SELF-OBJECTIFICATION AMONG OVERWEIGHT AND OBESE WOMEN: AN APPLICATION OF STRUCTURAL EQUATION MODELING

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A Dissertation

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Research on self-objectification has traditionally utilized samples of young, normal weight, female college students which greatly limit the ability to generalize the results to other groups, particularly to overweight and obese individuals. Despite the incredibly high rates of overweight and obesity among adults in the United States and the obvious relevance of body objectification to the overweight and obese, they have been understudied to this date. Objectification theory posits that individuals can be concerned with their physical appearance regardless of body size. However, given their greater distance from the impossibly thin standard the culture has idealized as well as the considerable evidence for weight based objectification, internalized weight bias, and binge eating disorder, it is plausible that the particular mechanisms through which one experiences self-objectification may differ for those who are overweight and obese.

This study tested two proposed measurement models of the relationship of body image in the psychosocial processes of weight based objectification. The relationships between weight-based objectifying experiences, internalized weight bias, self-objectification, body image, depression and disordered eating were analyzed using Objectification theory as a guiding framework. Structural equation modeling indicated a differing role for body image depending on weight status. Specifically, poor body image fit as an observed measure of Internalized Objectification for the Overweight Sample while occurring as a Psychosocial Outcome within the Normal Weight sample. Additional analyses of the
structural models also indicate that for the Overweight sample, the relationship between Objectifying Experiences and Psychosocial Outcomes is fully mediated by the process of Internalized Objectification. In general, the preliminary results of this study provide support for the notion that self-objectification is likely a relevant construct in the lives of most women albeit consisting of group specific manifestations and requiring different methods of measurement.
DEDICATION

I dedicate this dissertation to my grandmother, Mary Wireman. In spite of lacking even a grade school education and teaching yourself to read and write, I have never doubted for even a moment how important education and learning were in your life. I will be forever grateful to you for insisting on education for your children and sparking my passion for knowledge. You continue to inspire me daily.
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Contemporary Western culture has essentially commodified the female body and form and we now live in a society where women’s bodies tend to be valued as appearance-based, sexual objects; objects that can be viewed and appraised, bought and sold, and ultimately consumed, both by individuals and society as a whole. Sexual objectification of the female body exists along a continuum ranging from the literal (e.g., human sex trafficking, participating in pageants) to figurative (e.g., media representations, using women’s bodies in advertising). Further, sexual objectification represents both a cultural as well as interpersonal phenomenon; one in which women and girls are reduced to and primarily valued for their appearance and, more specifically, their ability to conform to society’s increasingly narrow standards for a sexually desirable body. Thus, the experience of sexual objectification can be both direct (e.g., women and girls’ personal experiences of being ogled, leered at, or judged on their appearance and sexual desirability) as well as indirect (e.g., women and girls’ observation of the treatment and sexual objectification of other women and girls) (Bartky, 1990; Crawford, et al., 2009; Frederickson & Roberts, 1997; Kaschak, 1992).

A number of feminist theorists (e.g., Bartky, 1990; de Beauvoir, 1952; Frederickson & Roberts, 1997; Kaschak, 1992; McKinley & Hyde, 1996; Ussher, 1989) have argued that one of the many potential consequences of living in a society of pervasive sexual objectification is that girls and women will internalize this sexual objectification and begin to objectify themselves. Cooley (1902/1990) described this concept as the “looking-glass self” and de Beauvoir (1949/2009) even suggested this tendency is part of women’s normative development from girls into adults:

For the girl, erotic transcendence consists in making herself prey in order to make a catch. She becomes an object; and she grasps herself as an
object; she is surprised to discover this new aspect of her being: it seems to her that she has been doubled; instead of coinciding exactly with her self, here she is existing outside of herself (p. 349).

_Self-Objectification_

Objectification theory (Fredrickson & Roberts, 1997) is a framework for understanding a variety of psychological and physical consequences women may face as a result of living in a culture that sexually objectifies their bodies. This theory describes the process through which women internalize both the belief that appearance is critical component of women’s worth as well as culture’s standards of near physical perfection and then ultimately determine their value as an individual based on their ability to meet these standards (Crawford, _et al._, 2009). Specifically, Frederickson and Roberts (1997) posit that a lifetime of personal and observed experiences of being viewed and treated “as a body (or collection of body parts)... that exists for the use and pleasure of others” function as a form of social learning and internalized oppression that gradually shape a woman’s sense of self.

That is, over time many women learn, through both their interpersonal experiences and vicarious observation of society and popular culture, that their and other women’s “looks” matter, that other people’s appraisal of their appearance can determine how they are treated, and, these evaluations can even affect the quality of their social and economic lives. The resulting third-person view of oneself is expressed as a type of self-consciousness and stereotype threat in which women and girls engage in habitual body and appearance monitoring and base their self-evaluations and self-worth on how closely they can mimic the social ideal. Frederickson and Roberts (1997) further posit this third-person perspective and preoccupation with appearance have a profound likelihood of
disrupting an individual’s peak motivational states, or what Csikszentmihalyi (1990) termed, “flow” of consciousness.

Although many feminist theorists and researchers tend to focus their arguments on the inherent negative aspects of objectifying oneself, others (e.g., Berger, 1972) take a more pragmatic approach, suggesting that if women exist in an environment where their appearance, does in fact, influence life outcomes, they may benefit from acting as their “own first surveyors” and anticipating the repercussions of their appearance. Quite simply, in a world where women’s bodies are often evaluated with respect to sexual attractiveness, many women and girls ultimately just acquiesce to the pressure. In other words, “if you can’t beat ‘em, why not join ‘em?” Empirical work addressing the potential positive aspects of self-objectification has produced mixed results. Separate studies (Fea & Brannon, 2006; Tiggeman & Boundy, 2008) examining self-objectification and compliments suggest that for those women who report high levels of self-objectification, whose self-esteem would seemingly be contingent on others’ approval, receiving positive feedback in the form of character or appearance compliments may actually improve mood compared to those women who are low in trait self-objectification. However, Tiggeman and Boundy (2008) also noted that these appearance compliments, while positive, paradoxically led to an increase in reported body shame for those women suggesting that anything focusing attention on one’s appearance, even compliments, can ultimately produce negative outcomes.

However, as each successive cohort of women since the late 1950s has faced standards of thinness and beauty that are increasingly more difficult to achieve (Garner, et al., 1980; Wiseman, et al., 1992), the current cultural body and appearance standards for women are now both incredibly unhealthy as well as virtually unattainable (Sptizer,
Henderson, & Zivian, 1999; Wolf, 1991), particularly considering it is more common to be overweight or obese in the United States than it is to be even a healthy weight (Flegal, et al., 2010). Objectification theory posits that for those women who connect these standards to their identity and self-worth, the failure to achieve or compare to this idealized female body is likely to result in feelings of shame and anxiety about their bodies (Bartky, 1988; Darwin, 1872/1965; Lewis, 2000).

Specifically, Frederickson and Roberts (1997) suggest that increasing self-objectification leads to increases in body shame and dissatisfaction from failure to match the social ideal, and, because women don’t know exactly if, when, or how their appearance will be viewed, increases in appearance anxiety and vigilance. Similarly, valuing one’s body more on the basis of outward appearance than performance, health, or function, is theorized to lead to losses in peak motivational states, diminished cognitive resources, and decreased awareness of internal bodily states. In turn, Objectification theory posits these direct consequences, such as body shame and dissatisfaction, alternately mediate and/or moderate the relationships between self-objectification and emotional and physical outcomes such as depression and sexual dysfunction, both conditions consistently overrepresented by women (e.g., Nolen-Hoeksema, 1990; Oliver & Hyde, 1993; Silberstein, Striegel-Moore, & Rodin, 1987). Finally, consistent with a number of other sociocultural theories, the body shame and dissatisfaction resulting from self-objectification is theorized to predict disordered eating, such that Objectification theory posits one specific origin for the body dissatisfaction a number of researchers (e.g., Polivy & Herman, 2002; Thompson, et al., 1999) have described as the “most consistent” or even “essential” precursor to disordered eating (see Figure 1).
In the literature, the concept of self-objectification has been used interchangeably with the term objectified body consciousness. McKinley and Hyde’s (1996) similar construct of objectified body consciousness consists of three primary components: Self-surveillance, body shame, and appearance control. Much like the concept of self-objectification, an individual with an objectified body consciousness closely monitors their body from the view of a third person, exhibits body shame when they fail to achieve the cultural expectations, and believes that individuals are able to control their appearance, respectively.

**Outcomes of Self-Objectification**

Objectification theory was initially proposed to explain psychological outcomes in women, and over the last decade, a considerable body of evidence has been documented in support of the proposed tenets of this theory among both adult and adolescent women within a variety of contexts and empirical support for objectification theory in relation to women continues to grow (for an extensive review: Moradi & Huang, 2008). Self-objectification and objectified body consciousness have been empirically linked to a plethora of negative psychosocial and physical outcomes, including low body esteem (McKinley, 1998, 1999; McKinley & Hyde, 1996; Noll & Fredrickson, 1998), depression (Harrison & Frederickson, 2003; Miner-Rubino, Twenge, & Fredrickson, 2002; Muehlenkamp & Saris-Baglama, 2002; Tolman, et al., 2006), decreased well-being and life satisfaction (Mercurio & Landry, 2008); restrictive eating and eating disorders (Fredrickson, et al., 1998; McKinley, 1999; Muehlenkamp & Saris-Baglama, 2002; Noll & Fredrickson, 1998; Slater & Tiggemann, 2002; Tiggemann & Lynch, 2001; Tiggemann & Slater, 2001), sexual dysfunction (Roberts & Gettman, 2004; Wiederman, 2001) and
even more negative attitudes toward breastfeeding (Johnston-Robledo, et al., 2007) and an increased likelihood of smoking cigarettes (Harrell, 2002).

Additionally, experimental induction of temporary states of self-objectification has resulted in decreased performance, both physical and cognitive. In one study of over 200 girls, aged 10 to 17 years, Frederickson and Harrison (2005) found that increasing levels of self-objectification predicted poorer motor performance while throwing a softball. And, in their widely cited study, Frederickson and colleagues (1998) found that after asking women to try on a swimsuit and evaluate their appearance in a mirror, these women performed worse on a short math test compared to the women in the control group who completed the same appearance evaluation task in a sweater; findings which have been consistently replicated across multiple sexes and sexual orientations (Hebl, King, & Lin, 2004; Martins, Tiggemann, & Kirkbride, 2007). These findings, interpreted within the framework of objectification theory, suggest that by temporarily increasing one’s awareness of their appearance, the resulting body dissatisfaction and shame interrupt peak flow states. Self-objectification diverts attention, with women monitoring their own appearance as a reaction to (or in anticipation of) the sexually objectifying gazes of others and functions as a form of stereotype threat. In other words, the human mind is only capable of attending to so many tasks or thoughts at once, and if one is overly concerned with how they look or how other people may view them, it detracts from the cognitive resources available for attending to other tasks, such as a math test. Similar findings of decreased performance have been noted by other researchers using a variety of measures, including color-naming Stroop tasks (Quinn, et al., 2006) and recall tasks (Kiefer, Sekaquaptewa, & Barczyk, 2006).
Limitations of Previous Research

To date, much of the research on self-objectification has been conducted utilizing convenience samples of predominately female, undergraduate university students of normal weight (e.g., Miner-Rubino, Twenge & Fredrickson, 2002; Mercurio & Landry, 2008; Morry & Staska, 2001; Muenke & Saris-Baglama, 2002; Quinn, Kallen, & Cathey, 2006; Wagner Oehlhofer, et al., 2009) as well as other subgroups theoretically vulnerable to objectification, such as dancers (Parsons & Betz, 2001; Slater & Tiggemann, 2002; Tiggemann & Slater, 2001) in part due to their notably high rates of body dissatisfaction and eating disorders as well as the perceived likelihood of these groups experiencing sexually objectifying situations. While these characteristics certainly make these groups ideal for testing predictions based on objectification theory and the objectified body consciousness construct, they also mean that demographic qualities such as age range, socioeconomic status, and ethnicity are restricted in comparison to the general population. This has greatly limited the generalizability of the findings to other groups and made it difficult to investigate developmental aspects of self-objectification. Furthermore, given the ubiquitous nature of the sexual objectification of bodies in society today, self-objectification is likely to be a relevant construct in the lives of all women. However, as individuals are judged on differing physical standards based on qualities such as age and race/ethnicity, it is unlikely that all individuals would experience the development or manifestations of body surveillance and self-objectification in the same manner.

Using this rationale, several studies have noted interesting group specific manifestations of self-objectification and body surveillance. In a study specifically addressing body image among young African American college women, Buchanan and
colleagues (2008) found support for an expanded model of self-objectification that included the unique variable of skin tone. In a separate study of predominately White, Deaf college women, Moradi and Rottenstein (2007) found evidence to support the unique role of marginal Deaf identity attitudes within the framework of Objectification theory, such that marginal Deaf identity attitudes mediated the relationship between internalization of beauty standards and body surveillance, body shame, and disordered eating.

**Overweight and Obesity**

Research addressing group specific manifestations of self-objectification is far from complete and prior studies and reviews have repeatedly called for additional research addressing group specific manifestations of self-objectification and its related concepts and outcomes within the framework of Objectification theory. Despite the incredibly high rates of overweight and obesity among adults in the United States, overweight and obese individuals remain one group that has been understudied within this context. Data from the most recent National Health and Nutrition Examination Survey (Flegal, et al., 2010) show the age-adjusted prevalence of obesity (Body Mass Index/BMI ≥ 30.0) to be 31.6% among adult men and women, and when overweight and obesity are combined (BMI ≥ 25), these rates climb to 68%, rates which are more than double those reported in 1980. Overweight and obese individuals often suffer a host of negative physical risks and outcomes from their excess weight, including increases in heart disease, stroke, and high blood pressure, greater reports of sleep apnea and disturbance as well as asthma and other respiratory problems. Overweight and obese individuals also have a higher mortality risk and are more likely to suffer from Type 2 diabetes and various cancers, and overweight and obese pregnant women are more likely
to experience complications during pregnancy and childbirth as well as higher rates of resulting child birth defects (National Heart, Lung, and Blood Institute, 1998; Olshansky, et al., 2005; World Health Organization, 2002).

Further exacerbating the exhaustive negative physical consequences, overweight and obese individuals are also more likely than healthy weight individuals to report higher levels of psychological disturbance and poorer psychosocial outcomes (Simon, et al., 2006). Most notably, and to the sincere oversight of previous work on self-objectification, overweight and obese individuals, particularly women, report significantly higher levels of depression and disordered eating as well as poorer body image and lower self-esteem (Bookwala & Boyar, 2008; Faith, Matz, & Jorge, 2002; Johnston, et al., 2004; Scott, et al., 2008; Sinclair & Myers, 2004; Stunkard, Faith, & Allison, 2003).

Despite the notable lack of research within this population, objectification theory posits that women can be concerned with their physical appearance regardless of body size; a theoretical tenet which has received support from findings that show self-objectification scores are not correlated with BMI (e.g., Harrison & Frederickson, 2003; Noll & Fredrickson, 1998; Tiggemann & Lynch, 2001). Quite simply, both overweight or obese and normal weight individuals exist in a culture where their bodies and the bodies of women in general, are evaluated and consequently objectified. However, given their greater distance from the impossibly thin standard this same culture has idealized, overweight and obese individuals are unlikely to share the same kinds of objectifying experiences as non-overweight individuals.
Objectification among the Overweight and Obese

Several studies have addressed the role of appearance pressures and harassment, specifically weight-related criticism and pressure to be thin, within the framework of Objectification theory among predominately young women and girls of normal weights (e.g., Lindberg, Grabe, & Hyde, 2007; Lindberg, Hyde, & McKinley, 2006; Tylka & Hill, 2004). These findings compliment a separate body of work examining the experiences and consequences of more general appearance commentary and criticism in the development of body image disturbances; such that objectifying commentary and criticism based on visual evaluation of an individual’s body foster habitual body monitoring and a third-person view about oneself, ultimately leading to negative evaluations of one’s body and increases in body shame (Herbozo & Thompson, 2006; McLaren, et al., 2004; Sinclair, 2006; Tantleff-Dunn, Thompson, & Dunn, 1995). Namely, experiences of appearance and thinness pressure indirectly predict disordered eating through increases in body surveillance and body shame.

However, unlike their non-overweight peers, in Western culture, overweight and obese individuals are not only subject to a culture of sexual objectification, but also frequently subjected to instances of explicit weight stigma and bias (for extensive reviews: Puhl & Brownell, 2001; Puhl & Heuer, 2009). In fact, weight bias has been documented at significantly higher rates than other major targets of bias including gays and Muslims (Latner, et al., 2008) as well as gender and race (Puhl, Andreyeva, & Brownell, 2008). Mistreatment and discrimination based on weight status have been well documented in a variety of contexts and groups, including health care (e.g., Puhl, Wharton, & Heuer, 2009; Schwartz, et al., 2003) and educational settings (Latner, Stunkard, & Wilson, 2005) as well as among employers (Carr & Friedman, 2005) and
interpersonally from friends, romantic partners, and family members of the overweight and obese (e.g., Chen & Brown, 2005; Puhl, Andreyeva, & Brownell, 2008; Sitton & Blanchard, 1995). These experiences of bias and discrimination are associated with a plethora of adverse effects for individuals who are overweight or obese, including depression (Friedman, et al., 2005), body image concerns (Crocker, Cornwell, & Major, 1993), and low self-esteem (Myers & Rosen, 1999).

Within the framework of objectification theory, experiences of weight stigma may function as a relevant group specific manifestation of sexual objectification for overweight and obese individuals, such that every interpersonal experience or observation of anti-fat bias and weight based stigma or discrimination, referred to collectively from this point as weight based objectification and/or weight based objectifying experiences, serves as a direct reminder that they are failing to achieve or even approximate the social appearance ideal. More specifically, weight based objectification, particularly comments about an overweight or obese individual’s body, communicate to the overweight/obese individual that they are not viewed and/or valued sexually. This concept is supported by research findings that suggest individuals consistently rank overweight/obese individuals (particularly women) lower than individuals with a history of sexually transmitted diseases and various physical disabilities (Chen & Brown, 2005), and even drug problems (Sitton & Blanchard, 1995) as potential romantic partners. This pervasive social disdain and even contempt for overweight and obese women in particular is not lost on even the most “enlightened” academics and clinicians. Psychiatrist Irvin Yalom (1989, cited in Kaschak, 1992, p. 71) summarized his thoughts about the “profane” bodies of fat women by asking, “How dare they impose that body on the rest of us?” Quite simply, through weight based objectification, overweight and obese individuals live in an environment
that is highly likely to accentuate an awareness of others’ perspectives of their bodies, by
constantly reminding them and reducing them to one specific aspect of their physical
appearance, namely weight (or shape).

Similar to other marginalized and oppressed groups, several studies have also
found that weight based objectifying attitudes may be held by overweight and obese
individuals themselves (e.g., Crandall & Reser, 2005; Durso & Latner, 2008; Rudman,
Feinburg, & Fairchild, 2002; Schwartz, et al., 2006; Wang, Brownell, & Wadden, 2004).
This research suggests that overweight and obese individuals may internalize myths,
misinformation, and stereotypes against their own in-group and apply negative social
messages to themselves as a form of internalized oppression (Carels, et al., 2010; Durso
& Latner, 2008).

Social scientists and cultural critics generally cite internalized oppression when
individuals of a marginalized or oppressed group engage in self-devaluation and endorse
the belief of their own inferiority to the group or groups in power (Lipsky, 1987; Thomas,
1971). Descriptions of the extent of the internalized oppression range along a continuum
from passive acceptance, a lack of awareness or denial of cultural, institutional, or
individual oppression, to complete self hatred (Bargad & Hyde, 1991; Cross, 2001;
Downing & Roush, 1985). Internalized oppression has been studied and identity
development models have been proposed for a plethora of groups including, but certainly
not limited to, The Black Identity Development Model/Nigrescence Model for African
Americans (Cross, 2001; Cross & Vandiver, 2001), Native Americans (McBride, 2002),
Colonial Mentality among Filipino Americans (David & Okazaki, 2006), “bleaching
syndrome” among Mexican Americans (Hall, 1994), internalized misogyny and sexism
among women (Frederickson & Roberts, 1997; McKinley & Hyde, 1996; Szymanski, et
al., 2009), as well as internalized homophobia and heterosexism among sexual minority populations (Meyer, 2003; Williamson, 2000).

**Disordered Eating**

One of the many proposed consequences of self-objectification and its related constructs (Fredrickson & Roberts, 1997) that has received considerable research attention is the greater risk for disordered eating. Eating disorders, both as a group and individually, are defined by the American Psychiatric Association’s *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR; 2000)*. Eating disorders are severe disturbances in eating behaviors and are comprised primarily of Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder.

**Anorexia Nervosa**

Anorexia Nervosa is characterized by a refusal to maintain a minimally normal body weight. Individuals with this disorder are intensely afraid of weight gain and have a significant disturbance in the perception of the shape or size of their body. Subtypes of Anorexia Nervosa include 1) restricting type, in which weight loss is accomplished and maintained through dieting, fasting, or exercise; and 2) binge-eating/purging type, in which the individual usually restricts food intake but also regularly engages in binge eating and/or purging behaviors. Anorexia Nervosa occurs at a rate of .03% to .05 % in the general female population, but many individuals who are subthreshold for the disorder are more frequently observed (American Psychiatric Association, 2000; Hoek & van Hoeken, 2003).

**Bulimia Nervosa**

Bulimia Nervosa is characterized by repeated episodes of binge eating followed by inappropriate compensatory behaviors such as self-induced vomiting, use of laxatives
or diuretics, or excessive exercise in an effort to prevent weight gain. Subtypes of Bulimia Nervosa include 1) the purging type, in which individuals regularly compensate for the binge-eating with self-induced vomiting, laxative use, diuretics, or enemas, and 2) the nonpurging type, in which the individual attempts to compensate through dietary fasting or excessive exercising. The prevalence rates for bulimia in the general female population range between 1% and 3% (American Psychiatric Association, 2000; Hoek & van Hoeken, 2003).

Given the nature of the college student samples, much of the research in this area has focused on symptoms of anorexia and bulimia (e.g., Noll & Fredrickson, 1998). However, in an overweight and obese sample, binge eating disorder is more likely to be an issue than either anorexia or bulimia (Waller, 2002).

**Binge Eating Disorder**

Binge eating was first described as a pattern of overeating episodes followed by feelings of loss of control, culpability, and attempts to restrict eating to lose weight (Stunkard, 1959). Binge eating as a disorder, is described in the *DSM-IV-TR* as a disorder in need of further study and can be considered a subcategory of Eating Disorders Not Otherwise Specified (NOS). The proposed features for this disorder entail recurrent episodes of binge eating for which the person has significant distress and does not regularly employ the use of compensatory behaviors, as in bulimia nervosa (American Psychiatric Association, 2000).

**Eating Disorders among College Populations**

Although eating disorders represent a prominent concern for women in general, this concern is particularly high regarding collegiate populations. Numerous studies in this area have found that disordered eating behavior, attitudes, and beliefs are prevalent
among college women in general (e.g., Carter & Eason, 1983; Harris, 1995; Hesse-Biber, 1989; Klemchuck, Hutchinson, & Frank, 1990; Kurtzman, Yager, Landverck, Wiesmeier, & Bodurka, 1989; Mintz & Betz, 1988). Prevalence rates of eating disorders for college women are estimated at 3% to 19% for bulimia (Mintz & Betz, 1988; Powers, Schulman, Gleghorn, & Prange, 1987) and 1% to 2% for anorexia (Mintz & Betz, 1988). Additional research has suggested that even more collegiate women display disordered eating behaviors, attitudes, and beliefs while not meeting the criteria for an actual eating disorder (Ash & Piazza, 1995; Klemchuck et al., 1990; Mintz & Betz, 1988; Schwitzer, Bergholz, Dore, & Salimi, 1998; Schwitzer, Rodriguez, Thomas, & Salimi, 2001).

Koszewski, Newell, and Higgins (1990) reported 6% of undergraduate women are concerned about bulimia and anorexia, whereas 25% to 40% indicated moderate problems and concern that their eating was out of control.

**Current Study**

Given the considerable evidence for weight-based objectification, the internalization of weight bias, and binge eating disorder, it is plausible that the particular mechanisms through which one experiences self-objectification may differ for those who are overweight and obese. Thus, the purpose of the current study is to examine the relationships among self-objectification, body image, weight based objectifying experiences, internalized weight bias, depression, and disordered eating among overweight and obese women through structural equation modeling using Objectification Theory as a guiding framework. A secondary aim is to compare these findings to an examination of relationships among self-objectification, body image, weight based objectifying experiences, internalized weight bias, depression, and disordered eating among normal weight women. A weak causal ordering of variables was hypothesized,
such that weight based objectifying experiences were theorized to contribute to a process of internalized objectification, as evidenced by self-reported self-objectification and internalized weight bias, possible culminating psychosocial outcomes of which are poor body image, depression, and disordered eating (Figure 2).

Specifically, within the hypothesized model, weight-based objectifying experiences, particularly comments about an individual’s body, represents a specific form of interpersonal objectification in which the interpretations and outcomes are the same as sexual objectification, such that both types of experiences may "serve as a reminder that others are evaluating his or her appearance and lead to a greater focus on appearance" (Herbozo & Thompson, 2006, p. 260). As the objectifying experiences are weight-based, the Overweight sample was predicted to report more frequent experiences as well as stronger relationships among those variables.

I further proposed that as the frequency of weight based objectifying experiences increases so would reports of the internalization of the objectification. Similarly, as reports of internalized weight bias, poor body image, depression, and disordered eating tend to be higher among overweight and obese women compared to their normal weight counterparts, all proposed relationships were hypothesized to be stronger among women in the Overweight sample than those of the Normal Weight sample.

However, unlike self-objectification, not all of internalized weight bias is necessarily appearance-based. Notably, internalized weight objectification, similar to noted outcomes of self-objectification and objectified body consciousness, also incorporates elements of self-control, motivation and shame. As such, within the proposed model, internalized weight bias is represented as a potential internalization process similar to, but separate from that of self-objectification, ultimately mediating the
relationships between objectifying experiences and psychosocial outcomes of poor body image, depression, and disordered eating. However, as this model is somewhat exploratory in nature, a second proposed model (Figure 3), with poor body image also occurring as part of the internalization process, rather than a negative psychosocial outcome, was also evaluated.

Similarly, I hypothesized this internalization ultimately leads to a variety of negative psychosocial outcomes (e.g., depression, body image disturbance, decreased well-being), which are often over-represented among women with excess weight (Bookwala & Boyar, 2008; Luppino, et al., 2010). Thus these relationships were expected to be stronger among overweight women than those of normal weight.
METHOD

Participants

Participants (N = 413) were recruited from women age 18 years and older who were enrolled in psychology courses at a large university in Northwest Ohio. Participants were classified into one of two samples with a self-reported BMI greater than or equal to 25 kg/m² serving as the cutoff for inclusion in the Overweight sample.

Women in the Normal Weight sample (n = 212), comprised 57.6% of the total participants, had an average BMI of 21.02 (SD = 1.55), and consisted of 152 first year students (72%), 35 sophomores (16.5%), 15 juniors (7%), and 9 seniors (3%), with 1 woman (.5%) not reporting her school status. Women in the Normal Weight sample also averaged 19.17 years in age (SD = 1.59), and self-identified their race as White/Caucasian (88.2%), Black/African American (6.6%), Bi/Multiracial (2.8%), Asian/Pacific Islander (1.4 %), Latina/Hispanic (.5%), with 1 person (.5%) not reporting a racial/ethnic identification.

Women in the Overweight sample (n = 201) had an average BMI of 30.69 (SD = 5.48) with 17.2% of the total participants meeting BMI criteria for Overweight (BMI 25 – 29.99 kg/m²) and 25.2% meeting BMI criteria for Obesity (BMI ≥ 30 kg/m²). This sample consisted of 125 first year students (62%), 49 sophomores (24%), 14 juniors (7%), and 7 seniors (3.5%), with 6 women (3%) not reporting their school status. Women in the Overweight sample also averaged 19.71 years in age (SD = 2.95), and self-identified their race as White/Caucasian (84.6%), Black/African American (9.5%), Bi/Multiracial (1.5%), Asian/Pacific Islander (3.5 %), Native American (.5%), with 1 person (.5%) not
reporting a racial/ethnic identification. The racial composition of both samples was consistent with the racial demographics of the community.

As a ratio of 10 responses per free parameter estimate (including error terms as well as path coefficients) is recommended to obtain valid and reliable estimates using structural equation modeling (Bentler & Chou, 1987), both samples for this study exceeded the recommended sample size of 150 participants per group.

Procedure

Participants were recruited online through the Psychology Department’s online research participant recruitment system, Sona, and surveys, comprised of the measures described below, were completed online through Survey Monkey™ between January and March of 2011. Online data collection affords several notable advantages, including increased participant comfort and openness from a greater sense of anonymity (Bailey, Foote, & Throckmorton, 2000) as well as increased power from the resulting larger sample. Students participating through the Sona system receive course credit or extra credit for research participation throughout the semester. Additionally, upon completion of the surveys, participants were given the opportunity to be entered into a lottery for one of ten $20 gift certificates to a local store. No other inducements were offered.

Measures

Demographic information. A questionnaire (Appendix A) was used to gather basic demographic information about individuals participating (e.g., age, education). Participants were also asked to provide their height and weight and BMI was calculated as kg/m² from those measurements.
Self-objectification. Self-objectification was assessed using the Trait Self-Objectification Questionnaire (TSOQ; Noll & Frederickson, 1998; Appendix B). The TSOQ is based on objectification theory (Fredrickson & Roberts, 1997) and consists of ten items in two categories: appearance-based and competence-based. Appearance-based items focus on observable body attributes (e.g., sex appeal, measurements, weight, physical attractiveness, and muscle tone) and competence-based items focus on unobservable body attributes (strength, health, stamina/energy level, physical fitness, and physical coordination).

Participants were asked to rank order ten body attributes from that which has the greatest impact on their physical self-concept (ranked as a “9”), to that which has the least impact on their physical self-concept (ranked as a “0”). Scores were then obtained by separately totaling the two categories and then subtracting the sum of the unobservable competence-based items from the sum of the observable appearance-based items. Scores may range from –25 to 25, with higher scores indicating greater appearance orientation and self-objectification (Noll & Fredrickson, 1998). To accommodate a data assumption of structural equation modeling that measures are similarly scaled with positive values, for the current study, only participants’ scores from the appearance subscale were used as one of the indicators of the latent variable, Internalization.

The TSOQ displays satisfactory construct validity (Noll, 1996) and scores correlate positively with other measures of preoccupation with appearance and body dissatisfaction (Miner-Rubino, Twenge, & Fredrickson, 2002; Noll & Fredrickson, 1998). Specifically, the TSOQ correlates moderately with Dion, Dion, and Keelan’s (1990) Appearance Anxiety Questionnaire ($r = .52, p < .01$) as well as Williamson and colleague’s (1985) Body Image Assessment ($r = .46, p < .01$) (Noll & Fredrickson, 1998).
Similarly, the TSOQ is moderately correlated with the surveillance subscale of McKinley & Hyde’s (1996) Objectified Body Consciousness Scale \( (r = .63, p < .001; \) Miner-Rubino, Twenge, & Fredrickson, 2002).

**Body image.** Body image was assessed with the Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 2000; Appendix C). The MBSRQ is a 69-item self-report questionnaire comprised of ten subscales designed to measure the cognitive, behavioral, and affective components of body image (Cash, Winstead, & Janda, 1986). To reduce participant fatigue, for this study only one of the ten subscales, Appearance Evaluation, was used. The Appearance Evaluation subscale assesses feelings about physical attractiveness/unattractiveness and satisfaction/dissatisfaction with one’s appearance. Higher scores on this subscale indicate greater satisfaction with appearance and this scale has acceptable one-month test-retest reliabilities \( (rs > .88) \) and internal consistencies \( (\alpha > .81) \) for both men and women (Cash, Winstead, & Janda, 1986). Cronbach’s \( \alpha \) in the current investigation was .91 for the Normal Weight sample and .873 for the Overweight sample. The body image variable was used as one of the indicators of the latent variable, Internalization for Model 1 and as one of the indicators of the latent variable, Psychosocial Outcomes, for Model 2.

**Weight-based objectifying experiences.** Participants' frequency of objectifying experiences was measured with the Stigmatizing Situations Inventory (SSI; Myers & Rosen, 1999; Appendix D). Participants were asked to rate the frequency of 50 stigmatizing situations within 11 different stigma categories (e.g., nasty comments from others, being avoided, excluded, or ignored, job discrimination) on a ten-point Likert scale ranging from "never" (0) to "daily" (9). Scores are averaged across items and may range from 0 to 9 with higher scores indicating an increased frequency of stigmatizing
experiences. Because previous researchers (e.g., Friedman, et al., 2005; Myers & Rosen, 1999) have reported relatively low subscale means using the scale’s original ten-point response scale, this study will utilize the modified, four-point Likert scale (0, never; 1, once in your life; 2, more than once in your life; and 3; multiple times) as described by Puhl, Moss-Racusin, & Schwartz (2007).

In acknowledgement of theoretical and empirical distinctions between interpersonal and institutional discrimination (Wilson, 1973), two subscales were created from the SSI as described by Wott and Carels (2010) as measures of the latent variable, Objectification: Interpersonal stigma (e.g., inappropriate comments from doctors, nasty comments from children or family) and institutional stigma (e.g., physical barriers and obstacles). Cronbach’s α for the interpersonal stigma subscale in the current investigation was .87 for the Normal Weight sample and .87 for the Overweight sample while Cronbach’s α for the institutional stigma subscale was .82 for the Normal Weight sample and .80 for the Overweight sample.

**Internalized weight bias.** Internalized weight bias was assessed with the Weight Bias Internalization Scale (WBIS; Durso & Latner, 2008; Appendix E). Participants were asked to rate their agreement with 11 self-report items designed to assess internalized weight bias in overweight and obese individuals using a seven-point Likert scale ranging from “strongly disagree” to “strongly agree.” The WBIS demonstrates satisfactory validity, correlating with scales that measure similar constructs, including the dislike subscale of Crandall’s (1994) Antifat Attitudes Questionnaire ($r = .37, p < .01$) as well as the shortened version of the Cooper and colleagues’ (1987) Body Shape Questionnaire ($r = .75, p < .01$; Durso & Latner, 2008). The measure has also shown high internal consistency (Cronbach’s $\alpha \geq .90$) across several studies (e.g., Carels, et al., 2010; Durso &
Latner, 2008). Cronbach’s α in the current investigation was .86 for both the Normal Weight and Overweight samples. The internalized weight bias variable was used as one of the indicators of the latent variable, Psychosocial Outcomes.

**Depression.** Symptoms of depression were measured using the Center for Epidemiological Studies-Depression scale (CES-D; Radloff, 1977; Appendix F). The CES-D is a self-report questionnaire measuring levels of depressive symptoms on six major dimensions including depressed mood and psychomotor retardation, feelings of guilt, worthlessness, helplessness, and hopelessness, as well as eating and sleep disturbance. Participants were asked to rate the frequency of 20 items using a four-point Likert scale ranging from “rarely or none of the time” to “most or all of the time.” Scores may range from 0 to 60 with scores greater than 16 generally indicating the presence of significant depressive symptoms (Radloff, 1977). The scale has shown adequate reliability and validity for individuals from a variety of racial, gender, and age backgrounds (Knight, et al., 1997; Radloff, 1977). Cronbach’s α in the current investigation was .89 for the Normal Weight sample and .90 for the Overweight sample. The depression variable was used as one of the indicators of the latent variable, Psychosocial Outcomes.

**Disordered eating.** Symptoms of disordered eating were measured using the Eating Disorder Diagnostic Scale (EDDS; Stice, Telch, & Rizvi, 2000; Appendix G). The EDDS consists of 22 items in three scales designed to examine symptoms of anorexia nervosa, bulimia nervosa, and binge-eating disorder and provide diagnoses for both clinical and subclinical level disorders. Questions are ordered such that bulimia nervosa diagnoses preempt binge-eating disorder diagnoses, and anorexia nervosa diagnoses preempt bulimia nervosa diagnoses (Stice, et al., 2000).
The EDDS has been shown to have strong criterion-related, predictive, and convergent validity (Stice, *et al.*, 2000), as well as acceptable test-retest reliability and internal consistency. Several studies conducted by Stice, Fisher and Martinez (2004) have shown that the EDDS showed criterion related validity with interview-based diagnoses, convergent validity with risk factors for eating pathology, and internal consistency. The kappa coefficient reflecting the agreement between the diagnoses from the structured interview and the EDDS is .93 for anorexia nervosa; and the sensitivity, specificity, positive predictive value, negative predictive value, and accuracy all exceed .93. The kappa coefficient that denotes the agreement between the diagnoses from the structured interview and the EDDS is .81 for bulimia nervosa; and the sensitivity, specificity, positive predictive value, negative predictive value, and accuracy all exceed .81. Finally, the kappa coefficient reflecting the agreement between the diagnoses from the structured interview and the EDDS is .74 for binge-eating disorder; and the sensitivity, specificity, positive predictive value, negative predictive value, and accuracy are all above .77 (Stice, *et al.*, 2004).

The one-week test-retest kappa coefficient is .95 for anorexia nervosa diagnoses, and the overall accuracy rate was .98. The one-week test-retest kappa coefficient is .71 for bulimia nervosa diagnoses, and the overall accuracy rate is .91. For binge-eating disorder, the one-week test-retest kappa coefficient is .75, and the overall accuracy rate is .89. The correlation coefficient reflecting the one-week test-retest reliability is .87 for this composite (*r* = .87; Stice *et al.*, 2004). Test-retest kappa coefficients are strong according to the criteria proposed by Fleiss (1981). This scale also compares well to validated psychiatric interviews such as the Structured Clinical Interview for DSM-III-R (SCID), which has test-retest kappa coefficients from .80 to .90 for eating disorder diagnoses.
(Pike, Loeb, & Walsh, 1995). Cronbach’s $\alpha$ in the current investigation was .87 for the Normal Weight sample and .83 for the Overweight sample. The disordered eating variable was used as one of the indicators of the latent variable, Psychosocial Outcomes.
RESULTS

Statistical Methodology

Prior to more complex data analyses, all data were carefully examined for outliers, multicollinearity, missing data, as well as normality in distribution using SPSS 17.0.2 (2009). When necessary, data was corrected through the use of various mathematical transformations and statistical methods (e.g., square root for positively skewed distributions, various imputation methods for missing data; eliminating or combining redundant variables to address multicollinearity, rescaled to accommodate the assumptions of Maximum Likelihood method). All study variables and transformations are described in Table 1.

Using the previously specified models (Figures 2 and 3) which define the presumed relationships among the observed and latent variables, all data was analyzed utilizing AMOS 18.0 (Arbuckle, 2009) according to the methods described by Kline (2011) and presented in accordance with the recommendations of McDonald and Ho (2002). A listwise deletion method was implemented and no imputation method was applied to missing values. Model parameters were estimated using the preferred default maximum likelihood method, which is based on a normal distribution theory and designed to analyze and estimate all paths in a model to maximize the likelihood they come from the observed population (Kline, 2011).

Evaluation of the models was conducted with the two-stage procedure recommended by McDonald and Ho (2002). First, the fit of the measurement model was evaluated using the value of chi-square, in which a nonsignificant value would indicate good fit. However, because a sample size that is too large can lead to significant chi-square results and a sample size that is too small can result in rejection of a correct null
hypothesis (Kline, 2011), model fit was also evaluated through interpretation of common
goodness of fit indices; specifically, Bentler’s (1990) comparative fit index (CFI), Bentler
and Bonnett’s (1980) normed fit index (NFI), Schumacker and Lomax’s (2004) adjusted
goodness of fit (AGFI), and Browne and Cudeck’s (1993) root-mean-square error of
approximation (RMSEA). These indices consider additional aspects of the SEM analyses,
such as sample size, model parsimony, number of parameters, and degrees of freedom
(Fan, Thompson, & Wang, 1999; Hu & Bentler, 1999; Kline, 2011; Schumacker &

The CFI compares the noncentral chi-square of a target model with a baseline
model while the NFI compares the fit of a target model with the fit of the null or
independence model. For both the NFI and CFI, values above .90 are judged as indicative
of a good model fit (Schumacker & Lomax, 2010). The adjusted goodness of fit index
(AGFI), which represents the relationship between the residual variance and the total
variance suggested by the model (Kline, 2011) is adjusted for model degrees of freedom
relative to the number of variables in the model (Schumacker & Lomax, 2010) and
described by Kline (2011) is analogous to $R^2$. Values of the AGFI can range from 0 to 1
with numbers approaching 1 being most desirable and values above .90 judged as
indicative of a good model fit (Schumacker & Lomax, 2010). The root-mean-square error
of approximation (RMSEA) is a parsimony-adjusted index designed to account for
varying sample size (Browne & Cudeck, 1993). A value of 0 is considered a perfect fit
while higher numbers suggest an increasingly worse fit, with values between .05 and .08
suggesting a good fit (Schumacker & Lomax, 2010). Single parameters were tested using
a 5% significance criterion (i.e., t-value of parameters of 2.00).
Preliminary Group Differences

A series of independent sample t-tests was utilized to assess for potential differences between the Normal Weight and Overweight samples for each of the endogenous variables, specifically, demographics, interpersonal and institutional weight-based objectifying experiences, internalized weight bias, self-objectification, body image, disordered eating, and depression. The means and standard deviations of the endogenous variables for the Normal Weight and Overweight samples can be found in Table 2 and separate correlation matrices of the endogenous variables for the Normal Weight and Overweight samples, can be found in Tables 3 and 4, respectively.

The two samples did not differ statistically with regard to current relationship status ($\chi^2(1) = 4.487, p < .05$) with 43.5% of the Normal Weight sample and 55.7% of the Overweight sample currently being in a romantic relationship. The two samples also did not differ statistically with regard to self-reported frequency of weekly mild, $t(410) = -1.39, p > 0.05$, moderate, $t(408) = 1.79, p > 0.05$, or strenuous exercise, $t(406) = 1.43, p > 0.05$.

However, significant differences between the two groups of women were found in self-reported leisure time physical activity, $t(411) = 2.47, p < 0.05$, such that women in the Normal Weight sample ($M = .92, SD = .71$) reported greater time spent engaging in regular activity long enough to work up a sweat with their heart beating rapidly than women in the Overweight sample ($M = .75, SD = .67$). Additionally, significant differences between the two groups of women were found in current weight loss efforts, $t(381) = -10.59, p < 0.01$, such that women in the Overweight sample ($M = 4.60, SD = 2.79$) reported greater weight loss efforts than women in the Normal Weight sample ($M = 1.97, SD = 2.24$). Finally, significant differences between the two groups of women were
found in age, $t(304) = -2.32, p < 0.05$ and BMI, $t(230) = -24.1, p < 0.001$, such that women in the Overweight sample were older and had greater reported BMI than women in the Normal Weight sample.

Additionally, significant differences between the two groups of women were found on all endogenous variables except self-objectification, $t(411) = -2.17, p > 0.05$. Specifically, women in the Overweight sample reported greater weight-based objectifying experiences, both interpersonal, $t(399) = -12.69, p < 0.001$ and institutional, $t(258) = -11.83, p < 0.001$; as well as greater internalized weight bias, $t(411) = -6.91, p < 0.001$, less positive body image, $t(402) = 10.74, p < 0.001$, more symptoms of disordered eating, $t(393) = -6.45, p < 0.001$, and greater symptoms of depression, $t(411) = -2.02, p < 0.05$ than women in the Normal Weight sample.

*Structural Equation Modeling*

Both of the proposed measurement models were considered and analyzed independently within both the Overweight and Normal weight samples, the results of which are presented separately below. However, for each sample, the respective alternate model would not converge and was therefore rejected as a possibility. Specifically, Model 1, with the observed Body Image variable loading on the Psychosocial Outcomes latent variable, would not converge within the Overweight sample. Conversely, Model 2, with the observed Body Image variable loading on the Internalized Objectification latent variable, would not converge within the Normal Weight sample.

Because the groups differed with regard to their respective measurement models of the endogenous variables, further traditional multiple group analyses could not be performed (Kline, 2011; Schumacker & Lomax, 2010). As such, any further model modifications were considered and analyzed independently within the respective
Overweight and Normal weight samples, the results of which are presented separately below. Following establishment of the measurement models, the direct and indirect effects between the latent variables of the respective structural models were also analyzed.

**Measurement Models**

*Normal Weight Sample.* The unstandardized partial coefficients, standard errors, and standardized partial coefficients of the observed variables on the latent variables for Model 1 are presented in Table 5 and a summary of the goodness of fit indices is presented in Table 6. Examination of the unstandardized partial coefficients and residuals shows that all of the observed endogenous variables loaded significantly on their respective, hypothesized latent constructs and all residuals were less than 2.0. Although the CFI value of .927 suggests good model fit, all other goodness of fit indices (i.e., AGFI, NFI, RMSEA), as well as the significant $\chi^2$, suggest the theoretical model is not a good fit for the relationships among the observed data. As previously mentioned, Model 2, with the observed Body Image variable loading on the Internalized Objectification latent variable, would not converge within the Normal Weight sample and was therefore rejected as a possibility.

A number of authors (e.g., Kaplan, 2000; Kline, 2011; Schumacker & Lomax, 2010) have noted that although structural equation modeling is confirmatory in nature, it is often preferable and even necessary to either make modifications to the hypothesized model or to test alternative models. As such, AMOS output includes an index, Modification Indices, which suggests modifications that may improve overall model fit through the freeing of parameters or restrictions (e.g., adding an “arrow” or covariance to “constrain” the measurement model). Although a number of potential modifications to
Model 1 were identified within the Modification Indices, Kline (2011) cautions that researchers should only free one parameter at a time allowing for the use of a $\chi^2$ difference test to evaluate changes in a systematic, “nested” fashion. In accordance with Bollen’s (1989) suggestion to free those parameters that create the largest potential for change in chi-square, while not violating the major theoretical constructs of the model and to reduce further exploratory nature of the analyses, only two potential modifications to the model were considered. The first constrained model, which included freeing the error terms of Institutional weight-based objectifying experiences and Internalized Weight Bias, would not converge and was therefore rejected as a possibility.

The unstandardized partial coefficients, standard errors, and standardized partial coefficients of the observed variables on the latent variables for the second constrained model, which included freeing the error terms of Internalized Weight Bias and Depression, are presented in Table 5 and a summary of the goodness of fit indices is presented in Table 6. Examination of the unstandardized partial coefficients and residuals shows that all of the observed endogenous variables loaded significantly on their respective, hypothesized latent constructs and all residuals were less than 2.0. Although the value of $\chi^2$ is significant, all other goodness of fit indices (i.e., CFI, AGFI, NFI, RMSEA) suggest the second constrained model is good fit for the relationships among the observed data. Additionally, results of the nested $\chi^2$ difference test between Model 1 and the second constrained model ($\Delta \chi^2(1) = 9.836, p < .01$) indicate the “larger" constrained model with more freely estimated parameters fits the data better than the “smaller" model in which the parameters in question are fixed, and as such, is the measurement model accepted for the Normal Weight sample. The final measurement model of endogenous variables presented in Greek letter, matrix algebra format for the
Normal Weight sample can be found in Figure 4 and Figure 5 presents standardized partial coefficients and the significance for each path of the final measurement model.

**Overweight Sample.** As previously mentioned, Model 1, with the observed Body Image variable loading on the Psychosocial Outcomes latent variable, would not converge within the Overweight sample and was therefore rejected as a possibility. The unstandardized partial coefficients, standard errors, and standardized partial coefficients of the observed variables on the latent variables for Model 2 are presented in Table 7 and a summary of the goodness of fit indices is presented in Table 8. Examination of the unstandardized partial coefficients and residuals shows that all of the observed endogenous variables loaded significantly on their respective, hypothesized latent constructs and all residuals were less than 2.0. Although values of several of the goodness of fit indices (i.e., CFI, AGFI, NFI) suggest good model fit, the significant $\chi^2$ and RMSEA value of .084 suggest that Model 2 only displays adequate fit for the relationships among the observed data.

Although a number of potential modifications to Model 2 were identified within the Modification Indices, in accordance with the previously described suggestions of Kline (2011) and Bollen (1989), only two potential modifications to the model were considered. The first constrained model, which included freeing the error terms of Internalized Weight Bias and Depression, would not converge and was therefore rejected as a possibility.

The unstandardized partial coefficients, standard errors, and standardized partial coefficients of the observed variables on the latent variables for the second constrained model, which included freeing the error terms of Institutional weight-based objectifying experiences and Internalized Weight Bias, are presented in Table 7 and a summary of the
goodness of fit indices is presented in Table 8. Examination of the unstandardized partial
coefficients and residuals shows that all of the observed endogenous variables loaded
significantly on their respective, hypothesized latent constructs and all residuals were less
than 2.0. In addition to a nonsignificant value for $\chi^2$, all additional goodness of fit indices
(i.e., CFI, AGFI, NFI, and RMSEA) suggest the second constrained model is a good fit
for the relationships among the observed data. Additionally, results of the nested $\chi^2$
difference test between Model 2 and the second constrained model ($\Delta\chi^2(1) = 8.636, p < .01$) indicate the “larger” constrained model with more freely estimated parameters fits
the data better than the “smaller” model in which the parameters in question are fixed,
and as such, is the measurement model accepted for the Overweight sample. The final
measurement model of endogenous variables presented in Greek letter, matrix algebra
format for the Overweight sample can be found in Figure 6 and Figure 7 presents
standardized partial coefficients and the significance for each path of the final
measurement model.

Structural Models.

The structural models were also considered and analyzed independently for both
the Overweight and Normal weight samples, the results of which are presented separately
below. The structural model of latent variables presented in Greek letter, matrix algebra
format can be found in Figure 8.

Normal Weight Sample. The unstandardized partial coefficients, standard errors,
and standardized partial coefficients of the observed variables on the latent variables and
each path of the structural model are presented in Table 5. While small differences were
observed between the accepted measurement model and structural model, all of the
observed endogenous variables loaded significantly on their respective, hypothesized
latent constructs and all residuals were less than 2.0. Objectifying Experiences were
directly associated with Internalized Objectification \((t = .847, p < .001)\) and Psychosocial
Outcomes \((t = 1.674, p < .01)\), and Internalized Objectification was also directly
associated with Psychosocial Outcomes \((t = 1.634, p < .01)\). Goodness of fit indices did
not change from those of the accepted measurement model and can be reviewed in Table
6. Figure 9 presents standardized partial coefficients and the significance for each path of
the final structural model of the Normal Weight sample.

To assess whether Internalized Objectification was acting as a mediating process
between Objectifying Experiences and Psychosocial Outcomes, several additional
analyses of the structural model were conducted, in accordance with the methods
described by Holmbeck (1997) and Kline (2011). The hypothesis of “pure” mediation
between two variables, in this case Objectifying Experiences and Psychosocial Outcomes,
is tested by predicting that the direct effect between those two variables is not statistically
significant. If a third variable, specifically Internalized Objectification, mediates the
association between Objectifying Experiences and Psychosocial Outcomes, then after the
effects of the mediator are accounted for, the relationship between Objectifying
Experiences and Psychosocial Outcomes would be equal to zero or be significantly
smaller than it was originally. In other words, the effect of the IV on the DV shrinks upon
the addition of the mediator to the model.

Review of the structural model serves as the first three steps of the mediation
analyses by showing that the independent variable (IV) is correlated with the dependent
variable (DV), the IV is correlated with the mediator, and the mediator affects the DV,
indicating that all of the variables are associated with one another. To determine whether
the association between the IV and the DV is explained by the mediator and whether the
IV predicts the DV in the same way after the effects of mediator are accounted for, the structural model was tested under two additional conditions: 1) the IV-DV path constrained to zero and 2) the IV-DV path not constrained.

First, the direct effects of the path from Objectifying Experiences to Psychosocial Outcomes in the structural model were compared to a second, constrained structural model, which included removal (constrained to zero) of the direct path between Internalized Objectification and Psychosocial Outcomes. Analyses of the standardized partial coefficients (Table 5) indicated a reduction in Beta from the constrained model to the original, full structural model as well as a significant indirect path between Objectifying Experiences and Psychosocial Outcomes, through Internalized Objectification, suggesting partial mediation. However, as the constrained model would not converge thus not allowing for a $\chi^2$ difference test between the two models, the presence of mediation should be interpreted with strong caution.

*Overweight Sample.* The unstandardized partial coefficients, standard errors, and standardized partial coefficients of the observed variables on the latent variables and each path of the structural model are presented in Table 7. While small differences were observed between the accepted measurement model and structural model, all but one of the observed endogenous variables loaded significantly on their respective, hypothesized latent constructs and all residuals were less than 2.0. Contrary to the accepted measurement model, the path between Objectifying Experiences and Psychosocial Outcomes was only marginally significant ($t = .751, p = .065$). Objectifying Experiences was directly associated with Internalized Objectification ($t = 1.179, p < .001$) and Internalized Objectification was directly associated with Psychosocial Outcomes ($t = 1.605, p < .001$). Goodness of fit indices did not change from those of the accepted
measurement model and can be reviewed in Table 8. Figure 10 presents standardized
partial coefficients and the significance for each path of the final structural model for the
Overweight sample.

To assess whether Internalized Objectification was acting as a mediating process
between Objectifying Experiences and Psychosocial Outcomes, several additional
analyses of the structural model were conducted, in accordance with the previously
described methods recommended by Holmbeck (1997) and Kline (2011). After
establishing that all of the variables are associated with one another, the structural model
was tested under the two additional conditions previously described.

First, the direct effects of the path from Objectifying Experiences to Psychosocial
Outcomes in the structural model were compared to a second, constrained structural
model, which included removal (constrained to zero) of the direct path between
Internalized Objectification and Psychosocial Outcomes. Analyses of the standardized
partial coefficients (Table 7) indicated a significant reduction in Beta from the
constrained model to the original, full structural model. Specifically, in the constrained
model the direct path between Objectifying Experiences and Psychosocial Outcomes was
significant, however, after adding a direct path between Internalized Objectification and
Psychosocial Outcomes, the direct effects of Objectifying Experiences on Psychosocial
Outcomes were no longer significant. Second, analysis of the original, full structural
model indicated a significant indirect path between Objectifying Experiences and
Psychosocial Outcomes, through Internalized Objectification.

Finally, results of a nested $\chi^2$ difference test between the full structural model and
the second constrained model ($\Delta \chi^2(1) = 37.002, p < .01$) indicate the “smaller" model,
with the lower (nonsignificant) chi-square value, in which the parameters in question are
fixed fits the data better the “larger” constrained model with more freely estimated parameters. Taken together, these analyses suggest Internalized Objectification fully mediates the relationship between Objectifying Experiences and Psychosocial Outcomes for the Overweight sample.
DISCUSSION

This study tested two proposed measurement models of the relationship of body image in the psychosocial processes and outcomes of weight based objectification. The relationships between weight-based objectifying experiences, internalized weight bias, self-objectification, body image, depression, and disordered eating were analyzed using Objectification Theory as a guiding framework. Structural equation modeling indicated a differing role for body image depending on weight status. Specifically, poor body image fit as an observed measure of Internalized Objectification for the Overweight Sample while occurring as a Psychosocial Outcome within the Normal Weight sample.

Additional analyses of the structural models also indicated that for the Overweight sample, the relationship between Objectifying Experiences and Psychosocial Outcomes is fully mediated by the process of Internalized Objectification.

Similarities and Differences between Samples.

Results of a series of independent samples t-tests indicate that women in the Overweight sample self-reported greater instances of every observed endogenous variable except self-objectification, joining a growing body of research (e.g., Harrison & Frederickson, 2003; Noll & Fredrickson, 1998; Tiggemann & Lynch, 2001) and providing further support for the tenet of Objectification theory that women can be concerned with their physical appearance regardless of body size. Quite simply, both overweight or obese and normal weight individuals exist in a culture where their bodies and the bodies of women in general, are evaluated and consequently objectified. However, overweight women are more likely to have certain experiences that remind them that they are objects that normal weight women do not.
Ultimately, the most notable difference between the accepted measurement models for the Normal Weight and Overweight Samples was the relative placement and role of body image within the process of self-objectification. Specifically, poor body image fit as an observed measure of Internalized Objectification for the Overweight sample while occurring as a Psychosocial Outcome within the Normal Weight sample, suggesting that Overweight women may be experiencing not just poorer body image, but that experience may occur earlier in the process of internalizing objectification from one’s environment. Perhaps, among those who are not overweight, poor body image is a greater manifestation of psychological maladjustment than internalized objectification.

Conversely, among overweight women, greater internalization of society’s preoccupation with weight is more directly related to how they see their body. This differential role of body image also provides some preliminary evidence for weight based, group specific manifestations of self-objectification.

The differing correlations among error terms also provide further evidence of weight-based, group specific manifestations of self-objectification. Specifically, the accepted measurement model for the Overweight Sample allowed for correlation among the internalized weight bias and depression error terms while allowing for correlation among the internalized weight bias and institutional weight based objectification error terms within the Normal Weight sample. While correlations in error terms can often be explained by socially acceptable responding from participants on multiple measures or similar wording of items, for a woman of a “normal” weight, the experiences of internalized weight bias described by the WBIS could also perhaps indicate the co-occurrence of depression. Similarly, for overweight and obese women the respective correlation among error terms could indicate a closer underlying relationship between
institutional weight based objectification and internalized weight bias. Quite simply, while overweight and obese women may be able to ignore or dismiss comments from others or interpret them as reflecting others’ ignorance or bias, it may be more difficult to subjectively ignore feedback from their physical environment (e.g., not fitting into a booth at a restaurant). Rather than recognizing that the physical environments in which we all exist are created by people and therefore also biased, feedback from inanimate objects could be interpreted by overweight and obese women as being wholly objective and serve as greater reminder that they fail to meet the social standard for physical appearance, or put another way, “even the environment thinks I’m fat…”

On a similar note, although the measure of institutional weight based objectification loaded significantly onto the proposed Objectification latent construct for both samples, this relationship appears to be stronger for women in the Overweight sample compared to the Normal Weight sample. This relationship is not surprising considering one would expect to see greater self-report as well as more narrowly defined experiences of weight based objectification as weight increases. Quite simply, as overweight and obese women likely experience more weight based objectification (interpersonally as well as institutionally) than their normal weight counterparts, these relationships would likely be stronger and more narrowly ranged among an entire sample of overweight and obese women. For overweight and obese women, the more frequent experiences of institutional weight based objectification may contribute more directly to the internalization of that weight bias. However, it is important to note this study utilized a measure of weight based stigmatizing experiences originally designed for research with overweight and obese samples and it is likely that women of a normal weight would probably score higher in the measurement of other types of objectifying experiences, such
as “cat calls.” Further, as previously discussed, due to the differential placement of body image within the respective models, further between group similarities and differences are purely speculative.

**Limitations and Future Directions**

The most notable limitation of this study is the primarily Caucasian, undergraduate female sample from which the results were obtained. On one hand, a significant portion of the general research on body image and, more specifically, self-objectification is drawn from exactly this population, thus making comparisons and contributions to this body of research rather ideal. Conversely, the body image and self-objectification experiences of men and more heterogeneous community samples have been severely understudied to date.

Nonetheless, some researchers have posited that the theory’s basic tenets can also be applied to men (e.g., Morrison, Morrison, & Hopkins, 2003). Empirically, although women report more sexually objectifying experiences and exhibit higher rates of self-objectification than men (e.g., Aubrey, 2006a; Grabe, et al., 2005; Swim, et al., 2001), the construct has demonstrated good reliability and validity in male samples (e.g., McKinley, 1998; Wagner Oehlhof, et al., 2009). However, results from research on self-objectification with males in community samples have been mixed. Some research (Fredrickson, et al., 1998; Wagner Oehlhof, et al., 2009.) has found that self-objectification was not linked to the same outcomes for men as it was for women (i.e., higher self-objectification was linked to lower math performance and a desire for a significantly less muscular ideal body shape for women, but not for men). Conversely, other research has found important links between self-objectification and psychological outcomes for men that mirror those found among women. For example, Sanchez and
Kiefer (2007) found a significant relationship between increases in body shame and
greater appearance concerns during sexual activity and reports of decreased pleasure and
arousal while Aubrey (2007) reported that body surveillance mediated the relationships
between media exposure, body shame, and appearance anxieties during sexually intimate
situations.

Although, objectification theory (Fredrickson & Roberts, 1997) proposes that
women are more likely than men to receive messages from parents, peers, men, and the
media that their appearance is central to their worth as a person and are routinely
scrutinized by others, future research in this area could certainly benefit from a male
perspective. However, similar to the simple differences observed between women of
varying weights in this study, it is likely that group specific manifestations would present
in male and community samples as well.

Another limitation of the current work is the general nature of structural equation
modeling. Structural equation modeling, while advanced and more robust than traditional
statistical methodology such as regression and analyses of variance, is still limited,
particularly in that is does not prove causation. While the results of the current study
suggest that poor body image may be occurring earlier in the self-objectification process
for overweight and obese women, the exact role of body image as a function of time and
development cannot actually be determined given the cross-sectional nature of the sample
and study design. Similarly, previous work in the general area of body image would
suggest that the development of body image (poor or otherwise), at least among women,
is rooted much earlier than the current college student sample would necessarily detect.

Numerous researchers have documented that body image concerns and
dissatisfaction are significant for most adolescent girls in both clinical and non clinical
samples (Bunnell et al., 1992; Smolak & Levine, 2001; Thompson et al., 1999b), regardless of eating pathology or weight (Rodin, Silberstein, & Streigel-Moore, 1985); findings which have subsequently been explained as “normative discontent.” In other words, because a majority of women tend to be dissatisfied with their bodies, negative body attitudes are, in fact, quite normal. Results from several studies suggest that children’s reports of weight and body concerns range between 37% and 50% for girls aged 8- to 13-years-old (Collins, 1991; Field, et al., 1999; Rolland, Farnill, & Griffiths, 1997; Schur, Sanders, & Steiner, 2000; Schreiber et al., 1996) and a 1998 review by Smolak, Levine, and Schermer (1998) found that an average of 40% of girls in late elementary school reported weight and body image concerns. Thus, by adolescence, many girls have already developed weight and body concerns and may even have engaged in attempts to alter or control their weight and body shape. Thus, although it is probable that Objectifying Experiences contribute to Internalized Objectification and result in poorer Psychosocial Outcomes, given the nature of the current study design it is not possible to say with certainty that any of these variables are actually occurring before or after one another.

Further, women who have a longer history of overweight and obesity, thus being exposed to greater objectification over a lengthier period of time may experience greater internalization and display more negative psychosocial outcomes than women for whom overweight or obesity is a relatively recent development in comparison due to longer exposure to aspects of the environment which are particularly objectifying. A number of sociocultural models (Stice, 1994, 2001, 2002; Stice & Shaw, 1994; Thompson et al., 1999; Thompson & Stice, 2001; van den Berg et al., 2002) make particular note of the role of peers in the development of children’s and adolescents” body image. In addition to
serving as general sources of visual social comparison, peers may also influence each other via rewards and punishments in the form of appearance oriented conversations and criticism (Jones, Vigfusdottir, & Lee, 2004). Peer conversations and criticism regarding appearance provide strong social reinforcement for the value of physical appearance among children (Stormer & Thompson, 1996). And, in general, previous research suggests a strong peer pressure with regard to weight and body image concerns (Barr Taylor et al., 1998), dieting (Levine, Smolak, & Hayden, 1994; Paxton, et al., 1999), as well as disordered eating (Levine, et al., 1994). Of particular relevance to the focus of this study, Neumark-Sztainer and colleagues (2002) found that overweight girls reported the most negative responses to others’ teasing. Experiences of childhood and adolescent weight and body teasing may function as an age specific manifestation of Objectifying Experiences. Quite simply, as the study did not measure past weight status it is not possible to determine whether the overweight and obese women in this study truly developed poor body image sooner than those women of a normal weight. Although this hypothesis is beyond the scope of the current study, future research questions assessing weight and body teasing among child and adolescent samples or retrospective reports of childhood and adolescent weight and body teasing among young adult samples could provide the appropriate data for analyses.

Another limitation of the current work is related to the development of the analyses. The introduction of this paper was written prior to acquiring the specific knowledge and skills necessary for structural equation modeling, which is evident in both the development of the models and hypotheses as well as the justification for the approach. However, even with this limitation the introduction would still lend itself to the models that were tested.
Another limitation of structural equation modeling is that the results are only as strong as the measures. One measure originally proposed for inclusion in the models, the Interpersonal Sexual Objectification Scale, was ultimately discarded from analyses due to issues of non-normality that could not be resolved. Likewise, other researchers (Calogero, 2010) have noted difficulties in their use of the specific measure used to assess trait self-objectification, the TSOQ; most notably, participant error in appropriately rank ordering the body attributes. While the method used in this study was designed to reduce this particular participant error, it is unknown whether any other errors were an issue in this administration.

Additionally, while the TSOQ represented a significant pathway within all measurement and structural models, the strength of this relationship relative to the other measures was certainly weaker, with appearance focus ultimately explaining the least amount of variance in the models, which may ultimately speak to the distinction between transient state and persistent trait self-objectification. Structural equation modeling strongly promotes the use of multiple observed indicators to fully encapsulate the nature of a latent construct and I am not yet convinced that this construct, the preoccupation with appearance, either that of others or oneself, is being accurately observed/measured with the currently available measures. Namely, the TSOQ, as used in this study, measures self-objectification of one’s own body, yet evidence suggests that those women who engage in the most self-objectification are also greater objectifiers of others (Strelan & Hargreaves, 2005; Zurbriggen, Ramsey, & Jaworski, 2011) as well as greater consumers of and perhaps more susceptible to the negative effects of appearance based media (Aubrey, 2006b; Stice, Spangler, & Agras, 2001). Still other research has conceptualized objectification in relation to social power over others, in which the objectifiers treat social
targets as usable objects, a means to an end, to attain personal benefits and meet their own needs (Gruenfeld, Inesi, Magee, & Galinsky, 2008). These other manifestations of an appearance focus suggest a higher order personality construct not being fully measured within the current study. Although completely capturing an appearance focus in relation to an underlying personality trait will very likely require a number of trait objectification (internal and external) measures as well as a much larger sample size for the necessary analyses, future research addressing how other facets of appearance culture contribute to or accurately explain the current study models would be quite interesting.

Finally, this study only included measurement of one form of objectifying experiences, namely body weight/shape based. It is not at all unreasonable to expect that other types of objectification (e.g., sexual; engaging in the objectification of others, body modifications, consumption of objectifying media) could also fit within the respective models and future research could benefit from studying the respective role of other forms of objectification, such as interpersonal sexual or vicarious objectification through various forms of media and popular culture. Likewise, as previously discussed, objectification theory posits a number of potential pathways through which self-objectification would ultimately be manifest and expressed and this particular study only addressed a small number of those pathways. Given previous work addressing relationships and weight that highlights poorer status and dating/romantic relationships for overweight and obese women (Chen & Brown, 2005; Regan, 1995; Sheets & Ajmere, 2005; Sitton & Blanchard, 1995; Smith, et al., 2007), future research examining some of the more under-studied pathways, particularly the hypothesized outcome of sexual dysfunction would be worthwhile.
Clinical Implications

With the Overweight sample reporting greater weight loss efforts than the Normal Weight Sample, it would be worthwhile to determine if the related experiences and processes of weight-based objectification and self-objectification contribute to or impede successful weight loss efforts. With more than half of adult Americans meeting diagnostic criteria for overweight and obesity, a thorough understanding of these individuals’ life experiences is critical to creating appropriate weight loss interventions. And, while certainly disconcerting, weight-based objectifying experiences do not appear to solely influence the related negative psychosocial outcomes. Rather, the resulting internalization of those weight-based objectifying experiences appears to contribute significantly to these psychosocial outcomes as well. Thus, while individuals may not be able to wholly control their exposure to weight-based objectifying experiences, efforts to address reduction of the subsequent internalization could be beneficial.

Conclusion

As previous work in the area of self-objectification has often drawn from normal weight populations or simply neglected to look at the role of self-objectification beyond simple correlations with weight and BMI, this study makes a novel contribution to the literature and further highlights the need to consider group specific manifestations in the process and experience of self-objectification. Part of the experience of being a woman, particularly in American culture, is being looked at and evaluated by others and given the relative importance of body appearance in women’s identity, it is not surprising that how women feel about their bodies ultimately affects their psychological well-being. Self-objectification is quite likely a relevant construct for most women albeit consisting of
group specific manifestations and occasionally requiring different methods of measurement.
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Scott, K. M., Bruffaerts, R., Simon, G. E., Alonso, J., Angermeyer, M., de Girolamo, G.,


### APPENDIX A
### DEMOGRAPHICS QUESTIONNAIRE

Please provide the following demographic information so we know more about the individuals who are participating.

1. How old are you?  

2. What is your relationship status?  
   (Please choose one)  
   - Single  
   - Married/Committed  
   - In a relationship – living separately  
   - Divorced/Separated  
   - In a relationship – cohabitating  
   - Widowed  
   - Less than 1 month  
   - 1 to 6 months  
   - 6 months to a year  
   - 1 to 5 years  
   - 5 years or more  

3. If you are in a relationship, how long has that relationship been going on? (Please choose one)  

4. Which is your current class standing? (Please choose one)  
   - First Year/Freshman  
   - Sophomore  
   - Junior  
   - Senior  
   - Fifth Year Senior or more

5. Which race/ethnic group best describes you? (Please choose one)  
   - Caucasian/White  
   - Native American/Pacific Islander  
   - African American/Black  
   - Middle Eastern/West Asian  
   - Hispanic/Latino(a)  
   - Bi/Multi-racial  
   - Asian American  
   - Other:  

6. Please provide your height:  

7. Please provide your weight:  

8. Are you currently trying to lose weight?  

<table>
<thead>
<tr>
<th>No</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Strenuously</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>0 times/week</td>
<td>1-2 times/week</td>
<td>3-4 times/week</td>
</tr>
</tbody>
</table>

9. During a typical week, how many times on average do you exercise **strenuously** (heart beats rapidly) for more than 15 minutes during your free time?  

10. During a typical week, how many times on average do you exercise **moderately** (not exhausting) for more than 15 minutes during your free time?  

11. During a typical week, how many times on average do you exercise **mildly** (minimal effort) for more than 15 minutes during your free time?  

12. During a typical week, in your leisure time, how often do you engage in any regular activity long enough to work up a sweat with your heart beating rapidly?  
   - Rarely/Never  
   - Sometimes  
   - Often
APPENDIX B
TRAIT SELF-OBJECTIFICATION QUESTIONNAIRE

In this section 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 as 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 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!**

<table>
<thead>
<tr>
<th>Rank</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>greatest impact</td>
</tr>
<tr>
<td>8</td>
<td>next greatest impact</td>
</tr>
<tr>
<td>7</td>
<td>:</td>
</tr>
<tr>
<td>6</td>
<td>next to least impact</td>
</tr>
<tr>
<td>5</td>
<td>0 = least impact</td>
</tr>
</tbody>
</table>

When considering your physical self-concept…

1. …what rank to you assign to **physical coordination**?
2. …what rank to you assign to **health**?
3. …what rank to you assign to **weight**?
4. …what rank to you assign to **strength**?
5. …what rank to you assign to **sex appeal**?
6. …what rank to you assign to **physical attractiveness**?
7. …what rank to you assign to **energy level (e.g., stamina)**?
8. …what rank to you assign to **firm/sculpted muscles**?
9. …what rank to you assign to **physical fitness level**?
10. …what rank to you assign to **measurements (e.g., chest, waist, hips)**?
APPENDIX C
MULTIDIMENSIONAL BODY-SELF RELATIONS QUESTIONNAIRE – APPEARANCE EVALUATION SUBSCALE

Please indicate how much you agree with each statement.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Definitely disagree</th>
<th>Mostly disagree</th>
<th>Neither agree nor disagree</th>
<th>Mostly agree</th>
<th>Definitely agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. My body is sexually appealing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. I like my looks just the way they are.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Most people would consider me good-looking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I like the way I look without my clothes on.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I like the way my clothes fit me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I dislike my physique.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. I am physically unattractive.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
APPENDIX D
STIGMATIZING SITUATIONS INVENTORY

Below is a list of situations that people encounter because of their weight. Indicate whether, and how often, each of these situations happens to you. Use the scale below:

0 = Never  
1 = Once in your life  
2 = More than once in your life  
3 = Multiple times in your life

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>Once in your life</th>
<th>More than once in your life</th>
<th>Multiple times in your life</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. A child coming up to you and saying something like, &quot;You're fat!&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. A doctor blaming unrelated physical problems on your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. A parent or other relative nagging you to lose weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. A spouse/partner calling you names because of your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. A spouse/partner telling you to lose weight in order to be more attractive.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. As an adult, having a child make fun of you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. Being called names, laughed at, or teased by other children when you were young.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. Being glared at or harassed by bus passengers for taking up &quot;too much&quot; room.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. Being hit, beaten up or physically attacked because of your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. Being offered fashion advice from strangers.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Being passed up for promotion, given bad assignments, or otherwise discriminated against at work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. Being sexually harassed (cat-calls, wolf-whistles, etc.) because of your weight</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. Being singled out as a child by a teacher, school nurse, etc. because of your size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. Being stared at in public.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. Being the only heavy person, or the heaviest person, at a family gathering.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. A doctor saying that your weight is a health problem, even when you are in good health.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. Being told, &quot;All you really need is a little willpower.&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. Being unable to get a date because of your size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Children loudly making comments about your weight to others.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. Friends, acquaintances, co-workers, etc. making fun of your appearance.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. Groups of people pointing and laughing at you in public.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. Having a doctor make cruel remarks, ridicule you, or call you names.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. Having a doctor recommend a diet even if you did not come in to discuss weight loss.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. Having a romantic partner exploit you, because s/he assumed you were &quot;desperate&quot; and would put up with it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. Having a spouse or partner be ashamed to admit to being with you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. Having family members feel embarrassed by you or ashamed of you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. Having friends not notice weight loss, or not encourage your efforts to lose weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. Having people assume that you overeat or binge-eat because you are overweight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. Having people assume you have emotional problems because you are overweight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. Having strangers suggest diets to you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. Having strangers take photographs of you, as if you were an exhibit.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. Having your children tease or insult you because of your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. In the supermarket, having people criticize or make comments about your food choices.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. Losing a job because of your size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. Not being able to find clothes that fit.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. Not being able to find medical equipment in a size that works for you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. Not being able to find sports equipment in a size that fits you.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. Not being able to fit into bus or airplane seats, into small cars, or into standard seatbelts.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. Not being able to fit into seats at restaurants, theaters, and other public places.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. Not being able to fit through turnstiles, on amusement park rides, or other places not already mentioned.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. Not being hired because of your weight, shape, or size.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>42. Other people having low expectations of you because of your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. Overhearing other people making rude remarks about you in public.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>44. Parents or other relatives telling you how attractive you would be, if you lost weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>45. People telling you that you will never find a partner if you don't lose weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>46. Seeing bumper stickers, t-shirts, advertising, etc., that ridicule fat people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. Strangers asking intrusive, personal questions about your weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>48. Strangers making abusive remarks to you (e.g., saying you are disgusting or that you don't deserve to live).</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>49. When eating in public, being told “You really shouldn't be eating that.&quot;</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>50. When walking outside, having people drive by and laugh or shout insults.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
APPENDIX E
WEIGHT BIAS INTERNALIZATION SCALE

Please rate your agreement with each item.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Moderately Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Slightly Agree</th>
<th>Moderately Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Regardless of my weight, I feel that I am just as competent as anyone.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>2. I am less attractive than most other people because of my weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>3. I feel anxious about being or becoming overweight because of what people might think of me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>4. I wish I could drastically change my weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>5. Whenever I think a lot about being overweight, I feel depressed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6. I hate myself for my weight.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>7. My weight is a major way that I judge my value as a person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>8. I don't feel that I deserve to have a really fulfilling social life because of my weight</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>9. I am OK being the weight that I am.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>10. Because of my weight, I don't feel like my true self.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>11. Because of my weight, I don't understand how anyone attractive would want to date me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
APPENDIX F
CENTER FOR EPIDEMIOLOGICAL STUDIES – DEPRESSION SCALE

Below is a list of the ways you might have felt or behaved.

Please indicate how often you have felt this way during the past week.

<table>
<thead>
<tr>
<th></th>
<th>Rarely/none of the time (less than 1 day)</th>
<th>Some/a little of the time (1-2 days)</th>
<th>Occasionally/moderate amount of time (3-4 days)</th>
<th>Most/all of the time (5-7 days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I was bothered by things that usually don’t bother me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2.</td>
<td>I did not feel like eating; my appetite was poor.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3.</td>
<td>I felt that I could not shake off the blues even with help from my family or friends.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>I felt I was just as good as other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5.</td>
<td>I had trouble keeping my mind on what I was doing.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6.</td>
<td>I felt depressed.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>7.</td>
<td>I felt that everything I did was an effort.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>8.</td>
<td>I felt hopeful about the future.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>9.</td>
<td>I thought my life had been a failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>10.</td>
<td>I felt fearful.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>11.</td>
<td>My sleep was restless.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>12.</td>
<td>I was happy.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>13.</td>
<td>I talked less than usual.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>I felt lonely.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15.</td>
<td>People were unfriendly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16.</td>
<td>I enjoyed life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17.</td>
<td>I had crying spells.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18.</td>
<td>I felt sad.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19.</td>
<td>I felt that people dislike me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20.</td>
<td>I could not get “going.”</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
APPENDIX G
EATING DISORDERS DIAGNOSTIC SCALE

Please carefully complete all questions.

Over the past 3 months…

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Slightly</th>
<th>Moderately</th>
<th>Extremely</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you felt fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Have you had a definite fear that you might gain weight or become fat?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3. Has your weight influenced how you think about/judge yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4. Has your shape influenced how you think about/judge yourself as a person?</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>5. During the past 6 months have there been times when you have eaten what other people would regard as an unusually large amount of food (e.g., a quart of ice cream) given the circumstances?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>6. During the times when you ate an unusually large amount of food, did you experience a loss of control (feel you couldn’t stop eating or control what or how much you were eating)?</td>
<td>Yes</td>
<td>No</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>7. How many DAYS per week on average over the past 6 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?</td>
<td>0 1 2 3 4 5 6 7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. How many TIMES per week on average over the past 3 MONTHS have you eaten an unusually large amount of food and experienced a loss of control?</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

During these episodes of overeating and loss of control did you…

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Eat more rapidly than normal?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Eat until you felt uncomfortably full?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Eat large amounts of food when you didn’t feel physically hungry?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Eat alone because you were embarrassed by how much you were eating?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Feel disgusted with yourself, depressed, or very guilty after overeating?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Feel very upset about your uncontrollable overeating or resulting weight gain?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. How many times per week on average over the last 3 months have you made yourself vomit to prevent weight gain or counteract the effects of eating?</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. How many times per week on average over the last 3 months have you used laxatives or diuretics to prevent weight gain or counteract the effects of eating?</td>
<td>0 1 2 3 4 5 6 7 8 9 10 11 12 13 14</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
17. How many times on average over the last 3 months have you fasted (skipped at least 2 meals in a row) to prevent weight gain or counteract the effects of eating?  
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

18. How many times on average over the last 3 months have you engaged in excessive exercise specifically to counteract the effects of overeating episodes?  
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

19. How much do you weigh?  

20. How tall are you?  

21. Over the past 3 months, how many menstrual periods have you missed?  
1 2 3 4 N/A

22. Have you been taking birth control pills during the past 3 months?  
Yes  No
APPENDIX H
HUMAN SUBJECTS REVIEW BOARD APPROVAL

January 31, 2011

TO: Marissa Wagner Oehlholf
Psychology

FROM: Hillary Harms, Ph.D.
HSRB Administrator

RE: HSRB Project No.: H11D126GE7

TITLE: Women’s Self-Perceptions Study

You have met the conditions for approval for your project involving human subjects. As of January 28, 2011, your project has been granted final approval by the Human Subjects Review Board (HSRB). This approval expires on January 10, 2012. You may proceed with subject recruitment and data collection.

The final approved version of the consent document(s) is attached. Consistent with federal OHRP guidance to IRBs, the consent document(s) bearing the HSRB approval/expiration date stamp is the only valid version and you must use copies of the date-stamped document(s) in obtaining consent from research subjects.

You are responsible to conduct the study as approved by the HSRB and to use only approved forms. If you seek to make any changes in your project activities or procedures (including increases in the number of participants), please send a request for modifications immediately to the HSRB via this office. Please notify me, in writing (or email: hsr@bg.edu) upon completion of your project.

Good luck with your work. Let me know if this office or the HSRB can be of assistance as your project proceeds.

Comments/Modifications:
Please add text equivalent to the HSRB approval/expiration date stamp to the “footer” area of the electronic consent form (see attached for specific text).

Dr. Robert Carels
Research Category: EXPEDITED #7
Table 1

*Variable Names and Definitions*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objectifying Experiences</strong></td>
<td></td>
</tr>
<tr>
<td>Weight Objectification – Interpersonal</td>
<td>Mean of SSI interpersonal stigma items, recoded to start at 0</td>
</tr>
<tr>
<td>Weight Objectification – Institutional</td>
<td>Mean of SSI institutional stigma items, recoded to start at 0</td>
</tr>
<tr>
<td><strong>Internalized Objectification</strong></td>
<td></td>
</tr>
<tr>
<td>Internalized Weight Bias</td>
<td>Mean of WBIS items, recoded to start at 0</td>
</tr>
<tr>
<td>Self-Objectification</td>
<td>Square root of summed TSOQ appearance orientation items, recoded to start at 0</td>
</tr>
<tr>
<td><strong>Psychosocial Outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>Body Image&lt;sup&gt;a&lt;/sup&gt;</td>
<td>Mean of MBSRQ appearance evaluation items, recoded to start at 0</td>
</tr>
<tr>
<td>Disordered Eating</td>
<td>Sum of z-scored EDDS items, recoded to start at 0</td>
</tr>
<tr>
<td>Depression</td>
<td>Mean of CESD items</td>
</tr>
</tbody>
</table>

<sup>a</sup>Body Image endogenous variable loads on Internalized Objectification latent variable for Overweight sample
Table 2

Means and Standard Deviations of Endogenous Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Normal Weight</th>
<th>Overweight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td>M (SD)</td>
</tr>
<tr>
<td>Weight Objectification – Interpersonal</td>
<td>0.377 (0.27)</td>
<td>0.732 (0.30)</td>
</tr>
<tr>
<td>Weight Objectification – Institutional</td>
<td>0.059 (0.18)</td>
<td>0.467 (0.46)</td>
</tr>
<tr>
<td>Internalized Weight Bias</td>
<td>1.616 (0.59)</td>
<td>2.034 (0.63)</td>
</tr>
<tr>
<td>Self-Objectification</td>
<td>3.508 (0.99)</td>
<td>3.528 (0.95)</td>
</tr>
<tr>
<td>Body Image</td>
<td>2.582 (0.80)</td>
<td>1.694 (0.88)</td>
</tr>
<tr>
<td>Disordered Eating</td>
<td>3.999 (1.72)</td>
<td>4.967 (1.31)</td>
</tr>
<tr>
<td>Depression</td>
<td>0.775 (0.48)</td>
<td>0.874 (0.52)</td>
</tr>
</tbody>
</table>

a significant difference between Normal Weight and Overweight, $p < .05$
Table 3

Intercorrelations Between Endogenous Variables for Normal Weight Sample

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weight Objectification – Interpersonal</td>
<td>-</td>
<td>.446</td>
<td>.300</td>
<td>.125</td>
<td>-.315</td>
<td>.379</td>
<td>.413</td>
</tr>
<tr>
<td>2. Weight Objectification – Institutional</td>
<td>-</td>
<td>.111</td>
<td>.087</td>
<td>-.203</td>
<td>.158</td>
<td>.272</td>
<td></td>
</tr>
<tr>
<td>3. Internalized Weight Bias</td>
<td>-</td>
<td>.236</td>
<td>-.416</td>
<td>.555</td>
<td>.258</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-Objectification</td>
<td>-</td>
<td>-.044</td>
<td>.244</td>
<td>.107</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Body Image</td>
<td>-</td>
<td>-.465</td>
<td>-.456</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Disordered Eating</td>
<td>-</td>
<td>-</td>
<td>.346</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Depression</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
Table 4

*Intercorrelations Between Endogenous Variables for Overweight Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Weight Objectification – Interpersonal</td>
<td>-</td>
<td>.741</td>
<td>.435</td>
<td>.136</td>
<td>-.494</td>
<td>.512</td>
<td>.448</td>
</tr>
<tr>
<td>2. Weight Objectification – Institutional</td>
<td>-</td>
<td>.273</td>
<td>.151</td>
<td>-.429</td>
<td>.457</td>
<td>.308</td>
<td></td>
</tr>
<tr>
<td>3. Internalized Weight Bias</td>
<td>-</td>
<td>.175</td>
<td>-.568</td>
<td>-.578</td>
<td>.463</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-Objectification</td>
<td>-</td>
<td>-.140</td>
<td>.273</td>
<td>.171</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Body Image</td>
<td>-</td>
<td>-.464</td>
<td>-.438</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Disordered Eating</td>
<td>-</td>
<td>.450</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Depression</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5

*Unstandardized Partial Coefficients, Standard Errors and Standardized Partial Coefficients of Pathways for Normal Weight Sample*

<table>
<thead>
<tr>
<th>Path</th>
<th>Measurement Model</th>
<th>Constrained Model</th>
<th>Structural Model</th>
<th>Mediation Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
<td>$B$</td>
</tr>
<tr>
<td>WO (Interpersonal) to Objectifying Experiences</td>
<td>1.000</td>
<td>-</td>
<td>.923</td>
<td>1.000</td>
</tr>
<tr>
<td>WO (Institutional) to Objectifying Experiences</td>
<td>.356</td>
<td>.091</td>
<td>.483</td>
<td>.367</td>
</tr>
<tr>
<td>Internalized Weight Bias to Internalized Objectification</td>
<td>1.000</td>
<td>-</td>
<td>.827</td>
<td>1.000</td>
</tr>
<tr>
<td>Self-Objectification to Internalized Objectification</td>
<td>.577</td>
<td>.200</td>
<td>.285</td>
<td>.504</td>
</tr>
<tr>
<td>Body Image to Internalized Objectification</td>
<td>-.402</td>
<td>.051</td>
<td>-.641</td>
<td>-.423</td>
</tr>
<tr>
<td>Disordered Eating to Psychosocial Outcomes</td>
<td>1.000</td>
<td>-</td>
<td>.743</td>
<td>1.000</td>
</tr>
<tr>
<td>Depression to Psychosocial Outcomes</td>
<td>.203</td>
<td>.030</td>
<td>.541</td>
<td>.253</td>
</tr>
<tr>
<td>Objectifying Experiences to Internalized Objectification</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Objectifying Experiences to Psychosocial Outcomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Internalized Objectification to Psychosocial Outcomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* WO: Weight Objectification

$^a p < .01$

$^b p < .001$
Table 6

*Summary of Goodness of Fit Indices for Normal Weight Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement Model</th>
<th>Constrained Measurement and Structural Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2 (df)$</td>
<td>33.132 (11)$^a$</td>
<td>23.296 (10)$^b$</td>
</tr>
<tr>
<td>CFI</td>
<td>.927</td>
<td>.956</td>
</tr>
<tr>
<td>NFI</td>
<td>.898</td>
<td>.928</td>
</tr>
<tr>
<td>AGFI</td>
<td>.890</td>
<td>.917</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.098</td>
<td>.079</td>
</tr>
</tbody>
</table>

$^a p \leq .001$

$^b p \leq .01$
Table 7

*Unstandardized Partial Coefficients, Standard Errors and Standardized Partial Coefficients of Pathways for Overweight Sample*

<table>
<thead>
<tr>
<th>Path</th>
<th>Measurement Model</th>
<th>Constrained Model</th>
<th>Structural Model</th>
<th>Meditational Model</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
<td>$B$</td>
</tr>
<tr>
<td>WO (Interpersonal) to Objectifying Experiences</td>
<td>1.000</td>
<td>-</td>
<td>.968</td>
<td>1.000</td>
</tr>
<tr>
<td>WO (Institutional) to Objectifying Experiences</td>
<td>1.203$^b$</td>
<td>.121</td>
<td>.766</td>
<td>1.289$^b$</td>
</tr>
<tr>
<td>Internalized Weight Bias to Internalized Objectification</td>
<td>1.000</td>
<td>-</td>
<td>.779</td>
<td>1.000</td>
</tr>
<tr>
<td>Self-Objectification to Internalized Objectification</td>
<td>.497$^b$</td>
<td>.150</td>
<td>.258</td>
<td>.497$^b$</td>
</tr>
<tr>
<td>Body Image to Internalized Objectification</td>
<td>-1.267$^b$</td>
<td>.140</td>
<td>-.715</td>
<td>-.423$^b$</td>
</tr>
<tr>
<td>Disordered Eating to Psychosocial Outcomes</td>
<td>1.000</td>
<td>-</td>
<td>.728</td>
<td>1.000</td>
</tr>
<tr>
<td>Depression to Psychosocial Outcomes</td>
<td>.337$^a$</td>
<td>.042</td>
<td>.618</td>
<td>.253$^b$</td>
</tr>
<tr>
<td>Objectifying Experiences to Internalized Objectification</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Objectifying Experiences to Psychosocial Outcomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Internalized Objectification to Psychosocial Outcomes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note.* WO: Weight Objectification

$^a p < .01$

$^b p < .001$
Table 8

*Summary of Goodness of Fit Indices for Overweight Sample*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measurement Model</th>
<th>Constrained Measurement and Structural Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\chi^2$ (df)</td>
<td>26.455 (11)$^a$</td>
<td>17.819 (10)$^b$</td>
</tr>
<tr>
<td>CFI</td>
<td>.969</td>
<td>.984</td>
</tr>
<tr>
<td>NFI</td>
<td>.949</td>
<td>.966</td>
</tr>
<tr>
<td>AGFI</td>
<td>.913</td>
<td>.931</td>
</tr>
<tr>
<td>RMSEA</td>
<td>.084</td>
<td>.063</td>
</tr>
</tbody>
</table>

$^a p \leq .01$

$^b p > .05$
Figure 1. General framework of objectification theory
Figure 2. Hypothesized measurement model of self-objectification
Figure 3. Alternative hypothesized measurement model of self-objectification
Figure 4. Measurement model of endogenous variables for Normal Weight sample

\[ \gamma = \Lambda_\gamma \eta + \varepsilon \]

\( \gamma_1 = \text{SSI People} \)
\( \gamma_2 = \text{SSI Environment} \)
\( \gamma_3 = \text{WBIS Internalized Weight Bias} \)
\( \gamma_4 = \text{APPR Self Objectification} \)
\( \gamma_5 = \text{MBSRQae Body Image} \)
\( \gamma_6 = \text{CESD Depression} \)
\( \gamma_7 = \text{EDDS Disordered Eating} \)
Figure 5. Measurement model for Normal Weight sample (N = 212)

Normed Fit Index = .928; root mean square error of approximation = .079; chi-square = 23.296; degrees of freedom = 10; e = error; res = residual.
Figure 6. Measurement model of endogenous variables for Overweight sample

$$\gamma = \Lambda_\gamma \eta + \epsilon$$

$$\gamma_1 = \text{SSI People}$$
$$\gamma_2 = \text{SSI Environment}$$
$$\gamma_3 = \text{WBIS Internalized Weight Bias}$$
$$\gamma_4 = \text{APPR Self Objectification}$$
$$\gamma_5 = \text{MBSRQae Body Image}$$
$$\gamma_6 = \text{CESD Depression}$$
$$\gamma_7 = \text{EDDS Disordered Eating}$$

$$\begin{bmatrix}
\gamma_1 \\
\gamma_2 \\
\gamma_3 \\
\gamma_4 \\
\gamma_5 \\
\gamma_6 \\
\gamma_7
\end{bmatrix} = 
\begin{bmatrix}
1 & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & \lambda_{21} & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 1 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & \lambda_{42} & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & \lambda_{52} & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & 1 & 0 \\
0 & 0 & 0 & 0 & 0 & 0 & 1
\end{bmatrix}
\begin{bmatrix}
\eta_1 \\
\eta_2 \\
\eta_3 \\
\eta_4 \\
\eta_5 \\
\eta_6 \\
\eta_7
\end{bmatrix} + 
\begin{bmatrix}
\epsilon_1 \\
\epsilon_2 \\
\epsilon_3 \\
\epsilon_4 \\
\epsilon_5 \\
\epsilon_6 \\
\epsilon_7
\end{bmatrix}$$

$$\begin{bmatrix}
\theta_{e11} & \theta_{e12} & \theta_{e13} & \theta_{e14} & \theta_{e15} & \theta_{e16} & \theta_{e17} \\
0 & \theta_{e22} & \theta_{e23} & \theta_{e24} & \theta_{e25} & \theta_{e26} & \theta_{e27} \\
0 & 0 & \theta_{e33} & \theta_{e34} & \theta_{e35} & \theta_{e36} & \theta_{e37} \\
0 & 0 & 0 & \theta_{e44} & \theta_{e45} & \theta_{e46} & \theta_{e47} \\
0 & 0 & 0 & 0 & \theta_{e55} & \theta_{e56} & \theta_{e57} \\
0 & 0 & 0 & 0 & 0 & \theta_{e66} & \theta_{e67} \\
0 & 0 & 0 & 0 & 0 & 0 & \theta_{e77}
\end{bmatrix}$$
Figure 7. Measurement model for Overweight sample (N = 201)

Normed Fit Index = .966; root mean square error of approximation = .063; chi-square = 17.819; degrees of freedom = 10; e = error; res = residual.
Figure 8. Structural model of latent variables

$$\eta = B\eta + \Gamma \xi + \zeta$$

$$\begin{bmatrix}
\eta_1 \\
\eta_2 \\
\eta_3
\end{bmatrix} =
\begin{bmatrix}
0 & 0 & 0 \\
\beta_{21} & 0 & 0 \\
\beta_{31} & \beta_{32} & 0
\end{bmatrix}
\begin{bmatrix}
\eta_1 \\
\eta_2 \\
\eta_3
\end{bmatrix} + 
\begin{bmatrix}
\zeta_1 \\
\zeta_2 \\
\zeta_3
\end{bmatrix}$$

$$\begin{bmatrix}
\Psi_{11} & \Psi_{21} & 0 \\
0 & \Psi_{22} & \Psi_{31} \\
0 & 0 & \Psi_{33}
\end{bmatrix}$$

$$\eta_1 = \text{Objectification}$$
$$\eta_2 = \text{Internalization}$$
$$\eta_3 = \text{Psychosocial Outcomes}$$
Figure 9. Structural model for Normal Weight sample (N = 212)

Normed Fit Index = .928; root mean square error of approximation = .079; chi-square = 23.296; degrees of freedom = 10; e = error; res = residual.
Figure 10. Structural model for Overweight sample (N = 201)

Normed Fit Index = .966; root mean square error of approximation = .063; chi-square = 17.819; degrees of freedom = 10; e = error; res = residual.