

Objectification Theory as It Relates to Disordered Eating Among College Women

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Objectification theory (B. L. Fredrickson & T. A. Roberts, 1997) demonstrates how socio-cultural variables work together with psychological variables to predict disordered eating. Researchers have tested models that illustrate how certain constructs of objectification theory predict disordered eating, but a more comprehensive model that integrates a combination of constructs central to the theory (i.e., sexual objectification; self-objectification; body shame; poor interoceptive awareness of hunger, satiety, and emotions) has not yet been examined. In this study, we incorporated these variables within an inclusive model based on the assertions of B. L. Fredrickson and T. A. Roberts (1997) and examined it with 460 college women. Structural equation modeling analyses suggested that the model provided a good fit to the data and supported most propositions set forth by objectification theory and the eating disorders literature.

KEY WORDS: eating disorders; objectification theory; body image; college women.

Several scholars (e.g., Dolan & Gitzinger, 1995; Hyde, 1991; Nolen-Hoeksema & Girgus, 1994; Striegel-Moore, Silberstein, & Rodin, 1986) have inquired as to why certain mental health disorders, such as eating disorders and depression, disproportionately affect women. Among the reasons offered to explain this discrepancy in prevalence rates between women and men, the role of sociocultural factors, namely the societal devaluation of women, has been underscored. Specifically, theorists have suggested, and research has shown, that sexism and objectification of women account for a substantial amount of variance in women's psychological distress (Brownlow, 1997; Landrine, Klonoff, Gibbs, Manning, & Lund, 1995; Moradi & Subich, 2002).

Perhaps the most obvious risk for girls and women living in a culture that objectifies the female

body is disordered eating (Kilbourne, 1994). Indeed, approximately 90% of those who suffer from bulimia and anorexia nervosa are women (Kashubeck-West & Mintz, 2001; Striegel-Moore & Cachelin, 2001). Fredrickson and Roberts (1997) proposed objectification theory, a comprehensive framework that explores *how* living in a culture that sexually objectifies women can lead to disordered eating. According to objectification theory, Western women live in a culture in which their bodies are objectified, a culture where "women are treated *as bodies*—and in particular, as bodies that exist for the use and pleasure of others" (p. 175). These sexual objectification experiences encourage women to self-objectify, or to treat their own bodies as objects to be looked at and evaluated. Self-objectification, then, may lead to consequences such as body shame, lack of awareness of internal body sensations, anxiety, and decreased peak motivational states among women (Fredrickson & Roberts, 1997; Lewis, 1992). Fredrickson and Roberts (1997) proposed that these subjective experiences can accumulate and account for psychological disorders that unduly affect women, such as eating disorders, depression, and sexual dysfunction.

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Several aspects of objectification theory, despite its recent origin, as it applies to disordered eating have gained empirical support. The following is a discussion of the research on constructs central to objectification theory, followed by a description of how the current study adds to this body of research.

SEXUAL OBJECTIFICATION AND PRESSURE TO BE THIN

Fredrickson and Roberts (1997) defined sexual objectification as when “a woman’s body, body parts, or sexual functions are separated out from her person, reduced to the status of a mere instrument, or regarded as if they were capable of representing her” (p. 175). Experiences with sexual objectification are embedded within United States culture where *both* men and women evaluate women based on whether their bodies conform to societal standards of attractiveness, in particular, thinness (Kaschak, 1992). According to Fredrickson and Roberts (1997), as well as other theorists (e.g., Kilbourne, 1994; Maine, 2000), women are constantly inundated with messages to become thinner through verbal evaluation and gaze. These messages can occur through both the media and interpersonal/social encounters.

At a macrolevel, the media are thought to perpetuate this pressure to be thin by promoting unsafe weight loss products, glamorizing dieting, overrepresenting thin women, and underrepresenting fat women (Fouts & Burggraf, 1999). At a microlevel, families (Costanzo & Woody, 1985; Pike, 1995), peers (Crandall, 1988), and partners (Stice, Nemeroff, & Shaw, 1996) of women may reinforce these sociocultural pressures by directly and/or indirectly encouraging women to lose weight. Messages that prompt women to lose weight communicate the value of women’s external selves (i.e., current physical appearance) and deny women’s internal selves (i.e., feelings, personality, intellect). The body is evaluated, compared to the thin-ideal, and found lacking.

BODY SURVEILLANCE

According to objectification theory, living in a culture where women’s bodies are sexually objectified, women learn to equate their own self-worth with their appearance, thus treating themselves as objects to be looked and evaluated (Fredrickson & Roberts, 1997; Pipher, 1994). Numerous scholars

(e.g., Fredrickson & Roberts, 1997; Thompson & Heinberg, 1999) have suggested that a potential mediator between sexual objectification experiences (e.g., exposure to messages regarding ideals for attractiveness) and the development of disordered eating is the tendency to *internalize* those messages, a perspective Fredrickson and Roberts (1997) termed “self-objectification.” McKinley and Hyde (1996) proposed a parallel construct that they termed “body surveillance,” or constant monitoring of physical appearance and thinking of the body in terms of how it looks to outside observers rather than how it feels. Preliminary research in this area has supported the relationship between various types of sexual objectification experiences and both self-objectification and body surveillance. For example, magazine exposure (Morry & Staska, 2001), sexualized gaze (Hill & Fisher, 2004), trying on swimsuits (Fredrickson, Roberts, Noll, Quinn & Twenge, 1998), sports participation (Parsons & Betz, 2001), and ballet participation (Tiggemann & Slater, 2001) have been found to be related to self-objectification and/or body surveillance.

Sociocultural pressure for thinness and dieting also has been found to predict a similar form of self-objectification (i.e., women’s tendency to internalize societal messages and values of thinness; Stice et al., 1996). It is also our belief that sociocultural pressure to be thin is a more general and comprehensive construct of sexual objectification than those measured in previous research because it incorporates magazine exposure, experiences of gaze, and pressures to be thin experienced in all contexts, not just those specific to sports or ballet participation. Although previous research provides preliminary support for objectification theory, these relations have not been tested within comprehensive models of objectification theory and disordered eating. On the basis of this body of research, we hypothesized that pressures to be thin (a common and insidious form of sexual objectification) would predict the degree to which women engage in body surveillance.

BODY SHAME

According to objectification theory (Fredrickson & Roberts, 1997), habitual body surveillance can lead women to experience body shame. Body shame occurs when “people evaluate themselves relative to some internalized or cultural ideal and come up short” (Fredrickson & Roberts, 1997, p. 181). Given

that the current beauty standards are impossible for most women to attain (Maine, 2000) and that women are encouraged to compare themselves to the thin-ideal cultural stereotype (Kilbourne, 1994), women are set up to feel disappointed with themselves and their bodies. Women who are vigilantly aware of their appearance, therefore, are likely to have increased opportunities to experience body shame. Researchers have found that self-objectification (and/or body surveillance) predicts body shame among college women (e.g., McKinley & Hyde, 1996; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001) and adolescent girls (Slater & Tiggemann, 2002). Based on this research, it was hypothesized that body surveillance would predict body shame in the present study. In addition, although not directly specified in objectification theory, pressure for thinness has been found to predict unique variance in body dissatisfaction above and beyond the variance accounted for by internalization of sociocultural messages of thinness (Stice, Nemeroff, & Shaw, 1996). Thus, it was hypothesized that pressure for thinness would also directly predict unique variance in body shame.

POOR INTEROCEPTIVE AWARENESS

Theorists have asserted, and research has supported, that women are often less aware than men are of their internal bodily sensations (e.g., Blascovich et al., 1992; Garner, 1991; Katkin, 1985; Lerner, 1993). Fredrickson and Roberts (1997) proposed two possible explanations for women's relative inattention to physiological cues. First, they suggested that women suppress internal bodily cues as a result of attempts to control their food intake. In other words, women who feel ashamed of their bodies might try to decrease this shame by suppressing their hunger cues (and, as a result, other internal cues) in an attempt to lose weight (Hirschmann & Munter, 1995; Tribole & Resch, 1995). Research findings have supported this assertion in that body shame is related to the inability to identify hunger and satiety signals and to describe emotions (Muehlenkamp & Saris-Baglama, 2002). Tiggemann and Slater (2001), however, did not find a significant relationship between body shame and awareness of general internal states. They attributed this lack of significance to the brevity and moderate internal reliability of their measure of awareness of internal states. It is also likely that these differences in results are due to the internal states measured. More specifically, body shame may not

predict lack of awareness of more *general* internal states (e.g., dryness of throat) but may account for significant variance in the lack of awareness of internal states *specific to eating and affect* (i.e., hunger, satiety, emotions). Second, Fredrickson and Roberts (1997) suggested that, "because women are vigilantly aware of their outer bodily appearance, they may be left with fewer perceptual resources available for attending to inner body experience" (p. 195). Therefore, it was hypothesized that both body shame and body surveillance would predict unique variance in poor interoceptive awareness in the current sample.

DISORDERED EATING

According to objectification theory, subjective experiences such as body shame and poor interoceptive awareness can accumulate and lead to disordered eating in women. Fredrickson and Roberts (1997) suggested that women who feel ashamed of their bodies would be more likely to attempt to change those aspects of their bodies that fail to live up to their internalized ideals (i.e., through dieting and disordered eating). Indeed, research has demonstrated that body shame predicts disordered eating among women (Noll & Fredrickson, 1998; Tiggemann & Slater, 2001). Previous research has also indicated that poor interoceptive awareness of hunger, satiety, and emotions predicts disordered eating among women (e.g., Garner, 1991; Laquatra & Clopton, 1994; Pike, 1995; Tylka, 2001).⁴ However, Tiggemann and Slater (2001) and Muehlenkamp and Saris-Baglama (2002) found that awareness of general internal states did not predict unique variance in disordered eating. Again, it is possible that their nonsignificant results are due to measuring the lack of awareness of more general internal states in lieu of internal states specific to eating and affect. Therefore, based on extant theory and research, we hypothesized that body shame and poor interoceptive awareness of hunger, satiety, and emotions would predict disordered eating in the present study.

⁴It is imperative to note that disordered eating and poor interoceptive awareness of hunger, satiety, and emotions are *not* the same construct (Garner, 1991). In fact, many women experience confusion of hunger, satiety, and emotions, but do not engage in disordered eating behaviors (Garner, 1991; Laquatra & Clopton, 1994). Support for their distinctiveness has been noted by many researchers (e.g., Pike, 1995; Tylka & Subich, 2003).

SUMMARY

This study adds to this body of research in three important ways. First, we structured our study to explore the combination of constructs central to objectification theory and disordered eating (i.e., sexual objectification; self-objectification; body shame; and poor interoceptive awareness of hunger, satiety, and emotions). Whereas previous researchers have provided initial support for the propositions set forth by Fredrickson and Roberts (1997), no one has yet examined this combination of constructs together within the same model. Testing these variables within the same model may uncover variables that, although significant in previous studies, do not predict unique variance in the criterion variables because of their conceptual overlap with other variables. Models including only some of the theory's constructs are likely to produce different results than models that include all of the theory's constructs, as variable paths that contribute unique variance would be separated from nonsignificant paths and thus create a more parsimonious model that could lead to theory refinement (Tabachnick & Fidell, 1996).

To date, it appears that Tiggemann and Slater (2001) offered the closest approximation to a comprehensive model that applies objectification theory to disordered eating. In their study, they explored whether body shame, appearance anxiety, flow, and awareness of general internal states (e.g., dryness of throat) mediate the relation between self-objectification and disordered eating. Our model adds significantly to Tiggemann and Slater's research by (a) incorporating sexual objectification in our model and by (b) measuring awareness of internal body states specific to hunger, satiety, and emotions rather than general body states.

A second way this study adds to the existing body of literature is by using a more sophisticated and stringent methodology. Many prior investigators of objectification theory and disordered eating have used path analysis in lieu of latent variable structural equation modeling (SEM). Latent variable SEM provides a more stringent test of the model, as it uses multiple indicators to estimate a construct (i.e., latent variable) and, as a result, controls measurement error (Kelloway, 1998). On the other hand, path analysis only uses one indicator to represent a construct.

Third, we explored an alternative model to the original one we proposed. This alternative model included all paths of the original model as well as a direct path from pressure for thinness to disordered

eating, and it was explored in order to further investigate a fundamental proposition of objectification theory: sexual objectification should predict disordered eating only indirectly through its associations with other variables (i.e., body surveillance and body shame; Fredrickson & Roberts, 1997). If the alternative model does not provide a significantly better fit to the data than the original model, then this tenet of objectification theory will be supported.

Therefore, on the basis of the theoretical and empirical literature discussed previously, the purpose of this study was first to test, in one model, the following propositions: (a) pressure for thinness (i.e., sexual objectification) predicts unique variance in body surveillance, (b) pressure for thinness and body surveillance predict unique variance in body shame, (c) body surveillance and body shame predict unique variance in poor interoceptive awareness, and (d) body shame and poor interoceptive awareness predict unique variance in disordered eating. Additionally, a second model was tested that included the abovementioned paths as well as a direct path from pressure for thinness to disordered eating. Although appearance anxiety and peak motivational states are constructs specified in objectification theory, researchers (e.g., Slater & Tiggemann, 2002; Tiggemann & Slater, 2001) have not found those variables to predict unique variance in disordered eating. Therefore, those variables were not examined in the current study.

METHOD

Participants and Procedure

Participants were 460 college women enrolled in undergraduate psychology (i.e., introductory and upper-level) classes at a large midwestern university. Women ranged in age from 17 to 55 years ($M = 21.3$, $SD = 7.18$) and evenly represented undergraduate statuses (i.e., 29.4% were freshmen, 22.2% were sophomores, 25% were juniors, and 23.2% were seniors). Most women identified as European American (81.8%), followed by African American (10.7%), Latina (3.0%), Asian American (2.0%), multiracial (1.7%), and Native American (0.4%). One participant (0.2%) did not indicate her class rank or ethnicity.

Participants were recruited through verbal announcements in their psychology courses. Women who agreed to participate were given a packet of

questionnaires, and they completed them in small groups (between 2 and 10 participants). Afterward, each woman was given a list of campus resources she could contact if any concerns arose from reading the measures. All participants were compensated for their participation with extra credit points awarded by the psychology department's organized research program.

Measures

Pressure for Thinness

Pressure for thinness, a form of sexual objectification, was assessed using the Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, Margolis, & Flick, 1996). The PSPS is an 8-item scale used to measure women's reported pressure for thinness from family (2 items), friends (2 items), partners (2 items), and the media (2 items). A sample item is "I've felt pressure from my family to lose weight." Participants choose between three responses: no pressure (scored as a 1), some pressure (scored as a 3), and a lot of pressure (scored as a 5). Higher scores represent greater pressure to be thin. Scores on this measure have been shown to have good internal consistency reliability ($\alpha = .89$), test-retest reliability over a 2-week period ($r = .93$), and convergent validity, as strong relations were found among this measure and retrospective reports of parental pressure to lose weight during childhood (average $r = .51$) (Stice, Ziemba, Margolis, & Flick, 1996). The internal consistency estimate (α) for the current sample was .83.

Body Surveillance

Body surveillance, the extent to which women self-objectify by watching their bodies and thinking in terms of how their bodies appear to others rather than how they feel, was measured by the Body Surveillance subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996). This subscale contains eight items that are rated on a scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*); higher scores indicate higher frequency of body surveillance. An example of an item is "I think more about how my body feels than how my body looks" (reverse scored). Researchers have indicated that this subscale yields reliable and valid scores. For

instance, McKinley and Hyde (1996) reported that α was .89 for Body Surveillance subscale, women responded to its items in a consistent fashion over a 2-week period ($r = .79$), and this subscale has been shown to be related to measures of public self-consciousness ($r = .73$), which demonstrates convergent validity. Alpha was .87 for the current sample of women.

Body Shame

The Body Shame subscale of the Objectified Body Consciousness Scale (McKinley & Hyde, 1996) is an 8-item subscale that quantifies a woman's belief that she is a bad person if she does not fulfill cultural expectations of her body (e.g., "When I'm not the size I think I should be, I feel ashamed"). Items are rated on a scale that ranges from 1 (*strongly disagree*) to 7 (*strongly agree*); higher scores indicate a higher degree of body shame. McKinley and Hyde (1996) reported that its internal consistency estimate (α) was .75, it was negatively related to the Body Esteem Scale ($r = -.51$), and it was stable over a 2-week period ($r = .79$). For this study, α was .83.

Poor Awareness of Hunger, Satiety, and Emotions

The Interoceptive Awareness subscale is 1 of 11 subscales of the Eating Disorder Inventory-2 (Garner, 1991). This subscale contains 10 items that assess awareness of hunger, satiety, and emotions (e.g., "I get confused as to whether or not I am hungry"). Participants indicate their level of agreement with items on a scale that ranges from 1 (*never true of me*) to 6 (*always true of me*); higher scores indicate poorer interoceptive awareness. It should be noted that the Interoceptive Awareness subscale is one of several subscales that assess psychological variables related to eating disturbances, and it does not measure behavioral eating disorder symptomatology (i.e., only the Drive for Thinness and Bulimia subscales assess behavioral symptoms of eating disorders; for a full review of the EDI-2 subscales, see Garner, 1991). Theorists (e.g., Garner, 1991) and researchers (e.g., Brookings & Wilson, 1994; Pike, 1995; Tylka & Subich, 1999) have argued for the distinctiveness of this subscale from disordered eating. Among groups of college women, scores on this subscale are internally consistent ($\alpha = .81$; Garner & Olmsted, 1984), stable over a 3-week

period ($r = .85$; Wear & Pratz, 1987), and related to therapist-consultant ratings of client interoceptive awareness ($r = .51$; Garner & Olmsted, 1984). For the current sample of women, α was .82.

Eating Disorder Symptomatology

The Eating Attitudes Test-26 (EAT-26; Garner & Garfinkel, 1979) was used to determine women's levels of eating disorder symptomatology. Various authors (Mazzeo, 1999; Noll & Fredrickson, 1998; Tylka, 2001) have shown that the EAT-26 demonstrates validity as a continuous measure of disturbed eating among nonclinical samples of women. The EAT-26 includes 26 items that are rated on a scale that ranges from 1 (*never*) to 6 (*always*); higher scores indicate more severe eating disorder symptomatology. A sample item is "I have gone on eating binges where I feel that I may not be able to stop." Estimates of its internal consistency reliability ($\alpha = .91$) and test-retest reliability over a 3-week period ($r = .86$) were high among a sample of college women (Mazzeo, 1999). Alpha was .91 for the present study. Further, construct validity for the EAT-26 have been supported among samples of college women, as it was found to be related to other measures of eating disorder symptomatology, such as the Bulimia subscale of the Eating Disorder Inventory-2 ($r = .55$; Brookings & Wilson, 1994).

SEM Analyses

Latent variable SEM was used to analyze the model. SEM was chosen because it permits the concurrent exploration of all of the paths specified in the model, provides several specific indices that help us to evaluate the model, and controls for measurement error within the model (Kelloway, 1998). *Mplus* (Muthén & Muthén, 1998), a popular SEM program, was used to estimate the fit of the model and the model paths. The current sample size of 460 surpasses the number of participants required for a conservative cases-to-parameter ration of 10:1 (i.e., 27 parameters were estimated) needed for the latent variable SEM analysis (Bentler, 1990).

To provide two independent indicators for each latent variable, each measure was divided into an odd-item composite (i.e., average of its odd items) and an even-item composite (i.e., average of its even items), a common procedure in SEM (Kelloway,

1998). Once measure indicators (i.e., odd- and even-item composite scores) were converted into a covariance matrix, they were freely estimated on their respective latent variable via *Mplus*. Then, the paths of the latent variables specified in the model were analyzed and several indices were calculated to evaluate the "fit" of the data to the hypothesized model (i.e., χ^2/df ; comparative fit index [CFI]; the non-normed fit index [NNFI], which also is known as the Tucker-Lewis Index [TLI]; the standardized root-mean-square residual [SRMR]; and the root mean square error of approximation [RMSEA]). It has been suggested that the best way to determine whether a model is acceptable is to use several indices and look for agreement across them (Hu & Bentler, 1995). A model that provides a good fit to the data, then, has CFI and NNFI values above .90, a χ^2/df value between 2.0 and 5.0, a SRMR value below .05, and an RMSEA value below .08.

RESULTS

For each measure, the score ranges were comparable to other samples of college women. Most women (87%) did not meet the criterion for clinical eating disorder symptomatology as indicated by EAT-26 scores (Garner & Garfinkel, 1979). Indicator means, standard deviations, and relations were examined and are presented in Table I. As anticipated, indicators that measure pressure for thinness, body surveillance, body shame, poor interoceptive awareness, and disordered eating all were moderately-to-strongly related (Cohen, 1992). These correlations replicate the basic findings reported by several researchers (e.g., McKinley & Hyde, 1996; Noll & Fredrickson, 1998; Tylka, 2001).

In SEM analyses, it has been recommended that indicators of *separate* latent variables should not be highly correlated (i.e., $r \geq .90$; Tabachnick & Fidell, 1996). In the present study, many indicators of separate latent variables were significantly correlated (range from .40 to .66), but did not reach .90. These results support the distinctiveness of each latent variable. As expected, substantial relations (range from .77 to .89) were found among indicators of the *same* latent variable in this study. High relations among indicators of the same latent variable are desirable; they suggest conceptual overlap that is essential for estimating the latent variable.

Table I. Indicator Means, Standard Deviations, Alphas, and Correlations (*N* = 460)

| Indicators | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---------------------------|------|------|------|------|------|------|------|------|------|------|
| 1. PSPS-odd | .71 | | | | | | | | | |
| 2. PSPS-even | .77* | .72 | | | | | | | | |
| 3. Body surveillance-odd | .43* | .41* | .77 | | | | | | | |
| 4. Body surveillance-even | .42* | .40* | .81* | .74 | | | | | | |
| 5. Body shame-odd | .54* | .46* | .61* | .58* | .71 | | | | | |
| 6. Body shame-even | .62* | .53* | .63* | .60* | .81* | .80 | | | | |
| 7. EDI-2-IA-odd | .54* | .47* | .52* | .45* | .61* | .62* | .78 | | | |
| 8. EDI-2-IA-even | .49* | .44* | .46* | .41* | .58* | .56* | .84* | .70 | | |
| 9. EAT-26-odd | .52* | .52* | .54* | .49* | .60* | .63* | .58* | .51* | .74 | |
| 10. EAT-26-even | .54* | .56* | .54* | .48* | .64* | .66* | .60* | .51* | .89* | .88 |
| <i>M</i> | 2.16 | 2.31 | 4.81 | 4.71 | 3.39 | 3.81 | 2.65 | 2.41 | 2.58 | 2.38 |
| <i>SD</i> | .99 | .95 | 1.20 | 1.16 | 1.40 | 1.50 | .92 | .94 | .67 | .84 |

Note. Odd = average of odd scale items, even = average of even scale items; PSPS = Perceived Sociocultural Pressures Scale; EDI-2-IA = Interoceptive Awareness subscale of the Eating Disorder Inventory-2; EAT-26 = Eating Attitudes Test-26. Alphas for each indicator are along the diagonal. One item was dropped from the odd-item composite of the Body Shame subscale, as it was not found to correlate with the other items. As a result, the alpha, mean, and standard deviation of this composite score were calculated without this item.

**p* < .01.

SEM Analyses

Tabachnick and Fidell (1996) suggested that the adequacy of the measurement model should be evaluated before the structural components of the model are estimated. The measurement model ensures that indicators assumed to measure a hypothesized latent variable indeed measure (i.e., load on) that latent variable. Our model was evaluated using *Mplus* with a Maximum Likelihood (ML) estimation, which is often used when all indicators are continuous. Factor covariances were freely estimated. As expected, each measure significantly loaded on its intended latent factor (i.e., path coefficients ranged from .84 to .97), and the measurement model fit the data well, $\chi^2/df = 2.20$, CFI = .99, NNFI (TLI) = .99, SRMR = .02, RMSEA = .05.

Given that all indicators adequately measured their respective latent variable, the hypothesized structural model could be evaluated. This proposed model predicted that pressure for thinness would account for significant unique variance in body surveillance and body shame, body surveillance would predict unique variance in body shame and poor interoceptive awareness, body shame would predict unique variance in poor interoceptive awareness, and body shame and poor interoceptive awareness would predict unique variance in disordered eating. The paths specified above were freely estimated, and *Mplus* with an ML estimation was used to evaluate them. Results indicated that the hypothesized structural model fit the data well, $\chi^2/df = 2.74$; CFI = .99;

NNFI (TLI) = .98; SRMR = .03; RMSEA = .06. The alternative model (i.e., including all paths specified in the original hypothesized structural model as well as a direct path from pressure for thinness to disordered eating) did not provide a significantly better fit to the data than the original structural model, $\chi^2_{\text{difference}}(1) = 4.99$, *ns*. Therefore, the original model was interpreted.

Within the original model, all but one specified model path were significant (see Fig. 1). Pressure for thinness predicted unique variance in body surveillance, $t(459) = 10.32$, $p < .01$, $\beta = .51$, and body shame, $t(459) = 10.14$, $p < .01$, $\beta = .45$. Body surveillance predicted unique variance in body shame, $t(459) = 11.92$, $p < .01$, $\beta = .53$, but unexpectedly did not predict unique variance in poor interoceptive awareness, $t(459) = .37$, *ns*, $\beta = .02$. Body shame predicted unique variance in both poor awareness of hunger, satiety, and emotions, $t(459) = 10.44$, $p < .01$, $\beta = .71$, and disordered eating, $t(459) = 10.88$, $p < .01$, $\beta = .64$. Last, poor awareness of hunger, satiety, and emotions predicted unique variance in disordered eating, $t(459) = 3.15$, $p < .01$, $\beta = .17$. Overall, pressure for thinness predicted 26% of the variance in body surveillance, pressure for thinness and body surveillance predicted 72% of the variance in body shame, body shame predicted 53% of the variance in poor interoceptive awareness, and body shame and poor interoceptive awareness predicted 61% of the variance in eating disorder symptomatology.

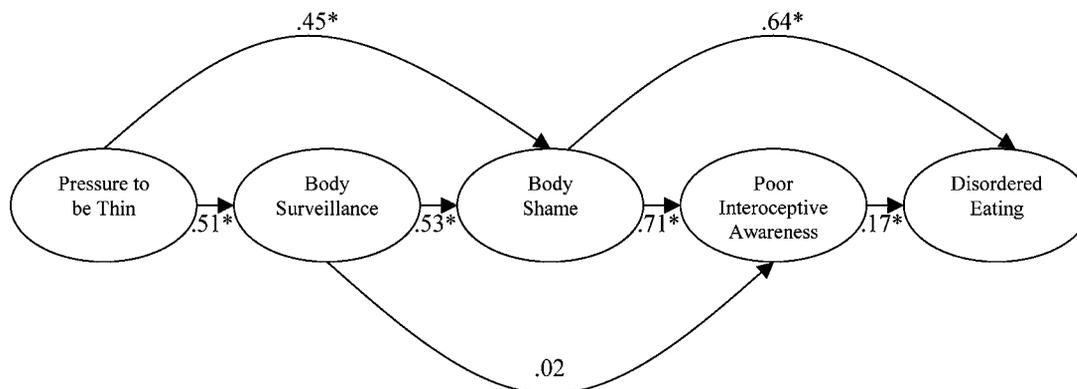


Fig. 1. The structural model representing objectification theory as it relates to disordered eating among college women. Presented are standardized path coefficients derived from *Mplus*. * $p < .01$.

DISCUSSION

Research has shown objectification theory (Fredrickson & Roberts, 1997) to be a particularly helpful framework for understanding disordered eating in women (e.g., Noll & Fredrickson, 1998; Tiggemann & Slater, 2001). Yet, several constructs considered to be central to this theory (sexual objectification; body surveillance; body shame; and poor interoceptive awareness of hunger, satiety, and emotions) have not been examined concurrently within the same model. Therefore, the purpose of this study was to examine a model based on objectification theory that incorporated the aforementioned variables in predicting women's levels of eating disorder symptomatology via latent variable SEM. Overall, this model was empirically supported in the current study as it provided a good fit to the data. These results offer reasonably powerful evidence for the theoretical relevance of sociocultural and psychological variables in the development of eating disorders among women.

Pressure to be Thin

In this study, pressure for thinness predicted unique variance in body surveillance. This finding is consistent with the propositions set forth by objectification theory (i.e., living within a culture where women's bodies are sexually objectified, women learn to equate their own self-worth with their appearance, thus treating themselves as objects to be looked at and evaluated; Fredrickson & Roberts, 1997). Our finding that pressure for thinness predicted body surveillance significantly

adds to the mounting empirical evidence that supports the relationship between other forms of sexual objectification and self-objectification (Fredrickson et al., 1998; Morry & Staska, 2001; Parsons & Betz, 2001; Tiggemann & Slater, 2001). However, given that only 26% of the variance in body surveillance was explained by pressure for thinness, other variables that predict the tendency to focus on external (i.e., appearance) rather than internal experiences warrant examination. Indeed, pressure to be thin is ubiquitous within United States culture (e.g., Kilbourne, 1994), but not all women self-objectify (Striegel-Moore et al., 1986). Therefore, additional factors likely contribute to the tendency to engage in body monitoring behaviors. It would be useful to investigate whether other forms of sexual objectification (i.e., sexual assault, sexual harassment) predict additional variance in body surveillance above and beyond the variance accounted for by pressure for thinness. It also would be interesting to observe whether other factors (e.g., feminist ideology, quality relationship with caregivers, media literacy awareness, self-esteem, positive emotions) provide a buffering effect against body surveillance.

Body Surveillance

Our finding that body surveillance predicted unique variance in body shame is consistent with previous research (e.g., Noll & Fredrickson, 1998; Tiggemann & Lynch, 2001) and supports a fundamental tenet of objectification theory: women who engage in body monitoring, or who focus on how their bodies appear to others rather than how their bodies feel, are more likely to be ashamed of their

bodies. Although objectification theory suggests that body surveillance fully mediates the relation between pressure for thinness and body shame, our findings were similar to those of Stice, Nemeroff, & Shaw, (1996) in that pressure for thinness predicted unique variance in body shame above and beyond the variance accounted for by body surveillance. The influence and inclusion of both of these variables within the model, then, are supported. We propose that this finding could be used to refine objectification theory in that women who experience pressure to be thin may report body shame without necessarily engaging in body surveillance. In order to reduce women's body shame, our results suggest that it is imperative that efforts are aimed simultaneously at: (a) decreasing pressures to be thin that exist at a macrolevel (i.e., within the media) and a microlevel (i.e., from friends, family, and partners), and (b) identifying variables that buffer the internalization of these messages (Kilbourne, 1994; Stice, Nemeroff, & Shaw, 1996).

We also found that pressure for thinness was related to disordered eating only through its associations with body surveillance and body shame. This finding is consistent with objectification theory's proposition that sexual objectification contributes to women's disordered eating only to the extent to which it is internalized (i.e., the extent to which women focus on their external appearance rather than their internal qualities and feel ashamed of their bodies). Therefore, it seems necessary that attempts are made not only to increase women's awareness of overt and covert sexual discrimination, but to also encourage women to resist internalizing these messages, devaluing their bodies by focusing on their external appearance, and feeling ashamed of their bodies, as these latter steps appear to be more directly related to their eating behaviors.

Body Shame

In the current sample, 53% of the variance in poor awareness of hunger, satiety, and emotions was accounted for by body shame. These findings lend support to objectification theory's assertion that women who are ashamed of their bodies might attempt to decrease this shame by suppressing their hunger, satiety, and emotional cues in attempt to lose weight (Fredrickson & Roberts, 1997; Tribole & Resch, 1995) and are consistent with previous research that showed body shame to be related to

poor interoceptive awareness of hunger, satiety, and emotions (e.g., Garner, 1991; Muehlenkamp & Saris-Balgama, 2002; Tylka, 2001). Our findings, when combined with Tiggemann and Slater's (2001) findings, support the proposition that awareness of bodily states specifically related to eating and emotions may be related to body shame, whereas awareness of more general bodily states might not be.

Unexpectedly, however, body surveillance did not predict unique variance in poor interoceptive awareness of hunger, satiety, and emotions. This finding is in contrast to objectification theory (e.g., Fredrickson & Roberts, 1997), which asserts that women may be left with fewer resources available for attending to internal bodily signals due to spending a considerable amount of effort to attend to their outer bodily appearance. Because body surveillance and poor interoceptive awareness are indeed correlated, it is possible that the nonsignificant path represents the complete mediation by body shame of the relationship between body surveillance and poor interoceptive awareness. In other words, women who engage in body surveillance may suppress awareness of their internal cues only to the extent that they feel ashamed of their bodies. If they engage in body surveillance, but do not perceive their bodies as inconsistent with the society's ideal image for women and consequently are not ashamed of their bodies, they may not suppress their internal cues related to eating and affect. Further research is needed to explore this possible explanation. This finding, along with the strong path found from body shame to disordered eating, highlights the key role of body shame within the model. It seems necessary that professionals promote body acceptance to counter women's tendency to experience body shame within a culture that promotes an unrealistically thin-ideal prototype for women (Kilbourne, 1994).

Poor Interoceptive Awareness

Poor awareness of internal states such as hunger, satiety, and emotions accounted for a significant albeit small amount of unique variance in reports of disordered eating. This finding is consistent with previous research that noted that poor interoceptive awareness of hunger, satiety, and emotions predicted unique variance in eating disorder symptomatology above that accounted for by other correlates of disordered eating (Pike, 1995). Given that Tiggemann and Slater (2001) did not find a significant

relationship between disordered eating and a more general internal awareness, this study's results lend support to the distinctiveness of internal awareness specific to hunger and emotions from a more general internal awareness. Further, the fact that poor interoceptive awareness, in spite of being measured using a subscale of the EDI-2, only accounted for a small percentage of unique variance in disordered eating supports the distinctiveness of poor interoceptive awareness from disordered eating. As noted by other researchers (e.g., Garner, 1991), these variables appear to be two separate constructs.

When the small, albeit significant, relation between poor interoceptive awareness and disordered eating is considered in conjunction with the strong relation between body shame and disordered eating, it becomes clear that, although poor interoceptive awareness adds explanatory value to understanding eating disorders, it does not fully mediate the relationship between body shame and disordered eating. In other words, the relation between body shame and disordered eating cannot be explained by poor interoceptive awareness alone, which provides further clarification of the variables included within objectification theory. At the same time, these findings suggest that eating disorders are multidetermined. Even though several researchers have purported that eating disorders are multidimensional (e.g., Kashubeck-West & Mintz, 2001; Leung, Geller, & Katzman, 1996), the majority of researchers have not examined more than one pathway to disordered eating. Given that body image disturbance (including both body shame and dissatisfaction) has been proclaimed to be the strongest predictor of eating disorder symptomatology (Mazzeo, 1999), researchers often fail to examine whether other variables concomitantly predict eating disorders. The results of the current study suggest that poor interoceptive awareness may also provide a direct pathway to disordered eating among women. These results suggest that helping women to identify and express their emotions, attend to their hunger and satiety signals, and accept their bodies may directly aid in preventing and treating disordered eating.

Limitations and Future Directions for Research

Although the current study provides reasonably powerful support for objectification theory and the relations among sociocultural and psychological variables in understanding disordered eating in women,

future research should be undertaken to replicate these findings utilizing more diverse samples, instrumentation, and/or methodologies. First, although we used SEM to simultaneously investigate specific variable paths, it was embedded within a correlational methodology. As a result, firm conclusions cannot be made about the causal order of the variables. A logical extension of this research would be to examine this model within a longitudinal design to observe whether initial levels of each predictor variable indeed predict future levels of the criterion variables. Second, because eating disorders have been shown to have personal and relational correlates in addition to sociocultural correlates (Leung et al., 1996; Mintz & Wright, 1993), psychological variables (e.g., body dissatisfaction, cognitions, positive and/or negative affect) and relational variables (e.g., family conflict) should be integrated and examined within the model. Obviously, not all women who are pressured to be thin experience body shame, and not all women who report body shame also report high levels of eating disorder symptomatology. Therefore, future researchers should continue to explore other variables within the model and perhaps explore, within a longitudinal design, variables that either may put women at increased risk or protect women from developing body shame and eating disorder symptomatology. Last, it is imperative to examine whether this model can be generalized beyond European American women. Overall, there is limited research on objectification theory in Women of Color. It is largely unknown, then, whether the model paths would generalize to those women. In addition to sexual objectification, Women of Color are likely to struggle with racial objectification (Moradi & Subich, 2003), so revising the postulates of objectification theory to be inclusive of other forms of objectification and/or discrimination is imperative. Clearly, researchers need to explore how this theory relates to eating disorder symptomatology among diverse groups of women.

In conclusion, although we used a correlational methodology, our findings provide support for Fredrickson and Roberts' assertion that experiences of being sexually objectified impact women's psychological and physical well-being through various routes (Fredrickson & Roberts, 1997). Specifically, pressure to be thin was found to predict body surveillance and body shame, body shame was found to predict disordered eating and poor awareness of specific internal states (i.e., hunger, satiety, and emotions), and poor awareness of these internal states predicted disordered eating. Body surveillance, however, was

not found to predict unique variance in poor interoceptive awareness, and based on our findings we assert that this relation is fully mediated by body shame. Yet, our findings uphold the role of body surveillance in our model, as it strongly predicted body shame above and beyond the variance accounted for by pressure for thinness. Last, pressure for thinness only predicted disordered eating through its associations with body surveillance and body shame. Results from this study underscore attempts made by feminists to emphasize the dangers of pressuring women to be thin and efforts to challenge these pressures at both a macrolevel and microlevel.

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