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Social Comparison, Self-objectification, And Objectification Of Others Investigating The Vicious Cycle That Leads To Body Dissatisfaction And Disordered Eating

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SOCIAL COMPARISON, SELF-OBJECTIFICATION, AND OBJECTIFICATION OF OTHERS: INVESTIGATING THE VICIOUS CYCLE THAT LEADS TO BODY DISSATISFACTION AND DISORDERED EATING

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ABSTRACT

The purpose of this study was to test a new theoretical model that integrates self-objectification, objectification of others, and social comparison as contributors to the development and maintenance of body image disturbance and disordered eating behavior. Within the new theoretical model, self-objectification, objectification of others, and social comparison are conceptualized as a self-perpetuating cycle, rather than as processes that occur independently of one another. Four hundred fifty-nine female college students between the ages of 18 and 32 completed measures of self-objectification, objectification of others, social comparison, body shame, body dissatisfaction, and eating disorder symptomatology. Structural equation modeling with nested model comparisons was used to examine the fit of the new theoretical model relative to less complex models which contain only relationships which have received previous attention in the research literature (e.g., the relationship between self-objectification and body shame). Results indicated that the new theoretical model demonstrates good fit for the data and that the fit of this model is significantly better than the original model suggested by the literature. Hierarchical multiple regression and mediational analyses also provided support for the interplay between objectification and social comparison. Implications for clinical work as well as theory and measurement will be discussed.

For my parents and my sister.

Your love and encouragement is felt every day. Thank you for always believing in me.

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CHAPTER ONE: INTRODUCTION

Fredrickson and Roberts' (1997) objectification theory and Festinger's (1954) social comparison theory both have been applied as frameworks for better understanding body image disturbance and disordered eating behavior. Objectification theory suggests that exposure to sexually objectifying media socializes women to view themselves as others do, a behavior which has been labeled self-objectification (Fredrickson & Roberts, 1997). Self-objectification has been shown to lead to a number of negative consequences, including body shame. Body shame refers to a woman's negative feelings about herself and her body that arise due to the failure to live up to cultural standards of beauty. Body shame in turn has been linked to disordered eating behavior (Fredrickson & Roberts, 1997; Noll & Fredrickson, 1998). Social comparison theory suggests that body dissatisfaction and disordered eating can arise when women engage in frequent appearance comparisons with their peers or figures in the media (Stormer & Thompson, 1996; Heinberg & Thompson, 1992).

Existing research has focused on the role of either self-objectification or social comparison in the development of body image dissatisfaction and disordered eating; no attempt has been made to integrate the two. In addition, relatively little attention has been paid to the potential consequences that arise when women objectify other women. Thus, the purpose of the current study is to test a new theoretical model that integrates self-objectification, objectification of others, and social comparison, with the goal of better understanding the underlying processes that lead to the development of body image disturbance and disordered eating behavior. Although typically conceptualized as distinct theories, careful examination of the research findings related to objectification and social comparison suggests that these two constructs may ultimately be two parts of the same process. Understanding how objectification and social

comparison may contribute to body dissatisfaction and disordered eating behavior has implications for the refinement of existing theories as well as the modification of the psychoeducational components of treatment for body image disturbance and eating disorders.

This paper will review the literature on objectification theory and social comparison theory, and then a model of the relationships among self-objectification, objectification of others, and social comparison will be presented. The model also includes body dissatisfaction, body shame, and eating disorder symptomatology, thus allowing for a better understanding of how social comparison and objectification processes operate and providing additional information about how these processes may be related to specific psychological and behavioral outcomes.

Objectification Theory

Fredrickson and Roberts (1997) developed objectification theory as a means of explaining women's everyday experiences. They argued that in Western society, women are frequently "treated *as a body* valued predominately for its use (or consumption by) others (p. 174)." Objectification theory suggests that a woman's body becomes equated with who she is as a person (Moradi, Dirks & Matteson, 2005). The media is generally viewed as the main source of objectification through the objectified images of women's bodies presented in ads and on television (Miner-Rubino, Twenge & Fredrickson, 2002). Exposure to these images leads many women to engage in self-objectification, which is "the tendency to define the self in terms of how the body appears to others, rather than what the body can do or how the body feels (Aubrey, 2006, p. 367-368)." Some authors have conceptualized self-objectification as a form of self-consciousness, where women become observers of their own bodies rather than simply being aware that they are being observed (Tiggemann & Lynch, 2001; Miner-Rubino, Twenge & Fredrickson, 2002). Self-objectification can be measured as both a trait and a state, with trait

self-objectification referring to a woman's more general tendency to assume an observer's perspective toward her body, and state self-objectification referring to a woman's act of temporarily assuming an observer's perspective toward her body (Fredrickson, Roberts, Noll, Quinn & Twenge, 1998).

Unger and Crawford (1996) highlighted the difference between the way men and women are portrayed in the media. In general, men's faces and heads are shown more than other body parts, whereas women's bodies or body parts are shown most frequently, which was described as a "body-ism" bias. In a longitudinal study examining the effects of exposure to sexually objectifying media, women reported more exposure to sexually objectifying movies and magazines than men in Year 1 and Year 2 of the study as well as greater self-objectification and body-surveillance (Aubrey, 2006). Exposure to sexually objectifying television in particular at Year 1 predicted an increase in self-objectification at Year 2 for both men and women.

In addition to exposure to objectified images of women in the media, women also may feel as though they are being "looked at" by others during interpersonal interactions (Fredrickson & Roberts, 1997). Although the stereotypical objectifying "gaze" is thought of as a male viewing a female, women objectify each other (Kaschak, 1992, as cited by Fredrickson & Roberts, 1997). Strelan and Hargreaves (2005) explored the objectification of women by other women based on existing evidence that those who self-objectify and emphasize weight and shape in their own self-evaluations are hyper-aware of other women's appearance. Women and men who reported greater self-objectification also reported greater objectification of both women and men. The relationship between self-objectification and objectification of others was much stronger for women than it was for men. Interestingly, although men reported objectifying women significantly more than women do, women reported objectifying other women significantly more

than they reported objectifying themselves. The authors suggested that women's objectification of other women may actually fuel further self-objectification. In this sense, there may be a cycle of objectification, with physical appearance comparison processes at work, and it may be the act of engaging in social comparison that both sets the cycle of objectification in motion and leads to negative consequences for the individual.

As outlined above, objectification in the media and through interpersonal interactions leads many women to engage in self-objectification, viewing their bodies as they believe others view them. Self-objectification leads to a number of undesirable outcomes, including body dissatisfaction (Myers & Crowther, 2007) and body shame (Miner-Rubino, Twenge & Fredrickson, 2002). Body shame is conceptually distinct from body dissatisfaction in that body dissatisfaction relates specifically to a woman's feelings about her own body, whereas body shame has a moral component and is tied to a woman's failure to meet societal standards (Miner-Rubino, et al., 2002). Fredrickson and colleagues (1998) investigated the relationship between self-objectification and body shame in a series of two experiments. They manipulated self-objectification by asking college students to try on either a swimsuit (high self-objectification condition) or a sweater (low self-objectification condition). In the first experiment, there was an interaction between trait self-objectification and condition such that women who tried on swimsuits reported greater body shame than those who tried on sweaters, but only when women reported high trait self-objectification at pre-test.

The second experiment by Fredrickson and colleagues (1998) used the same paradigm to examine the effects of self-objectification for both men and women. The act of trying on a bathing suit led to body shame for women only. Male and female participants in the swimsuit condition reported experiencing some type of self-conscious emotions (as measured by the

Differential Emotions Scale); women reported experiencing emotions like shame and guilt, whereas men reported shyness or sheepishness. Unlike the first experiment, trait self-objectification did not moderate the relationship between condition and body shame. Men's post-test levels of body shame were better accounted for by pre-test scores on self-objectification than by the effects of the experimental manipulation on state self-objectification..

Similar findings emerged in a later study that also used swimsuits and sweaters to manipulate state self-objectification (Quinn, Kallen & Cathey, 2006). Across conditions, women reported greater body shame than men. There was a significant gender by condition interaction such that women in the swimsuit condition reported greater body shame at post-test than women in the sweater condition and men in either condition. Although this interaction was significant, both men and women reported feeling defined by their bodies after trying on a bathing suit. The researchers did not control for trait self-objectification, however they suggested that gender differences in trait self-objectification may be responsible for this interaction. Consistent with this assertion, Fredrickson and colleagues (1998) found that women reported a greater dispositional tendency toward self-objectification than men (Fredrickson, et al., 1998).

Hebl, King and Lin (2004) addressed both ethnicity and gender in their examination of the effects of self-objectification. As in the previously mentioned studies, women again were asked to try on a one-piece bathing suit or a sweater. Rather than trying on a traditional pair of swim trunks, men were asked to try on either a Speedo or a sweater. The authors reasoned that using a Speedo might elicit a level of self-objectification that was more similar to what women experience when they try on bathing suits. Differences in trait self-objectification approached significance, with women reporting slightly greater trait self-objectification than men. Interestingly, there was a significant gender by race interaction such that across ethnicities.

Women reported greater trait self-objectification than men, except in the case of Asian Americans, where men reported greater trait self-objectification than women. There were significant main effects for condition (swimsuit or sweater) and gender on body shame; those in the swimsuit condition reported more body shame than those in the sweater condition and women reported more body shame than men. There was a marginal main effect for ethnicity, with Hispanic participants reporting the most body shame and African American participants reporting the least. The interaction between gender and ethnicity was significant. For Caucasians, Asian Americans, and Hispanics, women reported greater body shame than men, but African American women and men reported similar levels of body shame. The authors also reported that state self-objectification fully mediated the relationship between experimental condition and body shame such that those who reported high levels of state self-objectification after trying on the bathing suit also reported high levels of body shame; participants in the same experimental condition who did not report high levels of state self-objectification did not experience body shame to the same extent. Thus, it is not mere exposure to an objectifying situation, but an individual's reaction to that situation (i.e., then extent to which he or she engages in self-objectification) that determines the level of body shame experienced. The evaluative component of body shame, whereby a woman experiences body shame once she realizes that she does not meet her culture's standards for attractiveness and/or thinness, suggests that some type of comparison process occurs between self-objectification and the body shame that may follow as a result.

Researchers have noted other emotional consequences of self-objectification as well. Self-objectification is associated with anxiety, a link that may exist because of increases in appearance anxiety secondary to fears about one's appearance being evaluated by others

(Fredrickson & Roberts, 1998; Miner-Rubino, Twenge & Fredrickson, 2002). Self-objectification is also related to depression via its association with body shame and appearance anxiety (Muehlenkamp & Saris-Baglama, 2002; Tiggemann & Kurig, 2004). This is particularly important to note because symptoms of depression may lead to an increase in body dissatisfaction in women with already high body dissatisfaction (Muehlenkamp & Saris-Baglama, 2002).

In addition to its links with body shame, anxiety, and depression, self-objectification requires that individuals maintain a state of divided attention as a result of habitual self-monitoring of appearance (Quinn, Kallen, Twenge & Fredrickson, 2006; Tiggemann & Lynch, 2001). In one of the earliest studies to investigate the relationship between self-objectification and divided attention, researchers measured performance on a math task after eliciting either high self-objectification or low self-objectification using the same swimsuit or sweater paradigm explained previously (Fredrickson et al., 1998). Participants completed 15 math questions designed to be practice items for the Graduate Management Admission Test (GMAT) while wearing the item of clothing they had been asked to try on. There was a sex by condition interaction such that women in the swimsuit condition scored significantly lower than those in the sweater condition, whereas there was no difference in men's scores between conditions. As with the data regarding body shame, these findings suggest that women may be particularly sensitive to changes in state self-objectification.

In a more recent study, Quinn, Kallen, Twenge and Fredrickson (2006) used a modified Stroop task to assess the effects of self-objectification on cognitive resources. The authors used the Stroop task due to concerns that gender stereotypes may have impacted women's performance on math tasks used in previous research. Self-objectification again was elicited by

asking female undergraduates to try on either a swimsuit or a sweater. Women in the swimsuit condition performed worse than those in the sweater condition, with no differences across ethnic groups. The authors also explored the influence of word type by including color words (e.g., red, blue, yellow), neutral words (e.g., civil, switch, fans), and body words (e.g., shape, body, diet, pounds). As hypothesized, word type did not impact performance; it was the decrease in available cognitive resources that occurred as a result of self-objectification rather than the content of the task that influenced performance. These studies clearly demonstrate that self-objectification places extra demands on women's cognitive resources.

Objectification theory identifies disordered eating behavior as one of the potential effects of living in a culture where women are sexually objectified (Fredrickson & Roberts, 1997). In the earliest study to explore the link between self-objectification and disordered eating behavior, two samples of female undergraduate students completed measures of self-objectification, body shame, and eating disorder symptomatology (Noll & Fredrickson, 1998). Self-objectification was positively correlated with body shame and eating disorder symptoms. Body shame mediated the relationship between self-objectification and disordered eating behavior and this mediational model accounted for a significant amount of the variance in eating disorder symptoms for both samples. Self-objectification also had a direct effect on eating disorder symptoms. Given the role that body shame plays in the relationship between self-objectification and disordered eating behavior, and taking into account the evaluative component of body shame, it is important to consider the potential role of social comparison processes.

Social Comparison Theory

The central premise of Festinger's (1954) social comparison theory is that people have a natural desire or tendency to evaluate themselves and comparisons with similar others can provide relevant information. Although Festinger initially argued that comparisons occur only in the absence of objective information about one's standing, later research demonstrated that comparisons occur both in the presence and absence of objective information (Marsh & Parker, 1984; Thompson et al., 1999). People make comparisons with others regarding many aspects of the self, including appearance, weight, and eating habits (Morrison, Kalin & Morrison, 2004; Wheeler & Miyake, 1992).

For the vast majority of women, appearance comparisons are likely to be upward, meaning when a woman makes a comparison based on appearance, she perceives her comparison target as being better off (e.g., more attractive, thinner) than herself (Morrison Kalin & Morrison, 2004; Wheeler & Miyake, 1992). Upward comparisons, even when made with the goal of self-improvement, generally lead a woman to feel worse about herself (Wheeler & Miyake, 1992). This is in contrast to downward comparisons, which are made with targets that are perceived as worse off on a given dimension. Downward comparisons are generally thought to cause a woman to feel more positively about herself, but some research has demonstrated that when social comparison is related to appearance, both upward and downward comparisons can have negative effects (Heinberg & Thompson, 1992; Thompson, Heinberg & Tantleff, 1991).

Researchers have argued that there may be individual differences in the tendency to make appearance-related social comparisons and it is these differences that account for some of the variance in body image disturbance (Thompson, Heinberg & Altabe, 1999). Females are particularly vulnerable to making appearance comparisons, in part because they tend to have a

greater social orientation than males (Davidson & McCabe, 2005). Among women, those in late adulthood (ages 50 to 86) appear to engage in less social comparison than those in middle or young adulthood (ages 30 to 49 and 18 to 29, respectively; Davidson & McCabe, 2005). In one study, women were asked to keep a diary of all the social comparisons they engaged in on any dimension (Patrick, Neighbors & Knee, 2004). Participants recorded information about the comparison dimension, the comparison target, the comparison direction, the reason for making the comparison, emotions before and after the comparison, and similarity to the comparison target. The women in the study reported comparing themselves to other women the majority of the time. Of all comparisons reported, 32.2% were based on general physical appearance, 23.8% were based on body shape or proportions, and 20.1% were based on weight. The most frequent comparisons were made with strangers (34.5%), followed by acquaintances (15.2%) and close friends (14.7%). These data suggest that many women engage in some form of appearance-related social comparison on a regular basis.

Women who emphasize shape and weight in their evaluations of themselves are also more likely to emphasize those characteristics when evaluating others. Similarly, they are likely to believe that other women evaluate their appearance in the same manner (Beebe, Holmbeck, Schober, Lane & Rosa, 1996). Thompson and colleagues (1999) argued that these types of comparisons may normalize the emphasis of shape and weight in evaluating the self and others. In addition, women who exhibit high levels of body dissatisfaction may be more likely to seek out media images that embody the thin ideal (Martin & Kennedy, 1993). Taken together, these findings suggest that social comparison and body dissatisfaction may create a self-perpetuating cycle such that women with high body dissatisfaction may engage in a large amount of

appearance-related social comparison with other people and images in the media; these comparisons in turn reinforce their body image dissatisfaction.

Appearance-related social comparison is related to a number of undesirable consequences, including body dissatisfaction, low self-esteem, anxiety, and disordered eating behaviors (Durkin & Paxon, 2002; Stormer & Thompson, 1996; Heinberg & Thompson, 1992; Striegel-Moore, McAvay & Rodin, 1986). Body dissatisfaction and related constructs (e.g., body image anxiety, body consciousness) have received the most attention in the research on appearance-related social comparison. Lin and Kulik (2002) found that when college-age women compared themselves with images of a peer who embodied the thin ideal (upward comparison condition), they experienced significant increases in body dissatisfaction and significant decreases in self-confidence in attractiveness. Women who were exposed to images of an overweight peer (downward comparison condition) also experienced increases in body dissatisfaction rather than the decreases that the researchers anticipated. This study supported earlier findings that women experience increases in body dissatisfaction and body image anxiety after engaging in both upward and downward comparisons (Heinberg & Thompson, 1992).

Although downward appearance comparisons involve targets women perceive as worse-off than themselves, a potential explanation for the negative consequences of social comparison may be found within objectification theory. If the appearance comparison process is broken down into its components, it appears as though a woman must engage in both self-objectification and objectification of her comparison target. Self-objectification provides a woman with information about how her body appears to others. To complete the comparison process, a woman must take this information about her own body and consider it in relation to the body of her comparison target. Thus, completing the comparison process requires that a woman objectify

the women with whom she wishes to compare herself. In light of evidence that women who emphasize weight and shape in their self-evaluations also emphasize those characteristics in their evaluations of others, women who engage in appearance comparison and then experience the resulting increase in body dissatisfaction may then continue to make additional comparisons in an attempt to better understand how their bodies rate relative to those around them. These additional comparisons require continued objectification of the self and of others.

In addition to examining the nature of social comparison, researchers have explored the link between social comparison and disordered eating behavior. In a study by Stormer and Thompson (1996), the frequency of appearance comparison emerged as a predictor of drive for thinness and bulimic behavior and accounted for more variance than factors like maturational status, teasing history, and internalization of the thin ideal. Morrison, Kalin and Morrison (2004) found that for female adolescents, engaging in frequent universalistic social comparison was related to the use of pathogenic weight control practices, including the use of diet pills, laxatives, and diuretics. These studies highlight the important role that social comparison plays in disordered eating behavior; however, the directionality of the relationship is unclear.

Unlike much of the previous research that focused on comparison with images of models or peers, two studies examined in vivo social comparison. This methodology may more accurately represent social comparison as it occurs in daily life. Thomas and Thompson (1998) have suggested that direct comparison with an actual person rather than indirect comparison with a picture may have a stronger effect on self-ratings of attractiveness. As such, the type of comparison target (an actual person as opposed to a picture) is an important methodological consideration. In one study, female undergraduates were told that they were participating in a study about self-perceptions and the dating process and that two college-age men waiting in

another room were going to rate their dating potential and the dating potential of the student sitting next to them, who actually was a confederate (Krones, Stice, Batres & Orjada, 2005). Two confederates were used: one confederate was average-sized and the other portrayed the thin ideal. Body shape and weight were emphasized by having each woman's waist, bust, and hips measured and having them report their weight aloud. Participants paired with the thin ideal confederate reported a significant increase in body dissatisfaction. Initial body dissatisfaction, initial negative affect, internalization of the thin ideal, perceived sociocultural pressure, self-esteem, and attractiveness did not emerge as moderators of the relationship between exposure to a thin ideal peer and body dissatisfaction. The fact that internalization of the thin ideal did not emerge as a moderator is important to note because previous studies have found that women react negatively following exposure to the thin ideal if thinness is important to them (Dittmar & Howard, 2004, Heinberg & Thompson, 1995). However, the existing research on the role that internalization of the thin ideal plays in the relationship between social comparison and body dissatisfaction consists of studies in which participants are exposed only to media images, not to images of peers or actual peers.

In a second in vivo study, participants engaged in conversations about shape and weight with two confederates. Both confederates in the Pressure to be Thin condition made disparaging remarks about their bodies and talked about a desire to lose weight. In the Positive Encouragement condition, one confederate made disparaging remarks about her body and expressed a desire to lose weight, while the other provided support and encouraged her to feel better about herself (Shomaker & Furman, 2007). Participants in the Pressure to be Thin condition who reported a high tendency to engage in appearance-related social comparison at pre-test experienced greater decreases in body dissatisfaction following the conversation with the

confederates than participants who reported a low tendency to do so. In contrast, participants in the Positive Encouragement condition who reported a high tendency to engage in social comparison experienced increases in body satisfaction. Participants in both conditions who were high in social comparison experienced decreases in positive emotion, whereas women in the Positive Encouragement condition who had a lower tendency to engage in social comparison reported increases in positive emotion at post-test. These findings suggest that interpersonal interactions can influence the comparison process; for the participants in this study, high comparison tendency alone did not lead to increased body dissatisfaction. Taken together, the findings of these vivo studies provide important information about how women may experience social comparison on a day-to-day basis.

The effects of social comparison depend largely upon the motive for comparison. Festinger (1954) originally identified self-evaluation as the motive for comparison, stating that individuals make comparisons as a means of better understanding how we relate to similar others on a given dimension. Wood (1989) has suggested that people may engage in social comparisons for the purposes of self-improvement or self-enhancement. Comparisons motivated by the desire for self-improvement are upward in nature and generally lead an individual to either learn something from the comparison target or be inspired to make changes in themselves. When a comparison is made with self-enhancement as the goal, a woman may use the information gained from this downward comparison to make herself feel better about the characteristic being compared.

A recent study by Halliwell and Dittmar (2005) explored the role different types of motives play in appearance-related social comparisons. Ninety-eight women ages 18 to 43 who reported high internalization of sociocultural attitudes towards appearance were included in the

study. Motives for social comparison were elicited based on instructions provided to the participants prior to viewing one of two sets of ads, one with a thin female model and a product, and the other with a product alone. Women in the self-evaluation condition were instructed to view the advertisement in relation to themselves. In the self-improvement condition, women were asked to consider the ad while thinking about how they could become more like the ideal person they wanted to be. Women in the self-evaluation condition reported significantly higher body-focused anxiety after viewing ads with models than after viewing ads without models. Women in the self-improvement condition did not exhibit significant differences in the amount of body-focused anxiety experienced at post-test, regardless of the type of ads they were exposed to. The difference in body-focused anxiety between social comparison conditions approached significance, such that women in the self-evaluation condition reported greater body-focused anxiety at post-test than those in the self-improvement condition. These findings are similar to an earlier study conducted by Martin and Gentry (1997) that indicated that the motive of self-evaluation is significantly more likely to lead to negative outcomes (e.g., body dissatisfaction following an appearance comparison) than either self-improvement or self-enhancement.

Relevance of the comparison target also is related to the effects of social comparison. Early research indicated that the negative effects of upward comparisons may be magnified if the comparison target is particularistic, or very similar to the individual (Wood, 1989). This finding was supported by a later study that examined the effects of different types of appearance-related feedback on body dissatisfaction (Heinberg & Thompson, 1991). Female undergraduate students who were given appearance-related feedback comparing them to other students at their university (a particularistic comparison target) exhibited greater body image anxiety and subjective discomfort than students who were given feedback comparing them to the average U.S. citizen.

This held true for both the positive feedback and negative feedback conditions, where participants were told that they were either smaller or larger than the comparison target, respectively.

Another study by Heinberg and Thompson (1992) explored the relationship between importance ratings of comparison targets and body image and eating disturbance. Male and female undergraduate students rated several groups (e.g., friends, family, classmates, celebrities, average U.S. citizens) in terms of the importance as comparison targets for both appearance and non-appearance domains. Friends emerged as the most important comparison target for female undergraduates in the appearance domain. Family members were rated as significantly less important comparison targets than friends for the appearance domain, but they were rated as equally important for the non-appearance domain. Based on these findings, the authors argued that target importance matters more than the degree of similarity because, in many cases, family members have a high degree of similarity to one another. In support of this finding, Thompson and Heinberg (1993) found that the importance of comparison targets accounted for unique variance in body dissatisfaction and disordered eating behaviors above and beyond the frequency of appearance comparison alone.

Most of the time, an individual's peers will serve as the most relevant, and therefore most important, comparison target. However, Strahan and colleagues (2006) found that when cultural norms about appearance are salient, relevance of the comparison target becomes less important. Participants were randomly assigned to view sets of appearance-related ads or neutral ads. Appearance-related ads contained indirect messages about the need to improve one's appearance (e.g., a cosmetics ad). The last ad in each set contained the image of a highly attractive same-sex individual who served as the comparison target. The sets of ads were created to manipulate the

salience of cultural norms about appearance, with appearance-related ads given to those in the high salience condition and neutral ads given to those in the low salience condition. The researchers also manipulated the relevance of the comparison target by telling participants the person pictured in the target comparison ad was either a fellow university student or a professional model. When cultural norms about appearance were salient, both male and female subjects rated the professional model equally as relevant as the peer and made more comparisons with the professional model. When cultural norms were not salient, participants made more comparisons with the peer than with the professional model.

A meta-analysis of 25 experimental studies in which participants were exposed to either images of women who met the thin ideal or some type of control condition (e.g., average-sized models, overweight models, or neutral objects) supports the notion that although target relevance is important, social comparison with less relevant targets like those presented in the media has negative effects. Women reported significantly lower body satisfaction after viewing images of models who exemplified the thin ideal than after viewing images of average-sized or overweight models or neutral objects (Groesz, Levine & Murnen, 2002).

The Current Study

The primary aim of the current study is to test a comprehensive theoretical model that integrates self-objectification, objectification of others, and social comparison to better explain the relationships among some of the evaluative processes that contribute to the development of body image dissatisfaction and eating disordered behavior. The theoretical model based on the existing literature appears in Figure 1 and the new theoretical model is displayed in Figure 2. The new model displays the proposed relationships among self-objectification, objectification of others, and social comparison. Research has indicated that women who objectify themselves are

more likely to objectify other women (Strelan & Hargreaves, 2005); these two behaviors are necessary in order for an appearance comparison to be made. It is likely, however, that the relationship is bidirectional. Not only does self-objectification and objectification of others fuel the comparison process, but the comparison process may lead to further objectification of the self and others. The model also reflects previously supported relationships between self-objectification and body shame (Fredrickson, et al., 1998) and social comparison and body dissatisfaction (Heinberg & Thompson, 1992). Although body shame and body dissatisfaction are conceptually distinct, both are negative thoughts and feelings a woman may have about her body after engaging in self-objectification or social comparison. Body shame has not been previously explored as a consequence of social comparison, but because body shame has an evaluative component, women likely experience it in addition to body dissatisfaction after engaging in appearance comparison. Eating disorder symptomatology is the last component of the model. The hypothesized model reflects previously supported relationships between eating disorder symptomatology and the other latent variables in the model (self-objectification, social comparison, and body shame/body dissatisfaction). This model will test hypotheses regarding the way in which objectification and social comparison processes may work together to lead to negative thoughts and feelings about one's body as well as eating disordered behaviors.

This study is the first to consider objectification and social comparison simultaneously. In addition, there is very little research regarding the relationship between self-objectification and objectification of others. Strelan and Hargreaves (2005) proposed that self-objectification and objectification of others create a self-perpetuating cycle. It may be that the social comparison process plays an important role in the maintenance of this cycle.

In addition to providing information about the relationships among self-objectification, objectification of others, and social comparison, this study also considers the behavioral and emotional consequences of such processes. Up to 80 percent of women report dissatisfaction with some aspect of their bodies (National Eating Disorders Association, 2008). Body dissatisfaction is so pervasive that is has been described as a "normative discontent" (Rodin, Silberstein & Striegel-Moore, 1984). Because body dissatisfaction affects so many women, it is important to understand the processes that may fuel dissatisfaction. In addition, the model underlying cognitive-behavioral treatments for bulimia nervosa highlights the role that negative thoughts about weight and shape play in the maintenance of disordered eating behavior. Psychoeducation regarding the thin ideal and objectification is frequently incorporated into treatment, generally in the context of discussions about media influences. While a focus on idealized images of thinness in the media are worthwhile, these messages are pervasive and the reality is that a cultural shift away from unrealistic beauty standards will take quite some time. In the meantime, social comparison may be something over which women have slightly more control. Psychoeducation about social comparison and the objectification processes involved in making those comparisons may increase patient understanding of the extent to which their responses to the culture of thinness contribute to body image dissatisfaction and eating disturbance.

Hypotheses

The measurement model for the current study appears in Figure 4. The following hypotheses will be examined using Structural Equation Modeling (SEM) and setwise analysis:

1. Self-objectification will be correlated with objectification of others.

2. Self-objectification and objectification of others will be correlated with social comparison.
3. Self-objectification, objectification of others, and social comparison will together account for more variance in body shame, body dissatisfaction, and eating disorder symptomatology than either self-objectification or social comparison alone.
4. (a) Self-objectification will predict body shame, body dissatisfaction, and eating disorder symtpomatology. (b) Social comparison will partially mediate the relationships between self-objectification and body shame and between self-objectification and body dissatisfaction. (c) Body shame and body dissatisfaction will partially mediate the relationship between self-objectification and eating disorder symptomatology.
5. (a) Social comparison will predict body shame/body dissatisfaction and eating disorder symptomatology. (b) Body shame and body dissatisfaction will partially mediate the relationship between social comparison and eating disorder symptomatology.

CHAPTER TWO: METHOD

Participants

The questionnaires were completed by a total of 635 participants from a large Southeastern university. Participants ranged in age from 18 to 53, with a mean age of 20.38 (*SD* = 4.06). The mean Body Mass Index (BMI) was 23.69 (*SD* = 5.57), with a range of 15.96 to 60.07. Most of the 635 participants identified as heterosexual (94.8%; n = 602) and Caucasian (68.0%; n = 432), with Hispanic participants comprising the next-largest ethnic group (12.8%; n = 81). Given the desire to test the hypothesized theoretical model with a representative sample of female undergraduate students, participants with a reported age or BMI greater than three than standard deviations above the mean were excluded from the analysis (those older than 32.57 years or with a BMI greater than 39.98). Twenty-three participants were excluded on the basis of age and an additional 11 participants were excluded based on their calculated BMI, resulting in a sample size of n = 601. Differences between age groups and BMI groups appear in the results section.

Given the necessity of having full datasets in order to analyze data using structural equation modeling, additional participants were excluded due to missing data on the measures necessary to evaluate the proposed model, yielding a final sample of n = 459. The process by which participants were excluded from the analyses is described in greater detail in the results section. Participants in the final sample ranged in age from 18 to 32, with a mean age of 19.85 years (*SD* = 2.57). The mean BMI was 23.03 (*SD* = 4.69), with values ranging from 15.97 to 39.48. Similar to the initial sample, the majority of participants identified as heterosexual (94.6%; n = 434) and Caucasian (69.3%; n = 318). The remainder of the sample was comprised

by those identifying as Hispanic (12.2%; n = 56), African American (7.0%; n = 32), Asian/Pacific Islander (5.2%; n = 24) and Other or Biracial (7.5%; n = 28).

The proposed model for the current study had 38 degrees of freedom. According to MacCallum, Browne, and Sugawara (1996), 252 participants is the minimum sample size required to assess close fit at a power of .80 for structural equation model with 40 degrees of freedom. However, Tabachnick and Fidell (2007) are more conservative in their estimates of sample size and recommend an N-to-k ratio of 35 to 1, where k is the number of manifest variables in the model. As the proposed model has 11 manifest variables, the minimum sample size based on this recommendation is 385 participants. Based on these recommendations, the final sample of 459 participants was adequate for the analyses

Procedures

Institutional Review Board (IRB) approval was obtained prior to beginning recruitment (Appendix B). Participants were recruited using Sona Systems, the University's online research participation program for students enrolled in psychology courses. Female students ages 18 and older were eligible for participation. Interested students were directed to a secure website (Survey Monkey) in order to complete the anonymous questionnaire. Informed consent was obtained using the document that appears in Appendix C. Participants were granted course credit as compensation for their participation.

Measures

Demographic Questionnaire (Appendix D). Participants were asked to provide information regarding several variables including age, sexual orientation, relationship status, ethnicity, and education. Height and weight were assessed as part of a separate instrument.

Self-Objectification. The Self-Objectification Questionnaire (Appendix E) (SOQ; Noll & Fredrickson, 1998), is a 10-item measure of an individual's tendency to define his or her body in appearance-related (objectified) terms or competence-related (non-objectified) terms. Participants were asked to rank order a list of body attributes in order of their relative importance to the participant's physical self-concept. There are 5 appearance-based items and 5 competence-based items. Scores ranged from -25 to 25, with higher scores reflecting greater self-objectification. Although reliability data are limited, the Self-Objectification Questionnaire demonstrates adequate construct validity. In previous studies, scores on this measure were positively correlated with appearance anxiety (r = .52) and body dissatisfaction (r = .46). Because of the structure of the SOQ, Cronbach's alpha cannot be calculated as a measure of internal consistency.

The Body Surveillance subscale of the Objectified Body Consciousness Scale (Appendix F) (OBC; McKinley & Hyde, 1996) provided an additional index of self-objectification. The scale consists of 8 items rated on a 7-point Likert scale, with higher scores indicating greater surveillance or self-objectification. In female undergraduate samples, internal consistency ranged from .79 to .89 and test-retest reliability was .79. The subscale also demonstrated adequate convergent and divergent validity. Body Surveillance scores were negatively correlated with body esteem (r = -.39) and positively correlated with public self-consciousness (r = .73), but uncorrelated with scores on measures social anxiety and private body consciousness. In the present sample, Cronbach's alpha was .78. The Body Surveillance subscale of the OBC contains a social comparison item (i.e., "I rarely compare how I look with how other people look."). Given that one of the primary aims of this study is to better understand the relationship between social comparison and objectification and the potential for the presence of a social comparison

item on a measure of objectification may inflate the relationship between the two constructs, the social comparison item was removed from the scale for all statistical analyses to minimize the possibility of criterion contamination. Removal of the social comparison item did not substantially impact the scale's internal consistency ($\alpha = 76$).

Objectification of Others. Similar to Strelan and Hargreaves' (2005) work, a modified version of the Self-Objectification Questionnaire (Appendix G) was be used to assess the extent to which participants objectify other women. Instead of rank ordering body attributes in order of their relative importance to one's own physical self-concept, participants were asked to consider which body attributes are most important in other women. As with the Self-Objectification Questionnaire, scores ranged from -25 to 25, with higher scores signifying greater objectification of other women.

As suggested by Strelan and Hargreaves (2005), a modified version of the Body Surveillance Subscale of the Objectified Body Consciousness scale was used to further assess objectification of others. The Surveillance of Others Scale (Appendix H) contains 7 items that were rated on the same 7-point Likert scale used in the Objectified Body Consciousness scale. Higher scores on the measure reflect greater objectification of others and the items reflect the extent to which a woman notices the appearance of other women in her daily life (e.g., "I rarely pay attention to how other women look," "I am more concerned with what other women's bodies look than what other women's bodies are able to do"). Examination of the correlations among items and the reliability estimates obtained when items were deleted from the scale revealed that the inclusion of one item in particular ("I think that it is more important that other women wear comfortable clothes than clothes that look good on them.") resulted in a substantial decrease in the calculated Cronbach's alpha. This item was deleted, yielding a 6-item scale with a

Cronbach's alpha of .79. Similar to the OBC Body Surveillance subscale, a social comparison item was included on the original version of the Surveillance of Others Scales and was later removed. Thus, the final Surveillance of Others scale consisted of five items with an internal consistency of .77.

Social Comparison. The Body Comparison Scale (BCS; Fisher & Thompson, 1998), (Appendix I), is a 36-item instrument that measures social comparison. Participants were instructed to rate how often they compare aspects of their appearance to same-sex peers using a Likert scale (1= never to 5= always). The scale contains items that measure overall comparison (e.g., I compare my physical appearance to the physical appearance of others.) as well as comparison of specific body sites (e.g., thighs, chest). In previous research, the measure demonstrated excellent internal consistency ($\alpha = .95$). Cronbach's alpha for the present sample was .93.

The Physical Appearance Comparison Scale (PACS; Thompson, Heinberg & Tantleff, 1991) (Appendix J) is a 5-item measure that provides an additional index of overall appearance comparison. Participants rated items on a Likert scale (1= never to 5= always). The measure demonstrated adequate test-retest reliability and internal consistency in undergraduate samples (.72 and .78, respectively). Internal consistency for the present study was .73.

Body Shame. The Body Shame Subscale of the Objectified Body Consciousness Scale (OBC; McKinley & Hyde, 1996) (Appendix K) consists of 8 items rated on a 7-point Likert scale. Scores on this subscale provide an index of the extent to which a woman feels badly about herself and her body if she does not meet cultural standards of beauty. Higher scores reflect higher levels of body shame. Estimates of internal consistency in female undergraduate samples

ranged from .75 to .84 and test-retest reliability was .79. In the current sample, Cronbach's alpha was .82.

The Weight- and Body-Related Shame and Guilt Scale (WEB; Conradt, Dierk, Schlumberger, Rauh, Hebebrand & Rief, 2007) (Appendix L) assesses feelings of shame and guilt about one's weight and shape. The measure's test-retest reliability was .79 and the WEB also demonstrated adequate discriminant validity. For the purpose of this study, only the 6-item Shame Subscale was used. Participants indicated how often they have experienced feelings of shame during the last six months on a Likert scale (0 = never to 4 = always). Internal consistency of the Shame subscale of the WEB was .90.

Body Image. The Multdimensional Body-Self Relations Questionnaire Appearance Evaluation subscale (MBSRQ-AE; Cash, 1990) (Appendix M) consists of 7 items rated on a 5-point Likert scale and measures feelings of global physical attractiveness or unattractiveness. In a college student sample, Cronbach's alpha for the Appearance Evaluation subscale was .88 and one-month test-retest reliability was .91 (Brown, Cash & Mikulka, 1990; Cash, 1990). The Appearance Evaluation subscale demonstrates adequate convergent, discriminant, and construct validity (Cash, 1990). Cronbach's alpha for the present sample was .90.

The Eating Disorder Inventory-3 Body Dissatisfaction Scale (EDI-BD; Garner, 2004) (Appendix N) was also used to measure body image. Participants responded to each of the subscale's ten items on a Likert scale to indicate their degree of satisfaction or dissatisfaction with specific aspects of their appearance. Cronbach's alpha in adult female samples ranged from .90 to .94. Test-retest reliability over a one-week period was .95. This scale demonstrated adequate convergent and discriminant validity. Cronbach's alpha for the Body Dissatisfaction Scale was .89.

Eating Disorder Symptomatology. Two subscales of the Eating Disorder Inventory-3 (Garner, 2004) were used to assess eating disorder symptomatology. The Drive for Thinness scale (EDI-DT) (Appendix O) consists of seven items which assess one's desire to be thinner and concern with dieting and weight gain. Cronbach's alpha for the scale was .91 and test-retest reliability over a one-week period was .95 in adult female samples. Consistent with previously obtained estimates, Cronbach's alpha for the Drive for Thinness Scale was .91 for the present study.

The EDI-3 Bulimia scale (EDI-B) (Appendix P) is an 8-item measure of the tendency to engage in binge eating behavior or to eat when upset. Cronbach's alpha ranged from .63 to .84 in adult female samples. Test-retest reliability was .94. Both EDI-3 subscales demonstrated adequate convergent and discriminant validity. The internal consistency of the Bulimia Scale in the present study was .80.

CHAPTER THREE: RESULTS

Data Screening

Data were screened for skewness and kurtosis as well as missing values prior to conducting all analyses. Examination of data from the initial sample of 635 participants revealed that there were several outliers with regard to age and BMI. Given concerns that older participants and those with high BMIs might represent a different population than the majority of the sample, participants whose age or BMI were more than three standard deviations above the mean (i.e., age greater than 32.57 years and/or BMI greater than 39.98) were excluded. Thirteen participants were excluded on the basis of age, six participants were excluded on the basis of BMI, and one participant was excluded based on both age and BMI.

Independent samples t-tests were conducted to determine whether there were differences between participants who were outliers on age (n = 14) relative to the remaining participants. Age outliers had a significantly higher BMI than the majority of participants ($t(618) = -4.38$; $p = .000$). Although there were no significant differences between groups in objectification as measured by the SOQ and OOQ, the age outliers scored significantly lower on the OBC Body Surveillance subscale ($t(602) = 3.48$; $p = .001$) and marginally lower on the Surveillance of Others Scale ($t(612) = 1.97$; $p = .049$). These differences are consistent with age-related differences in self-objectification observed by Tiggemann and Slater (2001). There were no age-related differences in social comparison or in body shame. While there were no significant differences in body satisfaction as measured by the MBSRQ, older participants reported greater body dissatisfaction as measured by the EDI Body Dissatsifaction subscale ($t(606) = -2.13$, $p = .034$). There were no significant differences between age groups on either measure of disordered eating.

Independent samples t-tests were also conducted to examine differences between participants excluded on the basis of BMI (i.e., those with BMIs more than 39.98, which corresponds to three standard deviations above the mean) and the rest of the sample. According to the National Institutes of Health (2010), a BMI equal to or greater than 40.0 is classified as morbid obesity. Although objectification is thought to occur independent of BMI (Noll & Fredrickson, 1998), concerns about differing relationships among BMI and the outcome variables of interest (e.g., body shame, body dissatisfaction, and eating disordered behavior) between participants who are normal weight to obese and those who are morbidly obese necessitated the exclusion of BMI outliers. There was no difference in age between BMI groups. In addition, there were no significant differences between groups in measures of self-objectification and objectification of others. There were also no significant differences between groups in social comparison. Although there were no significant differences in scores on the OBC Body Shame subscale, participants with high BMIs scored significantly higher on the Shame subscale of the Weight- and Body-Related Shame and Guilt Scale ($t(617) = -2.56$; $p = .011$). Participants with BMIs above 39.98 reported less body satisfaction than those with BMIs below 39.98 ($t(619) = 2.10$; $p = .036$) and the difference in body dissatisfaction approached significance, with participants with high BMIs reporting more dissatisfaction ($t(609) = -1.83$; $p = .067$). There were no differences between groups on either measure of disordered eating.

Examination of the dataset for missing data revealed that a substantial minority of participants failed to complete the SOQ and/or the OOQ. Of the 615 participants who remained after outliers for age and BMI were excluded, 25.7 percent of participants (n = 158) did not complete one or both measures. Because the structure of the scale involves ranking ten attributes on a scale of one to ten, mean substitution for missing values was not possible; however,

exclusion of 158 cases would have resulted in a substantial reduction in sample size and statistical power. In addition, when the SOQ and OOQ were included in the aforementioned analyses, listwise deletion resulted in nonsignificant differences between age and BMI groups across all variables. The disappearance of between-group differences, particularly the differences between BMI groups, is inconsistent with what would be expected based on previous research. When listwise deletion was used in the analyses with all measures except the SOQ and OOQ, the differences between age and BMI groups that were initially obtained using pairwise deletion remained. Each of these issues point to potential problems with the measures themselves and as such, the decision was made to exclude the SOQ and OOQ from all analyses and to instead split the OBC Body Surveillance and Surveillance of Others scales into two manifest variables for the purposes of evaluating the proposed theoretical model. Although there are limitations to this approach, the OBC Body Surveillance scale has been widely used as a measure of self-objectification in prior research and the evidence of OBC's reliability is much stronger than that of the SOQ.

Independent samples t-tests were conducted to determine whether there were differences between participants who completed both the SOQ and OOQ and those who did not. Participants who did not complete both measures were significantly older than those who completed both measures ($t(604) = 2.16$; $p = .039$) but there were no differences in BMI between groups. There were no significant differences between completers and non-completers in self-objectification, objectification of others, or social comparison. In addition, there were no significant differences in body shame, body dissatisfaction, and disordered eating.

Upon deciding to exclude the SOQ and OOQ from the analyses, the other measures were examined to determine the extent to which there were missing values. Of the remaining

measures, the percentage of participants who did not fully complete each one ranged from 1.5 percent (n = 9) to 6.2 percent (n = 38). Generally, non-completion was lower for shorter measures than for longer measures. Independent samples t-tests revealed that there were no significant differences in age, self-objectification, objectification of others, social comparison, body shame, body dissatisfaction, and eating disorder symptomatology between participants who completed all ten remaining measures and those who did not. Participants missing scores on at least one measure had a significantly higher BMI than those who completed all measures ($t(608) = -2.33$; $p = .020$); however, the mean BMI for non-completers and completers both fell within the normal range (24.17 and 23.07, respectively).

It is important to note that while some participants failed to complete one measure (16.9%; n = 104), other participants failed to complete multiple measures (5.2%; n = 32). No participants failed to complete more than three of the ten measures of interest. Independent samples t-tests indicated that there were no significant differences in age, BMI, or any of the variables of interest between participants who failed to complete one measure and those who failed to complete multiple measures.

Removal of participants with missing values on measures other than the SOQ and OOQ resulted in a sample of size of n = 479. At that time, data were again inspected for skewness and kurtosis. Of all measures completed by participants, only scores on the EDI Bulimia scale exhibited high skewness and kurtosis (1.32 and 2.18, respectively). Although transforming EDI-B scores by obtaining the inverse reduced skewness and kurtosis to acceptable levels, transformations decrease the ease of interpreting results. Thus, the six participants with EDI-B scores more than three standard deviations above the mean (i.e., those with scores greater than 36.56) were excluded, resulting in a final sample size of n = 473. Exclusion of outliers on EDI-B

reduced skewness and kurtosis to .99 and .70, respectively. Independent samples t-tests revealed that there were no significant age differences between groups but that participants excluded on the basis of EDI-B scores had a significantly higher BMI than the rest of the sample, $t(469) = -2.71$, $p = .007$). Participants excluded on the basis of EDI-B scores also had significantly higher scores on the OBC-Surveillance subscale, $t(469) = -2.55$, $p = .011$) and slightly higher scores on the Surveillance of Others Scale, $t(476) = -1.92$, $p = .055$. Although there were no between-group differences in social comparison as measured by the BCS, those with elevated EDI-B scores reported greater social comparison as measured by the PACS, $t(476) = -2.80$, $p = .005$. They also reported more body shame as measured by both the OBC-Shame subscale, $t(476) = -4.50$, $p = .000$, and the WEB-Shame scale, $t(476) = -4.24$, $p = .000$, less body satisfaction, $t(476) = 3.43$, $p = .001$, and more body dissatisfaction, $t(476) = -3.68$, $p = .000$. Lastly, participants excluded on the basis of EDI-B scores reported more eating disorder symptomatology as measured by the EDI-DT scale, $t(476) = -3.23$, $p = .001$, and the EDI-B scale, $t(476) = -10.08$, $p = .000$).

Hypothesis 1

Descriptive statistics and correlations among study variables obtained from the final sample of 473 participants appear in Table 1. To test the hypothesis that self-objectification is positively correlated with objectification of others, the correlation between measures of those variables were examined. As reported in Table 1, scores on the OBC-Surveillance subscale were positively correlated with scores on the Surveillance of Others Scale, $r = .54$, $p = .000$.

Hypothesis 2

As hypothesized, self-objectification and objectification of others were positively correlated with both measures of social comparison. As appears in Table 1, scores on the OBC-Surveillance subscale were positively correlated with scores on both the BCS, r =.42, p = .000, and the PACS, r = .58, p = .000. Similarly, scores on the Surveillance of Others Scale were correlated with BCS and PACS scores (r = .50 and .63, respectively, p = .000).

Hypothesis 3

Two series of six hierarchical multiple regressions were used to examine the relative contribution of either self-objectification or social comparison alone compared to self-objectification, objectification of others, and social comparison together in explaining the variance in body shame, body satisfaction and dissatisfaction, and disordered eating behavior. In the first set of regressions, self-objectification (OBC-Surveillance) was entered in the first step, followed by objectification of others (Surveillance of Others) and social comparison (BCS and PACS) in the second step. In the second series of regressions, social comparison (BCS and PACS) was entered in the first step, followed by self-objectification (OBC-Surveillance) and objectification of others (Surveillance of Others). Entering variables in this order allows for examination of the contributions of multiple predictors over and above that of one predictor or one set of predictors measuring the same construct. A summary of the results of these regressions appear in Tables 2 and 3. Given the number of analyses conducted, a Bonferroni correction was applied to avoid inflation of the Type I error rate, setting the significance level for all statistical tests at p = .008.

Self-objectification alone accounted for 19.6 of the variance in OBC-Shame, whereas social comparison alone accounted for 24.9 percent of the variance. All independent variables

together accounted for 29.0 percent of the variance in body shame, with OBC-Surveillance, BCS, and PACS emerging as statistically significant predictors. Self-objectification and social comparison each accounted for unique variance in WEB-Shame when examined alone (14.2 and 22.1 percent, respectively). All independent variables together accounted for 25.6 percent of the variance in this second measure of body shame. Only BCS and OBC-Surveillance were significant predictors of WEB-Shame.

Self-objectification and social comparison also accounted for unique variance in evaluative body image. With regard to body satisfaction as measured by the MBSRQ-AE, self-objectification accounted for 8.8 percent of the variance and social comparison accounted for 10.3 percent. Together, both forms of objectification and social comparison accounted for 12.7 percent of the unique variance in body satisfaction. Self-objectification accounted for 14.0 percent of the variance in body dissatisfaction as measured by the EDI-BD, whereas social comparison accounted for 23.6 percent of the variance. The total amount of variance accounted for by all independent variables was 26.2 percent. For both forms of evaluative body image measured in this study, BCS and OBC-Surveillance emerged as significant predictors.

With regard to disordered eating, self-objectification accounted for 25.2 percent of the variance in drive for thinness and social comparison accounted for 27.4 percent. All independent variables together accounted for 33.9 percent of the variance in drive for thinness. OBC-Surveillance, BCS, and PACS were significant predictors. Self-objectification accounted for 9.7 percent of the variance in bulimic symptomatology compared to social comparison, which accounted for 15.0 percent of the variance. Together, self-objectification, objectification of others, and social comparison accounted for 17.0 percent of the variance. Only social comparison significantly predicted bulimic symptomatology.

As anticipated, self-objectification of others, and social comparison together accounted for more variance in body image and eating behavior than either self-objectification or social comparison alone. Self-objectification and at least one measure of social comparison were significant predictors of body image and of drive for thinness, and social comparison only was a significant predictor of bulimic symptomatology. Objectification of others did not contribute unique variance to body image or eating behavior.

Hypothesis 4

As shown in Table 4, self-objectification predicted body shame, body dissatisfaction, and eating disorder symptomatology. In addition, social comparison partially mediated the relationships between self-objectification and each of the three dependent variables: body shame, body dissatisfaction, and eating disorder symptomatology. Although self-objectification remained a significant predictor of each dependent variable in the second step of each multiple regression, its strength as a predictor diminished with the addition of social comparison into the equation. In nearly every case, both measures of social comparison were statistically significant predictors of the dependent variable. However, only the Body Comparison Scale contributed to the mediation observed between self-objectification and both WEB-Shame and MBSRQ scores.

Social comparison emerged as one mediator of the relationship between self-objectification and eating disorder symptomatology and, as shown in Table 5, body shame and body dissatisfaction also mediated this relationship. Body shame partially mediated the relationship between self-objectification and drive for thinness, while it fully mediated the relationship between self-objectification and bulimic symptomatology. Body dissatisfaction partially mediated the relationships between self-objectification and both drive for thinness and bulimic symptomatology, although only EDI-BD was a statistically significant predictor. When

body image were examined as a unified construct as suggested by the confirmatory factor analysis conducted prior to the evaluation of the theoretical model (i.e., with measures of body shame and body dissatisfaction combined into one latent variable), poor body image partially mediated the relationship between self-objectification and drive for thinness, with OBC-Shame and EDI-BD responsible for the observed partial mediation. Poor body image fully mediated the relationship between self-objectification and bulimic symptomatology and, as with the relationship between self-objectification and drive for thinness, scores on OBC-Shame and EDI-BD were statistically significant. WEB-Shame and MBSRQ scores (which were recoded such that higher scores reflected greater dissatisfaction for the purpose of these analyses) were not statistically significant predictors and did not contribute to the observed mediation.

Hypothesis 5

Table 7 summarizes the roles of body shame and body dissatisfaction as mediators of the relationship between social comparison and eating disorder symptomatology. Body shame partially mediated the relationship between social comparison and drive for thinness, with one measure of social comparison (PACS) remaining significant after the addition of both measures of body shame into the equation and the other measure of social comparison (BCS) becoming nonsignificant. Body shame fully mediated the relationship between social comparison and bulimic symptomatology. Body dissatisfaction partially mediated the relationships between social comparison and both drive for thinness and bulimic symptomatology. For both measures of eating disorder symptomatology, BCS became a nonsignificant predictor in the second step of the regression whereas PACS remained significant. EDI-BD scores were responsible for the observed mediation, as the contribution of the MBSRQ was nonsignificant. When examined as the unidimensional construct of poor body image, body shame and body dissatisfaction together

partially mediated the relationship between social comparison and drive for thinness. PACS, OBC-Shame,and EDI-BD were significant predictors in the final step. Poor body image fully mediated the relationship between social comparison and bulimic symptomatology, with OBC-Shame and EDI-BD emerging as the only significant predictors in the final step of the multiple regression.

Evaluation of the Theoretical Model

Prior to evaluating the proposed theoretical model, confirmatory factor analysis was used to ensure that all manifest variables loaded on to the appropriate latent constructs. A measurement model (Figure 3) was designed which allowed all latent variables to correlate freely with one another. Analysis of Moment Structures 7 for Windows (AMOS, 2006) was used to conduct all analyses requiring structural equation modeling. The initial measurement model resulted in a covariance matrix that was not positive definite and, as such, the initial solution was inadmissible. Although the correlations among study variables did not indicate the presence of multicollinearity, examination of the covariance matrix for the initial measurement model revealed high covariances between body shame and body dissatisfaction (.98) and body shame and eating disorder symptomatology (.93). Given the conceptual overlap between body shame and body dissatisfaction, the measurement model was re-specified such that body shame and body dissatisfaction were combined to yield a single latent construct. The revised model consisting of five latent constructs (Figure 4) converged successfully. The χ^2 statistic was significant, $\chi^2(4) = 260.97$, ($p = .000$), which indicated that there was a significant difference between model and data. However, a significant χ^2 statistic is not unusual for models based on large samples and does not, on its own, suggest bad fit. Several other indices indicated adequate-to-good model fit (RMR = .05, RMSEA = .10, GFI = .92, AGFI = .85).

To further examine the relationship between objectification and social comparison, additional five-factor models were tested using CFA, each time setting paths between objectification and social comparison to zero, forcing them to be unrelated to one another. Restricting the relationship between objectification of others and social comparison to zero resulted in poorer model fit (RMR = .17, RMSEA = .14, GFI = .87, AGFI = .77). The initial five-factor model in which all constructs were allowed to correlate freely fit the data better than the modified model, χ^2 difference = 229.96 (1), $p < .001$. Poorer model fit was also observed when the relationship between self-objectification and objectification of others was set to zero (RMR = .16, RMSEA = .14, GFI = .87, AGFI = .79), χ^2 difference = 169.011 (1), $p < .001$. Lastly, poorer model fit was observed when the relationship between self-objectification and social comparison was set to zero (RMR = .16, RMSEA = .14, GFI = .86, AGFI = .77), χ^2 difference = 185.67 (1), $p < .001$.

Following evaluation of the measurement model, the theoretical model that was designed based on the existing literature was tested. Although researchers generally argue that body shame and body dissatisfaction are two distinct constructs (e.g., Miner-Rubino, et al., 2002), body shame and body dissatisfaction were combined into a single latent construct of poor body image based on the evaluation of the measurement model. This model, Model 1(Figure 5), contained an unanalyzed correlation between self-objectification and objectification of others but no relationship between either form of objectification and social comparison. Model 2(Figure 6) included the addition of an unanalyzed correlation between objectification of others and social comparison. This model fit the data significantly better than the original model, χ^2 difference = 98.65 (1), $p < .001$. Model 3(Figure 7) included the addition of another unanalyzed correlation between self-objectification and social comparison and represented the final hypothesized

theoretical model for the study. The hypothesized theoretical model fit the data significantly better than Model 2, χ^2 difference = 187.71 (1), $p < .001$. Goodness-of-fit indices for each of the three models appear in Table 7.

CHAPTER FOUR: DISCUSSION

The results of this study provide additional support for a large body of research regarding factors which contribute to the development and maintenance of body dissatisfaction and disordered eating behavior. Findings from this study support objectification theory (Fredrickson & Roberts, 1997), which argues that body shame and dissatisfaction as well as disordered eating behavior are related to the extent to which a woman internalizes a view of herself as others view her. The results also provide support for social comparison theory (Festinger, 1954), which holds that women who more frequently compare their appearance to that of other women feel worse about their bodies and report more disordered eating behavior. Although objectification and social comparison have long been recognized as significant contributors to body dissatisfaction and disordered eating, this study was the first to examine the potential relationship between objectification and social comparison processes, with the central aim of demonstrating that objectification of both the self and others and social comparison are likely two parts of the same process.

The correlations among measures of self-objectification, objectification of others, and social comparison provide the first evidence of a potential relationship between objectification and social comparison. Consistent with the findings of Strelan and Hargreaves (2005), self-objectification and objectification of others were positively correlated with one another. It is important to note that Strelan and Hargreaves used the Self-Objectification Questionnaire and a modified Self-Objectification Questionnaire to establish this relationship. This study extends those findings by demonstrating a similar correlation between alternate measures of the same constructs. In addition, both measures of social comparison were correlated with measures of self-objectification and objectification of others. For two constructs which are thought to be

entirely separate, the correlations between objectification and social comparison obtained from this data set are relatively high, ranging from .42 to .63. Strelan and Hargreaves referred to the relationship between self-objectification and objectification of others as a 'circle of objectification' and viewed this circle as a significant contributor to body dissatisfaction. The findings of this study suggest that the process of making an appearance comparison may have a place in that circle.

Results of multiple regression analyses also point to a relationship between objectification and social comparison. When examining the relative contribution of objectification and social comparison to body shame, body dissatisfaction, and eating disorder symptomatology, self-objectification, objectification of others, and social comparison together accounted for more variance in body image and eating behavior than either self-objectification or social comparison alone. From a statistical perspective, this finding is not surprising given that increasing the number of predictors increases the amount of variance accounted for. However, from a theoretical perspective, the statistically significant increase in prediction afforded by including self-objectification, objectification of others, and social comparison together as predictors relative to examining either self-objectification or social comparison alone supports the argument that by looking solely at self-objectification or social comparison, an important part of the process related to the development and maintenance of body image disturbance and disordered eating.

The results of the mediation analyses both replicate previous findings and provide richer information about the nature of the relationship between objectification and social comparison. Consistent with existing literature, body shame and body dissatisfaction partially mediated the relationship between self-objectification and eating disorder symptomatology. Unique to this

study, social comparison was investigated as a possible mediator of the relationships between self-objectification and body shame and body dissatisfaction. Social comparison partially mediated these relationships, suggesting that the act of self-objectification does not fully explain the resulting negative feelings about one's body. Also consistent with previous research, body dissatisfaction partially mediated the relationship between social comparison and disordered eating behavior. Body shame partially mediated this relationship as well. Although the relationship between social comparison and body shame has received very little attention in the literature, this finding is not surprising given that body shame is thought to have an evaluative component that arises when a woman realizes she does not meet societal standards of beauty. Based on this study, social comparison appears to contribute to that realization and the resulting body shame.

The Theoretical Model

Evaluation of the theoretical model occurred in two phases, both of which provide important information about the constructs examined in this study. Examination of the initial measurement model led to the creation of a single construct of poor body image given the high covariance between body shame and body dissatisfaction. In addition, multiple competing CFA models which constrained the relationships among self-objectification, objectification of others, and social comparison to zero were tested and the model allowing those constructs to correlate freely resulted in the best overall model fit. When self-objectification, objectification of others, and social comparison were allowed to correlate freely with one another, the path coefficients were all statistically significant and were quite large, ranging from .68 to .80 in the case of objectification of others and social comparison. These findings lend support to the argument that

self-objectification and social comparison are not as completely distinct as the existing literature would suggest.

The overall model of the relationships between self-objectification, objectification of others, social comparison, poor body image, and eating disorder symptomatology adequately fit the data. Given that body shame and body dissatisfaction were combined into a single construct, the competing models tested differed from the model suggested by the existing literature only in the addition of unanalyzed correlations among self-objectification, objectification of others, and social comparison. The first model tested forced objectification and social comparison to be uncorrelated; however, the addition of each unanalyzed correlation resulted in a significant improvement in model fit. The final, best-fitting model allowed for correlations between self-objectification and objectification of others, self-objectification and social comparison, and objectification of others and social comparison. If self-objectification and social comparison functioned independently, the improvements in model fit would not have been observed.

The results of this study point toward the development of more integrated view of objectification and social comparison processes. Borrowing from objectification theory, most women in Westernized cultures are socialized to think of their bodies as others do, both because of the media and because women around them are behaving similarly (e.g., placing significant emphasis on particular body parts in discussion, selecting clothing based on what others may think). Borrowing from social comparison theory, women have a natural tendency to understand how they "measure up" relative to others with regard to appearance and many other attributes. It is these two tendencies together, along with objectification of others, which likely form a self-perpetuating cycle which in turn shapes body image and eating behavior. The process of self-objectification likely prompts a woman to wonder how her body or appearance compares to

others. In order to draw a conclusion about how she "measures up," that woman needs to seek out a comparison target, compare her own self-objectified impression of her appearance with the information she gathers by objectifying her comparison target, and then determine whether she is thinner, heavier, more attractive, or less attractive than her comparison target. It is probable that the comparison process (and its resulting emotional and behavioral consequences) fuels additional objectification of both the self and others as a woman looks to gain additional evidence about her appearance. Thus, the relationships among self-objectification, objectification of others, and social comparison are likely all bi-directional.

Clinical Implications

For the average woman, the cycle of objectification and social comparison likely result in mild body dissatisfaction, and potentially, occasional dieting behavior. For women who place significant emphasis on weight and shape in determining their self-worth, however, this cycle is probably particularly vicious. Fairburn's (2008) transdiagnostic cognitive behavioral model identifies the over-evaluation of the importance of weight and shape and their control as the core psychopathology in eating disorders. Several forces likely maintain this core psychopathology (e.g., engaging in weight control behaviors, feedback from others), including the cycle of repeated objectification of the self and others and social comparison. Women who place significant emphasis on appearance in evaluating themselves also place emphasis on appearance in their evaluations of others and believe that other women do the same (Beebe, et al., 1996). By definition, this includes women with eating disorders. Findings from a study by Calogero, Davis, and Thompson (2005) also demonstrated with a women diagnosed with eating disorders reported significantly higher levels of self-objectification than women from undergraduate samples.

The process of engaging in objectification of the self and others and making subsequent appearance comparisons probably operates similarly in women with and without eating disorders, or more generally, subclinical patterns of disordered eating. However, the process likely occurs more frequently given the sensitivity of women who place emphasis on their own appearance to the appearance of others and their own relative standing. In addition, the comparison process could easily serve to maintain both disordered eating behavior and the core psychopathology of over-valuation of weight and shape. Although objectification and social comparison have primarily been implicated in the development of eating disorders, they could also contribute to the maintenance of eating disorders in one of two ways. First, a woman may conclude, based on an appearance comparison, that she is not thin enough, and engage in caloric restriction or compensatory behaviors in order to control her weight. Alternatively, the negative emotions resulting from an appearance comparison could also lead to a binge eating episode and subsequent compensatory behavior. Second, and less likely to a occur, a woman could conclude that she is thinner than her comparison target and determine that her eating disorder is a successful way to maintain her weight. Regardless of the conclusion drawn, the comparison itself is likely to lead to additional eating disordered behavior, which in turn reinforces the core psychopathology of the disorder.

Although the psychoeducational aspects of cognitive behavior therapy for eating disorders addresses objectification and social comparison, it is important to consider each client and the potential role of objectification and comparison processes in the maintenance of her eating disorder and accompanying body image concerns. As previously discussed, a cultural shift in the way women are portrayed in the media and decrease in the emphasis placed on appearance would require significant changes; if those changes occur at all, they are likely decades away.

Even though people have a natural tendency to engage in a certain amount of objectification and comparison, it is possible instill in patients a sense of control over what happens as a result of the comparison process. A mindfulness-based approach may be particularly useful in teaching patients to recognize the comparison process and its effects while minimizing some of the negative behavioral and emotional effects. Stewart (2004) described several possible applications of mindfulness techniques for body image. A mindfulness-based approach would encourage patients to maintain an objective awareness of their thoughts and feelings as well as their environment and would also encourage them to view negative body-image-related thoughts as ideas rather than as facts. In addition, mindfulness techniques help patients to recognize that a given thought (e.g., feeling as though one is not thin enough) does not have to automatically lead to a behavior (e.g., skipping lunch).

Implications for Theory and Measurement

Perhaps one of the most important contributions of this project is the extent to which it highlights some of the limitations related to our ability to assess factors thought to contribute to the development of problems related to body image and eating behavior as well as our ability to assess different aspects of body image. Notably, although most of the existing knowledge about objectification theory is based on studies that used the Self-Objectification Questionnaire (SOQ; Noll & Fredrickson, 1998), the measure was discarded from the current study due to a large amount of missing data. Other authors have reported similar problems with the measure (e.g., Grippo & Hill, 2008; Myers & Crowther, 2007). Although there are other issues related to the SOQ, including questions about whether the scale has adequate construct validity, it has been used widely for over a decade. Most studies examining self-objectification without the use of the SOQ have used the Body Surveillance subscale of the Objectified Body Consciousness Scale

(OBC; McKinley & Hyde, 1996). However, this scale contains an item related to social comparison, and as such, the issue of criterion contamination is a concern. In this study, the comparison item was removed for this reason.

An additional issue related to measurement arose in the process of conducting each of the mediation analyses. Although multiple measures of each construct were selected (e.g., the Body Comparison Scale and Physical Appearance Comparison Scale as measures of social comparison), there were instances where one of the measures of a construct was significant as a partial mediator of a relationship whereas the other measure was non-significant. While there were certainly differences among measures (e.g., some measures referring to specific body parts and other measures referring to more general appearance, some measures containing items more specific to eating disorders and others containing items that were less focused on specific pathology), no clear pattern emerged that could potentially explain the reason why one indicator of a construct was a significant mediator but the other was not.

Lastly, it is important to address the need to combine body dissatisfaction and body shame into the single latent construct of poor body image. The covariance between the two constructs was so high that examining the constructs separately in the context of structural equation modeling yielded a non-positive definite covariance matrix and an inadmissible solution. Although researchers have maintained that body dissatisfaction and body shame are distinct constructs, with body shame containing a moral or societal component and body dissatisfaction relating purely to a woman's feelings about her own body, it could be argued that it is impossible to separate body dissatisfaction from the cultural context in which it occurs. That is, when a woman feels dissatisfied with her body, it is precisely because she is unable to live up to societal standards of beauty. Although existing measures of body dissatisfaction do not assess

for body shame and existing measures of body shame do not specifically assess for body dissatisfaction, it is unlikely that a woman would experience one without the other.

Limitations

The primary limitations of this study relate to the complexity of assessing abstract constructs such as self-objectification and body shame. Any of the conclusions drawn from this study rely heavily on the reliability and validity of the scales selected, and several issues related to measurement were uncovered during data analysis. Perhaps the most significant limitation in that regard was the need to discard the SOQ and OOQ and split the OBC-Body Surveillance and Surveillance of Others scales into to manifest variables for the purposes of structural equation modeling. In addition, the nature of this study is such that no conclusions about causality or the direction of specific relationships can be made. Although the directions of some relationships were specified, it is likely that the true relationships among all of the constructs examined in this study are more dynamic. For example, although social comparison and objectification are generally thought of as contributors to the development of eating disorders, it is also possible for eating disordered thoughts and behavior to fuel additional comparison and objectification.

It is also important to consider that the predominately Caucasian undergraduate sample used in this study is not representative of the general population. This sample is also not representative of a clinical sample of individuals with eating disorders. As such, generalizability of these findings is somewhat limited.

Future Directions

With a variety of different theoretical frameworks (e.g., objectification theory, social comparison theory, sociocultural theories which incorporate media influence) and a general

understanding that body image and eating disorders are multidimensional and impacted by multiple factors, additional research which integrates existing theories is particularly important. Studies which explore some of these potential interactions aid researchers and clinicians in understanding how causal and maintaining factors may work together. Although correlational research is often the first step in investigating new relationships, experimental or longitudinal research may she additional light on the complex nature of the relationship between objectification and social comparison and their interactions with body image and eating behavior.

In order to carry out this research, it is important to refine our existing measurement tools and/or develop new measures. Perhaps the area of greatest need at this point is time lies in the measurement of self-objectification, as each of the most widely used existing measures also has significant limitations. It is also important to consider construct validation as an ongoing process and to understand what observed relationships among variables mean. A relatively high correlation or covariance between body shame and body dissatisfaction may exist because the constructs are valid, or it may also exist because the two constructs are too similar. It would be worthwhile for additional research related to the assessment of body image to focus on greater parsimony.

Lastly, although this investigation and many others geared toward self-objectification and appearance-related social comparison focus largely on the negative effects of such processes, additional research should focus on factors related to resilience and adaptation. If we are able to understand why some women are remain relatively unaffected by objectification and comparison, we may be able to develop more comprehensive methods for the prevention and treatment of body image disturbance and eating disorders.

APPENDIX A: FIGURES AND TABLES

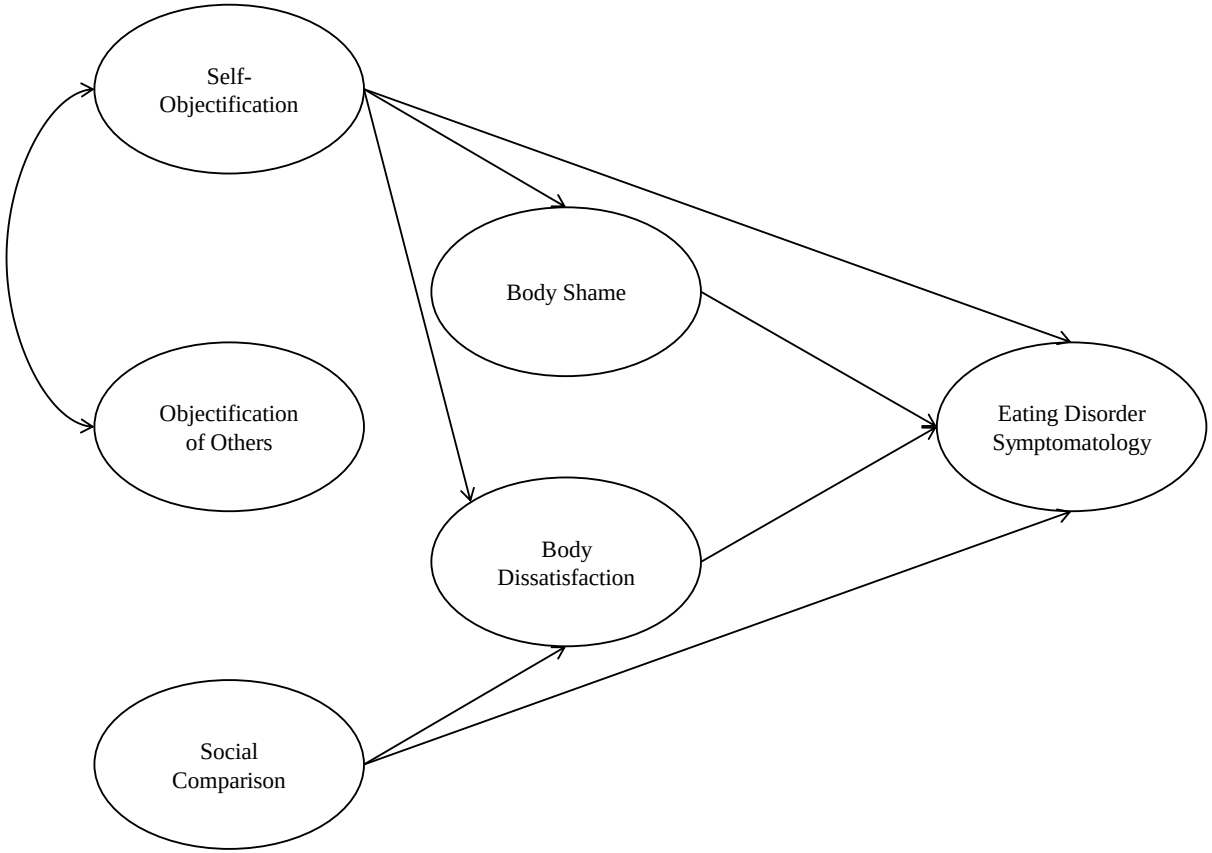

Figure 1. Model of Relationships Among Objectification, Social Comparison, Body Image, and Eating Disorder Symptomatology Based on Existing Literature

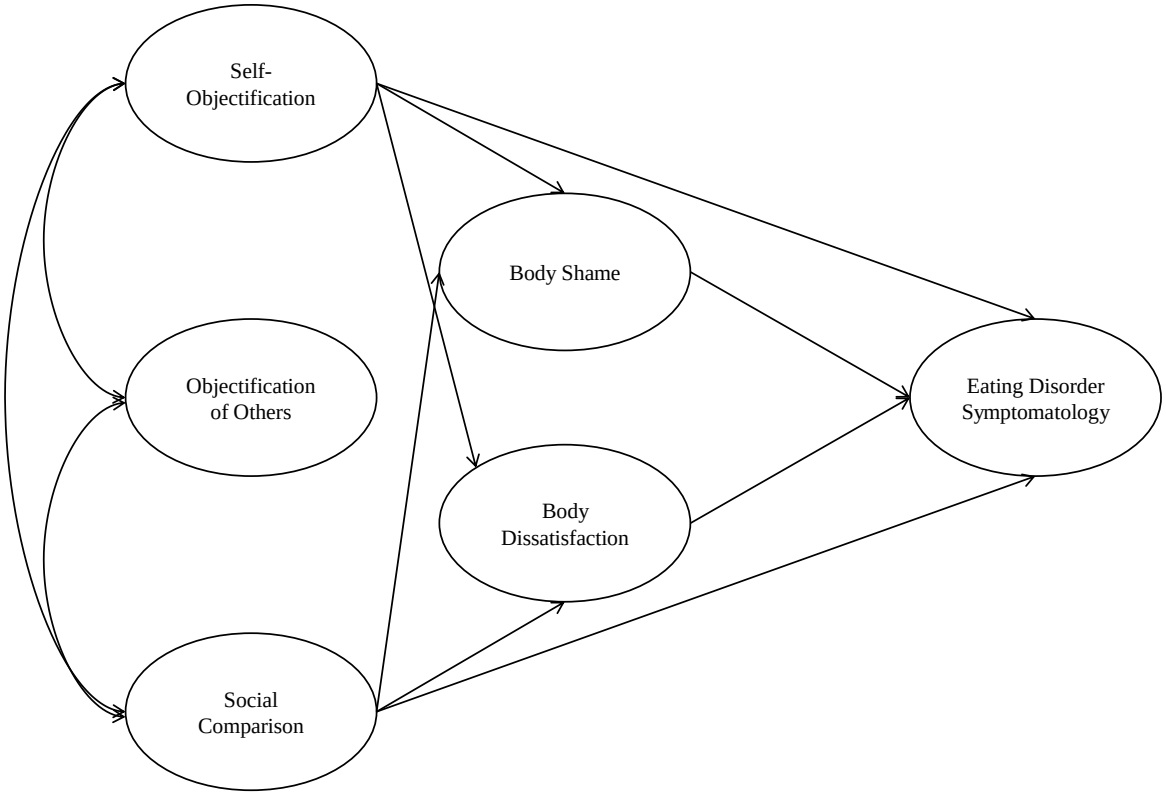

Figure 2. New Theoretical Model Integrating Objectification and Social Comparison

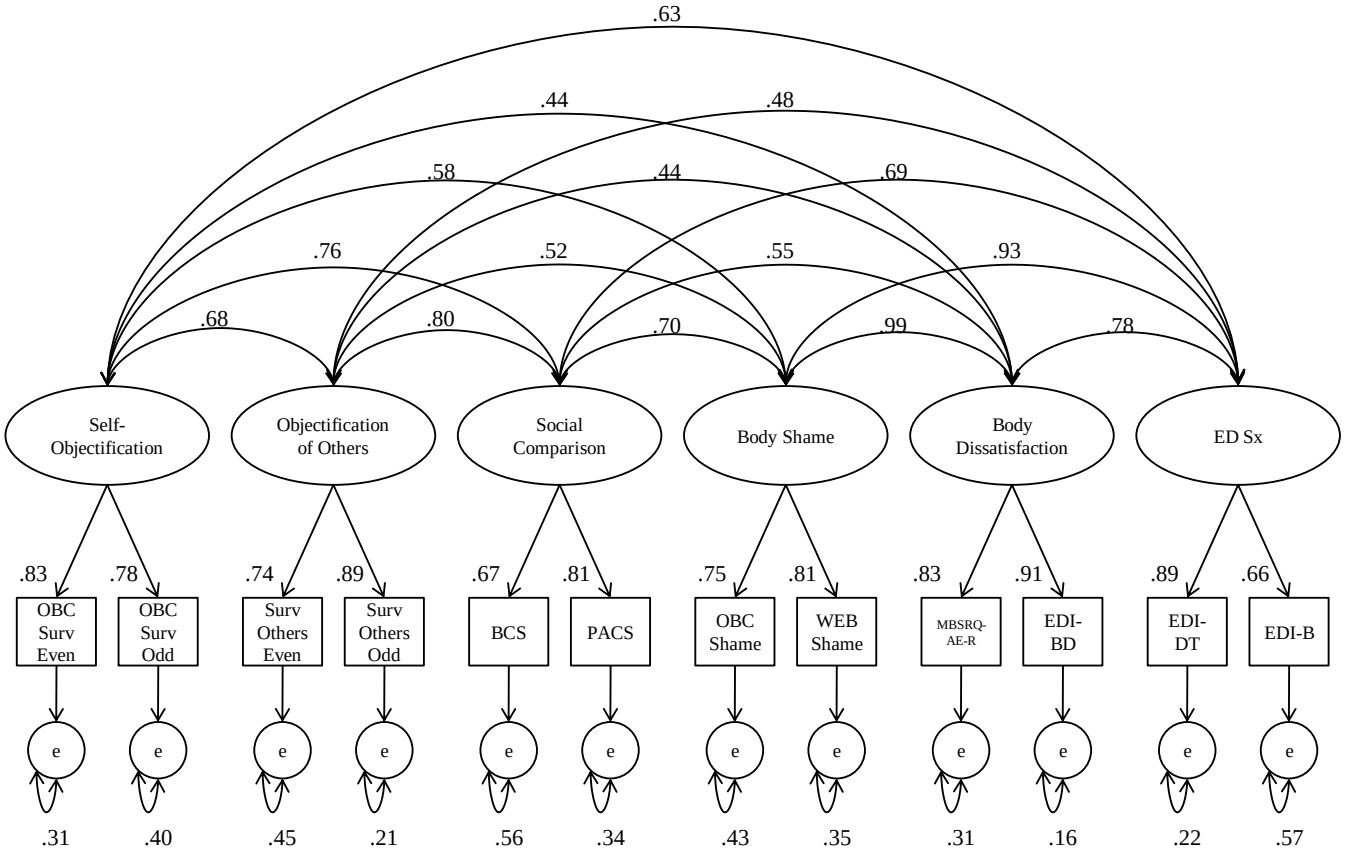

Figure 3. Initial Six-Factor Measurement Model

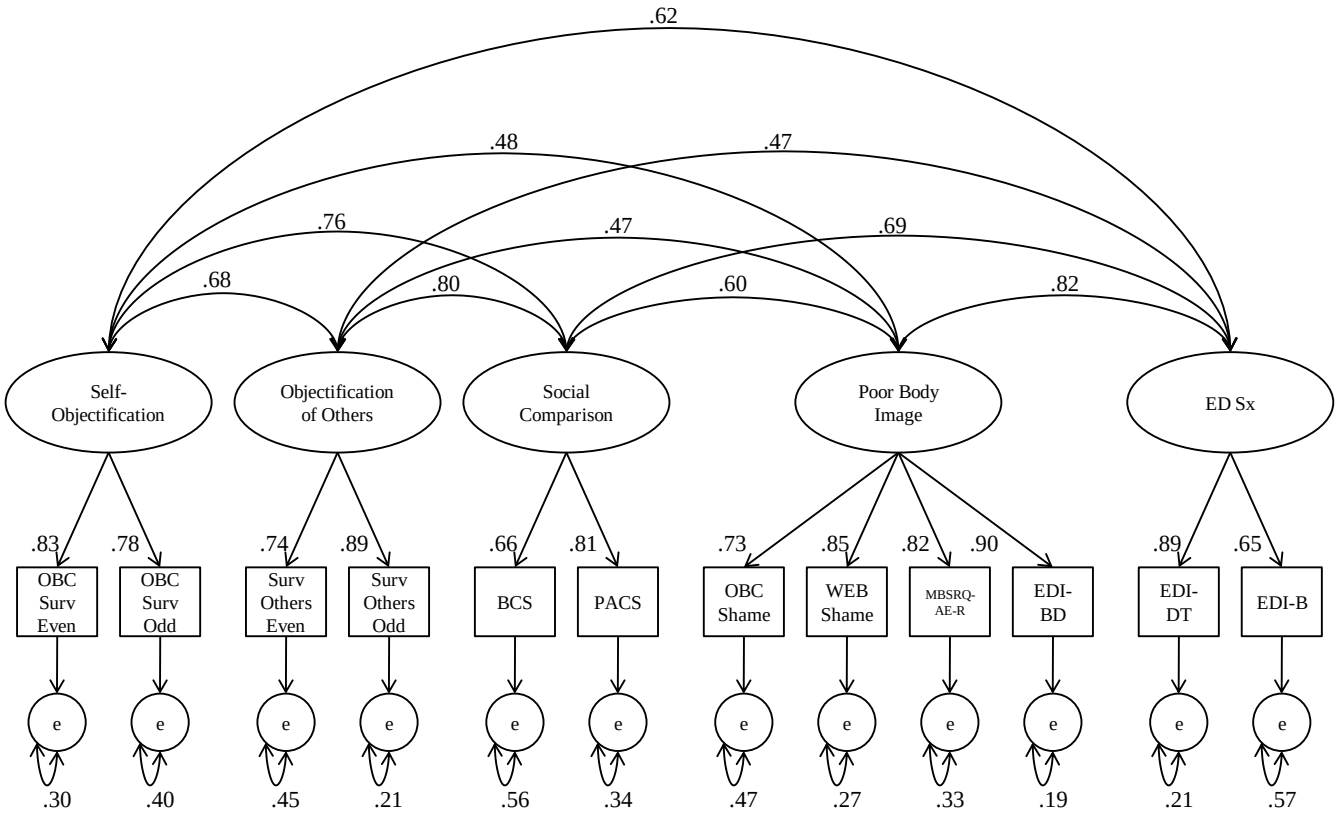

Figure 4. Five-Factor Measurement Model

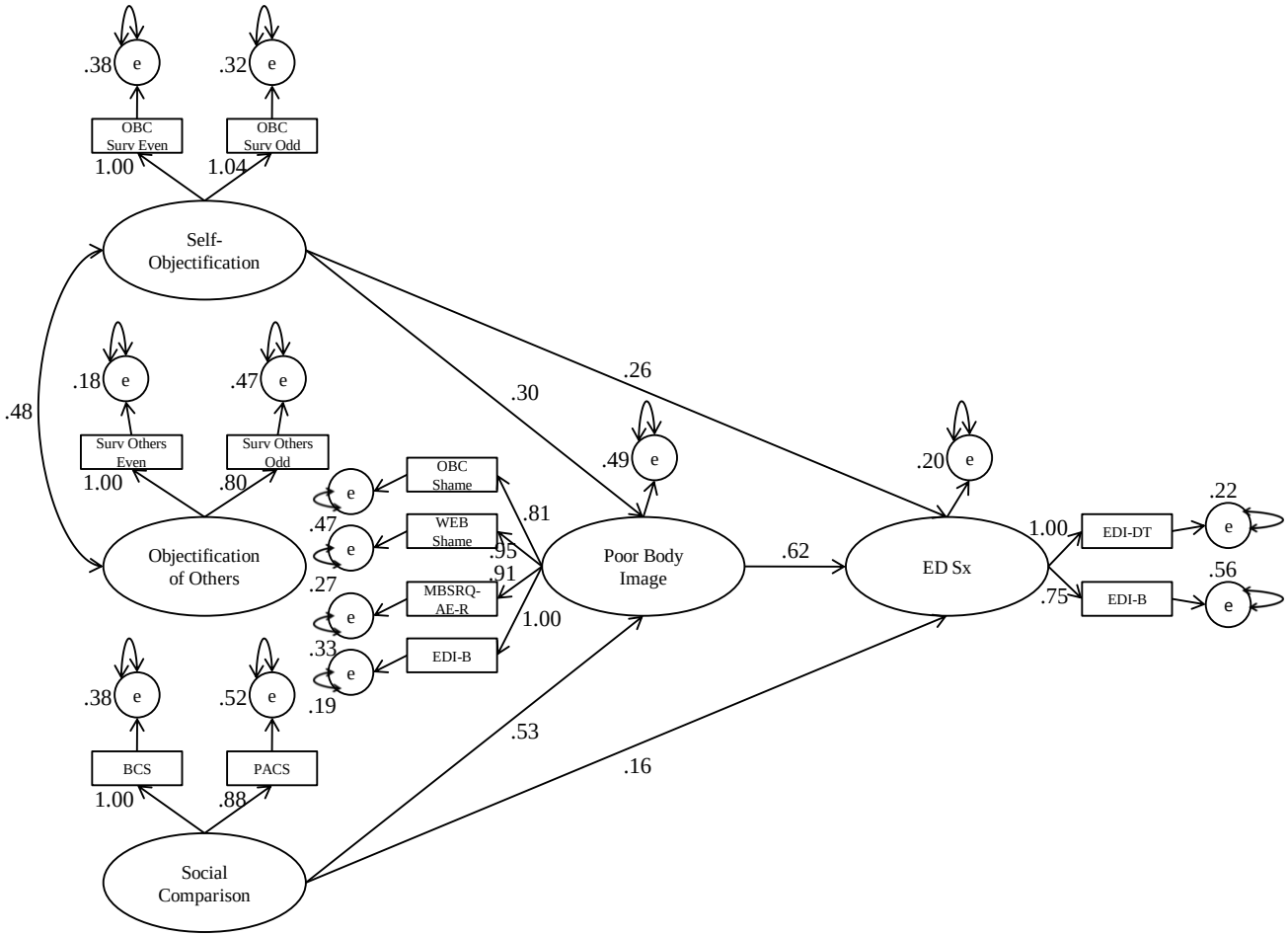

Figure 5. Model 1: Relationships Based on Existing Literature

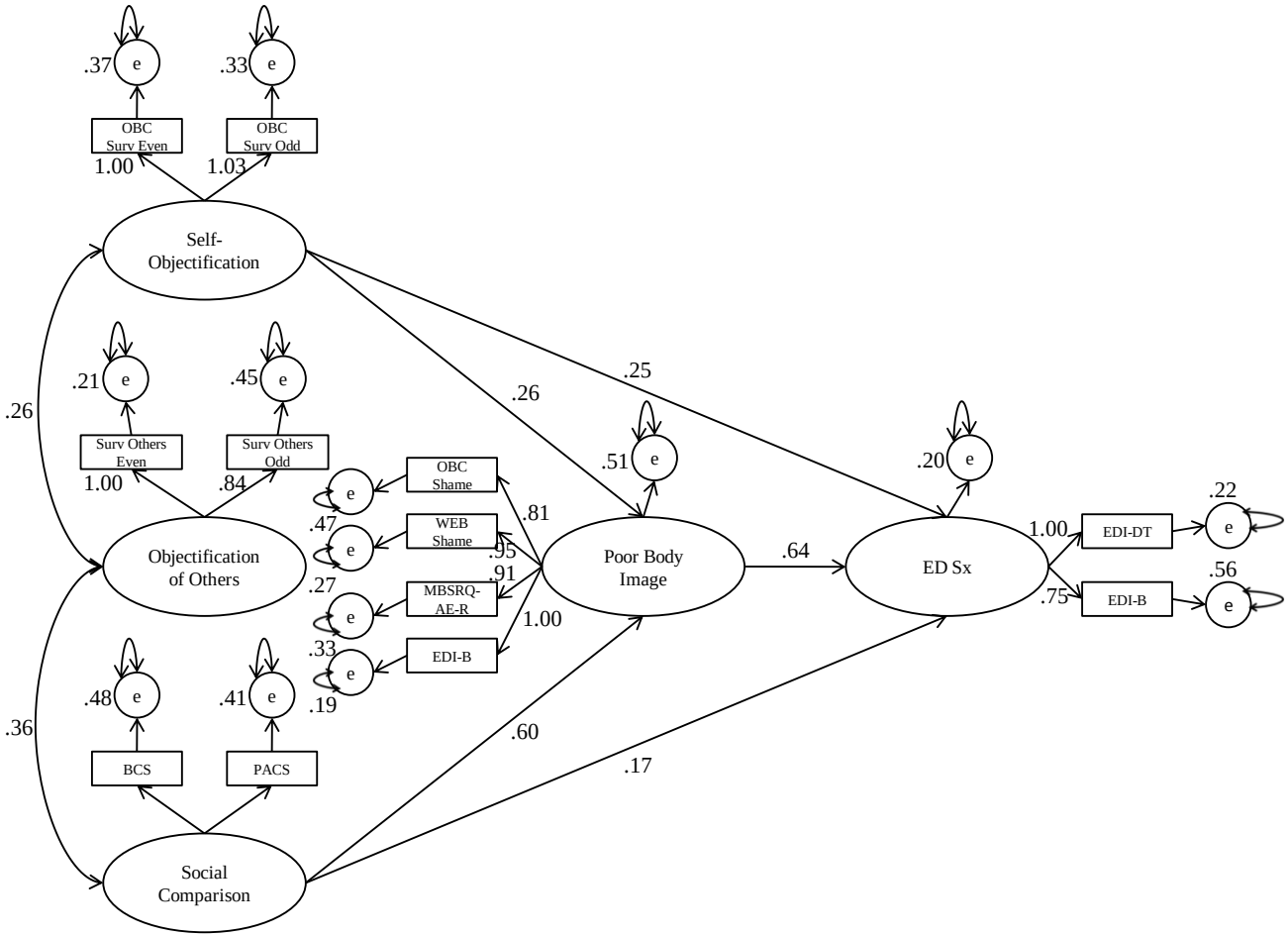

Figure 6. Model 2: Intermediate Model Allowing for Correlation Between Objectification of Others and Social Comparsion

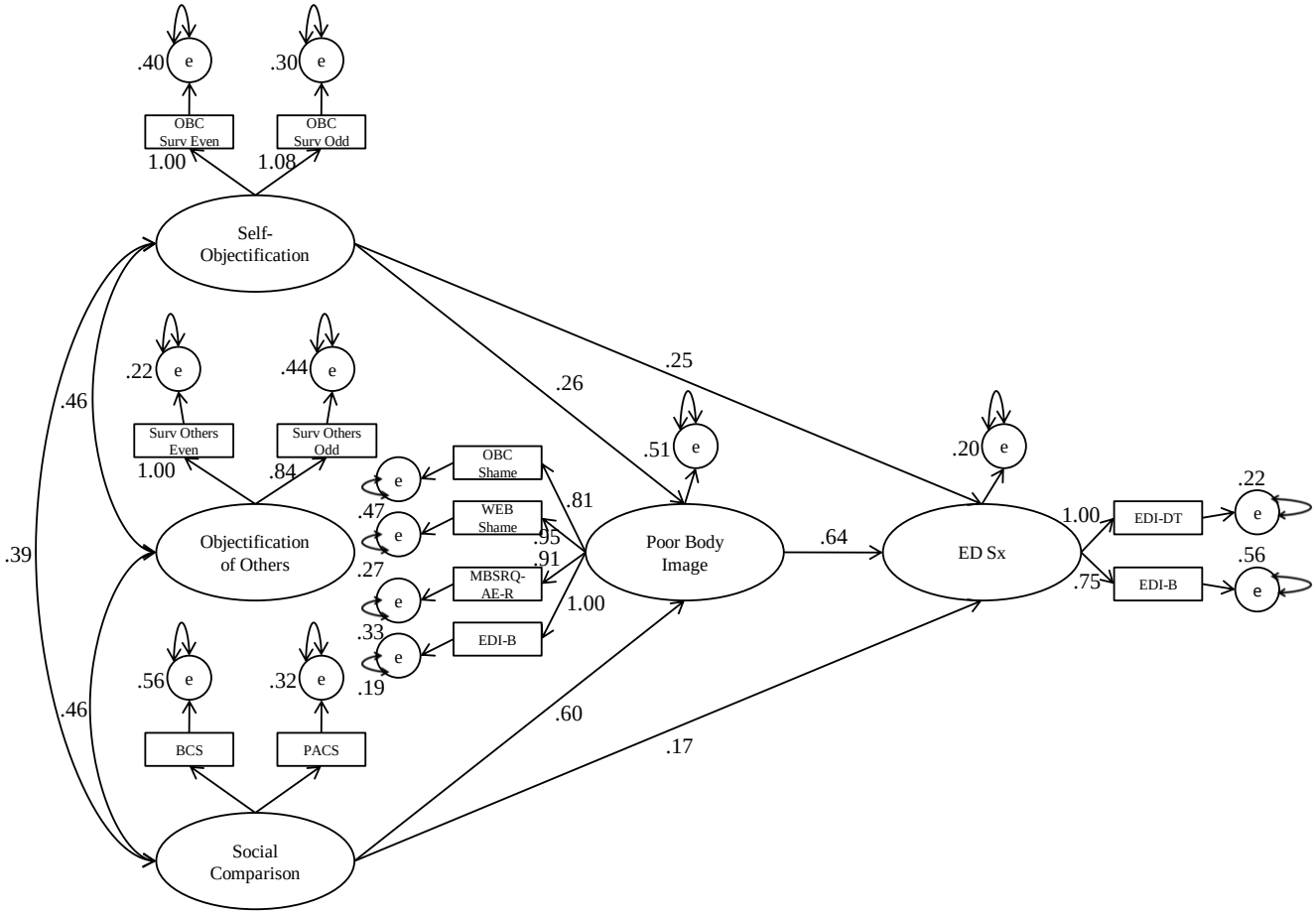

Figure 7. Model 3: New Theoretical Model Integrating Objectification and Social Comparison as Contributors to Body Image and Eating Behavior

Table 1. Means, Standard Deviations, and Correlations Among Study Variables

	M	*SD*	SOQ	OBC-Surv	OOQ	Surv-Other	BCS	PACS	OBC-Shame	WBS	MBSRQ	EDI-BD	EDI-DT	EDI-B
SOQ	2.57	12.39												
OBC-Surv	5.05	.95	.47											
OOQ	7.49	13.11	.62	.48										
Surv-Others	4.93	1.04	.34	.62	.38									
BCS	70.67	16.22	.25	.42	.23	.50								
PACS	15.74	3.56	.31	.58	.30	.63	.54							
OBC-Shame	3.49	1.21	.21	.45	.18	.36	.41	.46						
WBS	2.38	1.00	.17	.39	.17	.40	.43	.39	.61					
MBSRQ	3.42	.85	-.13	-.30	-.11	-.30	-.30	-.27	-.53	-.76				
EDI-BD	33.52	10.81	.18	.39	.18	.39	.44	.41	.63	.75	-.76			
EDI-DT	22.91	9.14	.27	.50	.21	.40	.43	.49	.72	.57	-.49	.67		
EDI-B	16.33	6.05	.14	.31	.13	.34	.33	.35	.54	.47	-.37	.51	.58	

Note: SOQ = Self-Objectification Questionnaire; OBC-Surv = Body Surveillance subscale of the Objectified Body Consciousness Scale; OOQ = Objectification of Others Questionnaire; Surv-Others = Surveillance of Others Scale; BCS = Body Comparison Scale; PACS = Physical Appearance Comparison Scale; OBC-Shame = Body Shame subscale of the Objectified Body Consciousness Scale; Shame subscale of the Weight- and Body-Related Shame and Guilt Scale; MBSRQ = Appearance Evaluation subscale of the Multidimensional Body-Self Relations Questionnaire; EDI-BD = Body Dissatisfaction subscale of the Eating Disorders Inventory-3 (EDI-3); EDI-DT = Drive for Thinness subscale of the EDI-3; EDI = B = Bulimia subscale of the EDI-3. Correlations not involving the SOQ or OOQ are drawn from the final sample of n = 473. Those involving the SOQ or OOQ were obtained from smaller sample sizes due to missing values. All correlations are significant at the $p < .01$ level, except for the correlation between OOQ and MBSRQ ($p = .025$).

Table 2. Predictors of Body Image and Eating Behavior: Self-Objectification Compared to Objectification and Social Comparison

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
OBC-Shame						
Model 1 df = 1,471	.20	114.83*				
OBC-Surveillance			.55	.05	.44*	10.72
Model 2 df= 3, 468	.09	50.09*				
OBC-Surveillance			.31	.06	.25*	5.07
Surveillance of Others			-.03	.06	-.03	-.51
BCS			.02	.00	.22*	4.52
PACS			.07	.02	.21*	3.86
WEB-Shame						
Model 1	.14	78.05*				
OBC-Surveillance			.38	.04	.38*	8.84
Model 2	.11	23.98*				
OBC-Surveillance			.16	.05	.15*	3.14
Surveillance of Others			.12	.05	.13	2.48
BCS			.02	.00	.27*	5.53
PACS			.02	.02	.07	1.29
MBSRQ-AE						
Model 1	.09	45.36*				
OBC-Surveillance			-.26	.04	-.30*	-6.74
Model 2	.05	8.45*				
OBC-Surveillance			-.14	.05	-.16*	-2.91
Surveillance of Others			-.09	.05	-.11	-1.96
BCS			-.01	.00	-.17*	-3.25
PACS			-.00	.02	-.02	-.27
EDI-BD						
Model 1	.14	76.57*				
OBC-Surveillance			4.16	.48	.37*	8.75
Model 2	.12	25.93*				
OBC-Surveillance			1.63	.56	.15*	2.89
Surveillance of Others			1.02	.53	.10	1.92
BCS			.18	.03	.28*	5.67
PACS			.35	.17	.12	2.06
EDI-DT						
Model 1	.25	160.13*				
OBC-Surveillance			4.73	.37	.50*	12.654
Model 2	.09	20.17*				
OBC-Surveillance			2.97	.32	.32*	6.58
Surveillance of Others			-.10	-.,1	-.01	-.23
BCS			.11	.20	.20*	4.31
PACS			.53	.21	.21*	3.87

	ΔR^2	ΔR^2(F)	B	SE B	β	*T*
EDI-B						
Model 1	.10	50.57*				
OBC-Surveillance			1.94	.27	.31*	7.11
Model 2	.07	13.67*				
OBC-Surveillance			.72	.34	.12	2.15
Surveillance of Others			.56	.32	.10	1.78
BCS			.06	.02	.16*	3.10
PACS			.24	.10	.14	2.35

Note: A Bonferroni correction was applied given the number of statistical tests performed. *$p <$ .008

Table 3. Predictors of Body Image and Eating Behavior: Social Comparison Compared to Objectification and Social Comparison

	ΔR^2	ΔR^2(F)	B	SE B	β	*T*
OBC-Shame						
Model 1 (2, 470)	.25	78.00*				
BCS			.02	.00	.24*	5.02
PACS			.11	.02	.33*	6.90
Model 2 (2, 268)	.04	13.33*				
BCS			.02	.00	.22*	4.52
PACS			.07	.02	.21*	3.86
OBC-Surveillance			.31	.06	.25*	5.07
Surveillance of Others			-.03	.06	-.03	-.51
WEB-Shame						
Model 1	.22	66.66*				
BCS			.02	.00	.32*	6.53
PACS			.06	.01	.22*	4.48
Model 2	.04	11.16*				
BCS			.02	.00	.27*	5.53
PACS			.02	.02	.07	1.29
OBC-Surveillance			.16	.05	.16*	3.14
Surveillance of Others			.12	.05	.13	2.48
MBSRQ-AE						
Model 1	.10	27.07*				
BCS			-.01	.00	-.21*	-4.11
PACS			-.04	.01	-.15*	-2.91
Model 2	.03	8.50*				
BCS			-.01	.00	-.17*	-3.25
PACS			-.00	.02	-.02	-.27
OBC-Surveillance			-.14	.05	-.16*	-2.91
Surveillance of Others			-.09	.05	-.11	-1.96
EDI-BD						
Model 1	.24	72.72*				
BCS			.21	.03	.31*	6.56
PACS			.72	.15	.24*	4.97
Model 2	.03	8.29*				
BCS			.18	.03	.28*	5.67
PACS			.35	.17	.12	2.06
OBC-Surveillance			1.63	.56	.15*	2.89
Surveillance of Others			1.02	.53	.10	1.92

	ΔR^2	ΔR^2(F)	B	SE B	β	*T*
EDI-DT						
Model 1	.27	88.55*				
BCS			.13	.03	.23*	4.96
PACS			.92	.12	.36*	7.70
Model 2	.07	23.19*				
BCS			.11	.03	.20*	4.31
PACS			.53	.14	.21*	3.87
OBC-Surveillance			2.97	.45	.32*	6.58
Surveillance of Others			-.10	.43	-.01	-.23
EDI-B						
Model 1	.15	41.60*				
BCS			.07	.02	.19*	3.85
PACS			.42	.09	.25*	4.88
Model 2	.02	5.45*				
BCS			.06	.02	.16*	3.10
PACS			.24	.10	.14	2.35
OBC-Surveillance			.72	.34	.12	2.15
Surveillance of Others			.56	.10	.10	1.78

Note: A Bonferroni correction was applied given the number of statistical tests performed. *$p <$ .008

Table 4. Social Comparison as a Mediator of the Relationships Between Self-Objectification and Body Shame, Body Dissatisfaction, and Eating Diorder Symptomatology.

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
Body Shame						
DV: OBC-Shame						
Model 1 (1, 471)	.20	114.81*				
OBC-Surv			.55	.05	.44*	10.72
Model 2 (2, 469)	.09	30.78*				
OBC-Surv			.31	.06	.25*	5.14
BCS			.02	.00	.21*	4.52
PACS			.07	.02	.20*	3.91
DV: WEB-Shame						
Model 1	.14	78.05*				
OBC-Surv			.38	.04	.38*	8.84
Model 2	.11	32.55*				
OBC-Surv			.20	.05	.20*	4.00
BCS			.02	.00	.29*	6.12
PACS			.03	.02	.12	2.18
Body Dissatisfaction						
DV: MBSRQ-AE-BD						
Model 1	.09	45.36*				
OBC-Surv			.26	.04	.30*	6.74
Model 2	.04	10.70*				
OBC-Surv			.17	.05	.19*	3.62
BCS			.01	.00	.19*	3.71
PACS			.01	.01	.06	.94
DV: EDI-BD						
Model 1	.14	76.57*				
OBC-Surv			4.16	.48	.37*	8.75
Model 2	.12	36.86*				
OBC-Surv			1.94	.54	.18*	3.58
BCS			.20	.03	.29*	6.17
PACS			.46	.16	.15*	2.81
Eating Disorder Symptomatology						
DV: EDI-DT						
Model 1	.25	160.13*				
OBC-Surv			4.73	.37*	.50	12.65
Model 2	.09	30.30*				
OBC-Surv			2.94	.43*	.31	6.81
BCS			.11	.03*	.20	4.36
PACS			.52	.13*	.20	4.01

	ΔR^2	ΔR^2(F)	B	SE B	β	*T*
DV: EDI-B						
Model 1	.10	50.57*				
OBC-Surv			1.94	.27*	.31	7.11
Model 2	.07	18.84*				
OBC-Surv			.89	.32*	.14	2.78
BCS			.07	.02*	.18	3.52
PACS			.30	.10*	.17	3.07

Note: A Bonferroni correction was applied given the number of statistical tests performed. *$p <$ .008

Table 5. Body Shame and Body Dissatisfaction as Mediators of the Relationship Between Self-Objectification and Eating Disorder Symptomatology

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
Mediator: Body Shame						
EDI-DT						
Model 1 (1, 471)	.25	160.13*				
OBC-Surv			4.73	.37	.50*	12.65
Model 2 (2, 469)	.33	183.28*				
OBC-Surv			1.93	.32	.21*	6.10
OBC-Shame			3.92	.30	.52*	13.20
WEB-Shame			1.68	.35	.18*	4.76
EDI-B						
Model 1	.10	50.57*				
OBC-Surv			1.94	.27	.31*	7.11
Model 2	.23	80.48*				
OBC-Surv			.38	.27	.06	1.41
OBC-Shame			1.96	.25	.39*	7.86
WEB-Shame			1.26	.30	.21*	4.28
Mediator: Body Dissatisfaction						
EDI-DT						
Model 1	.25	160.13*				
OBC-Surv			4.73	.37	.50*	12.65
Model 2	.27	133.77*				
OBC-Surv			2.77	.32	.30*	8.60
MBSRQ-AE-BD			-.60	.53	-.06	-1.13
EDI-BD			.51	.04	.60*	11.92
EDI-B						
Model 1	.10	50.57*				
OBC-Surv			1.94	.27	.31*	7.11
Model 2	.18	56.78*				
OBC-Surv			.89	.26	.14*	3.36
MBSRQ-AE-BD			-.22	.43	-.03	-.50
EDI-BD			.27	.04	.48*	7.61
Mediator: Poor Body Image						
EDI-DT						
Model 1	.25	160.13*				
OBC-Surv			4.73	.37	.50*	12.65
Model 2	.38	118.83*				
OBC-Surv			1.77	.30	.19*	5.90
OBC-Shame			3.25	.29	.43*	11.09
WEB-Shame			.35	.46	.04	.76
MBSRQ-AE-BD			-1.26	.52	-.12	-2.44
EDI-BD			.33	.04	.39*	7.80

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
EDI-B						
Model 1	.10	50.57*				
OBC-Surv			1.94	.27	.31*	7.11
Model 2	.25	45.59*				
OBC-Surv			.30	.26	.05	1.12
OBC-Shame			1.68	.26	.34*	6.53
WEB-Shame			.86	.40	.14	2.16
MBSRQ-AE-BD			-.91	.45	-.13	-2.01
EDI-BD			.15	.04	.27*	4.04

Note: A Bonferroni correction was applied given the number of statistical tests performed. *$p <$ .008

Table 6. Body Shame and Body Dissatisfaction as Mediators of the Relationship Between Social Comparison and Eating Disorder Symptomatology

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
Mediator: Body Shame						
EDI-DT						
Model 1 (2, 470)	.27	88.55*				
BCS			.13	.03	.23*	4.96
PACS			.92	.12	.36*	7.70
Model 2 (2, 468)	.30	163.43*				
BCS			.03	.02	.05	1.37
PACS			.39	.10	.15*	3.99
OBC-Shame			3.95	.30	.52*	13.05
WEB-Shame			1.62	.36	.18*	4.45
EDI-B						
Model 1	.15	41.60*				
BCS			.07	.02	.19*	3.85
PACS			.42	.09	.25*	4.88
Model 2	.18	64.69*				
BCS			.02	.02	.05	.98
PACS			.14	.08	.08	1.78
OBC-Shame			1.86	.25	.37*	7.42
WEB-Shame			1.16	.30	.19*	3.84
Mediator: Body Dissatisfaction						
EDI-DT						
Model 1	.27	88.55*				
BCS			.13	.03	.23*	4.96
PACS			.92	.12	.36*	7.70
Model 2	.23	109.57*				
BCS			.03	.02	.06	1.44
PACS			.59	.10	.23*	5.75
MBSRQ-AE-BD			-.19	.54	-.02	-.35
EDI-BD			.48	.05	.57*	10.37
EDI-B						
Model 1	.15	41.60*				
BCS			.07	.02	.19*	3.85
PACS			.42	.09	.25*	4.88
Model 2	.13	43.35*				
BCS			.02	.02	.06	1.30
PACS			.25	.08	.15*	3.08
MBSRQ-AE-BD			-.04	.43	-.01	-.08
EDI-BD			.24	.04	.42*	6.42

	ΔR^2	ΔR^2(F)	B	SE B	β	*t*
Mediator: Poor Body Image						
EDI-DT						
Model 1	.27	88.55*				
BCS			.13	.03	.23*	4.96
PACS			.92	.12	.36*	7.70
Model 2	.34	104.36*				
BCS			.01	.02	.02	.45
PACS			.34	.09	.13*	3.64
OBC-Shame			3.37	.30	.45*	11.26
WEB-Shame			.35	.47	.04	.74
MBSRQ-AE-BD			-1.06	.54	-.10	-1.98
EDI-BD			.32	.04	.38*	7.22
EDI-B						
Model 1	.15	41.60*				
BCS			.07	.02	.19*	3.85
PACS			.42	.09	.25*	4.88
Model 2	.20	36.60*				
BCS			.01	.02	.02	.44
PACS			.12	.08	.07	1.47
OBC-Shame			1.63	.26	.33*	6.33
WEB-Shame			.80	.41	.13	1.97
MBSRQ-AE-BD			-.80	.46	-.11	-1.73
EDI-BD			.14	.04	.25*	3.71

Note: A Bonferroni correction was applied given the number of statistical tests performed. *$p <$ .008

Table 7. Assessment of Fit for Theoretical Model of Relationships Among Self-Objectification, Objectification of Others,and Social Comparison

	Model 1	Model 2	Model 3	Criterion
Absolute Fit				
ML chi-square	535.366	456.716	269.009	Smaller $\chi 2$ reflects better fit
Degrees of freedom	48	47	46	
p-level	.000	.000	.000	$p < .05$ reflects poor fit
Standardized Root Mean Square Residual	.193	.158	.053	< .05 reflects good fit
Squared error of approximation (RMSEA)	.150	.136	.101	< .10 reflects good fit
Joreskog GFI	.851	.865	.912	> .90 reflects good fit
Joreskog AGFI	.757	.776	.850	> .90 reflects good fit
Relative Fit				
Normed Fit Index (NFI)	.832	.862	.918	> .90 reflects good fit
Comparative Fit Index (CFI)	.843	.873	.931	> .90 reflects good fit
Independence Model chi-square	3297.756	3297.756	3297.756	
Independence Model df	66	66	66	
Parsimonious Fit				
Parsimonious Fit Index (PNFI)	.605	.521	.640	Higher PFI when testing multiple models
Akaike Information Criterion(AIC)	615.366	518.716	333.009	Smaller values reflect better fit
Nested Model Comparisons				
$\chi 2$ Difference Test between Model 1 & Model 2		78.650(1), $p < .001$		Significance test
$\chi 2$ Difference Test between Model 2 & Model 3			187.707(1), $p < .001$	
$\chi 2$ Difference Test between Independence model & Model 1	2762.390(18), $p < .001$			
$\chi 2$ Difference Test between Independence model & Model 2		2841.040(19), $p < .001$		
$\chi 2$ Difference Test between Independence model & Model 3			3028.747(20), $p < .001$	

APPENDIX B: INSTITUTIONAL REVIEW BOARD APPROVAL LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901, 407-882-2012 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Notice of Exempt Review Status

From: **UCF Institutional Review Board**
FWA00000351, Exp. 10/8/11, IRB00001138

To: **Danielle Lindner**

Date: **May 15, 2009**

IRB Number: **SBE-09-06271**

Study Title: **Women's Body Image and Eating Behavior**

Dear Researcher:

Your research protocol was reviewed by the IRB Chair on 5/15/2009. Per federal regulations, 45 CFR 46.101, your study has been determined to be **minimal risk for human subjects and exempt** from 45 CFR 46 federal regulations and further IRB review or renewal unless you later wish to add the use of identifiers or change the protocol procedures in a way that might increase risk to participants. Before making any changes to your study, call the IRB office to discuss the changes. **A change which incorporates the use of identifiers may mean the study is no longer exempt, thus requiring the submission of a new application to change the classification to expedited if the risk is still minimal.** Please submit the Termination/Final Report form when the study has been completed. All forms may be completed and submitted online at https://iris.research.ucf.edu.

The category for which exempt status has been determined for this protocol is as follows:

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey or interview procedures, or the observation of public behavior, so long as confidentiality is maintained.

(i) Information obtained is recorded in such a manner that the subject cannot be identified, directly or through identifiers linked to the subject, **and/or**

(ii) Subject's responses, if known outside the research would not reasonably place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability or reputation.

The IRB has approved a **waiver of documentation of consent** for all subjects. Participants do not have to sign a consent form, but the IRB requires that you give participants a copy of the IRB-approved consent form, letter, information sheet. For online surveys, please advise participants to print out the consent document for their files.

All data, which may include signed consent form documents, must be retained in a locked file cabinet for a minimum of three years (six if HIPAA applies) past the completion of this research. Any links to the identification of participants should be maintained on a password-protected computer if electronic information is used. Additional requirements may be imposed by your funding agency, your department, or other entities. Access to data is limited to authorized individuals listed as key study personnel.

On behalf of Tracy Dietz, Ph.D., UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 05/15/2009 12:45:30 PM EDT

IRB Coordinator

APPENDIX C: HUMAN SUBJECTS INFORMED CONSENT FORM

Dear Student:

You are invited to participate in a research study investigating the role of different sociocultural factors in women's perceptions of themselves and their bodies. The results of the study may help researchers and clinicians better understand how to address women's body image and eating concerns. This study will be conducted completely online. Please read this document and ask any questions you may have before agreeing to be in the study. If you choose to participate, please know that you may withdraw your consent for participation at any time without penalty. To participate, you must be a female over the age of 18.

The principal researcher for this study is Danielle Lindner, B.A. of the University of Central Florida, Department of Psychology. Danielle is a graduate student in the Clinical Psychology Doctoral Program and she will be under the direct supervision of Stacey Tantleff Dunn, Ph.D., a faculty member in the UCF Department of Psychology.

What you will be asked to do in the study: If you choose to participate, you will complete an online questionnaire. You will answer questions regarding your thoughts and feelings about your body and your eating behavior.

Time required: Participation will take approximately 45 minutes.

Location: You will participate exclusively online.

Audio or video taping: This study does not include any audio or video taping.

Voluntary participation: Participation in this study is completely voluntary. There is no penalty for not taking part, and you will not lose any benefits. You have the right to withdraw from the study at any time by simply not completing the online questionnaire. You will be told if any new information is learned which may affect your willingness to continue taking part in this study.

Risks & Confidentiality: There are no foreseeable risks involved in this study with the exception of the very low likelihood of psychological discomfort from disclosing personal information. To minimize the risk, you should not answer any questions that make you uncomfortable. You will not lose any benefits if you skip questions or tasks. This study is completely anonymous; your data will not be connected in any way to your identity. Any information that you provide will be held in strict confidence to the extent allowable by law, and utilized only for the purpose of this study. All results will only be reported in the form of group data. Only people directly involved in the study will have access to this information. Your participation is strictly voluntary, and you may discontinue participation at any time without

penalty. You have the opportunity to ask, and to have answered, any questions you may have about this research at any point during the study.

Benefits: There are no known immediate benefits associated with participation, although you may learn more about the research process (specifically web-based research) as a result of your participation. In addition, the information gained from this study may aid researchers and clinicians in developing more effective methods for treating and preventing body image disturbance and eating disorders.

Compensation: There is no direct compensation for taking part in this study. Students enrolled in psychology courses may receive extra credit for participation, but this benefit is at the discretion of your instructor. If you choose not to participate, you may notify your instructor and ask for an alternative assignment of equal effort for equal credit. There will be no penalty if you choose not to participate.

Anonymous research: This study is anonymous. That means that no one, not even members of the research team, will know that the information you gave came from you.

Study contact for questions about the study or to report a problem: If you have any questions about the current research, please contact Danielle Lindner, B.A., (dlindner@mail.ucf.edu) or Stacey Dunn, Ph.D. (sdunn@mail.ucf.edu; 407-823-3578).

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901.

By clicking yes below, you assert that you understand the research described above and voluntarily provide your consent to participate. If you do not wish to participate, please click no and exit the study website. Please be sure to print (Control->P) this form for your records.

___ Yes ___ No

APPENDIX D:DEMOGRAPHIC QUESTIONNAIRE

1. *Age: ____ years

2. Sexual Orientation
___ Heterosexual
___ Bisexual
___ Homosexual

3. Relationship Status
___ Single
___ Casually Dating
___ In a Committed Relationship
___ Married
___ Separated
___ Divorced
___ Widowed

4. Ethnic Background
___ African American
___ Asian/Pacific Islander
___ Biracial
___ Caucasian
___ Native American
___ Latino/Hispanic
___ Other, Please Specify: _____

5. Highest level of education completed:
___ GED
___ High school
___ Some college
___ College graduate
___ Some graduate education
___ Graduate degree

APPENDIX E: SELF-OBJECTIFICATION QUESTIONNAIRE

We are interested in how people think about their bodies. The questions below identify 10 different body attributes. We would like you to *rank order* these body attributes from that which has the *greatest* impact on your physical self-concept (rank this a "9"), to that which has the *least* impact on your physical self-concept (rank this a "0").

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

Please first consider all attributes simultaneously, and record your rank ordering by writing the ranks in the rightmost column.

IMPORTANT: Do Not Assign The Same Rank To More Than One Attribute!

9 = greatest impact
8 = next greatest impact
:
1 = next to least impact
0 = least impact

When considering your physical self-concept…

1. … what rank do you assign to *physical coordination?* _____
2. … what rank do you assign to *health?* _____
3. … what rank do you assign to *weight?* _____
4. … what rank do you assign to *strength?* _____
5. … what rank do you assign to *sex appeal?* _____
6. … what rank do you assign to *physical attractiveness?* _____
7. … what rank do you assign to *energy level (e.g., stamina)?* _____
8. … what rank do you assign to *firm/sculpted muscles?* _____
9. … what rank do you assign to *physical fitness level?* _____
10. …what rank do you assign to *measurements (e.g., chest, waist, hips)?* _____

APPENDIX F: BODY SURVEILLANCE SUBSCALE OF THE OBJECTIFIED BODY CONSCIOUSNESS SCALE

Please respond to the following statements:

Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree	Does Not Apply
1	2	3	4	5	6	7	Na

1. I rarely think about how I look.	1	2	3	4	5	6	7	na
2. I think it is more important that my clothes are comfortable than whether they look good on me.	1	2	3	4	5	6	7	na
3. I think more about how my body feels than how my body looks.	1	2	3	4	5	6	7	na
4. I rarely compare how I look with how other people look.	1	2	3	4	5	6	7	na
5. During the day, I think about how I look many times.	1	2	3	4	5	6	7	na
6. I often worry about whether the clothes I am wearing make me look good.	1	2	3	4	5	6	7	na
7. I rarely worry about how I look to other people.	1	2	3	4	5	6	7	na
8. I am more concerned with what my body can do than how it looks.	1	2	3	4	5	6	7	na

APPENDIX G: MODIFIED SELF-OBJECTIFICATION QUESTIONNAIRE

We are interested in how people think about other women's bodies. The questions below identify 10 different body attributes. We would like you to *rank order* these body attributes from that which has the *greatest* impact on your physical self-concept (rank this a "9"), to that which has the *least* impact on your physical self-concept (rank this a "0").

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

Please first consider all attributes simultaneously, and record your rank ordering by writing the ranks in the rightmost column.

IMPORTANT: Do Not Assign The Same Rank To More Than One Attribute!

9 = greatest impact
8 = next greatest impact
:
1 = next to least impact
0 = least impact

When considering other women's bodies…

1. … what rank do you assign to *physical coordination?* _____
2. … what rank do you assign to *health?* _____
3. … what rank do you assign to *weight?* _____
4. … what rank do you assign to *strength?* _____
5. … what rank do you assign to *sex appeal?* _____
6. … what rank do you assign to *physical attractiveness?* _____
7. … what rank do you assign to *energy level (e.g., stamina)?* _____
8. … what rank do you assign to *firm/sculpted muscles?* _____
9. … what rank do you assign to *physical fitness level?* _____
10. …what rank do you assign to *measurements (e.g., chest, waist, hips)?* _____

APPENDIX H: SURVEILLANCE OF OTHERS SCALE

Please respond to the following statements:

Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree	Does Not Apply
1	2	3	4	5	6	7	Na

1. I rarely pay attention to how other women look.	1	2	3	4	5	6	7	na
2. I think it is more important that other women wear comfortable clothes than clothes that look good on them.	1	2	3	4	5	6	7	na
3. When I am talking with another woman, I pay no attention to her appearance.	1	2	3	4	5	6	7	na
4. I rarely compare how other people look with how I look.	1	2	3	4	5	6	7	na
5. During the day, I think many times about how the women around me look.	1	2	3	4	5	6	7	na
6. I pay attention to whether the clothes other other women are wearing make them look good.	1	2	3	4	5	6	7	na
7. I am more concerned with what other women's bodies look like than what other women's bodies are able to do.	1	2	3	4	5	6	7	na

APPENDIX I: BODY COMPARISON SCALE

For the items below use the following scale to rate how often you compare these aspects of your body to those of other individual of the same sex. Note: Please be sure that you read and respond to all of the questions according to how you would compare to your same-sex peers.

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

1. Ears	1	2	3	4	5
2. Nose	1	2	3	4	5
3. Lips	1	2	3	4	5
4. Hair	1	2	3	4	5
5. Teeth	1	2	3	4	5
6. Chin	1	2	3	4	5
7. Shape of face	1	2	3	4	5
8. Cheeks	1	2	3	4	5
9. Forehead	1	2	3	4	5
10. Upper arm	1	2	3	4	5
11. Forearm	1	2	3	4	5
12. Shoulders	1	2	3	4	5
13. Chest	1	2	3	4	5
14. Back	1	2	3	4	5
15. Waist	1	2	3	4	5
16. Stomach	1	2	3	4	5
17. Buttocks	1	2	3	4	5
18. Thighs	1	2	3	4	5
19. Hips	1	2	3	4	5
20. Calves	1	2	3	4	5
21. Muscle tone of upper body	1	2	3	4	5
22. Overall shape of upper body	1	2	3	4	5
23. Muscle tone of lower body	1	2	3	4	5
24. Overall shape of lower body	1	2	3	4	5
25. Overall body	1	2	3	4	5

Use this scale to answer items 26-36.

Never 1	Rarely 2	Sometimes 3	Often 4	Always 5

26. I find myself thinking about how my nose is different than others'. 1 2 3 4 5
27. When I am with other people, I find myself comparing my complexion with theirs. 1 2 3 4 5
28. Being around people with firm, muscular arms makes me self-conscious. 1 2 3 4 5
29. When I compare myself with others, I compare their degree of muscle-tone with my muscle-tone. 1 2 3 4 5
30. When with others, I compare my thighs to those of my peers. 1 2 3 4 5
31. When I am with others, I compare my weight with theirs. 1 2 3 4 5
32. When I compare my weight with others, I feel that I am overweight. 1 2 3 4 5
33. I compare my physical appearance to the physical appearance of others. 1 2 3 4 5
34. When I see people who are overweight, I compare my body size to theirs. 1 2 3 4 5
35. I compare the attractiveness of my facial features with the facial features of others. 1 2 3 4 5
36. I compare how thin or overweight someone is more than I compare how muscular and in shape they are. 1 2 3 4 5

APPENDIX J: PHYSICAL APPEARANCE COMPARISON SCALE

Use this scale to answer the following items:

Never	Rarely	Sometimes	Often	Always
1	2	3	4	5

1. At parties or other social events, I compare my physical appearance to the physical appearance of others. 1 2 3 4 5
2. The best way for people to know if they are overweight or underweight is to compare their figure to the figure of others. 1 2 3 4 5
3. At parties or other social events, I compare how I am dressed to how other people are dressed. 1 2 3 4 5
4. Comparing your "looks" to the "looks" of others is a bad way to determine if you are attractive or unattractive. 1 2 3 4 5
5. In social situations, I sometimes compare my figure to the figures of other people. 1 2 3 4 5

APPENDIX K: BODY SHAME SUBSCALE OF THE OBJECTIFIED BODY CONSCIOUSNESS SCALE

Please respond to the following statements:

Strongly Disagree			Neither Agree Nor Disagree			Strongly Agree	Does Not Apply
1	2	3	4	5	6	7	Na

1. When I can't control my weight, I feel like something must be wrong with me. 1 2 3 4 5 6 7 na
2. I feel ashamed of myself when I haven't made the effort to look my best. 1 2 3 4 5 6 7 na
3. I feel like I must be a bad person when I don't look as good as I could. 1 2 3 4 5 6 7 na
4. I would be ashamed for people to know what I really weigh. 1 2 3 4 5 6 7 na
5. Even when I can't control my weight, I think I'm an okay person. 1 2 3 4 5 6 7 na
6. I never worry that something is wrong with me when I am not exercising as much as I should. 1 2 3 4 5 6 7 na
7. When I'm not exercising enough, I question whether I am a good enough person. 1 2 3 4 5 6 7 na
8. When I'm not the size I think I should be, I feel ashamed. 1 2 3 4 5 6 7 na

APPENDIX L: WEIGHT- AND BODY-RELATED SHAME AND GUILT SCALE SHAME SUBSCALE

When you answer each of the questions below, please think about how often you have had the following experiences in the last six months.

Never 0	Rarely 1	Sometimes 2	Often 3	Always 4

1. When I am in a situation where others can see my body (e.g., pool, changing room), I feel ashamed. 0 1 2 3 4
2. The appearance of my body is embarrassing for me in front of others. 0 1 2 3 4
3. When I think of the possibility that others can see my naked body, I would rather hide somewhere. 0 1 2 3 4
4. I am ashamed of myself when others get to know how much I really weigh. 0 1 2 3 4
5. I avoid exerting myself physically in front of others since I feel embarrassed. 0 1 2 3 4
6. Since the size of my clothes is embarrassing for me, I would rather avoid shopping for new clothes. 0 1 2 3 4

APPENDIX M: MBSRQ APPEARANCE EVALUATION SUBSCALE

INSTRUCTIONS--PLEASE READ CAREFULLY

The following pages contain a series of statements about how people might think, feel, or behave. You are asked to indicate the extent to which each statement pertains to you personally.

In order to complete the questionnaire, read each statement carefully and decide how much it pertains to you personally. Using a scale like the one below, indicate your answer by clicking on the appropriate number.

Click a:

1 if you **definitely disagree** with the statement;

2 if you **mostly disagree**;

3 if you **neither agree nor disagree**;

4 if you **mostly agree**;

5 if you **definitely agree** with the statement.

There are no right or wrong answers. Just give the answer that is most accurate for you.Remember, your responses are anonymous, so please be completely honest and answer all items.

1. My body is sexually appealing.

2. I like my looks just the way they are.

3. Most people would consider me good-looking.

4. I like the way I look without my clothes on.

5. I like the way my clothes fit me.

6. I dislike my physique.

7. I am physically unattractive.

APPENDIX N: EATING DISORDER INVENTORY – 3 BODY DISSATISFACTION SCALE

For each item, decide if the item is true about you ALWAYS, USUALLY, OFTEN, SOMETIMES, RARELY, or NEVER.

1	2	3	4	5	6
Always	Usually	Often	Sometimes	Rarely	Never

1. I think that my stomach is too big.	1	2	3	4	5	6
2. I think that my thighs are too large.	1	2	3	4	5	6
3. I think that my stomach is just the right size.	1	2	3	4	5	6
4. I feel satisfied with the shape of my body.	1	2	3	4	5	6
5. I like the shape of my buttocks.	1	2	3	4	5	6
6. I think my hips are too big.	1	2	3	4	5	6
7. I feel bloated after eating a normal meal.	1	2	3	4	5	6
8. I think that my thighs are just the right size.	1	2	3	4	5	6
9. I think my buttocks are too large.	1	2	3	4	5	6
10. I think that my hips are just the right size.	1	2	3	4	5	6

APPENDIX O: EATING DISORDER INVENTORY – 3 DRIVE FOR THINNESS SCALE

For each item, decide if the item is true about you ALWAYS, USUALLY, OFTEN, SOMETIMES, RARELY, or NEVER.

1	2	3	4	5	6
Always	Usually	Often	Sometimes	Rarely	Never

1. I eat sweets and carbohydrates without feeling nervous.	1	2	3	4	5	6
2. I think about dieting.	1	2	3	4	5	6
3. I feel extremely guilty after overeating.	1	2	3	4	5	6
4. I am terrified of gaining weight.	1	2	3	4	5	6
5. I exaggerate or magnify the importance of weight.	1	2	3	4	5	6
6. I am preoccupied with the desire to be thinner.	1	2	3	4	5	6
7. If I gain a pound, I worry that I will keep gaining.	1	2	3	4	5	6

APPENDIX P: EATING DISORDER INVENTORY – 3 BULIMIA SCALE

For each item, decide if the item is true about you ALWAYS, USUALLY, OFTEN, SOMETIMES, RARELY, or NEVER.

1	2	3	4	5	6
Always	Usually	Often	Sometimes	Rarely	Never

1. I eat when I am upset.	1	2	3	4	5	6
2. I stuff myself with food.	1	2	3	4	5	6
3. I have gone on eating binges where I felt that I could not stop.	1	2	3	4	5	6
4. I think about bingeing (overeating).	1	2	3	4	5	6
5. I eat moderately in front of others and stuff myself when they're gone.	1	2	3	4	5	6
6. I have thought of trying to vomit in order to lose weight.	1	2	3	4	5	6
7. I eat or drink in secrecy.	1	2	3	4	5	6
8. When I am upset, I worry that I will start eating.	1	2	3	4	5	6

APPENDIX Q: DEBRIEFING FORM

Research conducted by Danielle Lindner, B.A. and
Stacey Tantleff Dunn, Ph.D.

Thank you for your participation in this research project. Participation by students like you is critical for the research and results to be relevant. The purpose of this study is to explore how women's views of their own bodies and other women's bodies affect body image and eating behavior.

To protect the integrity of this research and the accuracy of responses, please refrain from discussing this study with other participants. As a reminder, your participation is completely anonymous. Your name is not connected to any of the information you have provided.

If you experience discomfort or negative feelings after completing this questionnaire you may contact Dr. Stacey Dunn at the University of Central Florida, Dr. Bob Dipboye, Psychology Department Chair, at (407) 823-2216, or one of the organizations listed below. If you wish to learn the outcome of this study or if you have any questions, please contact one of the people listed below.

Thank you. Your participation is very much appreciated.

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