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Here's Looking at You: Self-Objectification, Body Image Disturbance, and Sorority Rush

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Abstract This study investigated the impact of sorority rush on self-objectification and body image disturbance. First-year undergraduate women either participating (n=68) or not participating (n=59) in sorority rush at a U.S. Midwestern university completed online surveys at four time points. It was predicted that rush participation would lead to increases in self-objectification, which in turn would lead to increases in body shame and eating disordered behavior and attitudes. Results supported predictions based on objectification theory at a single time point, but not longitudinally. Rush participants evidenced higher levels of self-objectification and eating disordered behavior at all time points. Body mass index predicted dropping out of the rush process and was negatively correlated with satisfaction with the rush process.

Keywords Body shame · Objectification theory · Sexual objectification · Sororities · Eating disorders

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Introduction

> It is the worst week many freshman girls experience…It was awkward, ego-crushing, and brought us to the depths of shallowness...The two minute convos [conversations] are just a chance for as many girls [as possible] to judge how pretty you are; that's the only thing they could determine in such a short amount of time.
> – Sorority rush participant, from an open-ended survey question asking for general reflections on the rush process.

In the early months of 2007, a flurry of activity at the DePauw University chapter of Delta Zeta Sorority drew national attention to the commonly held stereotype that sororities are overly-focused on women's physical appearance. In response to dwindling membership and concerns over the chapter's reputation, officers from Delta Zeta's national headquarters arrived on campus, interviewed all current members of the DePauw chapter, and asked 23 of the 35 members to vacate the sorority and no longer be active members (Dillon 2007). The 23 women asked to leave included every overweight member of the sorority; those allowed to stay were described as the thinnest and most conventionally attractive. The New York Times quoted one former member as saying, "Virtually everyone who didn't fit a certain sorority member archetype was told to leave" (Dillon 2007, para. 4).

The present study was conceptualized as an applied test of Fredrickson and Roberts' (1997) objectification theory, with the process of sorority rush acting as real-life objectifying context. Objectification theory (Fredrickson and Roberts 1997) suggests that frequent objectifying

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experiences lead to self-objectification. Self-objectification, characterized by the adoption of an outsider's perspective on one's own body, is linked to body shame, body dissatisfaction, eating disorders, and sub-clinical eating disordered behavior (e.g., Miner-Rubino et al. 2002; Muehlenkamp and Saris-Baglama 2002; Noll and Fredrickson 1998). Body shame has been shown to account (at least partially) for the relationship between self-objectification and disordered eating (e.g., Kozee et al. 2007; Noll and Fredrickson 1998; Slater and Tiggemann 2002; Tylka and Hill 2004).

Although the current body of literature on objectification theory is strong in its support of the theory's basic tenets, much of the research has relied entirely on self-report measures of frequency of objectifying experiences (see a recent review by Moradi and Huang 2008). There is support for the link between experiences of sexual objectification and self-objectification when both constructs are assessed via self-report instruments (e.g., Kozee and Tylka 2006; Moradi et al. 2005; Tylka and Hill 2004). A few studies have included experimental manipulations of self-objectification in the form of trying on a swimsuit (Fredrickson et al. 1998; Hebl et al. 2004; Quinn et al. 2006) or receiving an appearance-based compliment (Tiggemann and Boundy 2008). However, given a variety of ethical and practical concerns, there is currently no in situ data on the impact of more intense/ongoing experiences of sexual objectification. Because the rush process occurs over a period of several days and involves an ongoing series of interpersonal interactions during which rushees are clearly being evaluated (at least in part) on the basis of their physical appearance, sorority rush is a highly relevant context in which to test the tenets of objectification theory. In sum, this is the first test of objectification theory to move beyond laboratory-based manipulations and women's self-reported experiences of objectification (e.g., Calogero et al. 2005; McKinley 1998, 2006a; Quinn et al. 2006; Tylka and Hill 2004) to examine objectification in a real-life, applied context.

On college campuses across the nation, thousands of women join sororities each year through the structured process of sorority rush (Mongell and Roth 1991). Although sororities provide college women with a number of opportunities for personal growth and enrichment in the form of community service projects, structured social interactions, and education, they have been criticized for their potential to engender an excessive focus on appearance in their members. Such a focus can lead to self-objectification, the trait-like concept that involves habitually monitoring the appearance of one's body (Fredrickson and Roberts 1997). As noted above, an extensive body of research has linked self-objectification to body image disturbance and eating disordered behavior (e.g., Calogero et al. 2005; McKinley 1998, 1999, 2006a, b; McKinley and Hyde 1996; Miner-Rubino et al. 2002; Muehlenkamp and Saris-Baglama 2002; Noll and Fredrickson 1998; Slater and Tiggemann 2002).

By surveying first-year college women at a U.S. Midwestern university (54% of the survey's sample of students participated in sorority rush), we investigated the relationships between participation in sorority rush, self-objectification, and eating disordered behavior. The rush process involves an ongoing series of interpersonal interactions during which participants are being evaluated in part on the basis of their physical appearance. Thus, sorority rush is an ideal applied context in which to test the tenets of objectification theory. The results of this research are not only important to our understanding of the psychological effects of sorority rush specifically, but also to myriad other contexts (formal or informal) in which women are evaluated based on their appearance. In other words, though most women in the world will never undergo the rush process, studying the impact of this specific process may shed further light on what Fredrickson and Roberts (1997) called the "cascade of intraindividual psychological consequences" (p. 174) that result from women's "shared social experience" (p. 175) of objectification. Examining sorority rush also allowed us to test empirically how such potentially objectifying situations may be experienced differently by women whose bodies are further from cultural beauty ideals (in this case, young women with higher body mass indices).

The rush process typically spans several days, with potential new members (i.e., rushees) attending a series of gatherings (referred to as parties) at the sororities. Typically, rushees attend one party at each sorority during the first stage of rush. At these parties, each rushee briefly meets and speaks with a small number of current sorority members for a matter of minutes. At the end of the entire process, most rushees have the opportunity to accept a *bid* (a formal offer to join a specific sorority) and either join that sorority or reject their bid. Some rushees may not receive a bid at all. Rushees typically experience much anxiety over whether they will be offered a bid to the sorority of their choice (Atlas and Morier 1994). Rejection from sororities has been linked with decreased self-esteem (Keller and Hart 1982) and increased depression (Atlas and Morier 1994).

If sororities are acting as enforcers of cultural beauty ideals, this focus on appearance should be especially notable during the rush process, when rushees are screened by current sorority members via a series of extremely brief interactions. As suggested by this paper's opening quotation, a focus on rushees' appearance may be a natural outcome of these time-limited interactions. However, anecdotal evidence suggests that this emphasis on the appearance of potential members is also deliberate—at least

for some sororities. For example, a student-made documentary of the rush process at a Midwestern university included interviews with a number of women bemoaning the emphasis on appearance during rush. One sorority member explained, "How hot are they...What sorority got the hottest pledge class? That is a driving force behind rush. It really is" (Cohlan 2006). This intense focus on physical appearance is what makes sorority rush a potentially objectifying process for its participants. During rush, emphasis is placed on women's bodies by both observers and the women themselves. Women with higher body mass indices (BMIs) may be especially at risk for increased body image disturbance during rush, as increased body monitoring can draw more attention to the ways in which one's body falls short of the cultural ideal. This would be consistent with the oft-reported positive correlation between BMI and body dissatisfaction in women (see Stice 2002, for meta-analytic evidence).

Although the rush process may exacerbate body image concerns through the pathways described above, it is also possible that pre-existing differences in body image disturbance may distinguish those attracted to sororities from those who choose not to rush, with those attracted to sororities being at particularly high risk for such disturbance. Indeed, sorority members have been described as having a preoccupation with body image and appearance (Basow et al. 2007) and may be more at risk for eating disorders/eating disordered behavior than non-members (Alexander 1998; Prouty et al. 2002). Compared to college women who are not in sororities, sorority members show increased drive for thinness, body dissatisfaction, and fear of becoming fat (Schulken and Pinciaro 1997). Even if sororities are truly breeding grounds for eating disordered behavior as some research has suggested (e.g., Crandall 1988), it is possible that the rush process is relatively innocuous with regard to body image. Instead, it may be that women who choose to rush are already at risk when they enter the process—though sorority membership may serve to exacerbate already high levels of body image disturbance.

Using data collected at multiple time points during and after a sorority rush, the present study investigated the impact of sorority rush and joining a sorority on self-objectification, body shame, and eating disordered behavior. Of primary interest was the opportunity to assess the impact of the rush process in terms of the predictions of objectification theory. *Hypothesis 1:* Compared to control participants, women participating in rush will show increased self-objectification, body shame, and eating disordered behavior. Increases in body shame will mediate the association between increased self-objectification and increased eating disordered behavior.

As the final time point occurred one month after the completion of the rush process, this methodology also allowed for a test of the impact of initial sorority membership on the above variables. *Hypothesis 2:* Compared to women who did not join sororities, new sorority members will show increases in self-objectification, body shame, and eating disordered behavior one month after joining a sorority.

The current study also allowed for an empirical test of the effect sororities' endorsement of the thin body ideal may have on women who seek sorority membership but whose body shapes/sizes are not consistent with this ideal. Thus, the influence of rushees' body size on rush outcomes (i.e., satisfaction with the rush process and dropping out of rush) was also examined. *Hypotheses 3 and 4:* Women with higher body mass indices will be more likely to drop out of rush (i.e., to participate in rush but ultimately not join a sorority) and will be less satisfied with the rush process.

Published tests of objectification theory with data from a single time point are numerous, but these pathways have not been investigated longitudinally despite evidence (e.g., Maxwell and Cole 2007) that suggests analyzing longitudinal mediated effects cross-sectionally may lead to bias and over-estimation of mediated effects. Therefore, in an attempt to replicate and extend correlational findings supporting the relevance of objectification theory to body image disturbance (see above), additional analyses tested a set of predictions from objectification theory both at a single time point and longitudinally. *Hypothesis 5:* Across all participants (i.e., regardless of participation in sorority rush), self-objectification will be associated with both body shame and eating disordered behavior. The relationship between self-objectification and eating disordered behavior will be partially mediated by body shame (e.g., Miner-Rubino et al. 2002; Muehlenkamp and Saris-Baglama 2002; Noll and Fredrickson 1998).

Method

Participants

One hundred and twenty-seven first-year undergraduate women ranging in age from 17 to 20 *(M*=18.14, *SD*=.50) at a mid-sized, private, Midwestern university participated. Sixty-seven percent of participants identified themselves as Caucasian or White, 16% as East Asian, 6% as Hispanic/Latina, 2% as African American, 4% as biracial, and 5% as other. Initially, 68 of the women indicated that they intended to participate in campus-wide sorority rush and 59 women indicated that they did not intend to rush. At the last time point, 51 women indicated that they did not participate in rush at all; 16 participated, but did not finish; 2 participated and received a bid but did not join a sorority; and 33 completed the rush process and accepted a bid to a

sorority. In all analyses comparing the rush group to the non-rush group, participants who dropped out of the rush process at any time point were excluded. In other words, in analyses below, all members of the group referred to as the rush participation group joined a sorority and all members of the group referred to as the non-rush group did not participate in any aspect of rush.

Measure

At four different time points, participants completed surveys that contained the questionnaires described below (with the exception of demographic questions, which were only completed during a pre-screening survey). All measures were completed online via a webpage hosted by Surveymonkey.com.

Body Shame and Self-Objectification

The Objectified Body Consciousness Scale (OBCS; McKinley and Hyde 1996) is a 24-item measure with three subscales (8 items each): body shame, body surveillance, and appearance control beliefs. The body shame and body surveillance subscales were used in this study. Participants rate each item on a scale of 1 (*strongly disagree*) to 7 (*strongly agree*). After reverse scoring the appropriate items, the total score for each subscale is the sum of the relevant items. Higher scores on the body shame subscale indicate that a participant believes they are inadequate for not fulfilling cultural expectations and ideals concerning physical appearance (e.g., "I feel ashamed of myself when I haven't made my best effort to look my best."). The body surveillance subscale measures women's tendency to view their bodies as outside observers would (e.g., "I rarely worry about how I look to other people."—reverse scored). In this study, self-objectification was operationalized as scores on the body surveillance scale (as in other research 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). This measure is consistent with Fredrickson and Robert's (1997) definition of self-objectification as adopting an observer's perspective on the self (see Lindberg et al. 2007 and Moradi and Huang 2008, for further discussion regarding measurement of this construct), and has been validated using samples of college and middle-aged women in the U.S. (McKinley and Hyde 1996). Scores on the body surveillance subscale have been found to be positively correlated with public self-consciousness, and scores from both the body surveillance and body shame subscales are negatively correlated with body esteem (McKinley and Hyde 1996). An alpha of .75 has been reported for scores on the body shame subscale and .89 for the body surveillance subscale (McKinley and Hyde 1996). Alphas ranged from .87 to .91 and .85 to .89, respectively, in the current sample.

Eating Disordered Attitudes and Behaviors

The Eating Attitudes Test (EAT-26; Garner et al. 1982) is a 26-item assessment of eating disordered behaviors and attitudes that can be used with non-clinical populations. The total score for the EAT, as well as the Bulimia and Food Preoccupation subscale scores were used. Participants indicate how often (*always, usually, often, sometimes, rarely, never*) they agree with statements concerning eating habits, weight, and appearance (e.g., "I am terrified about being overweight" and "I vomit after I have eaten"). After reverse scoring such that higher responses all indicated higher levels of pathology, responses of *sometimes*, *rarely*, or *never* were scored as zero points, with *often*, *usually*, and *always* given one, two, or three points, respectively (consistent with the recommendations of Garner et al. 1982). Garner et al. (1982) found that the EAT could be used to predict membership in a group of anorexia nervosa patients vs. a comparison group of college women. In college women, total scores on the EAT are correlated with common measures of bulimia and other eating disorder symptoms, appearance satisfaction, body esteem, and internalization of the thin body ideal (Mazzeo 1999; Tylka and Hill 2004; Tylka and Subich 2004). Further, scores on the bulimia and food preoccupation subscale are significantly higher in women diagnosed with bulimia compared to women diagnosed with anorexia (Garner et al. 1982). Internal consistencies have been reported to range from .83 to .90 for total scores and .61 to .84 for the bulimia and food preoccupation subscale (Garner et al. 1982). Total scores alphas were .90 at all time points in the current sample; alphas for the bulimia and food preoccupation subscale were .78, .80, .77, and .81 at each respective time point.

Demographics and Rush-Specific Items

In the pre-screening, participants were asked their age, height, weight, ethnicity, and whether they were participating in sorority rush (i.e., *Will you participate in sorority recruitment during the Winter Quarter 2008?*). Participants were also presented with distracter questions asking if they were participating in sports, extracurricular activities, theater productions, community service activities, political clubs, or student government activities (all in the same format as the sorority recruitment question).

At the third time point (described below), those who participated in sorority rush were asked to rate their satisfaction with the outcome of the rush process (*How*

satisfied are you with the outcome of sorority rush?; 1– *not satisfied at all* to 7 – *extremely satisfied*). Identical distracter questions about satisfaction concerning extracurricular and community service activities (with the same wording/format) were used along with this item.

Procedure

A brief email asking for participants in a study of "women's health and eating patterns" was sent to a variety of campus listservs and courses likely to include first-year students. First-year women who indicated interest in participating in the study completed a pre-screening survey that asked if they would be participating in sorority rush (along with the distracter questions described above). They were emailed a link to an online survey at four different time points: five days before sorority rush, four days into the week-long sorority rush process, seven days into rush (the day rushees received bids), and one month after sorority rush. Participants could enter raffles for gift certificates at each time point and those who completed all four time points received $10. During a pre-screening survey, participants reported their height and weight and indicated whether they would be participating in sorority rush. At the final time point, participants also rated their satisfaction with the rush process (if relevant) and indicated the outcome of the process (i.e., whether they accepted their bid or dropped out of the process). The response rates for participants were 96%, 94%, 85%, and 83% of the pre-test sample, respectively.

Results

See Table 1 for descriptive statistics for each measure at each time point. For rushees and non-rushees, means for overall EAT scores and bulimia and food preoccupation subscale scores were comparable with scores of female control participants in Garnet et al. (1982) and were well below the proposed cut-off score that indicates a clinical level of eating disturbance. On average, across time points, participants reported body surveillance levels slightly above the midpoint of the scale. Additionally, body shame scores were well below the midpoint of the scale, on average.

The Impact of Rush (Hypothesis 1)

Data were first examined for evidence of differences in self-objectification (operationalized as body surveillance scores) over time points 1 to 3 (i.e., from the pre-test to the end of rush) and between rushees and non-rushees. Because of the unevenness of the time spacing, time point 4 (one month post-rush) was not included in these analyses. Only women who accepted bids to sororities were included in the rush group (as it was not possible to determine at which time point those who dropped out ended their participation in rush). A two-way mixed model ANOVA was run with time point as the within-subjects factor (three levels) and rush participation as the between-subjects factor. For self-objectification, there was no effect of time, F (2, 136)= 1.67, p=.19; however, there was a significant effect of rush participation, F (1, 68)=5.53, p=.02, η_p^2=.08. Women who participated in sorority rush had higher levels of self-objectification at time points 1 and 3 (ps<.01) and marginally higher scores at time point 2 (p=.08). The interaction between time and rush participation was not significant, F (2, 136)=2.88, p=.06.

Hypothesis 1 predicted a time by rush participation interaction, such that increases in self-objectification would occur during rush for the rush participation group. However, because no such interaction was found, the predictions that such increases would lead to increases in body shame and eating disordered behavior/attitudes were not tested. However, the same mixed model ANOVA described above was conducted for each of these variables in order to test for any main effects of rush participation or time by rush participation interactions.

There was no significant effect of time on body shame, F (2, 132)=.25, p=.78, no effect of rush participation, F (1, 66)=.56, p=.46, and no interaction between rush participation and time point, F (2, 132)=.92, p=.40. There was no effect of time on total eating disordered behavior/attitudes scores, F (2, 144)=.84, p=.43, but there was a marginally significant effect of rush participation, F (1, 72)=1.61, p=.05, η_p^2=.05. Because this interaction was marginally significant, it was further explored. The linear trend for the interaction was not significant (p=.45), but the quadratic term for the interaction was significant (p=.02). The non-rush group showed flat self-objectification scores and the rush group showed an unexpected dip at the second time point (hence, the significant quadratic term). However, follow-up paired sample t-tests showed that none of the three self-objectification scores for the rush group significantly differed (all ps>.53). Thus, this marginal finding was not interpreted further. No interaction was found between rush participation and time point for eating disordered behavior/attitudes, F (2, 144)=1.96, p=.15. To further explore the marginally significant finding for the impact of rush participation on eating disordered behavior/attitudes, the same analysis was repeated for the EAT subscale scores. The rush participation main effect was driven by scores on the bulimia and food preoccupation subscale. For this subscale, there was similarly no effect of time and no interaction, but the main effect of rush participation was significant, F (1, 70)=9.80, p<.01, η_p^2=.12. The rush

Table 1 Descriptive statistics for all dependent variables.

Measure	Non-rush group (*M*, *SD*)				Rush group (*M*, *SD*)			
	Time 1 (*N*=43)	Time 2 (*N*=45)	Time 3 (*N*=47)	Time 4 (*N*=46)	Time 1 (*N*=49)	Time 2 (*N*=46)	Time 3 (*N*=41)	Time 4 (*N*=45)
Body Surveillance[a]	4.53 (1.14)	4.53 (1.18)	4.44 (1.16)	4.47 (1.22)	5.10 (.91)	4.88 (.92)	5.15 (.84)	5.02 (.90)
Body Shame[b]	2.78 (1.35)	2.69 (1.31)	2.79 (1.41)	2.86 (1.33)	2.97 (.95)	3.03 (1.03)	2.91 (1.09)	3.31 (1.11)
Eating Attitudes Test-Total[c]	.30 (.32)	.29 (.31)	.31 (.34)	.32 (.35)	.44 (.45)	.51 (.46)	.47 (.46)	.53 (.46)
Eating Attitudes Test-Bulimia and Food Preoccupation[d]	.21 (.38)	.21 (.41)	.23 (.41)	.22 (.42)	.52 (.63)	.61 (.61)	.58 (.62)	.62 (.68)

[a] Possible scores range from 1 (low levels of body surveillance) to 7 (high levels of body surveillance)

[b] Possible scores range from 1 (low levels of body shame) to 7 (high levels of body shame)

[c] Possible scores range from 0 (low levels of eating disordered behavior) to 3 (high levels of eating disordered behavior)

[d] Possible scores range from 0 (low levels of bulimic attitudes and behavior) to 3 (high levels of bulimic attitudes and behavior)

group scored significantly higher on the bulimia and food preoccupation subscale at each time point (all *ps*<.05).

Initial Impact of Sorority Membership (Hypothesis 2)

A fourth time point (one month after the conclusion of rush) allowed us to test the impact of the initial time period of sorority membership on the body image-related variables described above. A similar series of two-way mixed model ANOVAs with time point as the within-subjects factor (two levels) and new sorority membership as the between-subjects factor were run. For self-objectification, there was no effect of time, F (1, 76)=.29, p=.59 and no time by membership interaction, F (1, 76)=1.27, p=.26. Consistent with the above findings, there was a significant main effect of membership, F (1, 76)=5.75, p=.02, η_p^2=.07, such that new sorority members showed higher levels of self-objectification compared to those who did not rush.

For body shame, there was a main effect of time, F (1, 76)=8.00, p<.01, η_p^2=.10, and a time by membership interaction, F (1, 76)=5.21, p=.03, η_p^2=.06. There was no main effect of membership, F (1, 76)=.63, p=.43. New sorority members showed a significant spike in body shame (compared to non-rushees) at the post-test, F (1, 76)=10.39, p=.002, η_p^2=.12. For total eating disordered behavior/attitude scores, there was a significant main effect of time, F (1, 80)=4.89, p=.04, η_p^2=.05, such that both groups showed increases over time. There was no significant time by membership interaction, F (1, 80)=1.54, p=.22. The main effect of membership was marginally significant, F (1, 80)=3.21, p=.08, η_p^2=.04, with new members scoring higher than those who did not rush at the final time point. However, once again, for bulimia and food preoccupation subscale scores, the effect of membership was significant, F (1, 79)=10.28, p < .01, η_p^2=.12, with new members scoring higher.

Rushees' BMIs and Rush Outcomes (Hypotheses 3 and 4)

Additional analyses were undertaken to determine the impact of participants' BMIs (based on self-reported height and weight in the pre-screening) on the rush process. At the time of the prescreening, the BMIs of those who participated in rush at all (even if they dropped out) (M=21.87, SD=3.02) were nearly identical to the BMIs of those who did not participate (M=21.89, SD=3.00; t (97)=−.04, p=.97). The same analysis excluding those who dropped out (i.e., comparing those who accepted a bid (M=21.07, SD=1.87) to those who never rushed at all) also indicated no significant difference between groups, t (79)=1.39, p=.17. Among rushees, BMI was negatively correlated with satisfaction with the rush process at the end of rush, r (46)=−.32, p=.03.

A substantial proportion (31%) of women who began the rush process did not finish it. Thus, analyses were conducted to determine whether those who dropped out of the rush process differed from those who accepted a bid to a sorority. Those who dropped out of rush (n=16) had significantly higher BMIs (M=23.50, SD=4.26) than those who accepted a bid (n=33; M=21.07, SD=1.87), t (47)=−2.79, p=.01, d=.81. Logistic regression demonstrated that a rushee's body mass index significantly predicted whether she dropped out of rush, B=.36, χ^2=5.12, p=.02, OR=1.44. Based on the odds ratio, for every one point increase in BMI, a rushee was 44% more likely to drop out of rush. No differences between these two groups were found for body shame, self-objectification, or EAT scores. These two groups also did not differ in terms of ethnicity, χ^2 (4)=6.77, p=.15.

General Tests of Objectification Theory Pathways (Hypothesis 5)

As a reminder, objectification theory proposes that self-objectification leads to increased body shame and eating

disordered behavior/attitudes. Furthermore, body shame has been shown to partially mediate the relationship between self-objectification and eating disordered behavior (Calogero et al. 2005; Kozee and Tylka 2006; Moradi et al. 2005; Noll and Fredrickson 1998; Slater and Tiggemann 2002; Tiggemann and Slater 2001). Scores from both the rush and non-rush groups were collapsed in order to test these proposed associations. (As there was no interaction between rush participation and time in the analyses above, there was no reason to believe that the change in these variables over time differed between the two groups of participants. Therefore, groups were not analyzed separately.)

The following pathways were tested on the 112 participants responding at a single time point (time point 1): self-objectification predicting body shame, body shame predicting eating disordered behavior/attitudes, and body shame mediating the relationship between self-objectification and eating disordered behavior/attitudes. Self-objectification significantly predicted body shame, b=.75, t (111)=8.11, p<.0001. Controlling for the effect of self-objectification, body shame significantly predicted eating disordered behavior/attitudes, b=.20, t (111)=8.09, p<.001. Based on suggestions of Preacher and Hayes (2008), the indirect effect was estimated using a bias corrected accelerated bootstrap with 5,000 replications. The 95% confidence interval around the indirect effect was found to range from .10 to .22. In the presence of the mediator, self-objectification marginally predicted eating disordered behavior/attitudes, b=.06, t (111)=2.02, p=.046. In other words, as predicted, body shame partially mediated the relationship between self-objectification and eating disordered behavior/attitudes.

While tests of objectification theory at a single time point have supported the relationships described above, there have not yet been tests of the theory using longitudinal data, an important step in establishing whether pathways are causal. Recent work on statistical mediation (e.g., Preacher 2008) indicates that structural equation models for longitudinal data analysis may reveal the nature of longitudinal mediation. Thus, a cross-lagged panel model (Cole and Maxwell 2003; Gollob and Reichardt 1991) was constructed using LISREL 8 (Jöreskog and Sörbom 2007) to examine whether self-objectification (time point 1) influenced body shame (time point 2), and whether body shame subsequently influenced eating disordered behavior/attitudes (time point 3). These three time points were chosen (rather than a subset including time point 4) because they were approximately evenly spaced (within three to nine days of each other). In this model, each variable was allowed to predict its own occurrence at subsequent time points. For example, self-objectification at time 1 predicted self-objectification at time 2, which in turn predicted self-objectification at time 3. As the time lag between time points was approximately equivalent, the relationship was constrained to be equal. Other predictors were examined while the effect of the previous time point was controlled for, thus assessing how each variable influenced the change in other variables. As suggested by MacKinnon (2008), the disturbance terms on each of the variables were allowed to correlate. See Fig. 1 for a depiction of the model and standardized solutions.

According to Hu and Bentler (1999), it is more appropriate to use a small subset of fit indices than multiple fit indices. Thus, only the comparative fit index and the standardized root mean square residual are reported. A CFI (a measure of improvement of fit of a theoretical model compared to a baseline model) of .95 or higher and a SRMR (the average of the standardized fitted residual between the inputted covariance matrix and that predicted by the model) of .08 or lower is considered ideal. Results indicated that the model fit the data well (CFI=1.00, SRMR=.03) for the 81 participants responding at all three of the included time points. Self-objectification at time 1 predicted self-objectification at time 2, and self-objectification at time 2 predicted self-objectification at time 3 (all ps<.001). Body shame at time 1 significantly predicted body shame at time 2, which significantly predicted body shame at time 3 (all ps<.001). Eating disordered behavior/attitudes at time 1 predicted eating disordered behavior/attitudes at time 2, which predicted eating disordered behavior/attitudes at time 3 (all ps<.001). However, when previous occurrences of each variable were controlled for, self-objectification failed to predict body shame and body shame failed to predict eating disordered behavior/attitudes (all ps>.05). This may have been due to the stability of the constructs themselves (i.e., there was little change to predict; at least 70% of the variance is explained by the previous time point), the fact that the time points were so close together, and/or the correlations between the constructs. Thus, these results are somewhat difficult to interpret with certainty. However, because Baron and Kenny's (1986) basic conditions for mediation were not met, the cross-sectional relationship proposed by objectification theory was *not* replicated longitudinally.

Because of the inequality of spacing in the time points (i.e., time point 4 occurred one month after time point 3) and the relative stability of each construct over the rush period, the difference between the last measurements during rush (time point 3) and the measurements at the post-test (time point 4) were examined separately. In other words, hypothesis 5 was tested a second time with a different set of time points (1 month apart). Having two rather than three time points necessitated a different analytic approach. MacKinnon (2008) has argued that it is possible to examine difference scores of independent variables, mediators, and outcomes, in order to assess how change might mediate relationships between changing variables. Hence, the

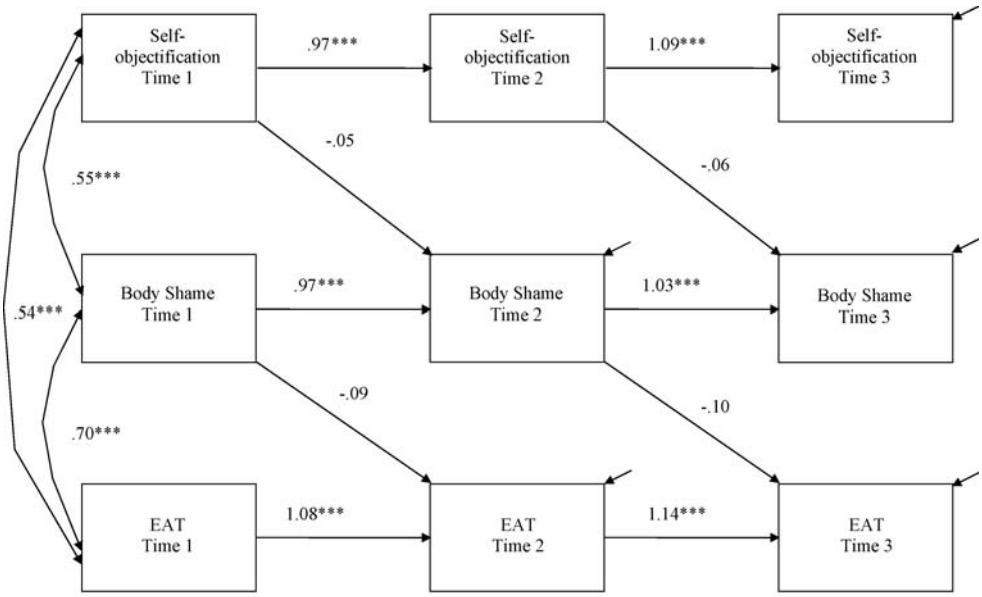

Fig. 1 Cross-lagged panel model examining mediation longitudinally. *** $p < .001$.

change in self-objectification between the end of rush and the post-test was used to predict the change in body shame, which in turn was used to predict the change in eating disordered behavior/attitudes.

Data from the 90 participants who completed all questionnaires at time points 3 and 4 were used to create difference scores. The total effect of differences in self-objectification on differences in eating disordered behavior/attitudes was statistically significant, b=.08, t (89)=2.85, p=.005. However, changes in self-objectification did not significantly predict differences in shame, b=.08, t (89)=.68, p=.50. Controlling for differences in self-objectification, differences in shame did not predict eating disordered behavior/attitudes, b=.04, t (89)=1.52, p=.13. In other words, changes in body shame did not mediate the relationship between changes in self-objectification and changes in eating disordered behavior/attitudes. However, changes in self-objectification did directly predict changes in eating disordered behavior/attitudes over time.

Discussion

We predicted that the process of sorority rush would lead to increases in self-objectification, body shame, and disordered eating behavior and attitudes. Furthermore, we hypothesized that body shame would mediate the relationship between increases in self-objectification and increases in disordered eating behavior and attitudes. A post-test time point one month after the conclusion of the rush process allowed us to test the impact of becoming an active member in a sorority on these variables. We also predicted that rushees with higher BMIs would have more negative experiences of the rush process. Finally, the current data were used to test the tenets of objectification theory regarding the relationship between self-objectification and eating disordered behavior and attitudes, both at a single time point and longitudinally.

Overall, evidence for the impact of participating in rush and joining a sorority was mixed. The most consistent finding was that women who chose to rush scored higher on self-objectification and eating disordered behavior and attitudes (particularly attitudes and behaviors associated with bulimia) compared to women who chose not to rush. Furthermore, the group differences in these variables were stable throughout rush and at the one-month post-test. These findings are consistent with a recent study by Basow et al. (2007). However, in contrast with the Basow et al. (2007) study, rushees in the current study did not show higher levels of body shame compared to non-rushees.

Although rushees and non-rushees differed throughout the rush process, there was no evidence that participating in rush led to systematic increases in self-objectification or body image disturbance. However, women who joined a sorority showed an increase in body shame one month after joining compared to those who did not join a sorority. This same increase was not found for self-objectification or eating disordered behavior and attitudes (although there was unsettling evidence that eating disorder symptoms increased for both groups of women over time, perhaps a time-of-year effect due to the approaching spring break). The body shame finding suggests that while rushees may begin the rush process with higher levels of body image disturbance compared to those who choose not to rush, becoming a member of a sorority has the potential to exacerbate these variables further. These results could be interpreted as consistent with Crandall's (1988) suggestion that sororities act as breeding grounds for disordered eating

behavior and attitudes. However, the group differences on body image-related variables found at the first time point of this study (prior to rush) and throughout the rush process suggest a different interpretation. If sororities are populated with women who emphasize a thin body ideal, it should not be surprising that they attract like-minded women to their ranks.

An additional key finding from this study regarding the rush process involves the impact of a woman's body size on her experience of rush. Women who dropped out of rush had significantly higher BMIs prior to beginning the rush process (compared to those who completed the rush process) and rushees' BMIs significantly predicted whether they would drop out of rush. Furthermore, BMI was negatively correlated with satisfaction with the rush process. Consistent with findings that sorority women are especially likely to promote a thin body ideal (Schulken and Pinciaro 1997), these data demonstrated that the further women's bodies were from the culturally sanctioned thin ideal, the more negative their experience of rush was. Although the methodology of this study does not allow us to conclude that being heavier caused women to have a more negative rush experience (and made them more likely to drop out), the BMI findings suggest that something about this process (whether deliberate or not) acts to enforce the thin ideal body type for women. Such a conclusion would be consistent with the wide variety of studies demonstrating the pervasive nature of both implicit and explicit weight-related bias (often referred to as *anti-fat bias*; Bessenoff and Sherman 2000; Teachman et al. 2003). However, it is notable that the mean BMI of those who dropped out of the rush process (23.5) was in the healthy range (although at the high end of healthy). The women who dropped out were *not*, on average, overweight. They were simply *less thin* than those who accepted bids. In other words, it is difficult to refer to these findings as simply demonstrating anti-fat bias. Instead, if these findings point to bias, they point to bias against those who deviate from the thin body ideal, not from a healthy body ideal.

The design of this study also allowed for a test of some of the pathways proposed by objectification theory. Although previous research (see above) has supported the proposed relationships between self-objectification, body shame, and eating disordered behavior and attitudes, this study allowed for a test of the relationships between these variables over time, an important step in establishing the causal direction of the pathways of interest. Consistent with previous findings, analyses from data at a single time point indicated that self-objectification significantly predicted eating disordered behavior and attitudes, and that this relationship was partially mediated by body shame. However, a structural equation model examining longitudinal mediation, controlling for previous levels of the variables, did not show evidence of this same pattern over time. Nonetheless, there was evidence for a direct link between increases in self-objectification and increases in eating disordered behavior and attitudes over time. The failure to find complete longitudinal evidence of objectification theory pathways is not entirely surprising, given that this analysis was likely weakened significantly by the fact that the initial three time points were so close together (all within three to nine days)—perhaps not allowing enough time for measurable change to occur. Although one also might be concerned about participants completing identical measures multiple times within short time intervals, this approach is consistent with commonly used experience sampling methodology (e.g., Nezlek 2001). Indeed, experience sampling methods often require participants to complete the same survey multiple times per day, yet show modest reactivity (Conner et al. 2007). Each survey was relatively short and participants were compensated, but specific validity checks were not embedded within the surveys, making it difficult to ascertain the level of attention participants were giving to generating accurate responses.

Given the structure of sorority rush and evidence that women participating in rush often find the process highly stressful (Atlas and Morier 1994), it seems likely that the process may have some effect on state-level self-objectification or body shame. Because this study did not employ specifically state-focused measures of these variables, it is possible that the employed measures were not sensitive enough to pick up on such changes. In a related vein, a possible reason for the failure of these data to show longitudinal evidence for objectification pathways is that the time period was too short to pick up on trait-level changes in the variables of interest. Future researchers might consider using implicit measures of self-objectification and shame (e.g., word stem tasks, as in Tiggemann et al. 2004) that could be more sensitive to smaller, state-level changes. Experience sampling methodology (e.g., Conner et al. 2007) might also be useful in assessing state-level effects tied to specific objectifying events or situations.

The quasi-experimental nature of this study (i.e., the fact that women were not randomly assigned to the rush vs. non-rush condition) is linked with several methodological limitations. The primary prediction of this study rested on the assumption that the first time point served as a pre-test that would capture responses from participants before rush had any effect on their thoughts, emotions, and behaviors. However, it is possible that the first time point was not a *pure* pre-test. The first time point was only a few days before the start of sorority rush. Women participating in rush likely had already started planning their schedules around rush activities, choosing outfits, and talking to one another about the process. Indeed, informal conversations

with rushees after the study indicated that this was the case. Perhaps this time point was not free of rush-related effects and might be considered the beginning of the rush mindset. Future studies of the impact of sorority rush should include a much earlier pre-test if possible, although practical limitations to attaining such a pre-test abound. Given this limitation, a causal relationship between rush and self-objectification remains a possibility. However, it is also possible that rush truly has no effect on self-objectification, but rather, women who show higher levels of self-objectification and women already engaging in (or at risk for) eating disordered behavior and attitudes may be more likely to participate in sorority rush. These women may be drawn to sororities in part because of sororities' focus on appearance and emphasis on the thin ideal. Data from this study are consistent with such an interpretation. Women who joined a sorority exhibited higher levels of self-objectification and bulimic attitudes and behavior than women who did not participate in rush, and women who joined a sorority showed increases in body shame over time. Thus, there is some evidence that sorority membership may exacerbate pre-existing, problematic attitudes/behaviors. The BMI findings summarized above suggest that these effects may be particularly pernicious for women whose bodies are further from the thin body ideal.

The effects of the rush process itself remain unclear given the possibility that the pre-test was contaminated by participants' rush-related planning. However, because sorority rush involves numerous, brief interactions in an explicitly evaluative environment, it certainly seems plausible that such a process could increase self-objectification. After all, trying on a swimsuit in private (shown to lead to increases in self-objectification by Fredrickson et al. 1998) seems like a rather mild manipulation compared to a week of on-going evaluation by groups of women commonly believed to have a preoccupation with physical appearance in general and thinness in particular.

In addition to addressing some of the methodological limitations discussed above, future research should employ measures explicitly designed to capture small changes in the variables of interest. If the timing of survey administration were more precise (e.g., if surveys could be administered immediately after a woman completes several hours of rush events), measures more focused on state (vs. trait) level variables would be ideal. Inclusion of implicit measures (e.g., Tiggemann et al. 2004) or behavioral measures (e.g., amount of food eaten/time spent exercising post-objectifying event) would also strengthen future investigations in this area. The body of research on objectification theory would benefit from research addressing the impact of other real-world objectifying contexts (e.g., going to a beach, going to bar/club with a focus on appearing attractive to potential dates, trying out for a cheerleading or dance squad).

The finding that heavier women appear to be less positively received during the rush process is directly tied to both objectification and an unhealthy focus on the thin body ideal. Further research with women who abandon the rush process is warranted, especially qualitative research that could be helpful in terms of elucidating the factors that lead a woman to abandon this process.

Regardless of the role the rush process itself plays in the relationship between sorority membership and body image disturbance, converging evidence points to sorority women (at least those from sororities associated with the National Panhellenic Conference) as an at-risk group. Indeed, a recent report by a task force on Fraternity and Sorority Life at the university where this study was undertaken listed eating disorders as one of the top four concerns facing the Greek community. While the current study leaves unanswered several questions about the role of self-objectification in the rush process, interventions aimed at reducing sorority women's focus on physical appearance (both during the rush process and in general) may hold promise as one of many routes to addressing body image disturbance and eating disorders among sorority members. Furthermore, a rush process that allows for more meaningful interpersonal interactions over a longer period of time could lessen the influence of physical appearance on the rush-related decision-making process. In the current study, only rushees participating in the NPC rush process were included. While the university at which this study was conducted also has African American and multicultural sororities, these sororities do not have the highly structured rush process described above. Instead, these groups employ processes that allow for longer interactions between rushees and sorority members. However, no research comparing these two approaches to rush and their impact on rushees has been conducted. Should such research indicate that a less structured process leads to less emphasis on physical appearance, perhaps the NPC could consider these less structured rush processes as an alternative to traditional rush.

Dissonance-based prevention/intervention techniques (where participants argue against pursuing the thin-ideal) have been shown to be effective in reducing body image disturbance in high school girls (Stice et al. 2008; Stice et al. 2009). Becker and colleagues (2006; 2008) similarly demonstrated the effectiveness of peer led dissonance-based programs in sororities (Becker et al. 2008; Becker et al. 2006). Such research points to the power of sororities to greatly influence the norms and ideals of their members. This potential leaves the door open for sororities to move away from a focus on appearance and toward a set of norms that encourages

healthy eating habits and more positive approaches to body image.

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References

Alexander, L. A. (1998). The prevalence of eating disorders and eating disordered behaviors in sororities. *College Student Journal, 32*, 66–75.

Atlas, G., & Morier, D. (1994). The sorority rush process: Self-selection, acceptance criteria, and the effect of rejection. *Journal of College Student Development, 35*, 346–353.

Baron, R. M., & Kenny, D. A. (1986). The mediator-moderator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173–1182.

Basow, S. A., Foran, K. A., & Bookwala, J. (2007). Body objectification, social pressure, and disordered eating behavior in college women: The role of sorority membership. *Psychology of Women Quarterly, 31*, 394–400.

Becker, C. B., Bull, S., Schaumberg, K., Cauble, A., & Franco, A. (2008). Effectiveness of peer-led eating disorders prevention: A replication trial. *Journal of Consulting and Clinical Psychology, 76*, 347–354.

Becker, C. B., Smith, L. M., & Ciao, A. C. (2006). Peer-facilitated eating disorder prevention: A randomized effectiveness trial of cognitive dissonance and media advocacy. *Journal of Counseling Psychology, 53*, 550–555.

Bessenoff, G. R., & Sherman, J. W. (2000). Automatic and controlled components of prejudice toward fat people: Evaluation versus stereotype activation. *Social Cognition, 18*, 329–353.

Breines, J. G., Crocker, J., & Garcia, J. A. (2008). Self-objectification and well-being in women's daily lives. *Personality and Social Psychology Bulletin, 34*, 583–598.

Calogero, R. M., Davis, W. N., & Thompson, J. K. (2005). The role of self-objectification in the experience of women with eating disorders. *Sex Roles, 52*, 43–50.

Cohlan, M. (Director). (2006). Rushed [Online documentary]. Retrieved from http://www.marcuscohlan.com/.

Cole, D. A., & Maxwell, S. E. (2003). Testing meditational models with longitudinal data: questions in the use of structural equation modeling. *Journal of Abnormal Psychology, 112*, 558–577.

Conner, T. S., Feldman Barrett, L., Tugade, M. M., & Tennen, H. (2007). Idiographic personality: The theory and practice of experience sampling. In R. W. Robins, R. C. Fraley, & R. F. Krueger (Eds.), *Handbook of research methods in personality psychology* (pp. 79–96). New York: Guilford.

Crandall, C. S. (1988). Social contagion of binge eating. *Journal of Personality and Social Psychology, 55*, 588–598.

Dillon, S. (2007, February 25). Sorority evictions raise issues of looks and bias. *The New York Times*. Retrieved from www.nytimes.com.

Fredrickson, B. L., & Roberts, T.-A. (1997). Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly, 21*, 173–206.

Fredrickson, B. L., Roberts, T.-A., Noll, S. M., Quinn, D. M., & Twenge, J. M. (1998). That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology, 75*, 269–284.

Garner, D. M., Olmstead, M. P., Bohr, Y., & Garkinel, P. E. (1982). The eating attitudes test: psychometric features and clinical correlates. *Psychological Medicine, 12*, 871–878.

Gollob, H. F., & Reichardt, C. S. (1991). Interpreting and estimating indirect effects assuming time lags really matter. In L. M. Collins & J. L. Horn (Eds.), *Best methods for the analysis of change: Recent advances, unanswered questions, future directions* (pp. 243–259). Washington: American Psychological Association.

Hebl, M. R., King, E. B., & Lin, J. (2004). The swimsuit becomes us all: Ethnicity, gender, and vulnerability to self-objectification. *Personality and Social Psychology Bulletin, 30*, 1322–1331.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1–55.

Jöreskog, K. G., & Sörbom, D. (2007). *LISREL* (Version 8.80) [Computer Software]. Lincolnwood, IL: Scientific Software International.

Keller, M. J., & Hart, D. (1982). The effects of sorority and fraternity rush on students' self-images. *Journal of College Student Personnel, 23*, 257–261.

Kozee, H. B., & Tylka, T. L. (2006). A test of objectification theory with lesbian women. *Psychology of Women Quarterly, 30*, 348–357.

Kozee, H. B., Tylka, T. L., Augustus-Horvath, C. L., & Denchik, A. (2007). Development and psychometric evaluation of the Interpersonal Sexual Objectification Scale. *Psychology of Women Quarterly, 31*, 176–189.

Lindberg, S. M., Grabe, S., & Hyde, J. S. (2007). Gender, pubertal development, and peer sexual harassment predict objectified body consciousness in early adolescence. *Journal of Research on Adolescence, 17*, 723–742.

MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York: Erlbaum.

Maxwell, S. E., & Cole, D. A. (2007). Bias in cross-sectional analysis of longitudinal mediation. *Psychological Methods, 12*, 23–44.

Mazzeo, S. E. (1999). Modification of an existing measure of body image preoccupation and its relationship to disordered eating in female college students. *Journal of Counseling Psychology, 46*, 42–50.

McKinley, N. M. (1998). Gender differences in undergraduates' body esteem: The mediating effect of objectified body consciousness and actual/ideal weight discrepancy. *Sex Roles, 39*, 113–123.

McKinley, N. M. (1999). Women and objectified body consciousness: Mothers' and daughters' body experience in cultural, developmental, and familial context. *Developmental Psychology, 35*, 760–769.

McKinley, N. M. (2006a). Longitudinal gender differences in objectified body consciousness and weight-related attitudes and behaviors: Cultural and developmental contexts in the transition from college. *Sex Roles, 54*, 159–173.

McKinley, N. M. (2006b). The developmental and cultural contexts of objectified body consciousness: A longitudinal analysis of two cohorts of women. *Developmental Psychology, 42*, 679–687.

McKinley, N. M., & Hyde, J. S. (1996). The objectified body consciousness scale: Development and validation. *Psychology of Women Quarterly, 20*, 181–215.

Mercurio, A. E., & Landry, L. J. (2008). Self-objectification and well-being: The impact of self-objectification on women's overall sense of self-worth and life satisfaction. *Sex Roles, 58*, 458–466.

Miner-Rubino, K., Twenge, J. M., & Fredrickson, B. L. (2002). Trait self-objectification in women: Affective and personality correlates. *Journal of Research in Personality, 36*, 147–172.

Mongell, S., & Roth, A. E. (1991). Sorority rush as a two-sided matching mechanism. *The American Economic Review, 81*, 441–464.

Moradi, B., Dirks, D., & Matteson, A. (2005). Roles of sexual objectification experiences and internalization of sociocultural

standards of beauty in eating disorder symptomatology: An examination and extension of objectification theory. *Journal of Counseling Psychology, 52*, 420–428.

Moradi, B., & Huang, Y. P. (2008). Objectification theory and psychology of women: A decade of advances and future directions. *Psychology of Women Quarterly, 32*, 377–398.

Muehlenkamp, J. J., & Saris-Baglama, R. N. (2002). Self-objectification and its psychological outcomes for college women. *Psychology of Women Quarterly, 26*, 371–379.

Nezlek, J. B. (2001). Multilevel random coefficient analyses of event- and interval-contingent data in social and personality psychology research. *Personality and Social Psychology Bulletin, 27*, 771–785.

Noll, S. M., & Fredrickson, B. L. (1998). A mediational model linking self-objectification, body shame, and disordered eating. *Psychology of Women Quarterly, 22*, 623–636.

Preacher, K. J. (August, 2008). *Anne Anastasi Distinguished Early Career Contributions Award: Approaches to hypothesis testing in mediation*. Paper presented at the annual meeting of the American Psychological Association, Boston, MA.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods, 40*, 879–891.

Prouty, A. M., Protinsky, H. O., & Canady, D. (2002). College women: Eating behaviors and help-seeking preferences. *Adolescence, 37*, 353–363.

Quinn, D. M., Kallen, R. W., & Cathey, C. (2006). Body on my mind: The lingering effect of state self-objectification. *Sex Roles, 55*, 869–874.

Schulken, E. D., & Pinciaro, P. J. (1997). Sorority women's body size perceptions and their weight-related attitudes and behaviors. *Journal of American College Health, 46*, 69–74.

Slater, A., & Tiggemann, M. (2002). A test of objectification theory in adolescent girls. *Sex Roles, 46*, 343–349.

Stice, E. (2002). Risk and maintenance factors for eating pathology: A meta-analytic review. *Psychological Bulletin, 128*, 825–848.

Stice, E., Marti, C. N., Spoor, S., Presnell, K., & Shaw, H. (2008). Dissonance and healthy weight eating disorder prevention programs: Long-term effects from a randomized efficacy trial. *Journal of Consulting and Clinical Psychology, 76*, 329–340.

Stice, E., Rohde, P., Gau, J., & Shaw, H. (2009). An effectiveness trial of a dissonance-based eating disorder prevention program for high-risk adolescent girls. *Journal of Consulting and Clinical Psychology, 77*, 825–834.

Teachman, B. A., Gapinski, K. D., Brownell, K. D., Rawlins, M., & Jeyaram, S. (2003). Demonstrations of implicit anti-fat bias: The impact of providing causal information and evoking empathy. *Health Psychology, 22*, 68–78.

Tiggemann, M., & Boundy, M. (2008). Effect of environment and appearance compliment on college women's self-objectification, mood, body shame, and cognitive performance. *Psychology of Women Quarterly, 32*, 399–405.

Tiggemann, M., Hargreaves, D., Polivy, J., & McFarlane, T. (2004). A word-stem completion task to assess implicit processing of appearance-related information. *Journal of Psychosomatic Research, 57*, 73–78.

Tiggemann, M., & Slater, A. (2001). A test of objectification theory in former dancers and non-dancers. *Psychology of Women Quarterly, 25*, 57–64.

Tylka, T. L., & Hill, M. S. (2004). Objectification theory as it relates to disordered eating among college women. *Sex Roles, 51*, 719–730.

Tylka, T. L., & Subich, L. M. (2004). Examining a multidimensional model of eating disorder symptomatology among college women. *Journal of Counseling Psychology, 51*, 314–328.