

Tests of Objectification Theory in Gay, Lesbian, and Heterosexual Community Samples: Mixed Evidence for Proposed Pathways

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Abstract Objectification theory (Fredrickson and Roberts 1997) proposes that women are especially vulnerable to eating disordered behavior when they live in cultures in which their bodies are a constant focus of evaluation. The current study examined whether predictions of objectification theory involving the associations among sexual objectification, body surveillance, body shame, and eating disordered behavior were supported in groups that varied by both gender and sexual orientation. Adults from a U.S. community sample in the Chicago area (92 heterosexual women; 102 heterosexual men; 87 gay men; and 99 lesbian women) completed self-report measures of these constructs. Results suggest that group differences in experiences of sexual objectification and body surveillance may partially explain gender and sexual orientation-based differences in eating disordered behavior.

Keywords Objectification theory · Sexual orientation · Body image · Gender differences

Introduction

A recent review of empirical tests of Fredrickson and Roberts' (1997) objectification theory (Moradi and Huang 2008) concluded that after a decade of research, the theory remains a "promising framework for understanding how some sociocultural and psychological risk factors and mediators work together to shape aspects of women's mental health" (p. 394). The theory's authors proposed that ongoing sexually objectifying experiences are internalized over time, leading to self-objectification. Self-objectification is the internalization of an observer's perspective on the self marked by frequent monitoring of the body's appearance (often operationalized as *body surveillance*; McKinley and Hyde 1996). Given the theory's explicit focus on women, research remains mixed regarding the roles that gender and sexual orientation play in objectification theory. However, gender and sexual orientation both play important roles in the prevalence of eating disordered behavior—one of the most studied outcomes specified by objectification theory. In the current study, a U.S. sample of adults from the Chicago area completed surveys assessing sexual objectification, body surveillance, body shame, and eating disordered behavior. The sample included heterosexual men and women, gay men, and lesbian women in order to test how well a subset of the pathways specified by objectification theory could predict eating disorder symptoms for these four groups.

The research reviewed below was all conducted with samples of U.S., British, or Australian participants. Self-objectification (or body surveillance) has been linked via correlational studies with body shame (Calogero et al. 2005; Kozee and Tylka 2006; Kozee et al. 2007; McKinley

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and Hyde 1996; Moradi et al. 2005; Noll and Fredrickson 1998; Slater and Tiggemann 2002, Tiggemann and Slater 2001; Tylka and Hill 2004), body dissatisfaction (McKinley 1998, 1999, 2006a, b; McKinley and Hyde 1996), and eating disordered behaviors (Calogero 2009; Calogero et al. 2005; Muehlenkamp and Saris-Baglama 2002; Slater and Tiggemann 2002). Several studies have demonstrated that body shame mediates the relationship between self-objectification and body image disturbance (e.g., Calogero 2009; Calogero et al. 2005; Kozee and Tylka 2006; Moradi et al. 2005; Noll and Fredrickson 1998; Slater and Tiggemann 2002, Tiggemann and Slater 2001). Research employing experimental manipulations of self-objectification has also provided relatively consistent support for a link between self-objectification and body shame in women, along with mixed support for the effect of self-objectification on eating behavior in a lab setting (e.g., Fredrickson et al. 1998; Hebl et al. 2004; see Moradi and Huang 2008 for a review).

The majority of research on objectification theory has not measured self-reported experiences of sexual objectification, focusing instead on self-objectification or body surveillance as a starting point (for exceptions, see Kozee and Tylka 2006; Kozee et al. 2007). Some researchers have used exposure to thin-ideal media images as a measure of experiences of sexual objectification (e.g., Aubrey 2007). However, such measures fail to account for interpersonal sexual objectification, arguably the most common, direct, and impactful type of sexual objectification. This interpersonal sexual objectification is the focus of the current study. The recently published *Interpersonal Sexual Objectification Scale* (ISOS; Kozee et al. 2007) has prompted research addressing the role of direct, interpersonal sexual objectification. ISOS scores predict both body surveillance and body shame, and body surveillance appears to mediate the association between sexual objectification and body shame (Kozee et al. 2007).

In sum, the current body of literature generally supports the following set of pathways with respect to the psychological experiences of women: The chronic experience of being sexually objectified by others leads one to internalize an objectified perspective on the body. This focus on the body leads to body shame (as cultural ideals for female beauty are so difficult to attain for most women). Eating disordered behavior can result from body shame both as a direct attempt to alleviate the shame by changing one's body shape and/or as an attempt to use eating behavior (e.g., bingeing) to cope with the emotional distress associated with body shame.

Objectification Theory and Gender

The multitude of studies using an objectification theory framework to explore body image disturbance in women

and the dearth of such studies with men can be traced to two separate but inter-related issues. First, objectification theory was originally conceptualized as addressing "psychological experiences that appear uniquely female" (Fredrickson and Roberts 1997, p. 175). Second, body dissatisfaction and eating disorders are much more common in women than men (American Psychiatric Association 2000; Carlat and Camargo 1991; Feingold and Mazzella 1998; Frederick et al. 2006).

Research on the sexual objectification of women has frequently focused on the *male gaze*. Women are subjected to sexualized gazes from both men and women more often than men are. However, men are most frequently the ones doing the gazing (see Fredrickson and Roberts 1997; Strelan and Hargreaves 2005) and the male gaze appears to have a greater impact on women's self-objectification (Calogero 2004). The idea that the male sexualized gaze is both frequent and objectifying was introduced decades earlier in the context of art and film theory. In 1973, Berger addressed what researchers now call self-objectification or body surveillance,

A woman must continually watch herself. She is almost continually accompanied by her own image of herself...From earliest childhood she has been taught and persuaded to survey herself continually. (p.46)

Berger concluded, "Men act and women appear. Men look at women. Women watch themselves being looked at" (p. 47). This notion that women are more often the *targets of* and less often the *possessors of* the sexualized gaze was clearly influential in the development of objectification theory.

Nonetheless, recent work has begun to address the extent to which the tenets of objectification theory can be applied to men. Men generally report lower trait-level self-objectification than women (Frederick et al. 2007; Strelan and Hargreaves 2005), yet some evidence suggests that self-objectification predicts variables such as body dissatisfaction in men as well as women (Frederick et al. 2007). Recent research with a sample of British male college students found that body surveillance was associated with increased body shame and disordered eating (Calogero 2009). Additionally, exposure to objectified media images of one's gender has been linked to self-objectification and body shame in both genders (Aubrey 2006; Morry and Staska 2001), which is especially relevant in light of evidence that media images of men are becoming more objectified over time (Rohlinger 2002).

Fredrickson et al. (1998) found that trying on a bathing suit (a manipulation of state self-objectification) only led to body shame and restrained eating in women, which was interpreted as evidence that the consequences specified by objectification theory "appear to be unique to young

women socialized in a culture that sexually objectifies the female body” (p. 280). However, male participants wore swim trunks, which might not be the equivalent (in terms of drawing focus to the body) to female participants wearing a one-piece bathing suit. In contrast, Hebl et al. (2004) found that when men were asked to try on a much more revealing, Speedo-style bathing suit, the effects of swimsuit-induced self-objectification did not differ by gender.

In sum, despite evidence that women are more frequently objectified than men and show higher trait-level self-objectification, direct manipulations of state-level self-objectification appear to have similar effects on men and women when the experimental manipulations are comparable. Overall, the degree to which the assumptions of objectification theory can be applied to men remains unclear. Indeed, a recent review of research on objectification theory (Moradi and Huang 2008) explicitly noted the need for more research exploring the effects of sexual objectification on men.

Objectification Theory and Sexual Orientation

The *male gaze* described above assumes a phenomenon whereby women are being evaluated in a sexualized manner by men. This assumption fails to consider the role of sexual orientation in either the observer or the observed. However, research demonstrates a clear link between sexual orientation and body image disturbance in men. On average, gay men show significantly more body dissatisfaction and eating disordered behavior than heterosexual men, often reporting levels comparable to heterosexual women (Beren et al. 1996; Boroughs and Thompson 2002; Brand et al. 1992; Lakkis et al. 1999; Peplau et al. 2009; Siever 1994; Tiggemann et al. 2007; Williamson and Hartley 1998; Yelland and Tiggemann 2003). In a meta-analysis of studies comparing gay and heterosexual men’s body dissatisfaction, Morrison et al. (2004) found reliably higher levels of dissatisfaction among gay men ($d=.29$). Advertising and media targeting gay men tend to focus on the idealized male body (Saucier and Caron 2008) and analyses of the content of personal advertisements have shown that both heterosexual and gay men focus on the physical appearance of potential partners more than women (Deaux and Hanna 1984). Together, these findings suggest potentially high levels of sexual objectification in the gay community.

For women, the association between sexual orientation and body image disturbance is less clear. Some studies have found that, compared to heterosexual women, lesbian women report less concern with appearance/weight, less dieting, lower drive for thinness, lower body dissatisfaction, and fewer bulimic symptoms (e.g., Gettelman and Thompson 1993; Herzog et al. 1992; Lakkis et al. 1999).

Other research has found comparable levels of body dissatisfaction and disordered eating between groups of lesbian and heterosexual women (e.g., Beren et al. 1996; Brand et al. 1992; Striegel-Moore et al. 1990). Morrison et al.’s (2004) meta-analysis showed no reliable difference in body dissatisfaction between lesbian and heterosexual women. However, the authors identified a subgroup of studies in which the lesbian and heterosexual participants were of comparable weight or BMI. Across these studies there was a small effect size ($d=-.22$), indicating that lesbian women evidenced slightly less body dissatisfaction than heterosexual women.

In sum, because gay men are more frequently objects of the male gaze, objectification theory may provide one useful explanation for their elevated rates of eating disordered behavior. Mixed findings for lesbian women may point to a group at intermediate risk. As women, they will often experience sexual objectification by men; as lesbian women, these experiences may be less chronic or impactful.

Correlational evidence shows that gay men exhibit elevated rates of self-objectification and body shame compared to heterosexual men, as well as the same mediational path described above between self-objectification and eating-related behaviors (Kozak et al. 2009; Martins et al. 2007). Using the swimsuit manipulation (in this case, Speedos) with samples of gay and heterosexual men, the manipulation led to increased state self-objectification in both groups (Martins et al. 2007). However, wearing Speedos led to increased body shame and decreased body satisfaction only in gay men. The authors interpreted this as evidence that self-objectification has greater consequences for gay men than heterosexual men, primarily because self-objectification does not appear connected to body shame in heterosexual men.

Studies of the experiences and impact of sexual objectification among lesbian women have been less plentiful. Kozee and Tylka (2006) found that lesbian women did not differ from heterosexual women in experiences of interpersonal sexual objectification or body shame, but scored lower on measures of body surveillance and eating disordered behavior. An exploratory model suggested that sexual objectification and body surveillance may have a direct influence on shame and eating disordered behavior for lesbian women. Haines et al. (2008) also found evidence for a direct link between body surveillance and eating disordered behavior in lesbian women.

The Current Study

The current study explored how broadly objectification theory can be applied as a framework for predicting eating disordered behavior. More specifically, data collected from U.S. community samples were analyzed using structural

equation modeling to determine whether proposed links between sexual objectification, body surveillance, body shame, and eating disordered behavior held across gender and sexual orientation; and whether differences in the magnitude and associations between these variables could partially explain gender and sexual-orientation-based differences in eating disordered behavior. In contrast to previous research on this topic, the current sample included substantial numbers of all four of the groups of interest and did not rely on samples of college students.

Hypothesis 1: We predicted that (controlling for BMI) heterosexual women and gay men would score higher than heterosexual men on sexual objectification, body surveillance, body shame, and eating disordered behavior. We predicted that lesbian women would score lower than heterosexual women and gay men on body surveillance and eating disordered behavior (but higher than heterosexual men).

Hypothesis 2: We predicted that, for heterosexual women and gay men, a model testing the following pathways would show good fit with the data (and all tested parameters would be significant): sexual objectification predicting body surveillance, body surveillance predicting body shame, and body shame predicted eating disordered behavior. Furthermore, we predicted that the relationship between sexual objectification and body shame would be mediated by body surveillance, and the relationship between body surveillance and eating disordered behavior would be mediated by body shame (see Figures for a representation of the model).

Hypothesis 3: Again, we predicted that the above-specified model would show good fit with the data for lesbian women. However, given the alternative model of objectification theory variables proposed by Kozee and Tylka

(2006) and Haines et al. (2008) for lesbian women, we predicted that body surveillance would show a direct association with eating disordered behavior rather than the meditational pathway (through body shame) specified for heterosexual women. Similar to predictions for heterosexual women, we expected sexual objectification to predict body surveillance.

Hypothesis 4: For heterosexual men, we predicted that sexual objectification would be associated with body surveillance. Although this association has not been directly tested in previous research, the theoretical mechanism by which sexual objectification by others leads to increased body surveillance should hold even for groups where levels of both variables are expected to be relatively low. We also expected body shame to be associated with eating disordered behavior.

Method

Participants and Procedure

Participants were approached by undergraduate research assistants (including both male and female and heterosexual and gay/lesbian RAs) at various locations in Chicago: the Chicago Pride Parade, an elevated train stop outside of a popular street fair, along a lakefront path, at a park, in the lobby of a GLBTQ community center during a GLBTQ-focused street fair, and after a GLBTQ-welcoming church service (see Tables 1 and 2 for more details). Participants were paid \$10 for completing anonymous surveys described as concerning “how men and women feel about their health and physical appearance.” By collecting data at crowded community events, we were able to obtain survey responses from a large, diverse sample. However, this

Table 1 Percent and number of participants recruited at each location

	Heterosexual women <i>n</i> =91	Heterosexual men <i>n</i> =100	Gay men <i>n</i> =85	Lesbian women <i>n</i> =95
Pride parade (2007)	32% (29)	10% (10)	42% (36)	31% (29)
Lakefront	32% (29)	56% (56)	1% (1)	–
Outside of street fair	11% (10)	17% (17)	1% (1)	–
Park	13% (12)	8% (8)	1% (1)	–
GLBTQ center	12% (11)	9% (9)	54% (46)	18% (17)
Church	–	–	–	15% (14)
Pride parade (2008)	–	–	–	37% (35)

Table 2 Demographic information for participants grouped by gender and sexual orientation

	Heterosexual women <i>n</i> =92	Heterosexual men <i>n</i> =102	Gay men <i>n</i> =87	Lesbian women <i>n</i> =99
Age	27.99 (9.69)	31.19 (10.80)	34.18 (13.09)	32.98 (12.38)
Age range	16–58	17–72	18–67	17–74
BMI	24.77 (5.52)	25.41 (2.87)	25.30 (5.23)	30.45 (8.30)
BMI range	16.95–41.80	17.50–35.42	14.00–44.30	18.83–58.35
Income				
<\$30,000	21 (23%)	17 (17%)	28 (33%)	32 (34%)
\$30,000–\$75,000	51 (56%)	51 (51%)	27 (32%)	37 (39%)
> \$75,000	19 (15%)	26 (26%)	23 (27%)	25 (26%)
Residence				
Large urban	53 (58%)	70 (70%)	57 (67%)	33 (35%)
Small urban	13 (14%)	8 (8%)	11 (13%)	13 (14%)
Suburban	19 (21%)	20 (20%)	14 (17%)	42 (44%)
Rural	5 (6%)	2 (2%)	3 (4%)	7 (7%)
Student status				
Non-student	58 (64%)	67 (67%)	53 (62%)	39 (41%)
Undergraduate	22 (24%)	17 (17%)	22 (26%)	23 (24%)
Graduate	11 (12%)	16 (16%)	10 (12%)	12 (13%)

methodology makes it impossible to provide precise estimates of response rates.

At all events except for the church service, participants were recruited without regard to sexual orientation or gender. However, because the initial sample of lesbian women was substantially smaller, only lesbian women were recruited at the church service and the 2008 Pride Parade. These specific potential participants were told that we were examining “sexual orientation, health, and physical appearance.” Participants signed an informed consent form prior to beginning their survey and were offered further information about the study’s goals after completing the study.

Measures

Interpersonal Sexual Objectification Scale (ISOS)

The ISOS (Kozee et al. 2007) is a 15-item measure that assesses two dimensions of interpersonal sexual objectification: Body Evaluation (11 items) and Unwanted Explicit Sexual Advances (4 items). In the current study, only the Body Evaluation subscale was used as the items in this subscale are most consistent with common experiences of interpersonal objectification in the form of a sexualized gaze (e.g., “How often have you felt that someone was staring at your body?”). The measure uses a five point scale (1 = *never*, 5 = *almost always*). In women, scores on this measure are relatively stable over time, unrelated to measures of socially desirable responding, and correlate

with sexist degradation, body surveillance, and internalization of the thin ideal (Kozee et al. 2007). Although this measure has not been validated with groups of male participants, the items were all face valid for use with gay men or heterosexual men with two exceptions. For two items, “breasts” was changed to “body” in order to make the scale appropriate for male participants. Cronbach’s alpha for this subscale has been reported as .91 in a sample of women (Kozee et al. 2007). In this study, alpha was .90 for heterosexual women, .83 for lesbian women, .90 for heterosexual men, and .68 for gay men. Although the alpha was lower for gay men, it was only slightly below the traditionally accepted .70 cut-off for alpha. Additionally, alpha provides a lower bound (not an exact estimate) of internal consistency reliability, making scores that deviate slightly from the .70 rule of thumb less concerning.

The Objectified Body Consciousness Scale (OBCS)

The OBCS (McKinley and Hyde 1996) is a well-validated, 24-item measure of three constructs (8 items each) related to women’s experiences of their bodies. Of interest for this study were the Body Shame and Body Surveillance subscales. The Body Shame subscale measures the tendency to feel badly about oneself when cultural beauty standards are not achieved. The Body Surveillance scale assesses “the amount of time a woman spends watching her body as an outside observer” (p. 209). Consistent with other recent work on objectification theory (e.g., Breines et al. 2008; Kozee and

Tylka 2006; Mercurio and Landry 2008; Moradi et al. 2005; Muehlenkamp and Saris-Baglama 2002; Tylka and Hill 2004), scores on the surveillance subscale were conceptualized as a measure of self-objectification for this study. Although the OBCS was originally validated on samples of women, several lines of research (e.g., Calogero 2009) have employed the measures successfully when studying men. Calogero (2009) reported a combined alpha (i.e., collapsing across men and women) of .85 for body shame and .88 for body surveillance. In the current study, alphas were .74 and .75 for heterosexual women, .76 and .71 for lesbian women, .71 and .76 for heterosexual men, and .67 and .72 for gay men (for the shame and surveillance subscales, respectively).

Eating Attitudes Test—26 (EAT-26)

Total scores on the EAT-26 (Garner et al. 1982) form a continuous measure of disordered eating that reliably identifies those at risk for eating disorders and distinguishes between diagnosed and non-diagnosed groups (Garner et al. 1982). This measure has been validated with groups of men and women. Participants respond to the items using a 6-point scale (1 = *Always*, 6 = *Never*). Scores were calculated using Garner and Garfinkel's (1979) originally proposed method of assigning 3 points for *always* responses, 2 points for *usually* responses and 1 point for *often* responses. All other responses were assigned zero points. Internal consistencies have been reported as ranging from .83 to .90 (Garner et al. 1982). For total EAT scores in this study, alpha was .87 for heterosexual women, .90 for lesbian women, .80 for heterosexual men, and .87 for gay men.

Measures of Sexual Orientation and Other Demographic Variables

A 7-point, single item measure of sexual orientation (Kinsey et al. 1948) was employed. Participants choosing options 0 (*exclusively heterosexual with no homosexual contact*) or 1 (*predominantly heterosexual, only incidentally homosexual*) were classified as heterosexual. Participants

choosing options 5 (*predominantly homosexual, only incidentally heterosexual*) or 6 (*exclusively homosexual with no heterosexual contact*) were classified as gay or lesbian. Those who chose options between these two points on the scale (approximately 10% of the sample) are not included in these analyses (the small sample size of this group, even smaller if one splits the group by gender, made analyses of this group impossible). Although more thorough assessments of sexual orientation are available, use of a single-item measure was based on findings that responses on this type of single-item measure correlate highly with multi-dimensional measures of sexual orientation (e.g., Bailey et al. 2000; Rieger et al. 2005; Weinrich et al. 1993). This approach was also consistent with the methods of previous research in this area (e.g., Brown and Graham 2008; Martins et al. 2007; Yelland and Tiggemann 2003). Although one might argue for keeping this scale in a continuous format for data analysis, the decision to form categories was based on two factors. First, very few participants fell in the mid-range of the scale. Second, in an attempt to address inconsistencies in previous findings with regard to objectification theory and gay men/lesbian women, we needed to find a valid manner of forming groups (for analysis) of gay men and lesbian women. Three participants who indicated “other” for their gender are also not included in these analyses.

Results

First, age and BMI scores were examined for group differences (see Table 3). A univariate ANOVA for age indicated a significant difference in the ages of the four groups, $F(3, 374)=4.95$, $p=.002$, $\eta_p^2=.04$. Post-hoc tests using a Bonferroni correction indicated that the sample of heterosexual women was significantly younger than the sample of gay men and lesbian women ($ps<.05$). BMI scores also revealed group differences, $F(3, 374)=20.99$, $p<.001$, $\eta_p^2=.14$. Lesbian women had significantly higher BMIs than each of the other three groups ($ps<.001$). Due to these findings, age and BMI are controlled for statistically in all analyses reported below.

Table 3 Means and standard deviations for variables included in MANCOVA

	Scale range	Heterosexual women <i>N</i> =91	Heterosexual men <i>N</i> =100	Gay men <i>N</i> =85	Lesbian women <i>N</i> =95
Age		27.99 (9.69)	31.19 (10.80)	34.18 (13.09)	32.98 (12.38)
BMI		24.77 (5.52)	25.41 (2.87)	25.30 (5.23)	30.45 (8.30)
Sexual objectification (ISOS)	1–5	2.87 (.64)	2.12 (.62)	2.65 (.83)	2.67 (.67)
Body surveillance (OBCS)	1–7	4.75 (.99)	4.00 (1.04)	4.54 (1.09)	3.96 (1.09)
Body shame (OBCS)	1–7	3.38 (1.29)	2.82 (1.11)	3.42 (1.24)	3.28 (1.23)
Eating disordered behavior (EAT)	0–3	.44 (.41)	.28 (.28)	.39 (.38)	.30 (.34)

Table 4 Estimated marginal means and standard errors for variables tested in model

	Heterosexual women	Heterosexual men	Gay men	Lesbian women
Sexual objectification (ISOS)	2.80 _a (.07)	2.10 _b (.07)	2.68 _a (.08)	2.73 _a (.07)
Body surveillance (OBCS)	4.72 _a (.11)	4.00 _b (.12)	4.55 _a (.11)	3.97 _b (.11)
Body shame (OBCS)	3.41 _a (.13)	2.87 _b (.12)	3.50 _a (.13)	3.14 _b (.13)
Eating disordered behavior (EAT)	.44 _a (.04)	.29 _b (.04)	.41 _a (.04)	.27 _b (.04)

Statistics presented are estimated marginal means and standard errors for each group when controlling for age and BMI. Differing subscripts indicate significant differences between estimated marginal means

Group Differences in Scores on Body Image-Related Variables (Hypothesis 1)

Scores on the key dependent variables (sexual objectification, body surveillance, body shame, and eating disordered behavior) were examined for group differences using MANCOVA with BMI and age as covariates. The IV identified each of the four categories of participant (i.e., heterosexual women, heterosexual men, lesbian women, gay men). The initial MANCOVA indicated significant multivariate effects for participant group, $F(12, 955)=8.33$, $p<.001$, $\eta_p^2=.08$. BMI, $F(4, 361)=7.11$, $p<.001$, $\eta_p^2=.07$, and age, $F(4, 361)=4.85$, $p<.001$, $\eta_p^2=.05$, were significant covariates. Univariate analyses indicated effects of participant group on all four dependant variables (all $ps<.01$). Follow-up tests comparing groups (retaining BMI and age as covariates) were conducted using a Bonferroni correction (see Table 4).

Consistent with predictions, for sexual objectification, heterosexual males scored lower than each of the other three groups ($ps<.001$), which did not differ from each other. Also consistent with predictions, for body surveillance, heterosexual women and gay men scored significantly higher than both heterosexual men and lesbian women. Lesbian women scored significantly lower than heterosexual women but comparably to heterosexual men. For body shame, consistent with hypotheses, heterosexual men scored significantly lower than heterosexual women and gay men. We predicted that

lesbian women would score lower than heterosexual women and gay men on eating disordered behavior (but higher than heterosexual men). Support for this hypothesis was mixed. Heterosexual men and lesbian women showed lower scores than heterosexual women and gay men on eating disordered behavior, but lesbian women's eating disordered behavior scores did not differ significantly from those of heterosexual men. Correlations between all of the variables (for each of the four groups) are shown in Tables 5 and 6.

Tests of Objectification Theory Pathways (Hypotheses 2–4)

LISREL VIII (Jöreskog and Sörbom 2007) was used to test the fit of the model specified above (see Figures). First, BMI and age were controlled for in all models by allowing these variables to predict all endogenous variables. In order to avoid over-parameterizing the models, BMI and age were only retained as covariates in the final set of models for endogenous variables with which they initially demonstrated a significant association in *at least one* of the four groups. In other words, if BMI or age did not predict an endogenous variable for any of the four groups, the path from BMI/age to that variable was deleted for the final set of analyses.

Consistent with recommendations by Hu and Bentler (1999), the comparative fit index (CFI) and the standardized root mean squared residual (SRMR) are reported for each model. A CFI of greater than .92 and an SRMR of less

Table 5 Correlation matrix for variables included in model (heterosexual women and lesbian women)

	1	2	3	4	5	6
1. BMI	–	.18	–.10	–.14	.13	.13
2. Age		–	–.18	–.16	.03	–.16
3. Sexual objectification (ISOS)	–.18	–.29**	–	.33**	.28**	.34**
4. Body surveillance (OBCS)	–.05	–.15	.11	–	.53**	.48**
5. Body shame (OBCS)	.27**	–.16	.07	.38**	–	.65**
6. Eating disordered behavior (EAT)	.11	–.04	.24*	.42**	.33**	–

Correlations for heterosexual women presented above the diagonal; correlations for lesbian women presented below the diagonal

* $p<.05$, ** $p<.01$, *** $p<.001$

Table 6 Correlation matrix for variables included in model (heterosexual men and gay men)

	1	2	3	4	5	6
1. BMI	–	.25*	.01	–.01	.20	.11
2. Age	.20	–	–.16	–.14	.04	.003
3. Sexual objectification (ISOS)	–.19	–.24*	–	.15	.41**	.36**
4. Body surveillance (OBCS)	.09	.02	–.17	–	.21*	.23*
5. Body shame (OBCS)	.08	–.19	.12	.32**	–	.36**
6. Eating disordered behavior (EAT)	.21	–.13	.04	.27*	.47**	–

Correlations for heterosexual men presented above the diagonal; correlations for gay men presented below the diagonal.

* $p < .05$, ** $p < .01$, *** $p < .001$

than .08 indicate good fit. All four models evidenced good fit using these criteria (see Figures for fit statistics and path coefficients). Bias-corrected bootstrapping was used to test the proposed mediational pathways using Mplus 6.0.

Heterosexual Women

For heterosexual women (see Fig. 1), consistent with predictions, all pathways predicted by objectification theory were significant (i.e., sexual objectification predicted body surveillance, body surveillance predicted body shame, and body shame predicted eating disordered behavior). Furthermore, the relationship between sexual objectification and body shame was mediated by body surveillance (95% CI=.17, .57; point estimate=.35). Likewise, the relationship between body surveillance and eating disordered behavior was mediated by body shame (95% CI=.07, .20; point estimate=.12).

Gay Men

Consistent with predictions, body surveillance predicted body shame, which predicted eating disordered behavior (Fig. 2). Additionally, the relationship between body surveillance and eating disordered behavior was mediated by body shame (95% CI=–.236, –.006; point estimate=

–.0081). However, for gay men, reported experiences of sexual objectification did not predict body surveillance or body shame.

Lesbian Women

For lesbian women, body surveillance predicted body shame and body shame predicted eating disordered behavior (Fig. 3). There was not evidence of mediation (95% CI= –.007, .06; point estimate=.02). Similar to the results for gay men (but in contrast with predictions), sexual objectification predicted neither body surveillance nor body shame. Although a direct path was predicted between body surveillance and eating disordered behavior, the coefficient for this path did not attain significance.

Heterosexual Men

Despite good model fit for the sample of heterosexual men (see Fig. 4), only two pathways were significant. Contrary to predictions, sexual objectification was not associated with body surveillance. However, sexual objectification had a direct effect on body shame. Consistent with hypotheses, body shame predicted eating disordered behavior. Body surveillance was not associated with either body shame or disordered eating.

Fig. 1 Model and coefficients from sample of heterosexual women * $p < .05$, *** $p < .001$.

† Indirect effect = .17*

†† Indirect effect = .30***

CFI = .98, SRMR = .047

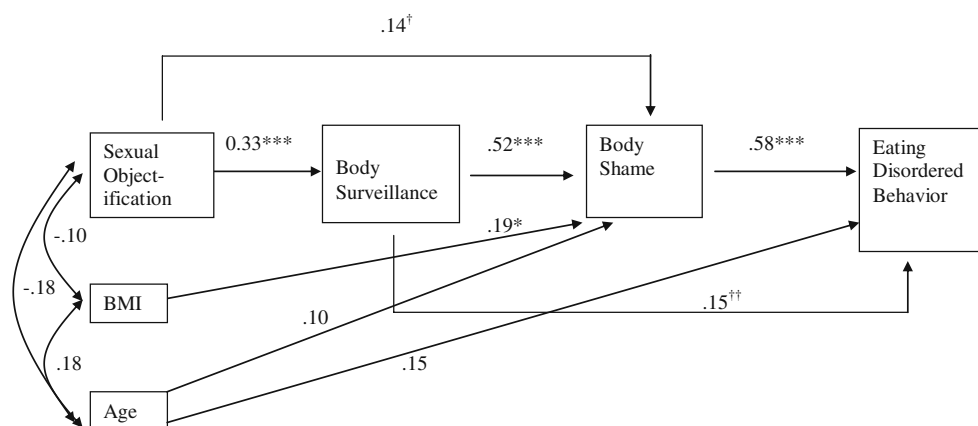
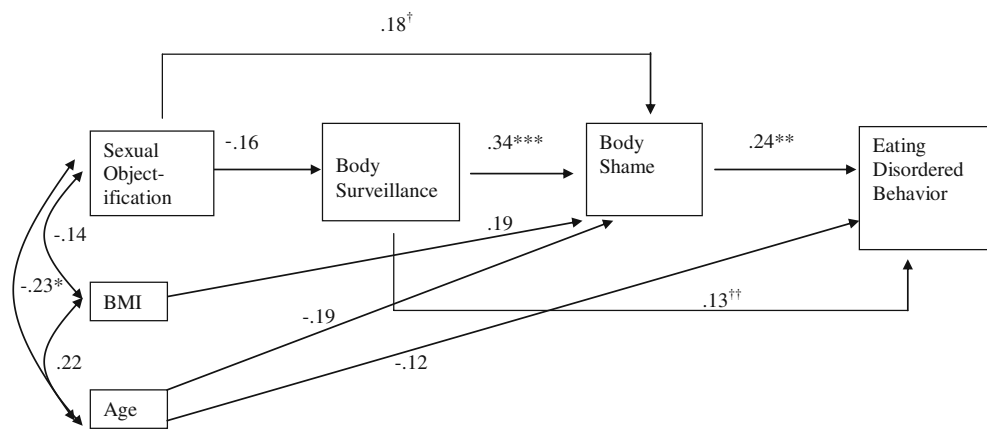


Fig. 2 Model and coefficients from sample of gay men
 $*p < .05$, $**p < .01$, $***p < .001$.
 $\dagger$ Indirect effect = $-.05$
 $\dagger\dagger$ Indirect effect = $.22$
 $CFI = 1.0$, $SRMR = .022$



Comparisons of Model Fit

Although the tested model showed adequate fit with the data for all four groups, the patterns of significant and non-significant coefficients clearly indicated group differences. In order to determine whether the magnitude of associations between variables in the model differed between groups (as opposed to simply stating a path was significant for one group and not another), a set of multi-group comparisons were conducted. First, a multi-group analysis was conducted with no constraints imposed upon groups, $\chi^2(25) = 43.70$, $p = .01$. Matrices were then systematically equated in order to determine whether forcing associations between variables to be equivalent across groups worsened model fit. First, a constraint was created equating associations between all endogenous variables, $\chi^2(34) = 74.27$, $p < .0001$. This significantly worsened model fit, $\Delta\chi^2(9) = 30.57$, $p = .0004$. Second, the associations between exogenous and endogenous variables were constrained to be equal across groups, $\chi^2(49) = 112.64$, $p < .0001$. This significantly worsened model fit relative to the second model, $\Delta\chi^2(15) = 38.37$, $p = .0008$. In sum, these analyses confirmed that the magnitude of the parameters in the model differed between the four groups.

Similar multi-group analyses were then conducted to determine which specific parameters differed by group. Heterosexual women were used as the comparison group, as their data showed the best fit with the model and all pathways were statistically significant. See Table 7 for relevant statistics for multi-group examinations of specific parameters.

First, the path between sexual objectification and body surveillance was tested. Although initial SEM analyses showed that this pathway was only significant for heterosexual women, comparisons of model fit indicated that constraining this path to be equal to the path for either heterosexual men or lesbian women did not significantly worsen model fit. In other words, although the path did not attain significance for lesbian women or heterosexual men, the association between these two variables does not significantly differ (in terms of strength) when comparing lesbian women and heterosexual men to heterosexual women. Nonetheless, the pattern of data suggests a stronger association between these variables for heterosexual women. On the other hand, the path coefficients for gay men vs. heterosexual women did differ significantly. This is somewhat unsurprising given that the coefficient for this path for gay men was negative (even though non-significant).

Fig. 3 Model and coefficients from sample of lesbian women
 $*p < .05$, $**p < .01$, $***p < .001$.
 $\dagger$ Indirect effect = $.04$
 $\dagger\dagger$ Indirect effect = $.07$
 $CFI = .94$, $SRMR = .053$

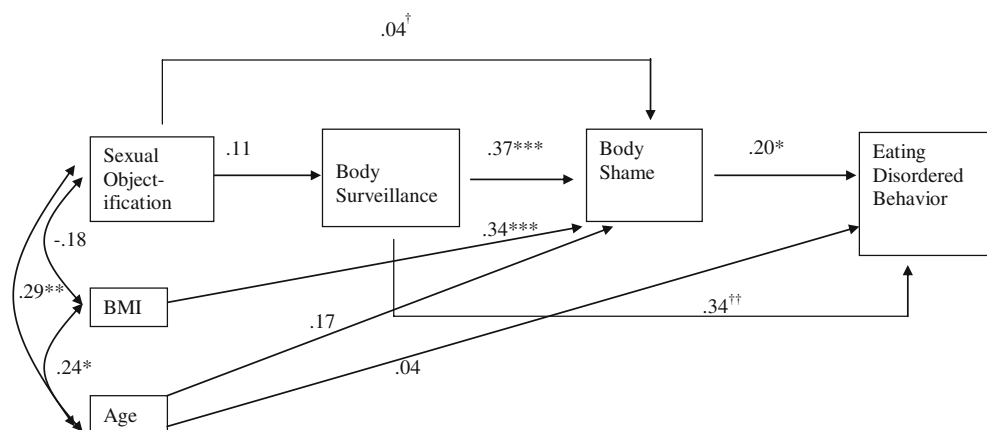


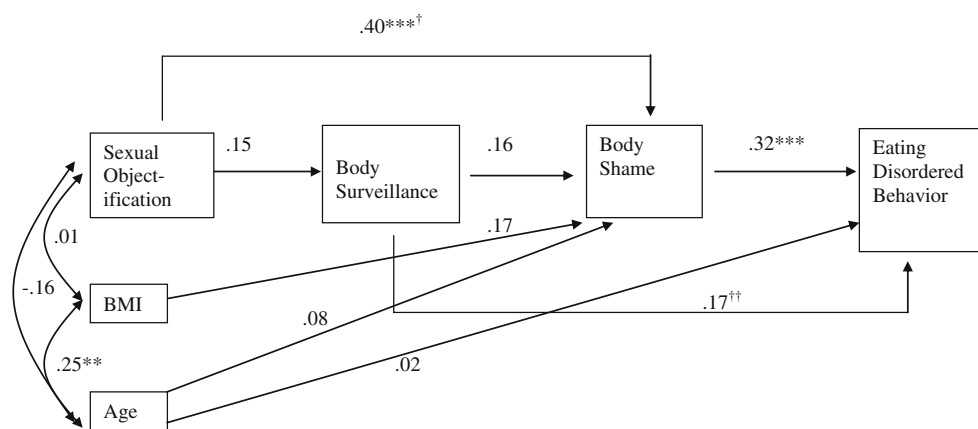
Fig. 4 Model and coefficients from sample of heterosexual men

* $p < .01$, *** $p < .001$.

† Indirect effect = .02

†† Indirect effect = .05

CFI = .93, SRMR = .052



Next, the path between body surveillance and body shame was examined. The analyses above demonstrated that this path coefficient was significant (and positive) for every group except heterosexual men. These further analyses demonstrated that the magnitude of this path did not significantly differ between heterosexual women and lesbian women, or heterosexual women and gay men. On the other hand, this coefficient was significantly weaker for heterosexual men compared to heterosexual women.

Although the path from body shame to eating disordered behavior was significant for all four groups, additional analyses revealed that the magnitude of the coefficient for this path was significantly weaker for lesbian women, gay men, and heterosexual men when compared to heterosexual women. The c' path assesses the association between body surveillance and eating disordered behavior controlling for body shame. As revealed above, this path was not

significant for any of the four groups (although it approached significance for lesbian women). Not surprisingly, constraining this parameter to be equal to the parameter for heterosexual women did not significantly weaken model fit for any of the three groups.

Discussion

Given the emphasis on the male gaze throughout the history of theorizing about the psychological effects of sexual objectification, examining the influence of gender and sexual orientation on objectification-related variables is of particular interest. The current study demonstrated a consistent trend whereby heterosexual women and gay men reported higher scores on experiences of sexual objectification, body surveillance, body shame, and eating

Table 7 Multi-group structural equation modeling parameter comparisons

Path	Heterosexual women compared to gay men	Heterosexual women compared to lesbian women	Heterosexual women compared to heterosexual men
Sexual objectification to body surveillance			
Constrained χ^2	18.81	16.28	15.82
Unconstrained χ^2	7.47	14.13	14.56
$\Delta\chi^2$	11.34***	2.15	1.26
Body surveillance to body shame			
Constrained χ^2	10.53	17.08	25.55
Unconstrained χ^2	7.47	14.13	14.56
$\Delta\chi^2$	3.06	2.95	10.99***
Body shame to eating disordered behavior			
Constrained χ^2	12.04	64.09 ^a	21.99
Unconstrained χ^2	7.47	14.13	14.56
$\Delta\chi^2$	4.54*	49.96***	7.43**
c' —body surveillance to eating disordered behavior			
Constrained χ^2	7.51	14.97	14.70
Unconstrained χ^2	7.47	14.56	14.56
$\Delta\chi^2$	.04	.41	.14

For unconstrained models, $df=9$. For constrained models, $df=8$. For $\Delta\chi^2$, $df=1$

* $p < .05$, ** $p < .01$, *** $p < .001$

^a interpret with caution, model did not converge

disordered behavior compared to heterosexual men. In other words, the two groups most likely to seek out men as romantic or sexual partners and to be sought out by men as partners were the most vulnerable to the psychological experiences associated with the male gaze. Though lesbian women reported levels of body surveillance, body shame, and eating disordered behavior that did not significantly differ from heterosexual men's scores, they did report levels of sexual objectification similar to gay men's and heterosexual women's. Only by considering both an individual's gender and sexual orientation can the influence of these variables on eating disordered behavior be appropriately conceptualized.

Tests of Objectification Theory

Most of the research examining the tenets of objectification theory has been conducted using samples of predominantly heterosexual women. Consistent with findings from this research, the current study suggests that for heterosexual women, body surveillance is associated with body shame and body shame mediates the relationship between body surveillance and eating disordered behavior. The current study is also consistent with Kozee et al.'s findings that in heterosexual women, experiences of sexual objectification predicted body surveillance and the relationship between sexual objectification and body shame was mediated by body surveillance. The overall pattern suggests that for heterosexual women, being objectified is associated with engaging in ongoing surveillance of one's own body, which is associated with increased body shame. This shame is associated with attempts to re-shape the body (or cope with body-related distress) by engaging in a variety of eating disordered behaviors. These correlational results are consistent with experimental studies finding that increases in state-level self-objectification are associated with increased body shame and restrained eating in women (Fredrickson et al. 1998). However, because the findings of this study are correlational and variables were only observed at one point in time, speculation about the causal nature (or direction) of these effects must remain cautious.

For gay men, findings were relatively consistent with objectification theory (and similar to the findings for heterosexual women). However, although gay men reported a frequency of experiences of interpersonal sexual objectification similar to heterosexual women, these experiences were not associated with body surveillance. In other words, gay men and heterosexual women may be equally likely to experience this type of sexual objectification, but these experiences do not appear to be associated with chronic body monitoring in gay men in the manner that they are for both heterosexual women and lesbian women. Nonetheless, gay men reported the same level of body surveillance as

heterosexual women, and this body surveillance was associated with increased body shame (which was associated with eating disordered behavior). This suggests that gay men may experience the effects of body surveillance in a similar manner to heterosexual women. However, gay men's body surveillance may not be explained by greater exposure to the sexualized gaze of others. Perhaps it is not specifically this type of direct body evaluation that leads to higher levels of surveillance in gay men, but rather other factors related to a general emphasis on physical appearance in communities of gay men.

This study suggests that the original conceptualization of objectification theory does not capture the experience of lesbian women as well as it captures the experience of heterosexual women. The current data are somewhat inconsistent with the speculative (modified) version of objectification theory pathways for lesbian women proposed by Kozee and Tylka (2006). Specifically, Kozee and Tylka found a direct link from experiences of sexual objectification to body shame as well as a link between sexual objectification and body surveillance. In our sample, the association between sexual objectification and body surveillance was not significant for lesbian women (although it did not appear to differ in magnitude in comparison to heterosexual women). The path between sexual objectification and body shame was also not significant. A possible explanation for these conflicting findings relates to differences in the populations sampled. Lesbian women in our sample were diverse in terms of age and recruited from a community setting, whereas Kozee and Tylka examined a college student population. Similar to Kozee and Tylka, we found that lesbian women scored lower than heterosexual women on eating disordered behavior, but did not differ in reported experiences of sexual objectification. However, Kozee and Tylka reported higher body surveillance scores among lesbian women (compared to heterosexual women), whereas we found the opposite pattern. Perhaps adult lesbian women are more likely than college-age lesbian women to have the type of community surroundings that reduce rather than emphasize body surveillance.

Given lack of consensus about the applicability of objectification theory to heterosexual men, we were particularly interested in how well the proposed model would fit heterosexual men's data. Similar to the findings for lesbian women and gay men, there was not a significant association between sexual objectification and body surveillance for heterosexual men. Instead, for heterosexual men, experiences of sexual objectification were directly associated with body shame. Heterosexual men were the only group for which this pattern emerged. Sexual objectification did seem to affect the body-related attitudes and behaviors of heterosexual men, but not by virtue of its tendency to be associated with higher levels of body

surveillance. This finding is consistent with Martins et al. (2007), who reported that self-objectification was not linked to body shame in heterosexual men.

Most notably, reported experiences of interpersonal sexual objectification were only significantly associated with body surveillance for heterosexual women. Lesbian women did not report experiencing less sexual objectification than heterosexual women (consistent with findings of Hill and Fischer 2008), but did report less body surveillance, suggesting the possibility that something associated with lesbian identity may attenuate the effects of being objectified by others (or, alternatively, factors associated with heterosexual identity may increase the negative impact of the sexualized gaze on heterosexual women). This interpretation is consistent with findings that anticipating a male gaze (but not a female gaze) increased body shame in women (Calogero 2004). The gaze of a woman may be both more relevant and less problematic for lesbian women's body image. Anecdotally, several lesbian participants asked, with regard to the questions in the ISOS, *who* was doing the objectification. This suggests that for lesbian women, the sexualized evaluation of one's body by another woman may be experienced as quite different compared to when a man is doing the objectification. Given the paucity of research examining objectification theory in samples of lesbian participants and the mixed findings of the few published studies on this topic, more work is needed. Although one might expect to find that lesbian women report *more* of a tendency to monitor their own bodies (to *pass* as heterosexual in a heterosexist culture), this notion was not supported by the current study. Lesbian women may be less homogenous with regard to body-related norms and behaviors compared to heterosexual women (Ludwig and Brownell 1999). Given this possibility, future researchers should consider identifying subgroups of lesbian women who may experience sexual objectification in different ways. For example, lesbian women who embrace traditionally heterosexual appearance norms may be more vulnerable to the effects of sexual objectification. Of course, the same approach could be useful for understanding the impact of sexual objectification on heterosexual women.

Body Surveillance, Sexual Orientation, and Gender as Risk Factors for Eating Disorders

A primary purpose of this research was to examine the extent to which objectification theory could provide a useful framework for understanding how eating disordered behavior varies by both gender and sexual orientation. Heterosexual women are most susceptible and heterosexual men least susceptible to eating disorders. Research is overwhelmingly consistent with regard to the findings that

gay men are at increased risk for eating disordered behavior compared to heterosexual men, but findings regarding lesbian women vary considerably.

Although the link between sexual objectification and body surveillance was inconsistent across groups, for heterosexual women, gay men, and lesbian women, body surveillance predicted body shame and body shame predicted eating disordered behavior. There are three manners in which one might conceptualize the nature of body surveillance as a risk factor using these data. First, if the strength of the relationships between body surveillance and body shame/eating disordered behavior were similar for all groups, then the fact that some groups experience higher levels of body surveillance may put them at increased risk. Second, for some groups, body surveillance may more strongly predict body shame and eating disordered behavior. Finally, both possibilities may simultaneously occur.

The current research suggests that group differences in eating disordered behavior can be explained partially by a combination of group differences in body surveillance *and* the degree to which body surveillance is associated with body shame. Body shame was significantly associated with disordered eating for all four groups examined (with an especially strong association for heterosexual women). Heterosexual women showed the strongest relationship between body surveillance and body shame, followed by lesbian women and gay men. The association between body surveillance and body shame was not significant for heterosexual men. Thus, compared to heterosexual men, heterosexual women appear doubly at risk: they report the highest levels of body surveillance and show the strongest associations between body surveillance and body shame. They are also the group for which body shame was most strongly associated with eating disordered behavior. Gay men reported levels of body surveillance similar to those of heterosexual women, but showed a slightly weaker relationship between body surveillance and body shame (and a significantly smaller association between body shame and eating disordered behavior). Lesbian women appear to land somewhere in the middle—somewhat less vulnerable than heterosexual women but more vulnerable than heterosexual men.

Study Limitations

The conclusions one can draw from this study are somewhat limited by its correlational design, although findings generally were consistent with the limited body of experimental research on this topic. An additional concern centers on the use of the ISOS to assess the frequency with which participants experience interpersonal sexual objectification. The scale was validated on samples of primarily heterosexual women (Kozee et al. 2007).

However, the scale was generally acceptable in terms of internal consistency for each of the groups (though slightly lower for gay men). Likewise, the items are quite straightforward in terms of assessing how frequently one's body is looked at or evaluated and nothing in the item wording (besides the reference to "breasts," which was changed to "body" for men) is specific to the experiences of women. The measures of body shame and body surveillance were also primarily validated on samples of (primarily heterosexual) women, but have been successfully employed in research with samples of men and lesbian women and are thus less concerning. Nonetheless, future research should specifically examine the extent to which the available measures of sexual objectification (and body surveillance) are valid for groups beyond heterosexual women. The possibility remains that links between sexual objectification and body surveillance might emerge for other populations if newer measures were specifically designed to be valid for groups beyond heterosexual women.

The samples used in this study were quite diverse (especially compared to the typical research relying heavily on college student participants), but a clerical error led to the failure to include a question on race/ethnicity. Although questions regarding how objectification may affect women and men of different ethnicities should be asked, we were unable to answer such questions with the current data.

The recruiting locations for this study also suggest somewhat limited generalizability of these findings. The vast majority of gay men and lesbian women who participated in this study were specifically recruited at events/locations focused on the GLBTQ population. (Heterosexual participants, on the other hand, were recruited at both GLBTQ focused events/locations and relatively neutral locations.) Gay men and lesbian women in this particular study may have been more likely to be integrated into a gay or lesbian community, which could offer a specific array of protective factors (e.g., social support for lesbian women that could reduce body surveillance) and/or risk factors (e.g., a social scene with a heavy emphasis on physical appearance that could increase body surveillance in gay men). In a related vein, the sample of heterosexual women in this study was significantly younger than the samples of gay men and lesbian women. Although we controlled for age statistically in all analyses, given the especially high risk of body image disturbance among young women, this difference suggests results should be interpreted somewhat cautiously.

Conclusions and Future Directions

The literature on objectification theory thus far has been relatively inconclusive with regard to the applicability of the theory's tenets to groups outside of heterosexual

women. Because being the target of a sexualized gaze is one root of body surveillance, including both gender and sexual orientation in the analysis of the theory's validity is a logical step. The current study suggests that group differences in experiences of sexual objectification have important implications for body image disturbance. Only for heterosexual women were past interpersonal experiences of sexual objectification clearly associated with viewing one's own body as an object (i.e., body surveillance). Though gay and lesbian men and women as well as heterosexual men clearly experience body surveillance, the construct's etiology may differ for these groups. In particular, for the gay men in this sample, there was no evidence of an association between sexual objectification and body surveillance. Future research should explore how these groups experience different types of sexually objectifying situations and how these experiences depend on the gender of the person doing the "gazing." In other words, why is it that heterosexual women seem most prone to internalizing experiences of interpersonal sexual objectification? Combined with the strong indirect effect of body surveillance on eating disordered behavior for heterosexual women, this finding suggests that heterosexual women may be especially likely to benefit from interventions that might help to break the link between being objectified (either interpersonally or through other routes such as media exposure) and internalizing an objectified perspective on the self. Of course, in an ideal world, women's experiences of sexual objectification would be less chronic, perhaps limiting the need for such an approach.

A theory's success is often dependent on its ability to grow and adapt as its tenets are tested in broader contexts. Objectification theory, while originally conceptualized as relevant only to women, appears to have the ability to explain associations between the internalization of an outsider's perspective on the body and a host of body image variables for gay men, perhaps because they are also frequent targets of sexual objectification by other men. Additionally, based on the results of this research (and somewhat consistent with Calogero 2009), sexual objectification was far from irrelevant for heterosexual men, demonstrating a direct link to body shame, which was associated with eating disorder symptoms. Modifications may be required for the theory to accurately capture the experiences of lesbian women and heterosexual men, a clear direction for future research.

Objectification theory has led to valuable research on factors that increase women's risk for eating disordered behavior. The variables specified by the theory may be equally as valuable in exploring the disconnect between gay men's and heterosexual men's levels of eating disordered behavior. It is our hope that the current study prompts greater theorizing and investigation in this area.

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