36 (6.55)	11.67 (4.82)	.31	.578	<.01
Negative affect	14.53 (4.71)	18.21 (8.41)	6.16	.015	.07
Positive affect	27.62 (7.94)	28.09 (6.97)	.33	.566	<.01
Body Esteem					
Sexual Attractiveness	45.24 (6.29)	43.93 (6.90)	.37	.542	<.01
Weight Concern	31.40 (8.10)	30.70 (6.84)	.14	.707	<.01
Physical Condition	28.07 (5.65)	28.27 (5.17)	.39	.619	<.01
Total	114.43 (17.25)	112.68 (16.26)	.04	.845	<.01
Food Consumed (in grams)	16.29 (16.46)	12.52 (14.78)	2.15	.148	.03

Table 2
Means (and standard deviations) for all variables of interest with ANOVA results for between group differences by restraint status

<u>Variable</u>	<u>Restrained</u>	<u>Unrestrained</u>	<u>F</u>	<u>p</u>	<u>η^2</u>
	<u>Eaters</u>	<u>Eaters</u>			
	<u>n = 28</u>	<u>n = 59</u>			
BMI	25.24 (4.63)	21.00 (3.21)	16.65	<.001	.17
Age	19.81 (1.87)	19.02 (1.37)	2.44	.122	.03
Negative affect	16.81 (6.69)	16.02 (7.28)	1.30	.257	.02
Positive affect	27.77 (7.84)	27.87 (7.32)	<.01	.978	<.01
Body Esteem					
Sexual Attractiveness	45.50 (7.26)	44.05 (6.30)	.88	.351	.01
Weight Concern	27.19 (6.84)	33.38 (6.92)	5.87	.018	.07
Physical Condition	27.55 (5.19)	28.76 (5.27)	.93	.339	.01
Total	109.81 (17.11)	116.07 (16.02)	2.84	.096	.03
Food Consumed (in grams)	9.34 (11.38)	17.49 (17.32)	4.05	.049	.06

Effects of Experimental Condition

The randomization procedure was successful as groups did not significantly differ in terms of BMI $F(1,82) = .31, p = .582, \eta^2 < .01$, age, $F(1,84) = .75, p = .388, \eta^2 = .01$, or trait dietary restraint $F(1,85) = .31, p = .578, \eta^2 = < .01$.

The main hypothesis of this study held that differences in scores on measures of food consumption, mood, and body esteem would vary across experimental group. Specifically, the appearance-based reassurance condition was expected to result in less food consumption, more negative mood, and lower body esteem as compared to the norm focused rebuttal condition.

ANOVA analyses revealed a significant main effect of experimental condition on negative affect such that participants in the norm focused rebuttal condition reported significantly more negative affect than did those in the appearance-based reassurance condition, $F(1,82) = 6.16, p = .015, \eta^2 = .07$. However, no other significant differences between experimental conditions were found in terms of the remaining variables of interest: age, $F(1,82) = 2.44, p = .122, \eta^2 = .03$, food consumption, $F(1,64) = 2.15, p = .148, \eta^2 = .03$, positive affect, $F(1,82) = .33, p = .566, \eta^2 < .01$, or body esteem and its subscales, including sexual attractiveness, $F(1,83) = .37, p = .542, \eta^2 < .01$, weight concern, $F(1,83) = .14, p = .707, \eta^2 < .01$, physical condition, $F(1,81) = .39, p = .619, \eta^2 < .01$, or total body esteem, $F(1,81) = .04, p = .845, \eta^2 < .01$.

The Moderating Effect of Dietary Restraint

First, data were examined to determine if there were any main effects of dietary restraint status on any of the dependent variables (i.e. to determine whether restrained eaters differed on any of the variables of interest relative to unrestrained eaters). A significant main effect of dietary restraint on BMI was observed such that restrained eaters weighed significantly more than unrestrained eaters, $F(1,77) = 16.65, p < .001, \eta^2 = .17$. Furthermore, results revealed a significant main effect of dietary restraint status on food consumption such that restrained eaters ate significantly less than did unrestrained eaters after controlling for BMI, $F(1,77) = 4.05, p = .049, \eta^2 = .06$. However, when BMI was not controlled for the result was no longer significant, $F(1,83) = 3.19, p = .078, \eta^2 = .04$. Moreover, a significant main effect of dietary restraint on weight concern was found such that restrained eaters were significantly more concerned about their weight as compared to unrestrained eaters, $F(1,83) = 16.05, p < .001, \eta^2 = .16$. This finding remained significant after controlling for BMI, $F(1,77) = 5.87, p = .018, \eta^2 = .07$. No other

significant differences between restrained and unrestrained eaters were found on any of the other variables of interest: positive affect $F(1,82) < .01, p = .978, \eta^2 < .01$, negative affect, $F(1,82) = 1.30, p = .257, \eta^2 = .02$, sexual attractiveness, $F(1,83) = .88, p = .351, \eta^2 = .01$, physical condition, $F(1,81) = .93, p = .339, \eta^2 = .01$, or total body esteem, $F(1,81) = 2.84, p = .096, \eta^2 = .03$.

Next, the data were probed for interaction effects between dietary restraint status and experimental condition to test the second hypothesis which held that restrained and unrestrained eaters would be differentially affected by the different conversational responses to fat talk such that unrestrained eaters were expected to be less negatively impacted by exposure to fat talk in the appearance-based reassurance condition in terms of their food consumption, mood, and body esteem as compared to restrained eaters. No interaction effect between dietary restraint status and experimental condition was found on any of the variables of interest: food consumption, $F(1,64) = .07, p = .787, \eta^2 < .01$, positive affect, $F(1,82) = .18, p = .675, \eta^2 < .01$, negative affect, $F(1,82) = 1.18, p = .281, \eta^2 = .01$, sexual attractiveness, $F(1,83) = .61, p = .437, \eta^2 = .01$, weight concern, $F(1,83) = .81, p = .371, \eta^2 = .01$, physical condition, $F(1,81) = .39, p = .534, \eta^2 = .01$, or total body esteem, $F(1,81) = 1.05, p = .309, \eta^2 = .01$. Therefore, different conversational responses to fat talk did not differentially impact restrained and unrestrained eaters.

Analysis of Qualitative Responses

Exploratory qualitative responses concerning a previous fat talk conversation that the participants had engaged in were coded according to themes established by prior research (Salk & Engeln-Maddox, 2011) and themes relating to the vignettes used in the study². In addition to

² Qualitative responses were coded for where fat talk occurred (at home, at school, during a meal, or at the gym), who the conversation was with (friend, family, or significant other), what the talker said (weight related or food related), what the recipient said (appearance-based reassurance, norm focused commentary, denial that the talker is fat, invocation of the health idea, action focused, disengagement from the conversation), what the participant reported thinking

themes that arose during the conversation, the frequency, length, and location of the conversation were also recorded. Furthermore, participant's self-reported thoughts about their conversational partner, their mood, and their body were coded. Inter rater reliability for the coding procedure was moderate (Cohen's Kappa = .73 based on a randomly selected sample of 25 [approximately 28%] of vignettes). Although there were no specific hypotheses, these exploratory analyses were undertaken to explore participants' experiences with fat talk.

Frequency and length of fat talk. Participation in conversations involving fat talk was fairly prevalent in the sample as 73% reported engaging in fat talk at least sometimes with 28.1% stating they often engaged in fat talk. None of the participants reported never engaging in fat talk. Overhearing fat talk was also prevalent as 77.6% of participants reported overhearing fat talk conversations at least sometimes with 46.1% overhearing fat talk often. Only one participant reported they never overheard fat talk. The average length of fat talk conversations was 8.21 minutes.

Location of fat talk conversations. School was the most frequently reported setting with 31.7% of participants stating they were exposed to fat talk while at school. At restaurants or during meals were also frequently reported settings (31.5%). Moreover, 27% reported engaging in fat talk at their own home or in homes of their friends. In addition, 6.1% of participants mentioned engaging in fat talk while shopping for clothing and 5.6% engaged in fat talk at the gym.

while the conversation was occurring (concern for the well-being of the fat talker or discounting the talker's reassurance), and what the participant reported feeling as a result of the conversation (annoyed, devalued because their reassurance was discounted, increased body esteem, decreased body esteem, increased positive mood, increased negative mood, increased objectification, or decreased objectification).

Who engages in fat talk. The overwhelming majority of fat talk conversations occurred between friends (83.1%). However, a significant minority (21.3%) reported engaging in fat talk with family. Lastly, 3.4% of participants reported having fat talk conversations with their significant other.

Conversational characteristics. During participants' most recent negative body related conversation 43.8% of participants self-identified as the fat talker. During this conversation, 44.9% of fat talkers reported a general feeling of feeling fat while others were more specific and made comments about their weight (40.4%) or food they had consumed (25.8%).

During the negative body related conversation 56.2% of participants identified as the fat talk recipient. Denial that the talker was fat was the most common response (reported by 36% of participants) followed by action oriented responses (22.5%), and appearance-based reassurance (21.3%). Participants also responded by evoking the healthy ideal (11.2%), providing norm focused rebuttal (6.7%), and by denying that the talker was fat and asserting that they themselves were fat (4.5%). In addition, one participant reported changing the subject to avoid the conversation.

The perceived impact of fat talk. Regardless of conversational role (talker or recipient), after the conversation 41.6% of participants reported increased negative mood, 20.2% made comments which indicated they felt objectified, and 18% said they felt worse about their body. Conversely, 16.9% of participants reported increased positive mood after engaging in a conversation involving fat talk. However, only one participant out of 89 reported that the conversation made her feel better about her body.

Relationship dynamics of fat talk. Many fat talkers discounted the reassurance that was offered to them (15.7%) by the recipient while 2.2% of recipients felt their opinion was not

valued by their conversational partner due to the fact that their reassurance was discounted. In addition, 4.3% of recipients reported being annoyed at being forced to engage in fat talk conversations, and only 3.4% of recipients expressed that they felt concerned for the well-being of the talker.

Discussion

Previous research has demonstrated the negative impact of fat talk on various psychological states. The purpose of Study 1 was to explore the impact of exposure to appearance-based reassurance versus norm focused rebuttal in response to fat talk. Specifically, the impact of different responses to fat talk on food consumption, mood, and body esteem in female undergraduate students was examined. In addition, dietary restraint was investigated as a possible moderating factor of the different responses to fat talk being investigated, given that previous research has suggested that low dietary restraint may protect against the negative consequences of fat talk.

This study tested two hypotheses. The first hypothesis held that the appearance-based reassurance condition would result in less food consumption, more negative mood, and lower body esteem than the norm focused rebuttal condition. This was predicted because appearance-based reassurance reinforces the idea that women are often and harshly evaluated based upon their appearance. The reassurance message, in this study, was that the woman still looks “good”, however, implicit in this type of reassurance is the message that if the woman was “fat” it would be a bad thing. As such, this type of reassurance can serve to remind women of the thin-ideal which has been shown to have deleterious effects (Brown & Dittmar, 2005). Contrary to the first hypothesis, results indicated that individuals in the norm focused rebuttal condition reported significantly more negative affect after exposure to the vignette as compared to individuals in the

appearance-based reassurance condition. As such, it appears that criticism of the phenomenon of fat talk negatively impacts women's affective state.

It may be that the norm focused rebuttal actually made participants feel worse because it reminded them of the unrealistic societal ideal of thinness that women are constantly subjected to as well as the unequal status of women in western society at large. Being reminded of these large-scale societal issues which are largely outside of a single individual's control may have evoked a sense of helplessness in participants in the norm focused rebuttal experimental condition which, in turn, resulted in negative affect. A sense of helplessness has been associated with situational state changes in negative affect (Swendsen, 1998).

It is important to note that negative affect was the only variable that was differentially impacted by the different conversational responses to fat talk. There are a number of possible explanations as to why the vignettes did not result in different outcomes on our other dependent variables of interest. One explanation is that encouraging participants to ruminate about the vignettes they read may have limited their distinctiveness, since both vignettes included fat talk and may have triggered similar reactions among participants. It is also possible that the vignettes themselves were not sufficiently different (regardless of the rumination that was encouraged). Additionally, the sample in this study was much more diverse than that of previous studies in terms of both ethnicity and BMI. This study was successful in recruiting women from all BMI categories and from a wide array of ethnicities, whereas Salk and Engeln-Maddox (2012) used only healthy weight participants and their sample was primarily Caucasian (63%).

The second hypothesis posited that restrained and unrestrained eaters would be differentially affected by the different conversational responses to fat talk, given that restrained eaters tend to be highly concerned with weight and shape, and undertake dieting as a means of

controlling their weight. However, no interaction between experimental condition (i.e., norm focused rebuttal vs. appearance-based reassurance) and dietary restraint status (i.e., restrained eater vs. unrestrained eater) was found on any measures. Therefore, different conversational responses to fat talk do not appear to differentially impact restrained and unrestrained eaters. However, three significant differences were found; restrained eaters weighed significantly more, ate significantly less, and were significantly more concerned about their weight than unrestrained eaters, regardless of condition. Given that restrained eaters tend to weigh more and also be highly concerned with weight and shape, the increased weight concern as compared to unrestrained eaters is perhaps not surprising. By contrast, the decreased food consumption is contrary to boundary model of dietary restraint (Herman & Polivy, 1983). This model predicts disinhibited eating in response to the heightened negative affect found among individuals in the norm focused rebuttal condition. Disinhibition of food consumption has been previously documented in restrained eaters in response to negative affect (Ruderman, 1985). However, the current finding is more in line with that of Compeau and Ambwani (2013) which found that exposure to fat talk can motivate chronic dieters to further restrain their eating.

The current study also points to the possibility that exposure to fat talk suppresses eating only in restrained eaters, as compared to unrestrained eaters. On the other hand, past studies that have found disinhibited eating in restrained eaters in response to induced negative affect required participants to consume a minimum amount of food by completing a taste test of high calorie foods (e.g., Ruderman, 1985; Yeomans, Martin, & Coughlan, 2009) which in and of itself may disinhibit eating when foods that are perceived “forbidden” (e.g., cookies) are involved. Consumption of foods perceived deemed “forbidden” by restrained eaters have been found to result in disinhibition of eating (Mills & Palandra, 2008); this is sometimes referred to as the

“what the hell effect” (Polivy & Herman, 1985) in which the food consumption of restrained eaters becomes disinhibited after a small transgression (e.g., eating a cookie) of their strict diet rules. Conversely, Study 1 did not use a forced taste test paradigm for cookie consumption, leaving open the possibility that participants would not eat any cookies. Thus, it is possible that this difference in experimental design may account for this finding which is contrary to what would be predicted by restraint theory. However, Compeau and Ambwani (2013) used a forced taste-test paradigm and still did not find disinhibition by restrained eaters in response to fat talk.

In sum, it appears as though exposure to fat talk may suppress eating of “forbidden foods” among dieters, as compared to nondieters. Along these same lines, Shentow-Bewsh, Keating, and Mills (in press) recently concluded that exposure to obesity stigmatizing messages may suppress eating (temporarily) among restrained eaters. However, different conversational responses to fat talk do not appear to differentially impact restrained and unrestrained eaters as the current study found no difference between restrained and unrestrained eaters’ cookie intake across the two conditions despite the finding that the norm focused rebuttal response to fat talk resulted in more negative affect among all participants. In this case, the suppressive effects of exposure to fat talk on dieters’ eating may override any disinhibitory effect of its associated negative affect on their food intake.

Qualitative Findings

Examination of qualitative data provided by participants while they were ruminating about the vignettes revealed that both participation in and overhearing fat talk was prevalent in the sample with an overwhelming majority reporting engaging in and being exposed to fat talk at least sometimes. In addition, a minority of participants reported they often engaged in fat talk and about half reported that they often overheard conversations involving fat talk. Most of the fat

talk conversations occurred between friends but a significant minority occurred with family, and a few participants reported having fat talk conversations with their significant other. These findings, in combination with the fact that none of the participants reported never engaging in fat talk and that only one participant reported that she never overheard fat talk, provide strong evidence that fat talk is a prevalent and normative behaviour among female undergraduate students. A typical fat talk conversation lasts for approximately 8 minutes; previous research that has documented negative effects of exposure to fat talk for much shorter amounts of time (Stice et al., 2003).

At restaurants or during meals were frequently reported settings for fat talk conversations. The gym and clothing stores were also mentioned by participants as common locations for fat talk conversations. However, settings in which fat talk was not primed were also frequently reported. Most notably, fat talk was frequently reported as occurring at school and at their own home or in homes of friends. This finding is consistent with a gender difference in fat talk that has been documented in other studies (e.g., Engeln, Sladek, & Waldron, 2013) in which men engage in fat talk only in situations in which it is primed but women engage in fat talk across situations. This finding is probably best explained by objectification theory (Fredrickson & Roberts, 1997). In brief, objectification theory holds that women in western societies are socialized to see themselves as objects that are to be evaluated by others. This constant evaluation often leads to anxiety and attempts to relieve this anxiety are sometimes maladaptive. Fat talk can be viewed as a maladaptive attempt to relieve this anxiety. This constant evaluation and resulting anxiety could be why women engage in fat talk across situations whereas men only engage in fat talk in situations in which a feeling of evaluation is primed such as at the gym.

Men, for the most part, are not socialized in the same way and do not feel as though their bodies are constantly under scrutiny.

The conversational responses to fat talk reported by the female undergraduate students in this study were similar to those reported by previous studies (Becker et al., 2013; Salk & Engeln-Maddox, 2011) and appear to reflect a normative fat talk script that one is expected to adhere to. In response to fat talk, denial that the talker was fat was the most common response followed by action oriented responses, and appearance-based reassurance. A minority of participants responded by evoking the healthy ideal or providing a norm focused rebuttal. Indicative of the strength of the normative and reciprocal nature of fat talk conversations, only one participant reported changing the subject to avoid the conversation. Also demonstrative of the normative nature of fat talk is the current finding that only a couple of fat talk recipients expressed concern for the well-being of the talker. It appears as though these types of self-disparaging remarks are viewed by peers as normative behaviour rather than cause for concern or a risk factor for psychopathology.

Participants' responses indicated that fat talk conversation temporarily improves the mood of some but has no effect or a negative effect on others. Almost half of participants reported increased negative mood from fat talk and a sizeable minority said they felt worse about their body as a result of the fat talk conversation they recounted. Interestingly, several participants discounted the reassurance offered to them by their conversational partner because they thought that they were lying in an effort to adhere to the social norm and only one participant reported that the conversation actually made her feel better about her body. Review of the qualitative responses provided by participants revealed that hearing fat talk makes most young women feel worse about their bodies because it reminds them of their flaws and the

societal ideal they are constantly being compared to. These findings raise questions about what is reinforcing fat talk and why fat talk continues to be so prevalent in Western society despite the fact that most women report that it makes them feel worse in terms of mood and body esteem. Pluralistic ignorance (Miller & McFarland, 1987) may play a role in the maintenance of fat talk. Pluralistic ignorance occurs when most members of a group privately reject a norm, but incorrectly assume that most others accept said norm. Thus, due to pluralistic ignorance, the largely unsupported and harmful norm of fat talk is perpetuated. Pluralistic ignorance appears to be relatively common among university students as it is seen as a key perpetuating force behind other detrimental health behaviours among this population, most notably, alcohol use (Prentice & Miller, 1993).

Another theory holds that fat talk is so prevalent among women in Western society because it serves an important social function as it helps build and solidify interpersonal relationships (Nitcher, 1994). Indeed, the qualitative responses of those who reported that hearing fat talk had a positive impact on their mood seemed to feel that way because they view the self-disclosure of fat talk as an indicator of closeness in the relationship. However, there is also a small percentage of women for whom fat talk has a negative impact on their relationship; specifically, a few women reported feeling annoyed at being forced to engage in fat talk conversations, and a couple of fat talk recipients felt their opinion was not valued by their conversational partner because their reassurance was discounted. Thus, although fat talk serves a positive social function for some women, there is also a subset of women for whom fat talk is interpersonally counter-productive. The finding that some women feel devalued when their reassurance is rejected is consistent with Coyne's (1976) theory of the role of reassurance seeking in depression. This theory holds that excessive reassurance seeking leads to the

deterioration of one's interpersonal relationships and ultimately exacerbates one's distress. As such, this theory is useful in explaining both why women engage in fat talk initially and why engaging in excessive fat talk has been found to have negative effects in past research (e.g., Nitcher, 2000).

Limitations

The generalizability of this study's findings is limited to young women (aged 17 to 24) who are undergraduate students. Moreover, the study did not have a pre-post design. Although the experimental groups were equivalent in terms of age and BMI, we cannot know for certain that they did not differ in mood, prior to the experimental manipulation. In addition, several participants (21%) did not eat any cookies and the results may have been different if there had been greater food intake overall. Previous studies (e.g., Clendenen, Herman, & Polivy, 1994; Howland, Hunger, & Mann, 2012; van Strien & Ouwens, 2003) have successfully used cookies as a measure of food consumption. However, these studies have used a taste test paradigm, requiring participants to eat some of the food on offer. The decision was made in this study not to require food consumption as increased consumption resulting from this type of manipulation may be due to the disinhibition of eating behaviour caused by the required taste test or encouragement (especially in restrained eaters) rather than the experimental manipulation itself. During debriefing, participants were asked why they consumed little or no food, and in response, most stated that the cookies were appealing but they were not hungry. The second most common response was that the participant did not like cookies. Some participants also mentioned that they were not comfortable eating food when they were not familiar with who made it or where it was prepared. Additionally, a few participants indicated that they did not feel like eating high calorie foods after reading the vignettes, allowing for the possibility that exposure to either fat talk scenario suppressed eating by reminding participants of their desire to lose weight.

Conclusions

Study 1 attempted to replicate and extend that of Salk and Engeln-Maddox (2012), which suggested that conversational responses to fat talk could impact its effects. Unlike Salk and Engeln-Maddox (2012), the study recruited participants of varying weights and measured food consumption following exposure to fat talk. Most importantly, this study separated appearance-based reassurance from norm focused rebuttal in an effort to identify which response produces more adaptive psychological reactions among young women. Although the hypotheses of this study were not supported, the findings contribute to the emerging literature on ways to negate fat talk. It was found that negative affect was higher following exposure to the norm focused rebuttal of fat talk as compared to appearance-based reassurance in response to fat talk. In addition, restrained eaters ate less than unrestrained eaters after exposure to either fat talk condition: appearance-based reassurance or norm focused rebuttal.

A second study was conducted in order to attempt to replicate and extend Study 1. Specifically, clarity was sought over whether the main effect of the experimental manipulation on negative affect was due solely to the fat talk vignettes. Furthermore, since both fat talk responses in Study 1 contained mention of weight and appearance and may have been too similar in that regard, the impact of a non-appearance-based fat talk response (i.e., distraction) was explored.

Study 2

Study 1 found some support for the idea that different responses to fat talk produce more or less adaptive outcomes among people exposed to fat talk. Unexpectedly, appearance-based

reassurance as a response to fat talk resulted in less negative affect than did the norm focused rebuttal of fat talk. Overall, though, there were few differences between the fat talk conditions. A follow-up study was conducted in an effort to overcome some of the limitations of Study 1. Specifically, the limitations concerning study design (i.e., the lack of pre-manipulation measures in the original study did not allow one to rule out pre-existing group differences and to conclusively attribute changes to the experimental manipulation) and the vignettes (i.e., the rumination encouraged by the vignettes may have been too similar in the original study) were addressed. As such, Study 2 used a pre-post design that allowed one to conclusively attribute changes to the experimental manipulation. Moreover, a new vignette was added (i.e., a vignette that uses distraction in response to fat talk), and the previous vignettes were made longer and rumination was no longer encouraged in an attempt to highlight the differences between conditions. The distraction vignette was added given previous research which demonstrated that distraction is beneficial for negating the detrimental impact of negative body image related cognitions on mood (Hartmann, Thomas, Greenberg, Rosenfield, & Wilhelm, 2015) and body esteem (Wade, George, & Atkinson, 2009). It was decided that a new vignette be added for the follow up study in an effort to better approximate the variation of real-world responses to fat talk which were reported in the qualitative portion of the previous study. Finally, a larger sample size was included to ensure sufficient power.

Hypotheses

Based on previous research, participants in the distraction condition were expected to have more positive mood (Hartmann et al., 2015) and higher body esteem (Wade et al., 2009) as compared to participants in the appearance-based reassurance and norm focused rebuttal conditions. As such, distraction was expected to be the most effective response to negate the

negative impacts of fat talk. As per the findings in the previous study, appearance-based reassurance was expected to be the second most effective response to negate the negative impacts of fat talk. As such participants in the appearance-based reassurance condition were expected to have more positive mood and higher body esteem as compared to participants in the norm focused rebuttal condition. Lastly, norm focused rebuttal was expected to be the least effective response in terms of its ability to negate the negative impacts of fat talk. As such, participants in the norm focused rebuttal condition were expected to have more negative mood and lower body esteem as compared to participants in the distraction and appearance-based reassurance conditions. In addition, restrained and unrestrained eaters are expected to be differentially affected by different conversational responses to fat talk. Despite the lack of interaction effects in Study 1, dietary restraint was again examined as a moderator of the negative impact of exposure to fat talk (Compeau & Ambwani, 2013) such that unrestrained eaters were expected to be less negatively impacted by exposure to fat talk in both the appearance-based reassurance and the norm focused rebuttal conditions in terms mood and body esteem as compared to restrained eaters.

Method

Participants

Female undergraduate students aged 17 to 24 were recruited from the York University undergraduate research participant pool. The average age of participants in this study was 19.16 ($SD = 1.51$). Participants received partial course credit for their participation in a single testing session. One hundred and eighty six participants were recruited. Participants were taking an average of 4.24 classes and would have been classified as full-time students at the time of their participation in the study. Most participants were students in the faculty of health (55.4%). The

most common ethnic category with which participants self-identified was South Asian (19.9 %) followed by Middle Eastern (15%), Caucasian (13.5%), African Canadian (11.5%), Latin (9.6%) Southeast Asian (7.1%), and East Asian (4.5%). In addition 14.8% of participants self-identified as “other” or multi-racial and 3.2% of participants chose not to respond.

Two participants correctly guessed the study question and were excluded from the analyses. In addition, three participants indicated that they had previously been diagnosed with an eating disorder and were excluded. After these exclusions, the total number of participants whose data were used in the subsequent analyses was 181. The average BMI was 23.23 ($SD = 4.31$, $range = 15.40$ to 36.30) which is in the normal BMI range (Centers for Disease Control, 2011), but all weight categories were represented as indicated by the wide range. Eight participants refused to be weighed and, thus, were not included in analyses involving BMI.

Materials

Exposure to fat talk was manipulated using three different vignettes (Appendices K, L, and M). The vignettes detailed a conversation between two female friends during which one friend engaged in fat talk (i.e., “I’m worried I’m starting to get fat. This morning when I looked in the mirror I was disgusted with myself. My clothes don't fit like they should and I look terrible. I think I should probably go on a diet. I told myself I would start today but look at all the greasy food I just ate.”), but the response to the fat talk varied based on the experimental condition. In the norm focused rebuttal condition the response was “Stop with the fat talk! I know everybody does it and that it’s become a part of our culture but it’s bad for our body image and just perpetuates our culture’s obsession with weight. Women should be worrying about more important things than whether they are skinny enough.” In the appearance-based reassurance condition the friend responds by saying: “You’re not fat! Stop worrying about your weight. You

look good. Plus, you always look so put together. Your clothes always look nice, and your make up always looks good.” In the distraction condition the response was: “I’m concerned about our midterm next week. There is so much we need to know and the concepts seem much more advanced and difficult than the last midterm. I really need to start studying. I think I am going to read the chapters tonight.” Participants were asked to rate the vignette on a 7 point Likert scale ranging from *not at all* to *very much* in terms of how appearance-focused, how reassuring, how focused on society’s ideal of beauty, and how off topic the conversational response was. As in the previous study, the vignettes were written by the primary investigator in consultation with laboratory associates and were based, in part, on the script used by the confederates in Salk and Engeln-Maddox (2012).

Measures

As in the original study, trait dietary restraint was measured using the Revised Restraint Scale (Polivy et al., 1988); the Cronbach’s alpha for Study 2 was .81. Mood was again measured by the Positive and Negative Affect Schedule (Watson, et al., 1988); the Cronbach’s alpha for this scale for Study 2 was .75 with subscale alphas of .86 (positive affect subscale) and .79 (negative affect subscale). Lastly, body esteem was assessed using the Body-Esteem Scale (Franzoi & Shields, 1984) the Cronbach’s alpha for this scale for Study 2 was .91 with subscale alphas of .76 (sexual attractiveness subscale), .89 (weight concern subscale), and .84 (physical condition subscale).

In addition, participants were asked to complete the same demographics questionnaire as in the previous study to assess age and possible eating disorder diagnosis. Furthermore, pre-screen data attained by the York University undergraduate research participant pool was once again used to assess self-identified ethnicity.

In addition to the Body Esteem Scale and PANAS, visual analog scales (Appendix N) were used to assess changes to key variables pre and post manipulation. Specifically, participants were asked to rate on a 100 millimetre long line how anxious, depressed, happy, intelligent, angry, confident, fat, physically attractive, satisfied with their body size, satisfied with their body shape, and physically fit they currently felt on a visual scale with anchors of “not at all” and “very much.” Responses were measured in millimetres.

Procedure

After giving written informed consent, participants were asked to complete the demographics questionnaire and the visual analog scales to assess their current affective state. Participants were then randomly assigned to their experimental condition and were asked to read one of three vignettes followed by a filler task (i.e., a neutral word search) for five minutes to reduce demand characteristics. Participants then completed a questionnaire package consisting of the same series of visual analog scales that they had completed, the Positive and Negative Affect Schedule, the Body Esteem Scale, and the Revised Restraint Scale. Upon completion of the questionnaires, participants were weighed backwards and their height was recorded by the experimenter. The participants were then asked what they thought the research question was for the study and debriefed about the nature of the study. In order to minimize any lasting negative consequences of the manipulation, participants were given a brief article on fat talk and ways to improve one’s body image (this is the same article used in the original study; see Appendix J).

Results

Data Analysis Plan

All continuous variables were examined for normality and outliers. Outliers were replaced with the most extreme score within 3.29 standard deviations (Cosineau & Charlie,

2010) which resulted in the following changes: a BMI of 41.70 was replaced with 36.30, a pre-manipulation visual analog scale measuring anger score of 75 was replaced with a score of 64, a RRS total subscale score of 33 was replaced with a score of 30, and a PANAS negative subscale score of 37 was replaced with a score of 33. In addition, the PANAS negative subscale (non-transformed coefficient = 1.33; transformed coefficient = .78), visual analog pre-manipulation depression scale (non-transformed coefficient = 1.36; transformed coefficient = .59), and the visual analog post-manipulation depression scale (non-transformed coefficient = 1.23; transformed coefficient = .55) were skewed and these skews were corrected using log transformations (Osborn, 2008). Missing data was minimal (i.e., less than ten percent) and was found to be missing completely at random (χ^2 (2233 N=184) = 2241.98, $p = .443$) so it was not replaced (Barladi & Enders, 2010; Bennett, 2001); it was handled on a case by case basis using listwise deletion (Graham, 2009). A manipulation check was performed using an ANOVA model (vignette x experimental condition) to ensure that participants in different experimental conditions perceived the three vignettes as significantly different from one another in terms of the content of the conversational response to the fat talk (i.e., its focus on appearance, its focus on the societal ideal of thinness, how reassuring it was, and how off topic it was). As an additional manipulation check, paired t -tests were conducted on pre-and-post manipulation scores on the visual analog scales to see whether scores changed significantly following any of the fat talk conditions.

The main hypotheses regarding group differences by experimental condition as well as the potential moderating effect of dietary restraint were investigated using a MANOVA for visual analog scales (experimental condition x restraint status) (to reduce the risk of Type 1 error) and ANOVAs (experimental condition x restraint status) for all other variables of interest.

ANOVA models were used for all variables but the visual analog scales rather than MANOVA models due to multicollinearity (Gabriel & Hopkins, 1974; Huberty & Morris, 1989; Mansfield & Helms, 1982). Significant differences between experimental conditions were followed up using Tukey's HSD *t*-tests. Moreover, significant effects involving restraint were followed up with ANCOVAs and MANCOVAs to see whether they remained significant after controlling for BMI. This was done to ensure that any observed differences between restrained and unrestrained eaters were not due to their body size; BMI and dietary restraint were highly correlated, $r = .49$, $p < .001$. Alpha was set at 0.05 for significance testing.

Manipulation Check

Analyses did not reveal any significant group differences between conditions in terms of participants' ratings of the conversational response in the vignette's focus on appearance, $F(2,180) = 1.02$, $p = .361$, focus on the societal ideal of thinness, $F(2, 180) = .11$, $p = .894$, how reassuring it was, $F(2, 180) = 3.49$, $p = .706$, and how off topic it was, $F(2,180) = 1.08$, $p = .341$.

Changes in Visual Analog Scales from Pre-to-Post Manipulation

Paired *t*-tests were used to detect differences between visual analog scales pre-and-post manipulation as a way to gauge the manipulation's effectiveness. Two of the eleven visual analog scaled were significantly different from pre to post manipulation: feelings of fatness, $t(183) = 2.16$, $p = .032$, and satisfaction with one's body shape, $t(183) = 3.54$, $p = .001$. Changes were such that participants reported increased feelings of fatness and decreased satisfaction with their body shape after exposure to the experimental manipulation. The remaining nine visual analog scales did not change significantly after exposure to any fat talk vignette: anxiety, $t(183) = -1.24$, $p = .215$, depression, $t(182) = -.49$, $p = .619$, happiness, $t(183) = 1.19$, $p = .237$, intelligence, $t(183) = 1.36$, $p = .175$, anger, $t(182) = -.70$, $p = .483$, confidence, $t(183) = .93$, $p = .355$), physical

attractiveness, $t(183) = -.08, p = .939$, physical fitness, $t(183) = .12, p = .908$, and satisfaction with one's body size, $t(183) = -1.05, p = .295$.

Descriptive Statistics

Table 3 displays means and standard deviations for all variables of interest by experimental condition whereas Table 4 documents means and standard deviations for all variables of interest by dietary restraint status.

Table 3
Means (and standard deviations) of all variables of interest by condition

<u>Variable</u>	<u>Appearance-Based Reassurance Condition</u> <u>n = 64</u>	<u>Norm Focused Rebuttal Condition</u> <u>n = 64</u>	<u>Distraction Condition</u> <u>n = 55</u>
BMI	22.80 (4.06)	23.73 (4.58)	23.15 (4.27)
Age	19.17 (1.61)	19.11 (1.48)	19.20 (1.43)
Trait Dietary Restraint	11.62 (5.40)	13.00 (6.00)	12.00 (6.66)
VAS1 Anxious	25.41 (25.60)	19.41 (20.30)	25.31 (27.24)
VAS2 Anxious	27.29 (28.26)	21.21 (22.65)	25.48 (28.89)
VAS1 Depressed	24.23 (27.55)	16.56 (21.35)	16.91 (23.90)
VAS2 Depressed	24.10 (27.44)	19.09 (22.86)	15.29 (22.39)
VAS1 Happy	59.29 (21.75)	58.29 (21.92)	64.88 (18.95)
VAS2 Happy	59.45 (22.29)	55.25 (22.37)	65.01 (19.49)
VAS1 Intelligent	56.66 (20.73)	57.47 (22.54)	56.41 (18.53)
VAS2 Intelligent	55.42 (20.24)	54.61 (22.47)	57.23 (21.92)
VAS1 Angry	7.58 (14.09)	12.19 (18.85)	10.52 (17.23)
VAS2 Angry	9.62 (15.48)	12.16 (18.26)	9.57 (17.78)
VAS1 Confident	56.47 (20.19)	51.66 (22.95)	56.45 (25.30)
VAS2 Confident	55.09 (20.19)	51.13 (24.93)	55.75 (24.14)
VAS1 Fat	37.21 (29.64)	39.57 (30.97)	35.83 (31.68)
VAS2 Fat	34.08 (27.69)	35.88 (30.13)	35.12 (30.59)
VAS1 Attractive	48.48 (21.31)	41.16 (24.16)	49.77 (21.99)
VAS2 Attractive	47.27 (22.15)	43.24 (24.59)	48.97 (23.13)

VAS1 Body Size	45.88 (28.52)	44.76 (27.52)	47.20 (26.49)
VAS2 Body Size	46.74 (28.94)	43.62 (27.38)	50.41 (27.44)
VAS 1 Body Shape	48.75 (28.85)	51.97 (25.14)	54.48 (25.46)
VAS2 Body Shape	47.08 (28.91)	49.40 (25.96)	53.32 (25.71)
VAS1 Physically Fit	44.55 (28.29)	40.40 (24.64)	46.45 (27.31)
VAS2 Physically Fit	44.02 (27.14)	41.03 (24.26)	46.04 (27.59)
Negative affect	16.21 (6.18)	15.28 (5.27)	15.11 (5.02)
Positive affect	26.61 (6.98)	26.58 (6.59)	28.18 (7.87)
Body Esteem			
Sexual Attraction	42.03 (6.41)	43.05 (6.56)	44.55 (6.90)
Weight Concern	28.98 (8.68)	29.52 (7.93)	29.06 (9.21)
Physical Condition	28.49 (6.64)	28.42 (6.54)	19.19 (6.46)
Total	98.67 (17.99)	100.80 (17.30)	102.40 (19.42)

Table 4

Means (and standard deviations) of all variables of interest by restraint status

<u>Variable</u>	<u>Restrained</u> <u>Eaters</u> <u>n = 57</u>	<u>Unrestrained</u> <u>Eaters</u> <u>n = 121</u>
BMI	25.66 (4.16)	22.05 (3.88)
Age	19.12 (1.48)	19.17 (1.50)
VAS1 Anxious	27.94 (26.93)	21.43 (23.20)
VAS2 Anxious	33.25 (29.98)	20.76 (24.41)
VAS1 Depressed	24.66 (26.79)	17.41 (23.57)
VAS2 Depressed	26.35 (28.13)	17.07 (22.58)
VAS1 Happy	58.46 (20.84)	61.63 (20.60)
VAS2 Happy	54.65 (22.79)	61.97 (20.78)
VAS1 Intelligent	52.39 (22.24)	59.44 (19.40)
VAS2 Intelligent	49.05 (22.52)	59.14 (20.19)
VAS1 Angry	11.25 (18.04)	9.66 (16.59)
VAS2 Angry	11.91 (18.34)	10.11 (16.89)
VAS1 Confident	46.62 (24.42)	58.65 (21.45)
VAS2 Confident	46.25 (24.47)	57.68 (21.94)

VAS1 Fat	60.39 (25.68)	26.94 (26.60)
VAS2 Fat	55.13 (25.79)	25.70 (26.01)
VAS1 Attractive	37.47 (20.98)	50.15 (22.90)
VAS2 Attractive	36.40 (22.16)	50.81 (22.65)
VAS1 Body Size	26.92 (23.04)	55.20 (25.00)
VAS2 Body Size	29.38 (24.55)	55.21 (25.92)
VAS 1 Body Shape	41.21 (27.49)	56.76 (25.15)
VAS2 Body Shape	36.25 (25.26)	56.52 (25.52)
VAS1 Physically Fit	34.99 (26.73)	47.59 (25.93)
VAS2 Physically Fit	35.05 (26.47)	47.52 (25.29)
Negative affect	15.88 (6.13)	15.38 (5.32)
Positive affect	25.46 (7.68)	27.74 (6.86)
Body Esteem		
Sexual Attraction	42.38 (6.62)	43.58 (6.78)
Weight Concern	23.56 (8.28)	31.93 (7.44)
Physical Condition	27.70 (6.63)	29.15 (6.53)
Total	93.25 (18.39)	104.28 (17.29)

Effects of Experimental Condition

The randomization procedure was successful as experimental conditions were not significantly different (i.e., there was no main effect of condition) in terms of BMI, $F(2,167) = 1.18, p = .309, \eta^2 < .01$, age, $F(2,172) = .41, p = .661, \eta^2 = .01$, and dietary restraint, $F(2,176) = .892, p = .412, \eta^2 = .01$.

The main hypothesis of this study held that differences in scores on measures of mood and body esteem would be observed as a function of experimental group. Specifically, the distraction condition was expected to result in more positive mood and higher body esteem as compared to the appearance-based reassurance and norm focused rebuttal conditions; the appearance-based reassurance condition was expected to result in more positive mood and higher body esteem as compared to the norm focused rebuttal condition, and the norm focused rebuttal

condition was expected to result in more negative mood and lower body esteem as compared to the distraction and appearance-based-reassurance conditions.

ANOVA analyses revealed a main effect of experimental condition on the sexual attractiveness subscale of the body esteem scale, $F(2,170) = 3.42, p = .035, \eta^2 = .04$. Tukey HSD tests were conducted on all possible pairwise contrasts. Results indicated that the mean score for the sexual attractiveness subscale of the body esteem scale for participants in the appearance-based reassurance condition ($M = 42.03, SD = 6.41$) was significantly different than the distraction condition ($M = 44.55, SD = 6.90$) such that participants in the distraction condition felt more sexually attractive than those in the appearance-based reassurance condition. However, the norm focused rebuttal condition ($M = 43.05, SD = 6.56$) was not found to be significantly different from the appearance-based reassurance or distraction conditions. No other significant differences between experimental conditions were found on any of the variables of interest: total body esteem, $F(2,163) = 1.89, p = .155, \eta^2 = .02$, weight concern, $F(2,171) = .70, p = .497, \eta^2 = .01$, physical condition, $F(2,168) = .39, p = .681, \eta^2 = .01$, negative affect, $F(2,172) = .26, p = .773, \eta^2 < .01$, positive affect, $F(2,173) = 1.33, p = .266, \eta^2 = .02$, or change scores on any of the visual analog scales, Pillai's Trace = .15, $F(22,328) = 1.24, p = .208, \eta^2 = .08$.

The Moderating Effect of Dietary Restraint

First, data were examined to determine if there were any main effects of dietary restraint status on any of the dependent variables (i.e. to determine whether restrained eaters differed on any of the variables of interest relative to unrestrained eaters). ANOVA analyses revealed significant main effects of dietary restraint status on BMI, $F(1,171) = 31.06, p < .001, \eta^2 = .15$, total body esteem, $F(1,163) = 15.68, p < .001, \eta^2 = .09$, the weight concern body esteem subscale, $F(1,171) = 44.82, p < .001, \eta^2 = .21$, and the positive affect subscale of the PANAS,

$F(1,173) = 4.13, p = .044, \eta^2 = .02$. Specifically, restrained eaters felt significantly worse about their bodies, were more concerned about their weight, and experienced less positive affect than did unrestrained eaters. However, analyses revealed that the main effect of restraint on the positive affect subscale of the PANAS was no longer significant when BMI was controlled for, $F(1,166) = 3.38, p = .068, \eta^2 = .02$. Conversely, the main effect of restraint on total body esteem, $F(1,156) = 10.90, p = .001, \eta^2 = .03$, and the weight concern subscale of the body esteem scale, $F(1,164) = 28.05, p < .001, \eta^2 = .15$, remained significant when controlling for BMI.

MANOVA analyses for the pre-post manipulation change scores for the visual analog scales revealed a main effect of restraint, Pillai's Trace = .16, $F(11,163) = 2.88, p = .002, \eta^2 = .16$. This finding held when controlling for BMI, Pillai's Trace = .12, $F(11,156) = 1.99, p = .033, \eta^2 = .12$. Follow-up analyses indicated a significant difference between restrained ($M = -.36, SD = 1.20$) and unrestrained eaters ($M = .03, SD = .95$) on changes to the happiness visual analog scale such that restrained eaters reported experiencing a larger decrease in happiness as compared to unrestrained eaters, $t(177) = -2.35, p = .020$, a significant difference between restrained ($M = .48, SD = 1.55$) and unrestrained eaters ($M = -.08, SD = 1.28$) on the anxiety visual analog scale such that restrained eaters experienced a larger increase in anxiety as compared to unrestrained eaters, $t(177) = 2.54, p = .012$, and a significant difference between restrained ($M = -.44, SD = 1.28$) and unrestrained eaters ($M = -.02, SD = .97$) on the satisfaction with one's body shape visual analog scale such that restrained eaters reported a larger decrease in satisfaction with their body shape as compared to unrestrained eaters, $t(177) = -2.43, p = .016$. No other significant differences between restrained and unrestrained eaters were found on any of the variables of interest: age, $F(1,176) = .06, p = .803, \eta^2 < .01$, the sexual attractiveness subscale of the body esteem scale, $F(1,170) = 1.93, p = .166, \eta^2 = .01$, the physical condition subscale of the body

esteem subscale, $F(1,168) = 1.79, p = .183, \eta^2 = .01$, or the negative affect subscale of the PANAS, $F(1,172) = .21, p = .645, \eta^2 < .01$.

Next, the data were probed for interaction effects between dietary restraint status and experimental condition to test the second hypothesis which held that restrained and unrestrained eaters would be differentially affected by the different conversational responses to fat talk. Specifically, unrestrained eaters were expected to be less negatively impacted by exposure to fat talk in both the appearance-based reassurance and the norm focused rebuttal conditions in terms of their scores on measures of mood and body esteem as compared to restrained eaters. There were no interaction effects between dietary restraint status and experimental condition on any of the variables of interest: body esteem total score, $F(2,163) = 1.71, p = .185, \eta^2 = .02$, sexual attractiveness, $F(2,170) = 1.93, p = .149, \eta^2 = .02$, weight concern, $F(2,171) = 1.09, p = .337, \eta^2 = .01$, physical condition, $F(2,168) = .51, p = .601, \eta^2 = .01$, negative affect, $F(1,172) = .15, p = .862, \eta^2 < .01$; positive affect, $F(2,173) = .56, p = .575, \eta^2 = .01$; or any of the visual analog scales, Pillai's Trace = .19, $F(22,328) = 1.54, p = .058, \eta^2 = .09$. That is, the different conversational responses to fat talk did not differentially impact restrained and unrestrained eaters.

Discussion

The purpose of Study 2 was to attempt to replicate and extend Study 1 by examining the impact of different conversational responses to fat talk on the mood and body esteem of female undergraduate students. Specifically, the impact of distraction, appearance-based reassurance, and norm focused rebuttal responses to fat talk were investigated. In addition, dietary restraint was investigated as a possible moderator of the negative effects of fat talk.

This study tested two main hypotheses. The first hypothesis held that participants in the distraction condition would report more positive mood and higher body esteem as compared to those in the appearance-based reassurance and norm focused rebuttal conditions. Moreover, participants in the appearance-based reassurance condition would report more positive mood and higher body esteem as compared to those in the norm focused condition. Furthermore, participants in the norm focused rebuttal condition would report more negative mood and lower body esteem as compared to those in the distraction and appearance-based reassurance conditions. The results indicated only one significant difference between experimental conditions; participants in the distraction condition felt significantly more sexually attractive than those in the appearance-based reassurance condition. This finding provides partial support of our hypothesis; exposure to distraction from fat talk in the form of having someone change the subject of conversation may be more adaptive than reassurance as a response to fat talk. Appearance-based reassurance can serve to remind women of the societal ideal of thinness and perpetuates the idea that attractiveness is important. Implicit in providing reassurance when a woman engages in fat talk (e.g., “you’re not fat”) is the idea that “fatness” is still something negative to be feared and avoided. That is, if the individual who is engaging in fat talk was “fat” there might be cause for concern, but if she is not, there is no issue. Thus, this type of response to fat talk provides temporary reassurance but, in the long run, it serves to reinforce the unrealistic societal ideal of thinness and contributes to a persistent sense of anxiety regarding one’s weight.

The second hypothesis of Study 2 held that different conversational responses to fat talk would differentially impact restrained and unrestrained eaters. It was anticipated that dietary restraint status would serve as a moderator of the negative effects of fat talk such that unrestrained eaters would be less negatively impacted in terms of mood and body esteem after

exposure to the appearance-based reassurance and norm focused vignettes as compared to restrained eaters. Analyses found no significant interaction effects between experimental condition and dietary restraint status. As such, different conversational responses to fat talk did not differentially impact restrained and unrestrained eaters. Despite restrained eaters being more concerned with weight and shape than their unrestrained counterparts, in the current studies both groups were equivalently impacted by the different fat talk conditions. However, despite this finding, a number of differences were found between restrained and unrestrained eaters independent of experimental condition. Restrained eaters weighed more, felt more unhappy, experienced more anxiety, felt less satisfied with their bodies, felt more concerned about their weight, felt less sexually attractive, and felt worse about their bodies overall after exposure to any of the fat talk vignettes when compared to unrestrained eaters. These findings echo those of previous studies that found restrained eaters have higher body dissatisfaction and lower psychological well-being after exposure to fat talk (Compeau & Ambwani, 2013) as well as prior to any experimental manipulation (McLean & Barr, 2002; Remick, Pliner, & McLean, 2009; Tiggemann, 1997) than unrestrained eaters. The poorer body image and mental health exhibited by restrained eaters can be at least partially explained by the tendency of restrained eaters to internalize societal ideals of thinness (Spangler, 2002) which, in turn, may lead them to place an inordinate amount of value on their weight (Spangler, 2002) which then leads to constant evaluation and scrutiny of their bodies (Lavender et al., 2013) which ultimately results in more negative affect and restrained eating (Dakanalis et al., 2014).

General Discussion

Across Studies 1 and 2, a number of significant differences between experimental conditions were predicted but were not found. The paucity of significant differences between

experimental conditions in terms of the variables of interest is surprising. There are a number of possible reasons for this, including: a) the fat talk vignettes were not significantly different from one another, obscuring differences between experimental conditions; b) the vignettes were not impactful enough to result in meaningful changes in terms of participants' mood, body image, or well-being; and c) the current samples were different than those of other fat talk studies. These possible explanations for the general failure to find many differences between the fat talk conditions are explored next.

Possible explanation a): the vignettes were not sufficiently different from one another. This is a probable explanation as analyses in Study 2 revealed that participants in different experimental conditions did not rate the conversational responses in the vignettes as significantly different in terms of their focus on appearance, focus on the societal ideal of thinness, how reassuring they were, or how off topic they were. This was surprising as an informal pilot study conducted among lab associates found the conversational responses to be significantly different from one another. It may be that the lab associates were significantly different from the actual study sample on a number of important variables such as age (i.e., lab associates were almost exclusively in their early to mid-twenties whereas the sample consisted primarily of individuals in their late teens), ethnicity (i.e., that lab associates were primarily Caucasian whereas the sample was primarily South Asian and Middle Eastern), year of study (i.e., the lab associates were primarily graduate students rather than undergraduates), and familiarity with the concept of fat talk (i.e., lab associates may have been more aware of research concerning fat talk due to their interactions with lab members).

Possible explanation b): the vignettes were not impactful enough to result in meaningful changes in terms of participants' mood and body image. This is also a strong

possibility as analyses found that in the norm focused rebuttal condition only two of the eleven visual analog scales (i.e., the feelings of fatness and intelligence visual analog scales) changed significantly from pre to post manipulation. This was unexpected as the vignettes had strong face validity, were based upon the script used by the confederates in Salk and Engeln-Maddox (2012), and were further enhanced with qualitative data obtained in Study 1. Moreover, other studies have successfully used vignettes as a fat talk manipulation (e.g., Compeau, Ambwani, 2013; Katreovich et al., 2014). With the use of vignettes, the participant is a passive “observer” of the fat talk exchange and the effects of exposure to fat talk vignettes may be different than the effects of being an active participant in a real-world fat talk exchange (as either the fat talker or the recipient). The instruction of rumination in Study 1 attempted to enhance the emotional impact of the fat talk vignettes, but the results were generally similar with and without rumination.

Possible explanation c): the sample was significantly different than that of other fat talk studies in terms of ethnicity and individuals of certain ethnicities are less impacted by fat talk exposure. Compared to Salk and Engeln-Maddox (2012) which the vignettes were based on, and other studies that have successfully used vignettes to manipulate fat talk exposure (i.e., Compeau & Ambwani, 2013; Katreovich et al., 2014), the sample in the current study is significantly different in terms of ethnicity. That is, participants in these other studies were primarily Caucasian or African American whereas participants in the current study were primarily South Asian or Middle Eastern. It may be that individuals of diverse ethnicities are differentially impacted by fat talk exposure. Indeed, studies have documented ethnic differences in body image. For example, it has been shown that individuals who identify as Caucasian report more body image disturbances than those that identify as Asian (Altabe, 1998) and that individuals who identify as Asian place less importance on physical appearance as compared to

those who identify as Caucasian (Altabe, 1998). Moreover, there is evidence that, in individuals who identify as South Asian, familial pressure to live up to a certain standard of beauty is more influential in terms of body image dissatisfaction than pressure from friends (Rajagopalan & Shejwal, 2014). Therefore, it may be that fat talk, which primarily occurs among peers, is less impactful for these individuals. In addition, the vignettes, which depicted a fat talk conversation among two female friends, may have been less impactful for South Asian participants.

Conversely, there is a paucity of research investigating body image in individuals who identify as Middle Eastern.

Limitations and Directions for Future Research

These studies had a number of limitations. The restricted age range of the participants as well as the lack of male participants, and diversity in education (i.e., all participants were undergraduate students) limits the generalizability of the findings. Moreover, the experimental manipulation (i.e., the vignettes) was minimally impactful, and the vignettes were not found to be significantly different from one another.

There are important lessons to be learned from the limitations of the present studies which will be of use to future fat talk researchers. Notably, future research which seeks to examine the impact of different conversational responses to fat talk would benefit from having a control group (i.e., a neutral talk condition where participants are not exposed to fat talk or a status quo condition where participants are exposed to the typical fat talk response of “you’re not fat I’m fat”) as, due to the absence of a control condition, it was not possible to determine whether exposure to fat talk had similar consequences regardless of the conversational response. Furthermore, most research concerning fat talk to date, including the present studies, has used lacked diversity in terms of the age (the majority of research has been conducted with individuals aged 18-24), gender (i.e., research has been conducted almost exclusively with individuals who

identify as female), and level of education (i.e., most research has involved undergraduate students) of participants, therefore, the universality of current findings concerning fat talk is unknown. Future research would be well-served by including more diverse participants.

Similarly, the hypotheses of the present studies, which were based on prior research, were not confirmed which may be due in part to the fact that both studies had more diverse samples (in terms of ethnicity and BMI) than in the previous fat talk research which the hypotheses were based on. Thus, it may be that conversational responses to fat talk differentially impact individuals of different BMIs, ethnicities, or individuals who are relatively new to western society. Most research thus far has been conducted with participants who are primarily Caucasian or African American and of a normal BMI, thus, this is an important possibility that warrants future research.

In addition, the two studies, taken together, underscore the importance of pre-post designs in experimental research concerning fat talk. Specifically, the results concerning the impact of conversational responses to fat talk on one's mood and body esteem were mixed. Study 1 found a significant difference between conversational responses in terms of negative affect, however, Study 2 which included pre-test measures failed to replicate this finding. Thus, when studies lack this important component (i.e., pre-manipulation measures), they may reveal group differences that are mostly attributable only to non-equivalent groups prior to the manipulation rather than the manipulation itself. As such, future fat talk studies should include pre- and post-manipulation measures.

Moreover, both studies had complications with the use of vignettes. In the first study it was suspected that the vignettes triggered similar memories and rumination in the participants whereas, in Study 2, the vignettes were found not to be significantly different from one another

on a number of important aspects. These issues with the vignettes underscore the hazards of using vignettes to manipulate conversational responses to fat talk and point to the need to conduct pilot studies with samples that are similar to the target population for the study. In addition, future research in which participants are actively engaging in or overhearing different conversational responses to fat talk as opposed to passively reading them in a vignette would be interesting. This type of future research is worthwhile as finding a more adaptive response to fat talk would be of practical significance, and what constitutes a more adaptive response may, in fact, be counter-intuitive (as evidenced by the finding that the norm focused rebuttal condition was more maladaptive than the appearance-based reassurance condition in Study 1).

Furthermore, Study 1 posits that different ways of manipulating food consumption may result in different effects (e.g., using a taste-test for restrained eaters may result in different effects than a free choice paradigm which does not require participants to consume any food), and this potential difference is something that future researchers may want to pay special attention to. In addition, there were a number of participants in Study 1 who did not consume any food. The use of multiple types of food to measure food consumption may encourage reluctant participants to engage in food consumption. Alternatively, participants may be less reluctant to consume food provided to them by experimenters if they are in a more natural setting.

Finally, these studies raise a number of questions which provide fruitful avenues for future research. Firstly, most of the research concerning fat talk has focused on the consequences of fat talk. As such, future research would be well-served by attempting to uncover the function of fat talk for women in western society and for certain subsets of women within western society, for example, restrained eaters. Specifically, in Study 1, 15.7% of participants discounted the reassurance offered to them by their conversational partner in response to their fat talk because

they thought that they were lying in an effort to adhere to the social norm. Additionally, only one participant reported that the fat talk conversation actually made her feel better about her body. If 15.7% of participants do not benefit from the reassurance (which is most likely the response they will receive) and fat talk only increases body esteem in a very small percentage of women (and has negative effects for many more) why do so many women engage in fat talk? Secondly, the possibility of a dose-response relationship for fat talk engagement or exposure warrants future investigation. Previous studies have used very brief exposures to manipulate fat talk but data collected in Study 1 indicates that the average length of a fat talk conversation may be much longer than that (i.e., 8 minutes). Thus, future experimental research should investigate the impact of a longer fat talk manipulation. Thirdly, participants in Study 1 reported engaging in fat talk with diverse partners (e.g., parents, siblings, romantic partners, and friends) which begs the question as to whether fat talk is more harmful when engaged in with certain conversational partners than with others. This important possibility has not yet been subject to empirical investigation. Fourthly, participants reported engaging in fat talk in a number of different contexts (e.g., at the gym, shopping for clothing, and while eating) which leads one to wonder whether fat talk may be more harmful in certain contexts than others. Lastly, along the same line of inquiry, it would be interesting and worthwhile to explore whether women's reasons for engaging in fat talk vary with different conversational partners or contexts.

Conclusions

Although neither study was able to conclusively point to a response to fat talk which would be considered to be most adaptive or to identify trait dietary restraint as a potential moderator of the negative effects of fat talk which was their primary purpose, these studies contribute to the growing literature concerning fat talk. Furthermore, both studies documented

differences between restrained and unrestrained eaters such that restrained eaters generally felt worse about their bodies and reported more negative affect after exposure to fat talk regardless of conversational response as compared to unrestrained eaters. Moreover, Study 1 found that restrained eaters ate significantly less than unrestrained eaters after exposure to fat talk regardless of conversational response and the negative affect that was generated by exposure to fat talk. This illuminates the important possibility that fat talk may serve to suppress the ability of negative affect to induce disinhibited eating among restrained eaters. The consequences of both engagement in and exposure to fat talk have been well-documented but the reasons why women engage in fat talk are largely unknown. As such, this finding points to a possible purpose served when restrained eaters engage in fat talk; engaging in may fat talk assist restrained eaters in their efforts to restrain their eating in situations in which they may normally lose control (e.g., when experiencing negative affect).

In addition, the lack of conclusive evidence for an adaptive conversational response to fat talk underscores the intricacies of body-related communication where what is actually said can be laced with implicit meaning which can result in the opposite impact as to what was intended. This appears to be what occurred in Study 1 where exposure to a norm focused rebuttal to fat talk resulted in more negative affect, and again in Study 2 where exposure to appearance-based reassurance resulted in lower self-rated sexual attractiveness. It appears as though a seemingly innocuous and well-intentioned response to fat talk which is intended to provide comfort or rebut negative talk about one's body may have the ability to trigger unhelpful comparisons to the societal thin-ideal and have unanticipated nefarious consequences.

In sum, this study made significant theoretical contributions which added to restraint theory as well as the growing literature which attempts to explain the causes and consequences

of fat talk. Moreover, important directions for future research were suggested and study limitations were documented which will be of use in future fat talk research. Fat talk is a normative behaviour that is engaged in by diverse populations and much more research is needed to determine what purpose fat talk serves and how to develop interventions that would serve that purpose in a more adaptive manner. More research regarding the ability of different conversational responses to negate the negative impact of fat talk is warranted and may ultimately prove to be of practical use for eating disorder prevention and anti-fat talk initiatives.

References

- Allison, D. B., Kalinsky, L. B., & Gorman, B. S. (1992). A comparison of the psychometric properties of three measures of dietary restraint. *Psychological Assessment, 4*, 391–398.
- Allison, S., Warin, M., & Bastiampillai, T. (2014). Anorexia nervosa and social contagion: Clinical implications. *Australian and New Zealand Journal of Psychiatry, 48*, 116-120. doi: <http://dx.doi.org/10.1177/0004867413502092>
- Altabe, M. (1998). Ethnicity and body image: Quantitative and qualitative analysis. *International Journal of Eating Disorders, 23*, 153–159. doi: [http://doi.org/http://dx.doi.org/10.1002/\(SICI\)1098-108X\(199803\)23:2<153::AID-EAT5>3.0.CO;2-J](http://doi.org/http://dx.doi.org/10.1002/(SICI)1098-108X(199803)23:2<153::AID-EAT5>3.0.CO;2-J)
- Arroyo, A., & Harwood, J. (2012). Exploring the causes and consequences of engaging in fat talk. *Journal of Applied Communication Research, 40*, 167-187. doi: <http://dx.doi.org/10.1080/00909882.2012.654500>
- Barladi, A. N., & Enders, C. K. (2010). An introduction to modern missing data analyses. *Journal of School Psychology, 48*, 5-37. doi:10.1016/j.jsp.2009.10.001
- Barwick, A., Bazzini, D., Martz, D., Rocheleau, C., & Curtin, L. (2012). Testing the norm to fat talk for women of varying size: What's weight got to do with it? *Body Image, 9*, 176-179. doi: <http://dx.doi.org/10.1016/j.bodyim.2011.08.003>
- Becker, C.B., Diedrichs, P.C., Jankowski, G., & Werchan, C. (2013). I'm not just fat, I'm old: Has the study of body image overlooked "old talk?" *Journal of Eating Disorders*. doi: 10.1186/2050-2974-1-6
- Bem, D. J. (1967). Self-perception: An alternative interpretation of cognitive dissonance phenomena. *Psychological Review, 74*, 183-200. doi: <http://dx.doi.org/10.1037/h0024835>

- Bennett, D. A. (2001). How can I deal with missing data in my study? *Australian and New Zealand Journal of Public Health*, 25, 464–469. doi: 10.1111/j.1467-842X.2001.tb00294.x
- Britton, L. E., Martz, D. M., Bazzini, D. G., Curtin, L. A., & LeaShomb, A. (2006). Fat talk and self-presentation of body image: Is there a social norm for women to self-degrade? *Body Image*, 3, 247-254. doi: <http://dx.doi.org/10.1016/j.bodyim.2006.05.006>
- Brown, A., & Dittmar, H. (2005). Think "thin" and feel bad: The role of appearance schema activation, attention level, and thin-ideal internalization for young women's responses to ultra-thin media ideals. *Journal of Social and Clinical Psychology*, 24, 1088-1113. doi: 10.1521/jscp.2005.24.8.1088
- Centers for Disease Control and Prevention. (2011). Healthy weight – it's not a diet, it's a lifestyle! Retrieved from: http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html
- Clendenen VI, Herman CP, Polivy J. (1994) Social facilitation of eating among friends and strangers. *Appetite*, 23, 1-13. doi: 10.1006/appe.1994.1030
- Compeau, A., & Ambwani, S. (2013). The effects of fat talk on body dissatisfaction and eating behavior: The moderating role of dietary restraint. *Body Image*. doi: <http://dx.doi.org/10.1016/j.bodyim.2013.04.006>
- Corning, A. F., & Gondoli, D. M. (2012). Who is most likely to fat talk? A social comparison perspective. *Body Image*, 9, 528-531. doi: <http://dx.doi.org/10.1016/j.bodyim.2012.05.004>
- Cosineau, D., & Charlie, S. (2010). Outlier detection and treatment: a review. *International Journal of Psychological Research*, 3, 58-67.

- Coyne, J. C. (1976). Toward an interactional description of depression. *Psychiatry*, 39, 28-40.
doi: 10.1521/00332747.1976.11023874
- Dakanalis, A., Carrà, G., Calogero, R., Fida, R., Clerici, M., Zanetti, M. A., & Riva, G. (2014).
The developmental effects of media-ideal internalization and self-objectification
processes on adolescents' negative body-feelings, dietary restraint, and binge eating.
European Child & Adolescent Psychiatry. doi:
<http://doi.org/http://dx.doi.org/10.1007/s00787-014-0649-1>
- Delinsky, S. S., & Wilson, G. T. (2008). Weight gain, dietary restraint, and disordered
eating in the freshman year of college. *Eating Behaviors*, 9, 82–90. doi:
10.1016/j.eatbeh.2007.06.001
- Engeln, R., Sladek, M., & Waldron, H. (2013). Body talk among college men: Contexts,
correlates, and effects. *Body Image*, 10, 300-308. doi: 10.1016/j.bodyim.2013.02.001
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Franzoi, S. L. (1994). Further evidence of the reliability and validity of the body esteem scale.
Journal of Clinical Psychology, 50, 237-239. doi:[http://dx.doi.org/10.1002/1097-4679\(199403\)50:2<237::AID-JCLP2270500214>3.0.CO;2-P](http://dx.doi.org/10.1002/1097-4679(199403)50:2<237::AID-JCLP2270500214>3.0.CO;2-P)
- Franzoi, S. L., & Herzog, M. E. (1986). The body esteem scale: A convergent and discriminant
validity study. *Journal of Personality Assessment*, 50, 24-31. doi:
10.1207/s15327752jpa5001_4
- Franzoi, S. L., & Shields, S. A. (1984). The body esteem scale: Multidimensional structure and
sex differences in a college population. *Journal of Personality Assessment*, 48, 173-178.
doi: http://dx.doi.org/10.1207/s15327752jpa4802_12

- Fredrickson, B. L., & Roberts, T. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*, 173-206. doi: <http://dx.doi.org/10.1111/j.1471-6402.1997.tb00108.x>
- Gabriel, R. M., & Hopkins, K. D. (1974). Research design and analysis clinic: Relative merits of MANOVA, repeated measures ANOVA, and univariate ANOVAs for research utilizing multiple criterion measures. *The Journal of Special Education, 8*, 377-389. doi: <http://dx.doi.org/10.1177/002246697400800410>
- Graham, J. W. (2009). Missing Data Analysis: Making It Work in the Real World. *Annual Review of Psychology, 60*, 549-576. doi:10.1146/annurev.psych.58.110405.085530
- Hagan, M. M., Tomaka, J., & Moss, D. E. (2000). Relation of dieting in college and high school students to symptoms associated with semi-starvation. *Journal of Health Psychology, 5*, 7-15. doi: 10.1177/135910530000500105
- Hartmann, A. S., Thomas, J. J., Greenberg, J. L., Rosenfield, E. H., & Wilhelm, S. (2015). Accept, distract, or reframe? An exploratory experimental comparison of strategies for coping with intrusive body image thoughts in anorexia nervosa and body dysmorphic disorder. *Psychiatry Research, 225*, 643-650. doi: <http://dx.doi.org/10.1016/j.psychres.2014.11.031>
- Heatherton, T. F., Polivy, J., & Herman, C. P. (1991). Restraint, weight loss, and variability of body weight. *Journal of Abnormal Psychology, 100*, 78-83. doi: <http://dx.doi.org/10.1037/0021-843X.100.1.78>
- Herman, C. P., & Polivy, J. (1983). A boundary model for the regulation of eating. *Psychiatric Annals, 13*, 918-927.

- Polivy, J., Herman, C. P., & Howard, K. (1988). The Restraint Scale: Assessment of dieting. In M. Hersen & A. S. Bellack (Eds.), *Dictionary of behavioral assessment techniques* (pp. 377-380). New York: Pergamon
- Polivy, J., & Herman, C. P. (2002). Causes of eating disorders. *Annual Review of Psychology*, 53, 187–213. doi:
<http://doi.org/http://dx.doi.org/10.1146/annurev.psych.53.100901.135103>
- Hartmann, A. S., Thomas, J. J., Greenberg, J. L., Rosenfield, E. H., & Wilhelm, S. (2015). Accept, distract, or reframe? An exploratory experimental comparison of strategies for coping with intrusive body image thoughts in anorexia nervosa and body dysmorphic disorder. *Psychiatry Research*, 225, 643–650.
<http://doi.org/10.1016/j.psychres.2014.11.031>
- Howland, M., Hunger, J. M., & Mann, T. (2012). Friends don't let friends eat cookies: Effects of restrictive eating norms on consumption among friends. *Appetite*, 59, 505-509. doi:
<http://dx.doi.org/10.1016/j.appet.2012.06.020>
- Huberty, C. J., & Morris, J. D. (1989). Multivariate analysis versus multiple univariate analyses. *Psychological Bulletin*, 105, 302–308. doi:<http://dx.doi.org/10.1037/0033-2909.105.2.302>
- Katrevich, A. V., Register, J. D., & Aruguete, M. S. (2014). The effects of negative body talk in an ethnically diverse sample of college students. *North American Journal of Psychology*, 16, 43-52.
- Lavender, J. M., Wonderlich, S. A., Crosby, R. D., Engel, S. G., Mitchell, J. E., Crow, S., ... Le Grange, D. (2013). A naturalistic examination of body checking and dietary restriction in

women with anorexia nervosa. *Behaviour Research and Therapy*, *51*, 507–511.

<http://doi.org/http://dx.doi.org/10.1016/j.brat.2013.05.004>

Lindner, D., Tantleff-Dunn, S., & Jentsch, F. (2012). Social comparison and the ‘circle of objectification’. *Sex Roles*, *67*, 222-235. doi: <http://dx.doi.org/10.1007/s11199-012-0175-x>

Mansfield, E. R., & Helms, B. P. (1982). Detecting Multicollinearity. *The American Statistician*, *36*, 158–160. doi:10.1080/00031305.1982.10482818

Martz, D. M., Petroff, A. B., Curtin, L.A., Bazzini, D. G. (2009). Gender differences in fat talk among American adults: Results from the psychology of size survey. *Sex Roles*, *61*, 34-41. doi: 10.1007/s11199-009-9587-7

McKinley, N. M., & Hyde, J. S. (1996). The objectified body consciousness scale: Development and validation. *Psychology of Women Quarterly*, *20*, 181-215. doi: 10.1111/j.1471-6402.1996.tb00467.x

McLean, J. A., & Barr, S. I. (2003). Cognitive dietary restraint is associated with eating behaviors, lifestyle practices, personality characteristics and menstrual irregularity in college women. *Appetite*, *40*, 185–192. [http://doi.org/http://dx.doi.org/10.1016/S0195-6663\(02\)00125-3](http://doi.org/http://dx.doi.org/10.1016/S0195-6663(02)00125-3)

Miller, Y. (2003). Recommendations for truncation of body mass index in population data. New South Wales Government Center for Physical Activity and Health. Report No. CPAH03-0005.

Miller, D. T., & McFarland, C. (1987). Pluralistic ignorance: When similarity is interpreted as dissimilarity. *Journal of Personality and Social Psychology*, *53*, 298-305. doi: 10.1037/0022-3514.53.2.298

- Mills, J. S., & Miller, J. L. (2007). Experimental effects of receiving negative weight-related feedback: A weight guessing study. *Body Image, 4*, 309-316. doi:
<http://dx.doi.org/10.1016/j.bodyim.2007.04.004>
- Mills, J. S., & Palandra, A. (2008). Perceived caloric content of a preload and disinhibition among restrained eaters. *Appetite, 50*, 240–245. doi:
<http://doi.org/http://dx.doi.org/10.1016/j.appet.2007.07.007>
- Mills, J. S., Polivy, J., Herman, C. P., & Tiggemann, M. (2002). Effects of exposure to thin media images: Evidence of self-enhancement among restrained eaters. *Personality and Social Psychology Bulletin, 28*, 1687–1699. doi: 10.1177/014616702237650
- Nichter, M. (2000). *Fat talk: What girls and their parents say about dieting*. Harvard University Press, Cambridge, MA.
- Nichter, M. & Vuckovic, N. (1994). Fat talk: Body image among adolescent girls. In N. Sault (Ed.). *Many Mirrors* (pp. 109-131). New Brunswick, NJ: Rutgers University Press.
- Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly, 22*, 623–636. doi:
10.1111/j.1471-6402.1998.tb00181.x
- Osborn, J. (2008). *Best practices in quantitative methods*. Louisville, KY: SAGE Publications.
- Ousley, L., Cordero, E. D., & White, S. (2008). Fat talk among college students: How undergraduates communicate regarding food and body weight, shape and appearance. *Eating Disorders: The Journal of Treatment & Prevention, 16*, 73-84. doi:
<http://dx.doi.org/10.1080/10640260701773546>
- Paxton, S. J., Neumark-Sztainer, D., Hannan, P. J., & Eisenberg, M. E. (2006). Body dissatisfaction prospectively predicts depressive mood and low self-esteem in adolescent

- girls and boys. *Journal of Clinical Child and Adolescent Psychology*, 35, 539-549. doi: http://dx.doi.org/10.1207/s15374424jccp3504_5
- Payne, L. O., Martz, D. M., Tompkins, K. B., Petroff, A. B., & Farrow, C. V. (2011). Gender comparisons of fat talk in the United Kingdom and the United States. *Sex Roles*, 65, 557-565. doi: <http://dx.doi.org/10.1007/s11199-010-9881-4>
- Polivy, J. (1996). Psychological consequences of food restriction. *Journal of the American Dietetic Association*, 96, 589–594.
- Polivy, J., & Herman, C. P. (1985). Dieting and bingeing: A causal analysis. *American Psychologist*, 40, 193–201.
- Prentice, D. A., & Miller, D. T. (2003). Pluralistic ignorance and alcohol use on campus: Some consequences of misperceiving the social norm. In *Social psychology of health*. (pp. 183–198). Psychology Press, New York, NY.
- Rajagopalan, J., & Shejwal, B. (2014). Influence of sociocultural pressures on body image dissatisfaction. *Psychological Studies*, 59, 357–364. doi: <http://doi.org/http://dx.doi.org/10.1007/s12646-014-0245-y>
- Remick, A. K., Pliner, P., & McLean, K. C. (2009). The relationship between restrained eating, pleasure associated with eating, and well-being re-visited. *Eating Behaviors*, 10, 42–44. doi: <http://doi.org/http://dx.doi.org/10.1016/j.eatbeh.2008.11.001>
- Ruderman, A. J. (1985). Dysphoric mood and overeating: A test of restraint theory's disinhibition hypothesis. *Journal of Abnormal Psychology*, 94, 78-85. doi: <http://dx.doi.org/10.1037/0021-843X.94.1.78>

- Salk, R. H., & Engeln-Maddox, R. (2011). "If you're fat, then I'm humongous!": Frequency, content, and impact of fat talk among college women. *Psychology of Women Quarterly*, 35, 18-28. doi: <http://dx.doi.org/10.1177/0361684310384107>
- Salk, R. H., & Engeln-Maddox, R. (2012). Fat talk among college women is both contagious and harmful. *Sex Roles*, 66, 636-645. doi: <http://dx.doi.org/10.1007/s11199-011-0050-1>
- Schmukle, S. C., Egloff, B., & Burns, L. R. (2002). The relationship between positive and negative affect in the positive and negative affect schedule. *Journal of Research in Personality*, 36, 463-475. doi: [http://dx.doi.org/10.1016/S0092-6566\(02\)00007-7](http://dx.doi.org/10.1016/S0092-6566(02)00007-7)
- Shentow-Bewsh, R., Keating, L., & Mills, J.S. (in press). Effects of anti-obesity messages on women's body image and eating behaviour. *Eating Behaviors*.
- Spangler, D. L. (2002). Testing the cognitive model of eating disorders: The role of dysfunctional beliefs about appearance. *Behavior Therapy*, 33, 87-105. doi: [http://doi.org/http://dx.doi.org/10.1016/S0005-7894\(02\)80007-7](http://doi.org/http://dx.doi.org/10.1016/S0005-7894(02)80007-7)
- Stice, E., Maxfield, J., & Wells, T. (2003). Adverse effects of social pressure to be thin on young women: An experimental investigation of the effects of "fat talk". *International Journal of Eating Disorders*, 34, 108-117. doi: <http://dx.doi.org/10.1002/eat.10171>
- Swendsen, J. D. (1998). The helplessness-hopelessness theory and daily mood experience: An idiographic and cross-situational perspective. *Journal of Personality and Social Psychology*, 74, 1398-1408. doi: <http://doi.org/http://dx.doi.org/10.1037/0022-3514.74.5.1398>
- Thomas, C. D., & Freeman, R. J. (1990). The body esteem scale: Construct validity of the female subscales. *Journal of Personality Assessment*, 54, 204-212. doi: http://dx.doi.org/10.1207/s15327752jpa5401&2_20

- Tiggemann, M. (1997). Dieting in Moderation: The Role of Dietary Restraint in the Relationship between Body Dissatisfaction and Psychological Well-being. *Journal of Health Psychology, 2*, 501–507. doi: <http://doi.org/http://dx.doi.org/10.1177/135910539700200407>
- van Strien, T., & Ouwens, M. A. (2003). Counter regulation in female obese emotional eaters: Schachter, Goldman, and Gordon's (1968) test of psychosomatic theory revisited. *Eating Behaviors, 3*, 329-340. doi: [http://dx.doi.org/10.1016/S1471-0153\(02\)00092-2](http://dx.doi.org/10.1016/S1471-0153(02)00092-2)
- Wade, T., George, W. M., & Atkinson, M. (2009). A randomized controlled trial of brief interventions for body dissatisfaction. *Journal of Consulting and Clinical Psychology, 77*, 845-854. doi: <http://dx.doi.org/10.1037/a0016879>
- Watson, D., Clark, L. A., & Tellegan, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54*, 1063–1070. doi: <http://dx.doi.org/10.1037/0022-3514.54.6.1063>
- Yeomans, M. R., & Coughlan, E. (2009). Mood-induced eating. interactive effects of restraint and tendency to overeat. *Appetite, 52*, 290-298. doi: <http://dx.doi.org/10.1016/j.appet.2008.10.006>

Appendix A

Norm Focused Rebuttal Vignette

Two female undergraduate students are sitting in the student center eating lunch. After finishing her lunch one of the students declared “I’m worried I’m starting to get fat”. In response her friend said “I wish people would stop talking like that. I know everybody says things like that and it’s become a part of our culture but I still hate it. Women should be worrying about more important things than whether their bodies fit with society’s ideal of beauty.”

Please take a moment to remember a similar conversation you have had.

How often do you engage in similar conversations? Please circle the appropriate response.

Never Rarely Sometimes Often

How often do you overhear similar conversations? Please circle the appropriate response.

Never Rarely Sometimes Often

Where did this conversation take place?

Who did you have this conversation with?

What did you say?

What did the other person say?

How long did this conversation last?

What were you thinking during the conversation?

How did this conversation make you feel?

Appendix B

Appearance-based Reassurance Vignette

Two female undergraduate students are sitting in the student center eating lunch. After finishing her lunch one of the students declared “I’m worried I’m starting to get fat”. In response her friend said “You’re not fat. Stop worrying about your weight. You always look so put together. Your clothes always look nice, and your make up always looks good.”

Please take a moment to remember a similar conversation you have had.

How often do you engage in similar conversations? Please circle the appropriate response.

Never Rarely Sometimes Often

How often do you overhear similar conversations? Please circle the appropriate response.

Never Rarely Sometimes Often

Where did this conversation take place?

Who did you have this conversation with?

What did you say?

What did the other person say?

How long did this conversation last?

What were you thinking during the conversation?

How did this conversation make you feel?

Appendix C

Revised Restraint Scale

1. How often are you dieting?

Never Rarely Sometimes Usually Always

2. What is the maximum amount of weight you have ever lost within one month (in pounds)?

0–4 5–9 10–14 15–19 20

3. What is your maximum weight gain within a week (in pounds)?

0–1 1.1–2.2 .1–3 3.1–5 5.1

4. In a typical week, how much does your weight fluctuate (in pounds)?

0–1 1.1–2 2.1–3 3.1–5 5.1

5. Would a weight fluctuation of five pounds affect the way you live your life?

Not at all Slightly Moderately Extremely

6. Do you eat sensibly in front of others and splurge alone?

Never Rarely Often Always

7. Do you give too much time and thought to food?

Never Rarely Often Always

8. Do you have feelings of guilt after overeating?

Never Rarely Often Always

9. How conscious are you of what you're eating?

Not at all Slightly Moderately Extremely

10. How many pounds over your desired weight were you at your maximum weight?

0–1 1–5 6–10 11–20 21

Appendix D

Positive and Negative Affective Schedule

This scale consists of a number of words that describe different feelings and emotions. Read each item and then list the number from the scale below next to each word. Indicate to what extent you feel this way right now, that is, at the present moment.

- 1 Very Slightly or Not at All
- 2 A Little
- 3 Moderately
- 4 Quite a Bit
- 5 Extremely

- _____ 1. Interested
- _____ 2. Distressed
- _____ 3. Excited
- _____ 4. Upset
- _____ 5. Strong
- _____ 6. Guilty
- _____ 7. Scared
- _____ 8. Hostile
- _____ 9. Enthusiastic
- _____ 10. Proud
- _____ 11. Irritable
- _____ 12. Alert
- _____ 13. Ashamed
- _____ 14. Inspired
- _____ 15. Nervous
- _____ 16. Determined
- _____ 17. Attentive

_____ 18. Jittery

_____ 19. Active

_____ 20. Afraid

Appendix E

Body Surveillance Subscale

Please read each item and circle the number which most closely resembles your agreement with the statement.

1.) I rarely think about how I look.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

2.) I think it is more important that my clothes are comfortable than whether they look good on me.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

3.) I think more about how my body feels than how my body looks.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

4.) I rarely compare how I look with how other people look.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

5.) During the day, I think about how I look many times.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

6.) I often worry about whether the clothes I am wearing make me look good.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

7.) I rarely worry about how I look to other people.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

8.) I am more concerned with what my body can do than how it looks.

Strongly Disagree 1 - 2 - 3 - 4 - 5 - 6 - 7 Strongly Agree

Appendix F

The Body-Esteem Scale

Please read each item and indicate how you feel about this part or function of your own body using the following scale:

- 1 = Have strong negative feelings
- 2 = Have moderate negative feelings
- 3 = Have no feeling one way or the other
- 4 = Have moderate positive feelings
- 5 = Have strong positive feelings

- 1. body scent _____
- 2. appetite _____
- 3. nose _____
- 4. physical stamina _____
- 5. reflexes _____
- 6. lips _____
- 7. muscular strength _____
- 8. waist _____
- 9. energy level _____
- 10. thighs _____
- 11. ears _____
- 12. biceps _____
- 13. chin _____
- 14. body build _____
- 15. physical coordination _____
- 16. buttocks _____
- 17. agility _____
- 18. width of shoulders _____
- 19. arms _____

Please read each item and indicate how you feel about this part or function of your own body using the following scale:

- 1 = Have strong negative feelings
- 2 = Have moderate negative feelings
- 3 = Have no feeling one way or the other
- 4 = Have moderate positive feelings
- 5 = Have strong positive feelings

- 20. chest or breasts _____
- 21. appearance of eyes _____
- 22. cheeks/cheekbones _____
- 23. hips _____
- 24. legs _____
- 25. figure or physique _____
- 26. sex drive _____
- 27. feet _____
- 28. sex organs _____
- 29. appearance of stomach _____
- 30. health _____
- 31. sex activities _____
- 32. body hair _____
- 33. physical condition _____
- 34. face _____
- 35. weight _____

Appendix G
Demographics Questionnaire

Age:

Faculty (i.e., Arts, Nursing, Business ect.):

How many classes are you taking this semester?

Have you ever been diagnosed with an eating disorder?

Appendix H

Informed Consent Form (Study Part 1)

If you participate in this study, you will be asked to complete a number of questionnaires to help us better understand how the interpersonal interactions of undergraduate students are shaped by their beliefs about themselves. It should take about an hour to complete the study. The test forms and any other information collected during testing will be viewed only by the principal investigators and research assistants and will be stored in a secure place for two years, after which they will be destroyed. A code number will be assigned to the data and your name will not appear on any of the data. Refusal to participate, refusal to answer any particular questions or withdrawal from the study will not affect the participant's relationship with York University, the researcher or any other group associated with the project. The results of this study will be used to fulfill the thesis requirement for the Master of Arts in Clinical Psychology at York University and may also be submitted for publication in a peer reviewed academic journal or presented at an academic conference.

There are no anticipated risks inherent in this study. It is unlikely that participants will experience any distress during this study, but please let us know if you do. Should anyone experience significant distress after participating they are encouraged to call the Counselling and Disabilities Services Crisis Services at York University (416-736-5297) for immediate assistance. You will receive 0.5% toward your final grade in PSYC 1010 upon completing this study. If new information related to the risks and/or benefits of this study are obtained, you will be informed. You may choose not to answer any questions, or to terminate participation at any time throughout the study without penalty. If you decide to withdraw from the study, any information already collected will be destroyed. In no way does signing this consent form waive your legal rights nor does it relieve the investigators, sponsors or involved institutions from their legal and professional responsibilities. All information derived from this study will be kept confidential to the limits allowed by law. Only the principal investigator and research assistants will have access to the information. This research has been reviewed and approved by the Human Participants in Research Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. Should you have any questions or concerns about this study at any point during or after it is completed, please feel free to contact Amy Shannon (MA Candidate and Researcher) office: 072J Behavioural Science Building, telephone (416) 736-2100 ext 40273, e-mail ashannon@yorku.ca or Dr. Jennifer Mills (Principal Investigator) office: 241 Behavioural Science Building, telephone 416-736-5115 ext 33153, email jsmills@yorku.ca, or the York University Psychology Graduate Office, 297 Behavioural Science Building, e-mail: gradpsyc@yorku.ca, phone: 416-736-5290. If you wish to contact someone not connected with the project about your rights as a research participant, or have any questions about the consent process, please contact Ms. Alison Collins-Mrakas, Office of Research Ethics, 5th Floor, Kaneff Tower, by telephone (416-736-5914) or e-mail (acollins@yorku.ca).

I have read this form about the nature and procedures of the study, have received a copy, and understand it in full. I agree to participate in the study and I give consent to have the information used for purposes of the study. I have been assured that the lead investigator will respond

appropriately to any questions that I may have. I have been fully informed of the potential risks and/or benefits of the study.

Participant's signature

Participant's name

Date

Researcher's signature

Researcher's name

Date

Appendix I

Informed Consent Form (Study Part 2)

If you participate in this study, you will be asked to complete a number of questionnaires and activities to help us better understand how the interpersonal interactions of undergraduate students are shaped by their beliefs about themselves. It should take about an hour to complete the study. The test forms and any other information collected during testing will be viewed only by the principal investigators and research assistants and will be stored in a secure place for two years, after which they will be destroyed. A code number will be assigned to the data and your name will not appear on any of the data. Refusal to participate, refusal to answer any particular questions or withdrawal from the study will not affect the participant's relationship with York University, the researcher or any other group associated with the project. The results of this study will be used to fulfill the thesis requirement for the Master of Arts in Clinical Psychology at York University and may also be submitted for publication in a peer reviewed academic journal or presented at an academic conference.

There are no anticipated risks inherent in this study. It is unlikely that participants will experience any distress during this study, but please let us know if you do. Should anyone experience significant distress after participating they are encouraged to call the Counselling and Disabilities Services Crisis Services at York University (416-736-5297) for immediate assistance. You will receive 1% toward your final grade in PSYC 1010 upon completing this study. If new information related to the risks and/or benefits of this study are obtained, you will be informed. You may choose not to answer any questions, or to terminate participation at any time throughout the study without penalty. If you decide to withdraw from the study, any information already collected will be destroyed. In no way does signing this consent form waive your legal rights nor does it relieve the investigators, sponsors or involved institutions from their legal and professional responsibilities. All information derived from this study will be kept confidential to the limits allowed by law. Only the principal investigator and research assistants will have access to the information. This research has been reviewed and approved by the Human Participants in Research Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. Should you have any questions or concerns about this study at any point during or after it is completed, please feel free to contact Amy Shannon (MA Candidate and Researcher) office: 072J Behavioural Science Building, telephone (416) 736-2100 ext 40273, e-mail ashannon@yorku.ca or Dr. Jennifer Mills (Principal Investigator) office: 241 Behavioural Science Building, telephone 416-736-5115 ext 33153, email jsmills@yorku.ca, or the York University Psychology Graduate Office, 297 Behavioural Science Building, e-mail: gradpsyc@yorku.ca, phone: 416-736-5290. If you wish to contact someone not connected with the project about your rights as a research participant, or have any questions about the consent process, please contact Ms. Alison Collins-Mrakas, Office of Research Ethics, 5th Floor, Kaneff Tower, by telephone (416-736-5914) or e-mail (acollins@yorku.ca).

I have read this form about the nature and procedures of the study, have received a copy, and understand it in full. I agree to participate in the study and I give consent to have the information used for purposes of the study. I have been assured that the lead investigator will respond

appropriately to any questions that I may have. I have been fully informed of the potential risks and/or benefits of the study.

_____	_____	_____
Participant's signature	Participant's name	Date
_____	_____	_____
Researcher's signature	Researcher's name	Date

Appendix J

Information About Fat Talk and How to Improve Your Body Image

Fat Talk describes statements made in conversation that reinforce unrealistic beauty ideals and contribute to women and men's dissatisfaction with their bodies. Statements like "I'm so fat," "Do I look fat in this?" and "She's too fat to be wearing that swimsuit" are Fat Talk. Both hearing and engaging in fat talk is associated with a number of negative outcomes including low self-esteem, depressed mood, and eating pathology.

How can one stop the fat talk phenomenon and improve his or her body image?

1. Consciously correct yourself if you Fat Talk. Replace those thoughts with something realistic and positive.
2. Never Fat Talk in front of your friends.
3. Don't compare your body to others.
4. Appreciate your body for what it can do.
5. Be critical of the body-related messages conveyed by the media.

For more information please visit <http://bi3d.tridelta.org/ourinitiatives/fattalkfreeweek>.

Appendix K

Norm Focused Rebuttal Vignette

It is Wednesday afternoon at York University. Two female undergraduate students are sitting in the student center eating lunch after their morning class. After finishing her lunch one of the students declared “I’m worried I’m starting to get fat. This morning when I looked in the mirror I was disgusted with myself. My clothes don't fit like they should and I look terrible. I think I should probably go on a diet. I told myself I would start today but look at all the greasy food I just ate.” In response her friend said “Stop with the fat talk! I know everybody does it and that it’s become a part of our culture but it’s bad for our body image and just perpetuates our culture’s obsession with weight. Women should be worrying about more important things than whether they are skinny enough.”

Considering the short story you just read please answer the following questions by circling the number that best represents your opinion.

How appearance-focused was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How reassuring was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How focused on society's ideal of beauty was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How off-topic was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

Appendix L

Appearance-based Reassurance Vignette

It is Wednesday afternoon at York University. Two female undergraduate students are sitting in the student center eating lunch after their morning class. After finishing her lunch one of the students declared "I'm worried I'm starting to get fat. This morning when I looked in the mirror I was disgusted with myself. My clothes don't fit like they should and I look terrible. I think I should probably go on a diet. I told myself I would start today but look at all the greasy food I just ate." In response her friend said "You're not fat! Stop worrying about your weight. You look good. Plus, you always look so put together. Your clothes always look nice, and your make up always looks good."

Considering the short story you just read please answer the following questions by circling the number that best represents your opinion.

How appearance-focused was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How reassuring was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How focused on society's ideal of beauty was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How off-topic was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

Appendix M

Distraction Vignette

It is Wednesday afternoon at York University. Two female undergraduate students are sitting in the student center eating lunch after their morning class. After finishing her lunch one of the students declared “I’m worried I’m starting to get fat. This morning when I looked in the mirror I was disgusted with myself. My clothes don’t fit like they should and I look terrible. I think I should probably go on a diet. I told myself I would start today but look at all the greasy food I just ate.” In response her friend switches the topic and said “I’m concerned about our midterm next week. There is so much we need to know and the concepts seem much more advanced and difficult than the last midterm. I really need to start studying. I think I am going to read the chapters tonight.”

Considering the short story you just read please answer the following questions by circling the number that best represents your opinion.

How appearance focused was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How reassuring was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How focused on society's ideal of beauty was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

How off topic was the friend's response?

Not at all 1 2 3 4 5 6 7 Very

Appendix N

Visual Analog Scales

Please indicate how you *feel* **right now** by placing a vertical line at the appropriate position on each horizontal line.

Anxious

Not at all |-----| Very much

Depressed

Not at all |-----| Very much

Happy

Not at all |-----| Very much

Intelligent

Not at all |-----| Very much

Angry

Not at all |-----| Very much

Confident

Not at all |-----| Very much

Fat

Not at all _____ Very much

Physically attractive

Not at all _____ Very much

Satisfied with your body size

Not at all _____ Very much

Satisfied with your body shape

Not at all _____ Very much

Physically fit

Not at all _____ Very much

Appendix O

Tri-Council Ethics Completion Certificate

PANEL ON
RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Amy Shannon

*has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)*

Date of Issue: **19 September, 2012**

PANEL ON
RESEARCH ETHICS
Navigating the ethics of human research

TCPS 2: CORE

Certificate of Completion

This document certifies that

Amy Shannon

*has completed the Tri-Council Policy Statement:
Ethical Conduct for Research Involving Humans
Course on Research Ethics (TCPS 2: CORE)*

Date of Issue: **30 June, 2015**