

A Test and Extension of Objectification Theory as It Predicts Disordered Eating: Does Women's Age Matter?

Casey L. Augustus-Horvath and Tracy L. Tylka
Ohio State University

When predicting disordered eating, models incorporating several of objectification theory's (B. L. Fredrickson & T. A. Roberts, 1997) core constructs (i.e., sexual objectification, self-objectification, body shame, poor interoceptive awareness) have been empirically supported with women of traditional undergraduate age who are consistent in age with the youthful-ideal prototype for women presented in the media. The present study extended this research by testing these core constructs with women ages 25–68 years ($n = 330$), as their experiences with these constructs may differ as they deviate from this youthful prototype. A multiple-groups analysis comparing these women with women ages 18–24 ($n = 329$) indicated that objectification theory can be extended to women ages 25 and older, as the model provided an adequate fit to the data. However, structural invariance analysis revealed that what takes place within the model may not be identical for these groups. The older group had a stronger relationship between body shame and disordered eating and a weaker relationship between poor interoceptive awareness and disordered eating than did the younger group.

Keywords: objectification theory, disordered eating, age, older women, sexual and self-objectification via body surveillance

Supplemental materials: <http://dx.doi.org/10.1037/a0014637.supp>

The incidence of eating disorder (ED) symptomatology has dramatically risen in Western society over the past 3 decades (Feingold & Mazella, 1998; Muth & Cash, 1998; Park, 2007). Counseling psychologists are uniquely equipped to advance the understanding and treatment of EDs due to their emphases on diversity and strengths, which encourage positive body image and adaptive eating among all individuals. One group that would be worthwhile for counseling psychologists to study in this domain is women older than those of traditional college age. Most research on maladaptive eating has used samples of young adult undergraduate women 18–24 years old, and there is growing awareness that disordered eating occurs among women older than this relatively narrow and young age range (Kearney-Cooke, 2004; Striegel-Moore & Bulik, 2007).

One framework that is directly aligned with the perspective of counseling psychology and discusses how disordered eating may differentially impact women on the basis of their age is objectification theory (Fredrickson & Roberts, 1997). This social-constructivist approach explains how sociocultural factors combine with intrapersonal variables to impact women's disproportionately greater risk of developing certain disorders such as disordered eating, depression, and sexual dysfunction. A dis-

cussion of objectification theory, as well as research evaluating many of its paths, is presented next. Figure 1 illustrates the core constructs of objectification theory as it predicts women's disordered eating; the solid paths with associated letters have been supported empirically with samples of primarily young adult college women.

The underpinning of objectification theory is sexual objectification (Moradi, Dirks, & Matteson, 2005; Tylka & Hill, 2004). Fredrickson and Roberts (1997, p. 175) defined *sexual objectification* as occurring when "women are treated as *bodies*—and in particular, as bodies that exist for the use and pleasure of others." That is, when a woman's body or body parts are separated from her personal identity, as if the body/body parts are capable of representing her. Sexual objectification occurs through media images that suggest to women that their appearance is the source of their worth and that their bodies should fit the societal conventions of attractiveness and be chiseled, clothed, and adorned to please their observers. These images also provide their significant others with a set of standards and expectations of female beauty from which to compare and evaluate their partner, sister, mother, daughter, and female friends, thus perpetuating sexual objectification. Objectification theory proposes that the first direct negative consequence of sexual objectification is self-objectification (see path a in Figure 1). Self-objectification occurs when a woman adopts an observer's perspective of her physical self and treats her own body as an object to be looked at and evaluated (Fredrickson & Roberts, 1997). Self-objectification may be described as the internalization of sexual objectification, which reduces a woman's worth to her perception of her body's semblance to cultural standards of beauty. Self-objectification is typically manifested as body

Casey L. Augustus-Horvath and Tracy L. Tylka, Department of Psychology, Ohio State University.

This work constituted Casey L. Augustus-Horvath's master's thesis, completed under the direction of Tracy L. Tylka.

Correspondence concerning this article should be addressed to Tracy L. Tylka, Department of Psychology, Ohio State University, 1465 Mount Vernon Avenue, Marion, OH 43302. E-mail: tylka.2@osu.edu

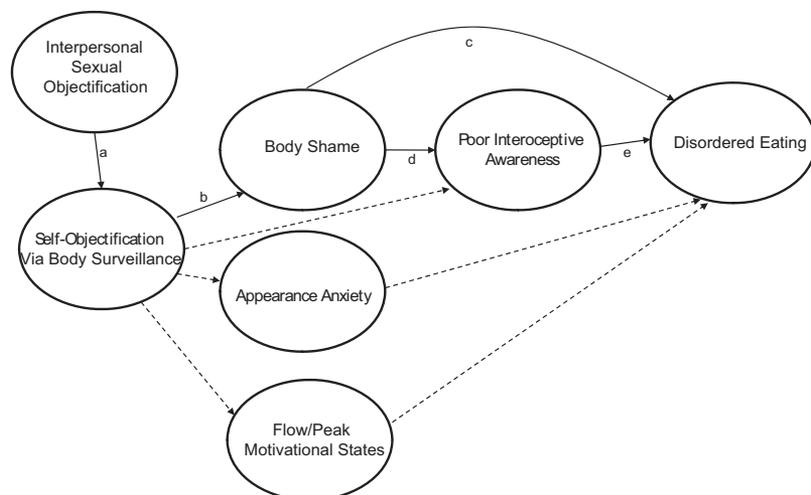


Figure 1. Predictors of disordered eating in the context of objectification theory. This model represents objectification theory applied to disordered eating in its entirety and does not reflect the model examined in the present study. Solid lines indicate conceptual and empirically supported links (these paths were evaluated in the present study), whereas dashed lines indicate conceptual links proposed in the model that have not received empirical support (these paths were not evaluated in the present study).

surveillance, or habitual monitoring of the body (Fredrickson & Roberts, 1997; Lindberg, Grabe, & Hyde, 2007).

Self-objectification is posited to increase body shame and appearance anxiety, reduce awareness of internal body states (i.e., interoceptive awareness of hunger, satiety, and emotions), and disrupt flow/peak motivational states (Csikszentmihalyi, 1990; Fredrickson & Roberts, 1997). According to theory and research, of the potential effects of self-objectification, body shame and poor interoceptive awareness have been underscored in frameworks of disordered eating (Kozee & Tylka, 2006; Tylka & Hill, 2004). If women largely or exclusively attend to their outer appearance, they often compare their body with an unattainable cultural thin-ideal standard and consequently experience body shame (see path b in Figure 1; Fredrickson & Roberts, 1997). Women who are shameful of their bodies may then engage in disordered eating in an attempt to lose weight to appear more consistent with this thin-ideal standard (see path c) and may further suppress their internal hunger, satiety, and emotional cues because they view these cues as sabotaging their weight loss attempts (see path d; Fredrickson & Roberts, 1997; Tylka & Hill, 2004). Last, this suppression decreases awareness of these cues, which both facilitates and perpetuates disordered eating (see path e; Garner, 1991; Tylka & Subich, 2004).

The dashed paths in Figure 1 represent posited relationships of objectification theory that have not received empirical support. In more comprehensive examinations of this theory (i.e., models containing most constructs in Figure 1), attending to external appearance does not uniquely contribute to college women's detached awareness of their internal body states and sensations (Kozee & Tylka, 2006; Tylka & Hill, 2004). Furthermore, appearance anxiety and the disruption of flow (i.e., engaged concentration) do not contribute incrementally to disordered eating (Slater & Tiggemann, 2002; Tiggemann & Slater, 2001). The five remaining paths have been supported by research with college women, which is further discussed below.

Fredrickson, Roberts, Noll, Quinn, and Twenge (1998) experimentally manipulated self-objectification by having undergraduate women try on a swimsuit or a sweater in front of a full-length mirror. They found that women wearing a swimsuit reported significantly higher levels of body shame than did those wearing a sweater, suggesting that self-objectification encouraged body shame. In turn, body shame was associated with restrained eating, measured by the number of cookies that participants ate in the latter phase of the study. Other studies (e.g., Greenleaf, 2005; Kozee & Tylka, 2006; McKinley & Hyde, 1996; Moradi et al., 2005; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001) have supported the associations among self-objectification, body shame, and disordered eating among undergraduate samples of women.

Recent examinations have accrued further evidence linking perceived sexual objectification with self-objectification for young adult women. Researchers who have included sexual objectification as a construct within their model (e.g., Kozee & Tylka, 2006; Moradi et al., 2005; Tylka & Hill, 2004) have found that it was associated with self-objectification. Additionally, objectification theory's proposed paths from body shame and poor interoceptive awareness to disordered eating have been upheld (Greenleaf, 2005; Kozee & Tylka, 2006; Noll & Fredrickson, 1998; Slater & Tiggemann, 2002; Tylka & Hill, 2004).

In summary, empirical support for objectification theory as a viable model of disordered eating continues to accumulate; yet, the vast majority of research has relied on convenience samples of young, mostly White women of traditional undergraduate age (i.e., 18–24; Grogan, 1999). This limitation may call into question the appropriateness of generalizing findings from such restricted samples to women of diverse ages and backgrounds. Indeed, objectification theory has specifically asserted that sexual objectification may differentially affect women when they deviate from the U.S. representation of beauty for women (e.g., portrayed in the media as thin, youthful, light-skinned, affluent, and heterosexual), depending in part on physical and personal attributes such as age, ethnicity, sexual

orientation, and socioeconomic status (Fredrickson & Roberts, 1997). It is curious, then, that researchers have repeatedly used such homogeneous samples that prevent examination of this assertion. As such, an important next step in extending the literature on objectification theory as it relates to disordered eating is to examine whether the relationships among its constructs differ on the basis of the demographic characteristics of the sample. In the present study, we investigated whether the tenets of objectification theory could be applied to women older than students of traditional college age. A discussion of how age may potentially impact the relationships among this theory's constructs is presented next.

The constructs contained in objectification theory may relate differently in samples of adult women ages 25 and older because the ideal body for women touted in U.S. culture is youthful as well as thin (Kearney-Cooke, 2004; Kilbourne, 1999). This ideal body type is reflected in media outlets such as *Playboy* (i.e., women in the centerfolds are typically 19–25 years old, with a mean age of 21.3; Bogaert, Turkovich, & Hafer, 1993; Sypeck et al., 2006) and fashion magazines (i.e., models are often 16–22 and considered to be retired by the age of 25; Santonastaso, Mondini, & Favaro, 2002; Shaw, 1995). As women age, they move further away from this youthful thin-ideal image. On average, they gain approximately 10 pounds of body fat per decade, generally in the midriff and upper arm regions, and lose muscle mass and skin elasticity (Andres, 1989).

Women ages 25 and older, then, may have different experiences with and levels of sexual objectification than do women who are consistent in age with this youthful thin ideal. According to Fredrickson and Roberts (1997), the media and interpersonal interactions are the two sources of sexual objectification. Significant others in women's lives (e.g., partners, family members, friends), acquaintances, and strangers may internalize the media's representation of this youthful thin-ideal body type and, in turn, objectify (e.g., evaluate, harass, ridicule) women if their bodies are dissimilar to this template (Fine & Asch, 1988). As a result, they may receive more critical but fewer sexualized comments about their bodies. Women who have internalized the belief that their value and power is tied to their sexuality and appearance are likely to be shameful of their bodies' aging process and feel that their worth as women is greatly reduced (Kearney-Cooke, 2004). Other older women, however, perceive aging in a favorable manner. These women indicate that they are relieved that they no longer are expected to be objects of beauty and sexuality, thereby reducing their experiences of constant body surveillance. They often view aging as an opportunity for personal and spiritual growth by rediscovering—independent of their appearance—goals and ambitions that were often lost at puberty (Kearney-Cooke, 2004; Pipher, 1994). Thus, internalization of the youthful thin-ideal image may reflect women's tendency to self-objectify and impact their negative body image, which may then determine their inattentiveness to internal body signals and maladaptive eating behaviors. These changes in the nature and/or levels of sexual objectification and self-objectification may make the sequence of variables contained in objectification theory, and the relationships among them, different for women as they deviate in age and weight from the youthful thin-ideal image.

Being 18–24, women of traditional college age are more consistent with the youthful ideal image portrayed by the media as beautiful for women. Given that (a) most research on objectifica-

tion theory has sampled women of only traditional college age and (b) the relationships among the objectification theory constructs may vary for older women, given their natural deviation from the youthful thin-ideal image and the perspective they take on aging, studies on objectification theory need to include women older than 24 years.

Limited preliminary support for some of objectification theory's paths has been gathered from studies sampling women older than 24 years. Hill (2003) found that perceived sexual objectification was associated with self-objectification. Additionally, Tiggemann and Lynch (2001) found that body surveillance was related to body shame and that body shame was related to ED symptomatology; however, this research did not include sexual objectification and poor interoceptive awareness as model constructs. It is therefore unknown whether the paths of objectification theory extend beyond women ages 18–24 years. Given that discrepancies may exist in the level, dynamic, and type of sexual objectification for older women due to their deviation from the youthful thin ideal, researchers need to investigate this research domain more thoroughly before simply generalizing findings from women of traditional undergraduate age to older women.

The relatively small amount of research that has investigated whether older women differ from those of traditional college age on the objectification theory constructs has been inconclusive. Some studies suggested that older women experience less self-objectification than do young adult college women (Greenleaf, 2005; McKinley, 1999; Szymanski & Henning, 2007; Tiggemann & Lynch, 2001), although one study did not uncover any age differences (Hill, 2003). Some researchers found that older women report less body shame than do young adult college women (Deeks & McCabe, 2001; Greenleaf, 2005; McKinley, 1999), whereas other researchers did not find such differences (Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Mixed findings also have been noted for ED symptomatology; some studies indicated that older women experience less disordered eating than do young adult college women (Lewis & Cachelin, 2001; Rand & Kuldau, 1991; Tiggemann & Lynch, 2001), whereas other studies did not reveal such differences (Hetherington & Burnett, 1994; McKinley, 1999; Stokes & Frederick-Recascino, 2003). One study found that older women reported lower levels of perceived sexual objectification than did young adult college women (Hill, 2003). No study, to our knowledge, has explored age differences in poor interoceptive awareness.

Because this limited literature includes many different sample sizes, age groupings, measures, and conceptualizations of objectification theory constructs, it appears somewhat disjointed and in need of integration. In our test of whether the tenets of objectification theory could be applied to women older than those of traditional college age, we worked to reconcile such inconsistencies by utilizing age groupings, measures, and conceptualizations of objectification theory constructs that are theoretically driven and have garnered psychometric support.

Specifically, we examined whether the five empirically supported paths in Figure 1 would be upheld with a sample of women 25 and older and whether the paths would be similar to those obtained for a comparison group of young adult women (i.e., 18–24 years) who typically resemble participants in objectification theory research. It should be noted, however, that participants were not limited to students. We attempted to obtain a nationwide and

diverse community sample of adult women irrespective of college status. To provide a more stringent test of our model, we controlled for body mass index (BMI) within our analyses by having it predict the five latent variables. Given the thinness standard for women's bodies in the United States, actual body size may be negatively related to the number of encounters with sexual objectification and positively related to monitoring body appearance, experiencing body shame, disconnecting the self from internal cues (i.e., hunger, satiety, and emotions), and employing harmful weight-control strategies to lose weight (Fredrickson & Roberts, 1997; Moradi et al., 2005). Controlling for BMI allowed for a clearer interpretation of the findings, as we reduced the possibility that (a) the relationships between the variables were due to a third variable (e.g., body mass) and (b) age group differences, should they emerge, were due to the expected higher body mass among women ages 25 and older (Andres, 1989).

We also explored whether three theoretical and empirically supported mediational links could be uncovered in our sample of women ages 25 and older and replicated in our sample of women ages 18–24. First, rooted in objectification theory is the proposition that women's tendency to self-objectify translates their experiences with sexual objectification into negative consequences, such as body shame. Thus, sexual objectification experiences will impact body shame only to the extent that they are internalized (Fredrickson & Roberts, 1997; Moradi et al., 2005; Tylka & Hill, 2004). Second, consistent with objectification theory's assertions, body shame may translate a woman's attention to her appearance to ED symptomatology. Self-objectification, then, should be associated with disordered eating only to the extent that women feel shame toward their bodies (Fredrickson & Roberts, 1997). Third, despite objectification theory's assertion of a direct relationship between self-objectification and poor interoceptive awareness, research has indicated that women lose touch with their internal cues only to the extent that they experience body shame (Kozee & Tylka, 2006; Tylka & Hill, 2004). Body shame, then, may translate women's attention to their appearance into poor interoceptive awareness.

Method

Participants and Procedure

We recruited only women, as objectification theory was originated to explain women's experiences of living within a culture that minimizes their contributions; internal experiences; and social, economic, and political power while concurrently sexually objectifying their bodies. Participants were approached via introductory psychology classes at a large midwestern university and electronic mail and listservs. Electronic mail messages were sent to students in these classes and nationwide to professional listservs, campus organizations (e.g., multicultural centers, gay/lesbian/bisexual/transgender (GLBT) student services, the women's engineering organization at Ohio State University, student affairs), friends, family, and colleagues. Efforts were made to recruit more diverse samples by targeting organizations and listservs comprised of historically underrepresented and/or marginalized populations. The e-mailed messages contained a brief description of the study, a request for participation, an entreaty for the recipient to forward the message to other women, and a direct URL link to the survey.

Interested participants were directed to a Web page that provided details regarding informed consent and efforts taken to ensure anonymity. After indicating their consent, they were immediately redirected to the survey Web page, where the measures and a demographic information form were hosted. Two different survey forms (containing opposite sequences of the measures) were administered in an attempt to offset possible ordering effects. Women enrolled in introductory psychology classes at Ohio State University were given course credit for their participation.

Several strategies were used to reduce the likelihood of erroneous data. Following the suggestions by Schmidt (1997), we screened date and time of submission to avoid duplicate surveys. Three questions asking participants to choose certain responses (e.g., "Please choose Strongly Agree for this item") were integrated into the survey to control for inattentiveness and random or careless responding. Participants who did not follow each of these requests were not included in the final data set. Furthermore, seven women had a significant amount of missing data (i.e., 15% or more of data points missing from at least one measure) and were not included in the final data set.

After these initial screening procedures, we categorized 659 women into two age groups: 18–24 years old ($n = 329$) and 25–68 ($n = 330$). The sample and demographic characteristics for both groups are presented in Table 1.

Constructs and Measures

Perceived sexual objectification. The Interpersonal Sexual Objectification Scale (ISOS; Kozee, Tylka, Augustus-Horvath, & Denchik, 2007) was used to determine the extent to which women perceived that they were targets of sexual objectification (i.e., body evaluation, unwanted explicit sexual advances) within the past year. It contains 15 items (e.g., "How often have you felt like or known that someone was evaluating your physical appearance?"), and responses range from 1 (*never*) to 5 (*almost always*). Item responses are averaged, with higher total scores reflecting greater objectification. Kozee et al. (2007) investigated the psychometric properties of the ISOS with samples of young adult college women. Reliability was upheld for scores on the ISOS, with reported internal consistency reliability (i.e., Cronbach's coefficient alpha) estimates ranging from .90 to .91 and a 3-week test–retest correlation (r) of .84. Construct validity for the ISOS scores was supported by relationships to sexist degradation ($r = .55$) and two other sexist events—unfair sexist events at work and school ($r = .35$) and unfair treatment in relationships ($r = .39$)—and by negligible associations with two measures of socially desirable responding—self-deceptive enhancement ($r = .05$) and impression management ($r = -.15$). In the present study, Cronbach's coefficient alpha estimates for scores on the ISOS were .91 for the 18–24 age group and .92 for the 25 and older age group.

Self-objectification via body surveillance. Whereas the usual definition of *self-objectification* involves a broad orientation to valuing appearance attributes over other personal characteristics (e.g., competence) and subjective experiences, we chose to more narrowly define it as body surveillance (McKinley & Hyde, 1996). Indeed, the literature has often equated body surveillance with self-objectification by using these constructs interchangeably (Lindberg et al., 2007; Moradi et al., 2005). Nevertheless, some researchers describe these constructs as somewhat distinct but

Table 1
Sample and Demographic Characteristics for Women Ages 18–24 Years and for Women Ages 25 Years and Older

Variable	Women ages 18–24	Women ages 25+
<i>n</i>	329	330
Average age (<i>SD</i>)	19.90 (1.88)	29.74 (6.20)
Ethnic identification: <i>n</i> (%)		
White/European American	286 (86.9)	310 (93.9)
African American	16 (4.9)	6 (1.8)
Asian American	8 (2.4)	5 (1.5)
Latina or Hispanic	2 (0.6)	2 (0.6)
Native American	2 (0.6)	1 (0.3)
Multiracial	9 (2.7)	3 (0.9)
International	4 (1.2)	0 (0.0)
Did not report	2 (0.6)	3 (0.9)
Socioeconomic identification: <i>n</i> (%)		
Lower class	10 (3.0)	8 (2.4)
Working class	139 (42.2)	117 (35.5)
Middle class	156 (47.4)	182 (55.2)
Upper class	13 (4.0)	10 (3.0)
Did not report	11 (3.3)	13 (3.9)
Relationship status (%)		
Single	48.9	11.2
Long-term relationship	39.5	17.6
Partnered	3.0	3.3
Married	5.2	57.6
Divorced or separated	0.0	8.2
Widowed	0.0	0.3
Did not report	3.3	1.8
Highest education level (%)		
Completed high school	7.6	3.9
Some college education	86.1	24.2
Completed college	4.0	15.8
Some graduate education	0.0	14.8
Completed graduate school	0.6	40.9
Did not report	1.7	0.3
Current college student (%)		
First-year student	45.0	2.0
Sophomore	18.5	4.6
Junior	14.6	6.6
Senior	13.0	20.6
Graduate student	3.3	0.0

highly related (Tiggemann & Slater, 2001). Thus, when discussing this construct as it relates to the present study, we have described it as self-objectification via body surveillance.

We used the eight-item Body Surveillance subscale of the Objectified Body Consciousness Scale (OBC; McKinley & Hyde, 1996) to measure this construct. Participants respond to items (e.g., “During the day, I think about how I look many times”) on a scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Item responses are averaged, with higher scores indicating greater body surveillance. Among samples of young adult college women (McKinley & Hyde, 1996), scores on the Body Surveillance subscale demonstrated evidence of internal consistency reliability ($\alpha = .89$), 2-week test–retest reliability ($r = .79$), and convergent validity ($r = .73$ with public self-consciousness). For the present study, Cronbach’s alphas for scores on the Body Surveillance subscale were .87 for the 18–24 age group and .88 for the 25 and older age group.

Body shame. Body shame was measured using the eight-item Body Shame subscale of the OBC (McKinley & Hyde, 1996).

Responses for items (e.g., “When I’m not the size I think I should be, I feel ashamed”) range from 1 (*strongly disagree*) to 7 (*strongly agree*) and are averaged, with higher scores indicating higher levels of body shame. Support has been garnered for the internal consistency reliability of its scores ($\alpha = .75$), the 2-week test–retest reliability of its scores ($r = .84$), and the construct validity of its scores ($r = -.51$ with self-esteem) among young adult college women (McKinley & Hyde, 1996). For the present study, Cronbach’s alphas for scores on this subscale were .87 for the 18–24 age group and .88 for the 25 and older age group.

Poor awareness of hunger, satiety, and emotions. This construct was measured using the Interceptive Awareness subscale of the Eating Disorder Inventory-2 (EDI-2-IA; Garner, 1991). Its 10 items (e.g., confusion over hunger sensations and emotions) are rated on a scale ranging from 1 (*never true of me*) to 6 (*always true of me*), with higher scores reflecting poorer interoceptive awareness. Although Garner (1991) recommended that item responses *never true of me*, *seldom true of me*, and *sometimes true of me* receive a score of 0 and the responses *often true of me*, *very often true of me*, and *always true of me* receive scores of 1, 2, and 3, respectively, we averaged the item responses to prevent range restriction and skewness, which could violate the assumptions of latent variable structural equation modeling (Kline, 2005). Other researchers (e.g., Tylka & Hill, 2004; Tylka & Subich, 2004) have used this scoring method within the literature. The internal consistency reliability ($\alpha = .81$; Garner, Olmsted, Polivy, & Garfinkel, 1984), 3-week test–retest reliability ($r = .85$; Wear & Pratz, 1987), and construct validity ($r = .77$ with difficulty identifying feelings; Tylka & Subich, 2004) of this subscale’s scores have been upheld with samples of young adult women. In the present study, Cronbach’s alphas for scores on the EDI-2-IA were .86 for the 18–24 age group and .76 for the 25 and older age group.

Disordered eating. The 26-item Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982) was used to measure ED symptomatology. Items (e.g., “I have gone on eating binges where I feel that I may not be able to stop”) are rated on a scale ranging from 1 (*never*) to 6 (*always*), with higher scores reflecting greater disordered eating. Although Garner et al. (1982) recommended that the responses *never*, *rarely*, and *sometimes* receive a score of 0 and that the responses *often*, *very often*, and *always* receive scores of 1, 2, and 3, respectively, we averaged the item responses to obtain a total score to prevent skewness in the distribution of scores. Other researchers (e.g., Mazzeo, 1999; Tylka & Subich, 2004) also have used this continuous scoring method with nonclinical samples of women due to the relatively low base rate of clinical EDs. When scored continuously, scores on the EAT-26 have yielded evidence of internal consistency reliability ($\alpha = .91$; Mazzeo, 1999), 3-week test–retest reliability ($r = .86$; Mazzeo, 1999), and convergent validity ($r = .66$ with the Questionnaire for Eating Disorder Diagnoses; Mintz, O’Halloran, Mulholland, & Schneider, 1997; Tylka & Subich, 2004). For the present study, Cronbach’s alphas for scores on the EAT-26 were .93 for the 18–24 age group and .88 for the 25 and older age group.

Body mass index (BMI). Participants’ self-reported weight and height were used to compute their BMI: (weight in pounds)/(height in inches)² \times 703, or (weight in kilograms)/(height in meters)². The BMI for women ages 18–24 ranged from 16.50 to 63.40 ($M = 24.13$; $SD = 4.85$), which is categorized as normal weight (BMI = 20–24.9; Garrow & Webster, 1985). The BMI for women ages 25

and older ranged from 17.2 to 47.2 ($M = 26.74$; $SD = 6.20$), which is categorized as overweight ($BMI = 25\text{--}29.9$).

Creation of Measured/Observed Variables

Recommendations by Russell, Kahn, Spoth, and Altmaier (1998) were followed in order to construct three measured indicators (parcels) for each latent variable represented in Figure 1. First, for each scale or subscale, an exploratory factor analysis using the total sample ($N = 659$) of participants was conducted using the maximum likelihood method of extraction, and a single factor was specified to be extracted. Second, items were rank-ordered according to the magnitude of the factor loadings. Third, items were successively assigned (from the highest to the lowest factor loading) to each of three parcels in order to equalize the average loadings of each parcel on its respective latent factor. Finally, for each parcel, items were averaged to arrive at a total score. Parcels were then used to estimate their respective latent variable within the SEM analyses.

Results

Preliminary Analyses

The few missing data points were handled by substituting participants' mean scale or subscale scores for the missing value. Next, data were examined for normality of distribution. For structural equation models, it is recommended that researchers transform variables that contain absolute values of skewness >3 and kurtosis >10 (Kline, 2005). We examined the skewness and kurtosis for BMI and each of the 15 indicators. All skewness and kurtosis values were under these critical values (skewness range = -0.53 to 1.53 , kurtosis range = -0.78 to 3.82); thus, no variables were transformed. For each age group, the scale means, standard deviations, and partial (holding BMI as a covariate) correlations were examined and are presented in Table 2. Observed variable (i.e., measure parcel) means, standard deviations, and partial correlations are displayed in Appendix A, which is available in the online supplemental material. We performed five independent-samples t tests to determine whether women ages 25 and older differed from women ages 18–24 on each measure. Because of the number of comparisons, p values were set at .01 (i.e., .05/5) to reduce the risk of Type I error. Results indicated that women ages

25 and older scored significantly lower on perceived sexual objectification, $t(657) = 14.34$, $p < .01$, and self-objectification via body surveillance, $t(657) = 4.68$, $p < .01$, than did women ages 18–24. No significant age group differences were found on body shame, $t(657) = 1.49$, ns ; poor interoceptive awareness, $t(657) = 0.69$, ns ; or disordered eating, $t(657) = 0.66$, ns .

Test of the Hypothesized Model for the Combined Sample

Latent variable SEM, an analysis that controls for measurement error by having multiple indicators estimate a latent factor (Kelloway, 1998), was used to evaluate the measurement model (i.e., parcel-factor loadings and relationships among latent variables) for the combined sample. Mplus Version 4.1 (Muthén & Muthén, 2006) with maximum likelihood estimation (using the covariance matrix as input) was used to test these models. Adequacy of model fit to the data was determined by four indexes recommended by Hu and Bentler (1999) and provided by the Mplus program: the comparative fit index (CFI), the Tucker–Lewis index (TLI), the standardized root-mean square residual (SRMR), and the root-mean square error of approximation (RMSEA). Findings from a Monte Carlo simulation study (Hu & Bentler, 1999) revealed that values of .95 or higher for CFI and TLI, .08 or lower for SRMR, and .06 or lower for RMSEA indicate a relatively good fit and that values of .90–.94 for CFI and TLI, .09–.10 for SRMR, and .07–.10 for RMSEA indicate an acceptable fit. We also specified Mplus to detect modification indexes (MIs) of paths above 5.0. An MI of this magnitude would indicate that a nonspecified path is statistically significant (Kelloway, 1998).

Examination of the measurement model. First, the measurement model was evaluated through a confirmatory factor analysis, with parcels serving as indicators for their respective latent variable. Results indicated that the measurement model provided an acceptable to good fit to the data (CFI = .95, TLI = .94, SRMR = .08, RMSEA = .07). Significant parcel-factor loadings ($p < .001$) indicated that all latent factors were adequately operationalized. Therefore, this measurement model was used to test the structural model. Relationships between the latent variables are included in Table 3.

Examination of the structural model. The hypothesized structural model (the five empirically supported paths and variables in Figure 1) was evaluated for the combined sample; BMI was a

Table 2

Means (SD) and Partial Correlations (With Body Mass Index Controlled) Among Measures for Women Ages 18–24 Years and for Women Ages 25 Years and Older

Measure	Women ages 18–24	Women ages 25+	Response range	1	2	3	4	5
1. ISOS	2.46 _a (0.65)	1.77 _a (0.57)	1–5	—	.23**	.29**	.24**	.27**
2. OBC: Body Surveillance	4.71 _b (1.11)	4.27 _b (1.27)	1–7	.18**	—	.63**	.45**	.55**
3. OBC: Body Shame	3.60 (1.32)	3.45 (1.33)	1–7	.15*	.64**	—	.57**	.58**
4. EDI-2: Interoceptive Awareness	2.53 (0.74)	2.50 (0.56)	1–6	.29**	.37**	.55**	—	.48**
5. EAT-26	2.47 (0.75)	2.43 (0.55)	1–5	.26**	.54**	.70**	.57**	—

Note. $N = 659$. Values that share a common subscript (reading horizontally) indicate that the age group means are significantly different from one another ($p < .01$). ISOS = Interpersonal Sexual Objectification Scale; OBC = Objectified Body Consciousness Scale; EDI-2 = Eating Disorder Inventory-2; EAT-26 = 26-item Eating Attitudes Test. Data from women in the 18–24 age group ($n = 329$) are presented below the diagonal, whereas data from women in the 25 and older age group ($n = 330$) are presented above the diagonal.

* $p < .05$. ** $p < .01$.

Table 3
Correlations Between Latent Variables (With Body Mass Index Controlled) on the Basis of the Measurement Model

Latent variable	1	2	3	4	5
1. Interpersonal sexual objectification	—	.25**	.26**	.23**	.27**
2. Self-objectification via body surveillance	.18**	—	.71**	.54**	.63**
3. Body shame	.13*	.73**	—	.68**	.69**
4. Poor interoceptive awareness	.30**	.45**	.65**	—	.58**
5. Disordered eating	.24**	.59**	.76**	.66**	—

Note. $N = 659$. Data from women in the 18–24 years age group ($n = 329$) are presented below the diagonal, whereas data from women in the 25 years and older age group ($n = 330$) are presented above the diagonal.

* $p < .05$. ** $p < .01$.

covariate in this model and was specified to predict each of the five latent variables. This model provided an acceptable to good fit to the data (CFI = .95, TLI = .94, SRMR = .08, RMSEA = .08).

Exploration of Group Differences: Multiple-Groups Analysis

We then used multiple-groups analysis to determine whether this model was similar for women in both age groups. Specifically, this analysis explored whether the five structural paths illustrated in Figure 1 differed for women ages 18–24 and women ages 25 and older. Two multiple-groups models were tested. In the first model, the values of the structural paths were allowed to vary (i.e., permitting different structural paths) for the two age groups. In the second (i.e., invariant) model, the five pairs of structural paths were constrained to be equal (i.e., not allowing differences in structural paths) for the two groups. If the invariant model did not differ in fit from the model where structural paths were allowed to vary, then the structural path coefficients would be similar between groups. If these models did differ in fit, then one or more structural paths would be different between groups.

In each model, factor loadings between the two groups were held invariant to ensure that the constructs were being measured similarly between groups; however, error variances and path coefficients from the covariate (i.e., BMI) to the latent variables were allowed to vary across groups (Liao, Rounds, & Klein, 2005). A test of the model in which the structural paths were allowed to vary indicated that the model provided an acceptable fit to the data (CFI = .94, TLI = .93, SRMR = .09, RMSEA = .09). The test of the model in which the structural paths were constrained to be equal suggested an acceptable to poor fit to the data (CFI = .93, TLI = .92, SRMR = .11, RMSEA = .09). The difference in fit between these two models was significant, $\chi^2_{\text{difference}}(5, N = 659) = 35.5, p < .05$, revealing structural path differences between the age groups.

A series of five follow-up chi-square difference tests examined which pairs of structural path coefficients were significantly different from one another. Because these comparisons were exploratory, a Bonferroni-adjusted p level of .01 was used for each analysis to minimize the risk of Type I error. These analyses were conducted by comparing the more restrictive model (the model specifying invariant structural path coefficients) with five different models, each allowing only one of the structural paths to vary. Results from these five tests indicated that two structural paths

varied between the age groups: body shame to disordered eating, $\chi^2_{\text{difference}}(1, N = 659) = 65.4, p < .01$, and poor interoceptive awareness to disordered eating, $\chi^2_{\text{difference}}(1, N = 659) = 24.3, p < .01$. No other specified structural paths were different for the age groups. The relationship between body shame and disordered eating was stronger for women ages 25 and older than for women ages 18–24, whereas the relationship between poor interoceptive awareness and disordered eating was stronger for women 18–24 than it was for women ages 25 and older. A model in which both of these paths were allowed to vary between the age groups reflected a significant improvement in model fit over the model in which all five paths were held invariant, $\chi^2_{\text{difference}}(2, N = 659) = 29.8, p < .05$, and this model did not reflect a significant difference from the model in which the five structural paths were allowed to vary, $\chi^2_{\text{difference}}(3, N = 659) = 5.7, ns$. It is important to note that these findings need to be replicated with other groups of women to determine whether they are specific to the present sample.

The structural coefficients and parcel-factor loadings from this final structural model (in which only three paths were held invariant) are presented in Figure 2. The paths that were held invariant do differ slightly between samples because some elements of the model, such as the error variances of the latent variables, were allowed to vary between groups, thereby affecting the standardized solution. In this final model, perceived sexual objectification accounted for 6.7% (for women ages 18–24) and 4.8% (for women ages 25+) of the variance in self-objectification via body surveillance; self-objectification via body surveillance accounted for 53.3% (for women ages 18–24) and 63.6% (for women ages 25+) of the variance in body shame; body shame accounted for 39.6% (for women ages 18–24) and 50.0% (for women ages 25+) of the variance in poor interoceptive awareness; and body shame and poor interoceptive awareness accounted for 62.2% (for women ages 18–24) and 55.9% (for women ages 25+) of the variance in disordered eating. This final structural model was used as the basis for the remainder of the analyses.

Post Hoc Exploration of Additional Model Paths

The MIs revealed structural paths that, according to the data, should be estimated. However, because paths noted by high MI values are data-driven rather than theory-driven, they should be considered tentative, as they may be specific to this sample. It is necessary, then, to replicate findings with other samples before

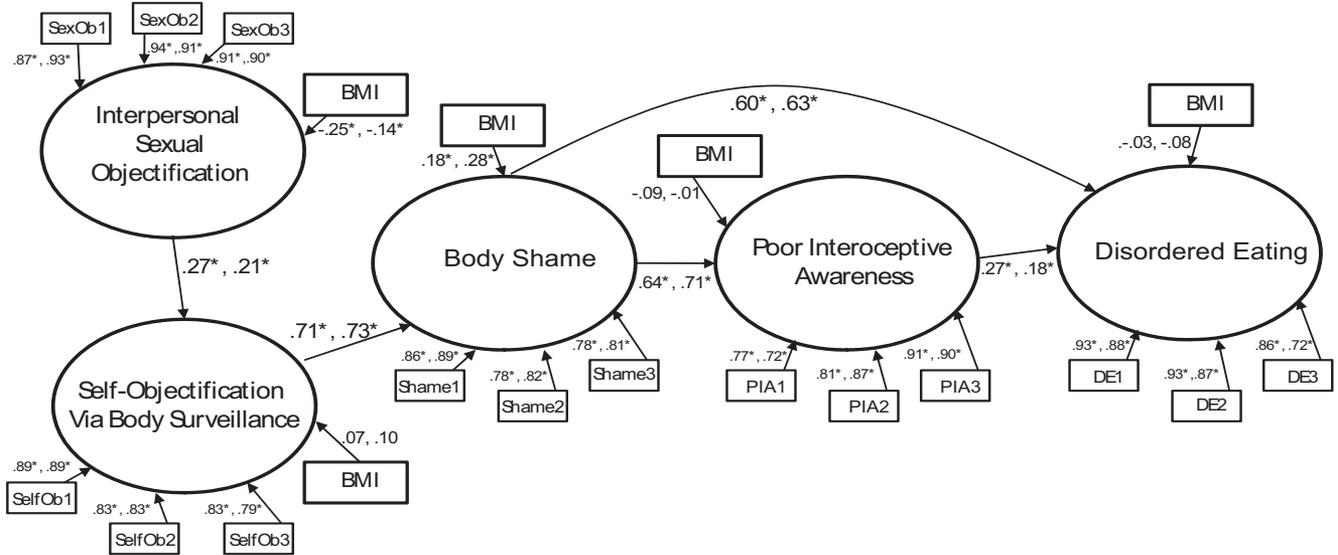


Figure 2. Parcel-factor loadings and path coefficients for the final structural model obtained by multiple-groups analysis of the data from women ages 18–24 ($n = 329$) and women ages 25 and older ($n = 330$). Path coefficients for women ages 18–24 are on the left; path coefficients for women ages 25 and older are on the right. SexOb = sexual objectification; BMI = body mass index; SelfOb = self-objectification; Shame = body shame; PIA = poor interoceptive awareness; DE = disordered eating. The numbers 1–3 accompanying abbreviations represent first item parcel through third item parcel. * $p < .05$.

they can be interpreted. Because the paths noted by high MIs were different for the age groups, they were allowed to vary in the structural model. For women ages 18–24, high MIs indicated that paths from perceived sexual objectification to poor interoceptive awareness and disordered eating should be added. Including these two paths significantly improved the fit of the model, $\chi^2_{\text{difference}}(2, N = 329) = 24.5, p < .05$. For women ages 25 and older, high MIs suggested that paths from perceived sexual objectification to body shame and from self-objectification via body surveillance to disordered eating should be estimated. The addition of these two paths also significantly improved the fit of the model, $\chi^2_{\text{difference}}(2, N = 330) = 20.6, p < .05$.

Mediation

As demonstrated in Table 3, all proposed predictor, mediator, and criterion variables were related to one another for each age group. Moreover, for each proposed instance of mediation, the two components of the indirect path were significant for both age groups (illustrated in Figure 2). Given that these preconditions for mediation were met, we explored the MIs to determine whether the direct path from the predictor to the criterion was significant for both age groups. An MI < 5.0 indicates that the direct path is superfluous (i.e., nonsignificant), providing evidence for full mediation. An MI > 5.0 reveals that the direct path is significant, suggesting partial mediation.

Accordingly, our findings revealed that self-objectification via body surveillance fully mediated the link of perceived sexual objectification to body shame for women ages 18–24 but partially mediated this relationship for women ages 25 and older.¹ Similarly, body shame fully mediated the relationship between self-objectification via body surveillance and disordered eating for

women ages 18–24 and partially mediated this relationship for women ages 25 and older. Last, body shame fully mediated the relationship between self-objectification via body surveillance and poor interoceptive awareness for both age groups.

Comparison of Final Structural Model to Alternative Models

The paths between our model variables were theoretically determined; that is, they followed the order specified by objectification theory. Yet, it is plausible that other orderings of the model variables would provide a good fit to the data. Consequently, we tested two alternative models. These findings need to be interpreted with caution and be considered exploratory, as the correlational nature of our data precludes any firm conclusions about the best sequence of model variables.

In the first model, self-objectification via body surveillance was specified to predict perceived sexual objectification in lieu of the reverse. All other paths were specified in the same manner as our final structural model. Our rationale for testing this model was that participants reported the frequency with which they perceived they

¹ We also carried out the three mediational analyses following Shrout and Bolger’s (2002) bootstrap procedures, which estimate the significance of the indirect effects. Specifically, we instructed Mplus to create 10,000 bootstrap samples from the data set by random sampling with replacement and then, when analyzing the structural model, to generate indirect effects and bias-corrected confidence intervals (CIs) around the indirect effects. Indirect effects are significant if the 95% CI does not include zero. Results from these analyses, which are presented in Appendix B of the online supplemental material, concurred with our initial interpretations of mediation.

were objectified, which is influenced by their interpretation of the experiences. Identifying their self-worth with their appearance and engaging in frequent body surveillance may cause women to believe that others evaluate them (whether they do or not) on the same basis as they objectify themselves. Given that the only change was the direction of the path, the fit of this first alternative model was the same as that of the final structural model (CFI = .94, TLI = .93, SRMR = .09, RMSEA = .09). According to Burnham and Andersen (2002), the Akaike information criterion (AIC) also can be used to estimate similarity/dissimilarity between models, with lower AIC levels being more desirable because less information is lost. These authors suggested that Δ AIC is the preferred index for comparing models (i.e., the model with the higher AIC minus the model with the lower AIC), with Δ AIC values <2 providing evidence for the similarity between the models, values between 3 and 7 indicating less similarity between the models, and values >10 suggesting that the models are dissimilar. The AIC values were 23,608.63 for our final structural model and 23,610.05 for the alternative model, yielding a Δ AIC value of 1.42. Although there is less information lost with the final structural model, the alternative model is equally plausible as a configuration.

In the second alternative model, disordered eating was specified to predict poor interoceptive awareness instead of the reverse placement as indicated in the final structural model. All other paths remained the same as in the final structural model. It is plausible that poor awareness of internal bodily states could be a result of dieting and other disordered eating behaviors rather than a cause of these behaviors. It has been suggested that dieting/fasting, rigidly restricting food intake, bingeing, and purging disconnect individuals from their inner physiological food-related cues (Polivy & Herman, 1999). For instance, these maladaptive eating behaviors may cause internal hunger and satiety cues to weaken over time, as individuals are responding to external cues (e.g., diet plan, mere presence of food) in lieu of internal hunger and satiety cues to determine when and how much to eat. Although the fit of this alternative model was similar to that of our final structural model (CFI = .94, TLI = .93, SRMR = .09, RMSEA = .09), its AIC value was 23,628.60, indicating that it was substantially different from that of the final structural model and that the configuration was less ideal (Δ AIC = 19.97).

Discussion

The present study extends literature on objectification theory (Fredrickson & Roberts, 1997) as it predicts women's disordered eating by testing its posited paths with a sample of women ages 25 and older. We attempted to ascertain whether its constructs differ for older women, who on the basis of age are less consistent with the youthful-ideal image presented in U.S. media. While controlling for BMI, we compared older women's variable associations with those of a sample of younger women ages 18–24, which is the typical age of (a) media representations of the youthful-ideal image and (b) participants included in extant objectification theory research. In order for our study to remain consonant with the tenets of objectification theory, we omitted many of the logically possible paths and did not include the data-derived paths. Despite these constraints, it is noteworthy that our model provided an adequate fit to the data for both age groups, accounting for a substantial percentage of variance in disordered eating for women ages 18–24

(i.e., 62.2%) and for women ages 25 and older (i.e., 55.9%). Thus, the core tenets of objectification theory can be extended to women ages 25 and older.

Objectification theory's major pathways, which have been supported with samples of largely young adult college women (e.g., Calogero, 2004; Fredrickson et al., 1998; Huebner & Fredrickson, 1999; Kozee & Tylka, 2006; Moradi et al., 2005; Noll & Fredrickson, 1998; Tiggemann & Slater, 2001; Tylka & Hill, 2004), were upheld for both age groups. Specifically, for both younger and older women, an increase in reported perceptions of sexually objectifying experiences was associated with higher levels of self-objectification, as noted by their tendency to habitually monitor their bodies. When women perceive that others pay attention to their physical appearance, they may focus on and value their physical appearance over their other attributes. Women in both age groups who had a greater tendency to self-objectify were more likely to express body shame. Older and younger women higher in body shame reported a greater tendency to (a) adopt maladaptive eating behaviors and (b) disconnect from their internal hunger, satiety, and emotional cues.

An examination of the strengths of these paths revealed that perceived sexual objectification contributed only between 4.8% (for women ages 25 and older) and 6.7% (for women ages 18–24) of the variance in self-objectification. When exposed to sexual objectification, not all women reacted similarly and engaged in self-objectification. Sexual objectification is ubiquitous. As such, it would be troubling if women habitually monitored their bodies whenever they perceived that they were sexually objectified. It is very likely, then, that variables attenuate this relationship. For instance, women who are high in feminist consciousness/identity may have a cognitive framework to challenge sexual objectification when they perceive that they are targets of it. In other words, they may recognize and appropriately contextualize sexual objectification as a problem within society with deleterious effects rather than unconsciously internalize an observer's perspective of their body and routinely engage in body surveillance. Advanced levels of feminist identity have been found to buffer the relationship between sexism and disordered eating among college women (Sabik & Tylka, 2006), and empowerment (i.e., a blend of personal competence and willingness to take social action) predicted lower body monitoring and a more positive body image among college women (Peterson, Grippo, & Tantleff-Dunn, 2008). In addition, women who have high levels of self-esteem independent of their appearance, proactive coping, optimism, and/or life satisfaction may also be less likely to self-objectify when they encounter sexual objectification, as these variables have been theorized to provide a buffer against psychological disturbance (Tylka & Wilcox, 2006). Future research could explore factors that protect women from self-objectification.

The overlap between perceived sexual objectification and the other model variables also was relatively low, hovering between 1.0% and 7.3%. These low percentages may be due to the fact that body shame, poor internal awareness, and disordered eating are largely contingent on women adopting an observer's perspective of the body, not simply whether women perceive that they are being objectified (Fredrickson & Roberts, 1997). Supporting this assertion, body surveillance demonstrated a much larger overlap with body shame, poor interoceptive awareness, and disordered eating, ranging from 20.3% to 57.8%.

Although objectification theory was upheld for both the younger and older samples, the manner in which the constructs are experienced may not be identical for women ages 18–24 and women ages 25 and older. Multiple-groups and structural invariance analyses indicated that our older group had a stronger relationship between body shame and disordered eating and a weaker relationship between poor interoceptive awareness and disordered eating than did our younger group. Because these analyses were conducted post hoc, caution should be used when drawing conclusions, and replication of the results is needed, as they may be specific to our sample.

Although we can only speculate about the causes of these differences, it is possible that women ages 25 and older practice maladaptive eating more to the extent that they are shameful of their bodies and less to the extent that they are out of touch with their inner cues. As women age, some may experience greater body shame, perhaps resulting in part from the physical characteristics that accompany aging (e.g., increased weight, increased body fat in the midriff and arms, wrinkles; Andres, 1989) that are inconsistent with the youthful cultural representation of beauty (Kearney-Cooke, 2004). These women may be more likely to engage in maladaptive weight control strategies characteristic of eating disorders due to this shame. Alternatively, some older women do not hold themselves to the same youthful standards of beauty and sexuality as do young women (Kearney-Cooke, 2004). These women are likely to have low levels of both body shame and disordered eating, thereby strengthening the relationship between these two variables. Also, older women may be less likely to connect their internal hunger and satiety cues with their eating habits. Generationally, older women have reported more messages to “clean their plate” and avoid between-meal snacking during their childhood (Tribole & Resch, 2003, p. 123). Thus, it is possible that older women may be more likely to override hunger and satiety cues out of convention, independent of their motivation to lose weight; they may be equally aware of these internal cues but do not associate these signals with eating to the same extent as do younger women.

Our data revealed several mediational links that elucidate additional similarities and differences in objectification theory for younger and older women. First, after self-objectification via body surveillance was considered in the relationship between perceived sexual objectification and body shame, perceived sexual objectification did not contribute to body shame for women ages 18–24 but continued to be associated with body shame for women ages 25 and older. Perhaps when the older sample perceived sexual objectification, it was associated with ridicule or criticism for not being consistent with the youthful cultural ideal representation for women; this ridicule or criticism then is likely to directly contribute to their shame (Fine & Asch, 1988). When younger women perceived sexual objectification, it may have contained more sexual innuendos, which would more likely influence their body monitoring behaviors rather than directly impact their body shame (Fredrickson & Roberts, 1997). Researchers need to explore whether types of sexual objectification associate differently with body surveillance and body shame.

Second, body surveillance was associated with disordered eating only through its connection with body shame for women ages 18–24 but continued to be uniquely associated with disordered eating for women ages 25 and older. Perhaps some older women

strive to maintain a thin appearance by engaging in maladaptive weight control behaviors regardless of their attitudes toward their bodies. Other older women may have low levels of body surveillance and eat to ensure that their bodies function well (i.e., thus reporting low levels of disordered eating) irrespective of their feelings toward their physical body (Kearney-Cooke, 2004). Either way, the direct contribution of body surveillance to disordered eating would likely be strengthened for women ages 25 and older.

Third, for both age groups, self-objectification via body surveillance did not contribute uniquely to poor interoceptive awareness once body shame was considered. This finding is consistent with previous research with young adult college women (Kozee & Tylka, 2006; Tylka & Hill, 2004), suggesting that our finding is not sample-specific. Even though objectification theory asserts that poor interoceptive awareness is a direct consequence of self-objectification, our finding is additional evidence to the contrary and thus may contribute to future revisions of this theory.

We found that, when compared with women ages 18–24, women ages 25 and older reported similar levels of body shame, poor interoceptive awareness, and disordered eating but lower levels of perceived sexual objectification and body surveillance. Because we utilized measures with adequate psychometric properties, obtained an adequate sample size of older women, and used a comparison group of younger adult women, our results help clarify the inconsistencies in the literature with regard to average levels of the objectification theory constructs between younger and older women. The majority of research, including the present study, suggests that older women experience less body surveillance than do young adult college women (Greenleaf, 2005; McKinley, 1999; Szymanski & Henning, 2007; Tiggemann & Lynch, 2001). Given the fact that no study to our knowledge has explored age differences in poor interoceptive awareness, our study adds incrementally to this literature. The findings regarding body shame and disordered eating appear to be more mixed, with some studies finding that older women have lower levels of these variables and other studies indicating no age differences. Our findings are consistent with studies that have used similar measures of these variables and had adequate sample sizes from which to estimate the age effects (Hetherington & Burnett, 1994; McKinley, 1999; Stokes & Frederick-Recascino, 2003; Tiggemann & Lynch, 2001; Webster & Tiggemann, 2003). Given that women ages 25 and older are likely to experience similar levels of body shame, poor interoceptive awareness, and disordered eating as do women ages 18–24, it is critical that they be included in research exploring these constructs.

It is premature to state that older women experience lower levels of sexual objectification than do younger women. Older women are still treated as objects when their bodies are evaluated and then derided and/or dismissed when they are deemed to be inconsistent with this youthful ideal (Fine & Asch, 1988). The measure of sexual objectification we used in the present study, the ISOS, does not measure ridicule or criticism directed toward women’s bodies (Kozee et al., 2007). Measures to evaluate this form of objectification and its impact on women need to be developed. Such measures are critical when considering older women’s experiences with objectification.

The ISOS is further limited because it measures recent perceptions of sexual objectification. Objectification theory asserts that women’s tendency to self-objectify may be rooted in earlier ex-

periences of being objectified. Although the ISOS could be tailored to ask women about their experiences with sexual objectification earlier in their lifetime, this method of assessment would be limited by recall accuracy. The ISOS also measures perceptions of sexual objectification, which may or may not correspond to actual levels of this variable and consequently impact the evaluation of objectification theory. Unfortunately, research has not adequately addressed how to measure actual levels of sexual objectification. It would be unethical to subject women to experimental conditions where they would be sexually objectified. However, studying women who, by their own volition, enter occupations where they encounter sexual objectification regularly (e.g., exotic dancing, waitressing at bars, bartending) may provide one way to study actual levels of this construct.

It is important to acknowledge other limitations of the present study. Analyses were embedded in correlational methodology; therefore, no causal conclusions can be made about the sequence of the model variables. We tested an alternative model in which self-objectification predicted perceived sexual objectification, and it provided a fit to the data that was as valid as our original model. The relationship between perceived sexual objectification and self-objectification may be circular. Perceived encounters with sexual objectification may prompt women to focus on their body; in turn, their adoption of an observer's perspective directs them to ruminate over how observers are interpreting their body. A longitudinal examination exploring these constructs with an objective measure of sexual objectification may be a direction for research.

Additionally, future research should attempt to expand and clarify this model. The variables included in our model could possibly be influenced by unmeasured variables, such as internalization of the youthful thin-ideal standard (Moradi et al., 2005) and a broader conceptualization of self-objectification (Tiggemann & Lynch, 2001). Perhaps low proactive coping, negative affect, and a lack of social support keep women focusing on the disparity between their body and the youthful thin-ideal societal standard and consequently drive their attempt to reduce this discrepancy via disordered eating. Because disordered eating is not the only proposed psychological disorder to result from the consequences of self-objectification, it would be useful to incorporate depression and sexual dysfunction within the model framework and examine them with samples of older women.

When exploring modification indexes for our final structural model, we uncovered (a) paths from perceived sexual objectification to poor interoceptive awareness and disordered eating for women ages 18–24 and (b) a path from perceived sexual objectification to body shame and a path from body surveillance to disordered eating for women ages 25 and older. These findings need to be cross-validated with other samples to ensure that the paths between the variables, as well as the strengths of these paths, are not sample-specific. When these samples of women are recruited, efforts should be made to obtain diverse samples and determine whether their multiple identities (e.g., race/ethnicity, class, ability, sexual orientation) impact the model.

Another limitation of the present study was the use of snowball sampling methods to obtain a portion of the data. Our main method of recruitment was via other methods (i.e., introductory psychology classes, contacts to professional listservs, and campus organizations such as multicultural centers, student affairs, and GLBT student services). We encouraged friends, family, and colleagues to pass

along information about the study to adult women in order to reach a diversity of women. We were unable to tell what percentage of the data was obtained through this snowball sampling procedure. Further research should extend the present study by drawing from a sample that is more representative of the general population, especially with regard to education and race. Although we attempted to recruit a diverse sample by incorporating several strategies into our method of data collection (e.g., by specifically targeting diverse, historically underrepresented, and marginalized members of nationwide organizations such as multicultural centers, GLBT student services, the women's engineering organization at Ohio State University, student affairs, and the Women's Fund), our sample of women ages 25 and older was highly educated and White, limiting the degree to which we addressed how sexual objectification differentially affects women. Future studies need to utilize more innovative techniques to obtain a diverse sample. For instance, nontraditional college student organizations and community colleges nationwide can be targeted via e-mails encouraging their members to complete the study and forward the link to their female friends and family members. Recruiting from these sites would likely draw participants from a diversity of socioeconomic backgrounds who have not received their undergraduate degrees, much like our comparison sample of women ages 18–24.

The present study's cross-sectional design needs to be addressed. Much variance exists within both age groups, and the age group categorization may not be as sensitive to differences within groups. Longitudinal examinations would be logical extensions of the present study and an attempt to explore developmental changes of the objectification theory constructs with age.

Despite these limitations, our findings could guide professionals' efforts to conceptualize body image and disordered eating in their adult female clients. For women ages 25 and older, lower levels of perceived sexual objectification and body surveillance do not appear to be protective against body shame, poor interoceptive awareness, and disordered eating because their levels of the latter three variables were similar to those of women ages 18–24. Perhaps previous encounters with sexual objectification have shaped their attitudes and awareness of their body and their eating habits. Therapists should acknowledge the similarities and differences between these variables for older and young adult women and not assume that older women are more satisfied with their bodies and resistant to ED symptoms when they report lower levels of current sexual objectification and body surveillance.

Professionals should also address the detrimental effects of sexual objectification with their clientele and assist their clients in rejecting the internalization of this objectification. Therapists need to understand that these variables may have differential deleterious contributions to women's body attitudes and eating behavior depending on the age of the client. It is also imperative that professionals help women decrease their feelings of body shame due to its strong association with disordered eating. Given the findings of the present study, professionals may also help women identify and express their emotions and attend to their hunger and satiety signals. Poor interoceptive awareness seems to be uniquely associated with their disordered eating, although to a lesser degree than is body shame.

The suggestions offered above can inform the prevention and treatment of disordered eating on broader (i.e., meso and macro) levels as well. Professionals could work on college campuses, at community centers, and with organizations as social justice advocates for disordered eating prevention and treatment. In this ca-

capacity, they could encourage and conduct support and psychoeducational groups and outreach services to raise awareness and disseminate information that sexual objectification, self-objectification, body shame, poor interoceptive awareness, and disordered eating impact many women, regardless of their age. Likewise, it is important for professionals to generalize these efforts to a systemic level and to work to decrease discrimination (e.g., sexism, ageism, weightism) and objectification and challenge any laws, policies, and practices that may sustain these injustices.

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Received January 10, 2008

Revision received October 24, 2008

Accepted November 13, 2008 ■

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