



Published in final edited form as:

*Sex Roles*. 2015 November 1; 73(9): 442–452. doi:10.1007/s11199-015-0533-6.

## Objectification in Virtual Romantic Contexts: Perceived Discrepancies between Self and Partner Ideals Differentially affect Body Consciousness in Women and Men

**Nicole M. Overstreet,**

Clark University, Department of Psychology

**Diane M. Quinn, and**

Department of Psychology, University of Connecticut

**Kerry L. Marsh**

Department of Psychology, University of Connecticut.

### Abstract

The current study examined whether exposure to sexually objectifying images in a potential romantic partner's virtual apartment affects discrepancies between people's perception of their own appearance (i.e., self-perceptions) and their perception of the body ideal that is considered desirable to a romantic partner (i.e., partner-ideals). Participants were 114 heterosexual undergraduate students (57 women and 57 men) from a northeastern U.S. university. The study used a 2 (Participant Gender) x 2 (Virtual Environment: Sexualized vs. Non-Sexualized) between-subjects design. We predicted that women exposed to sexually objectifying images in a virtual environment would report greater discrepancies between their self-perceptions and partner-ideals than men, which in turn would contribute to women's body consciousness. Findings support this hypothesis and show that perceived discrepancies account for the relationship between exposure to sexually objectifying images and body consciousness for women but not men. We also found gender asymmetries in objectification responses when each component of perceived discrepancies, i.e., self-perceptions versus perceptions of a romantic partner's body ideal, were examined separately. For men, exposure to muscular sexualized images was significantly associated with their self-perceptions but not their perceptions of the body size that is considered desirable to a romantic partner. For women, exposure to thin sexualized images was significantly associated with their perceptions that a romantic partner preferred a woman with a smaller body size. However, exposure to these images did not affect women's self-perceptions. Implications for gender asymmetries in objectification responses and perceived discrepancies that include a romantic partner's perceptions are discussed.

### Keywords

sexual objectification; gender; self-discrepancy; body consciousness; virtual reality

## Introduction

Sexual objectification experiences via visual media (e.g., music videos, magazines) are ubiquitous in the United States (Fredrickson & Roberts, 1997; all cited empirical papers are based on U.S. samples except where noted). Sexually objectifying media frequently focuses on men and women's body parts and subsequently reinforces societal standards of thinness for women and muscularity for men (Oehlof et al., 2009). Evidence from two meta-analyses that analyze studies conducted in the U.S. and other Western nations show that women and men receive media pressure to conform to these ideals, which results in men and women feeling worse about their own bodies (Barlett, Vowels, & Saucier, 2008; Grabe, Ward, & Hyde, 2008). Despite evidence that men and women suffer consequences of objectification, theorizing on objectification highlights a key gender difference in this process: women (and not men) are socialized to evaluate their self-worth through their physical appearance *and* adopt an outsider's perspective on their appearance (Calogero, Tantleff-Dunn, & Thompson, 2011; Fredrickson & Roberts, 1997; Fredrickson, Roberts, Noll, Quinn, & Twenge, 1998; McKinley, 1998). In other words, exposure to sexual objectification experiences heightens women's perception of their physical selves through the eyes of others.

One domain in which being seen through the eyes of others may become salient is in a romantic context. Few studies have examined the consequences of objectification in romantic contexts; however, romantic partners may play a critical role in mitigating or exacerbating appearance concerns in men and women (Meltzer & McNulty, 2013; Weinberg & Williams, 2010; Wiederman, 2000). A unique contribution of the current work is investigating whether exposure to objectifying media in a romantic partner's virtual apartment affects women's (and not men's) consciousness about their own bodies via a perceived discrepancy between their own body size, that is self-perceptions, and the body size that is perceived to be desirable to a romantic partner, that is partner-ideals. If women in a sexually objectifying environment are more susceptible than men to think about how their body appears in relation to what is perceived as important to a romantic partner, this would support the claim that women are socialized to value their appearance *and* worry about how their bodies are viewed by others. Thus, women's experience of objectification is tied to a discrepancy between how they see themselves and what they perceive to be desirable to a romantic partner. Another key question is whether exposure to sexual objectification experiences differentially affects each component of the discrepancy (i.e., perceptions of one's own body size or perceptions of a romantic partner's ideals) in men and women. We test our questions using an immersive virtual reality experience, which introduces highly impactful interaction-relevant environmental cues in a fairly naturalistic yet controlled way. In the current study, we simulated a virtual environment in which undergraduate men and women were either exposed to sexualized images or neutral images in a potential romantic partner's apartment.

The connection between sexual objectification experiences and appearance concerns has been theorized to work through an increased focus on the discrepancy between the self, that is how one currently perceives her/his body, and ideal, that is how one would ideally like her/his body to look (McKinley & Hyde, 1996; Quinn, Chaudoir, & Kallen, 2011). In the body image literature, these discrepancies are largely examined as differences between one's

current appearance (actual body image) and how one would ideally like to look (ideal body image) (Szymanski & Cash, 1995). When discrepancies are conceptualized in this manner, findings support the basic claims of self-discrepancy theory (Higgins, 1987) in that greater actual-ideal body image discrepancy, particularly among college women, is associated with concerns about one's appearance (Bessenoff & Snow, 2006; McKinley, 1998). In a romantic context, rather than use the traditional discrepancy score between actual body image versus general perceptions of a societal ideal, it may be more important to emphasize the discrepancy between actual body image and a more immediate idealized standard such as perceptions of a romantic partner's ideal body size. People's perceptions of a romantic partner's ideals become a more specific standard to assess in a romantic context, rather than a general perception of idealized body image, because people care about how their bodies appear to a romantic partner and romantic partners play an important role in how men and women judge their appearance (Park, Calogero, Harwin, & DiRaddo, 2009; Weinberg & Williams, 2010; Wiederman, 2000).

Although men and women may care about how their bodies appear to a romantic partner, societal pressure for women to secure a romantic relationship and invest their self-worth in their appearance may contribute to heightened concerns among women about how their bodies appear to a potential romantic partner (Mahalik, Morray, Coonerty-Femiano et al., 2005). Further, as Canadian researchers have found, messages to attain idealized standards of beauty are more pervasive and rigid for women than men, and this rigidity in appearance norms is more detrimental to body image than the flexible and heterogeneous appearance norms that are encountered by men (Buote, Wilson, Strahan et al., 2011). Thus, women are contending with feminine gender norms that encourage investment in one's appearance and investment in being in a relationship. These norms may become particularly salient to women in sexually objectifying romantic environments. Mere exposure to sexually objectifying images in a romantic partner's living environment can signal that a romantic partner desires these body ideals for their partner, which may create a sense of discrepancy between one's current body size and the body size that is perceived to be ideal by a relevant source—a potential romantic partner. We explicitly test this idea using virtual reality and consider whether perceived discrepancies link objectification experiences to body consciousness, an outcome that has been related to sexual dysfunction (Sanchez & Kiefer, 2007).

Physical environments provide a number of relevant cues that allow observers to form impressions of those who occupy that environment (Gosling, Ko, Mannarelli, & Morris, 2002), even in a virtual context (Wohn & Wash, 2013). Immersive virtual environments have also been shown to affect college women's perceptions of their bodies and mood. For example, Ferrer-García and Gutiérrez-Maldonado (2012) reviewed a number of virtual reality studies, most conducted in Spain and Italy, and found that exposure to proximal (e.g., eating a high-calorie food such as pizza) and distal cues (e.g., eating in a restaurant) in virtual contexts influence anxiety, depression, drive for thinness, and other weight concerns among undergraduate women clinically diagnosed with eating disorders and in nonclinical samples. These studies provide evidence that virtual reality is an ecologically valid context for understanding how everyday experiences of sexual objectification, such as exposure to objectified images on a cover of a magazine, shape men and women's self-perceptions and

their perceptions of people who occupy those virtual spaces. Past research suggests that objectifying cues in an interpersonal context may be more deleterious for women than men (Gervais, Vescio, & Allen, 2011; Saguy, Quinn, Dovidio, & Pratto, 2010), yet few studies have examined the consequences of objectification in contexts with potential for an encounter with a romantic partner. Of the work that has examined objectification in relation to romantic partners, evidence suggests that romantic partners who consume objectifying media may be more likely to monitor and think about their partner's appearance (Zurbriggen, Ramsey, & Jaworksi, 2011). It may be that consistent monitoring of a partner's appearance translates into comments about a partner's physical appearance. When these comments from a romantic partner are not balanced with valuation of nonphysical qualities, the consequences can be costly (Meltzer & McNulty, 2013). One consequence of objectification experiences that we focus on in the current study is body consciousness, that is, increased awareness of how one's body appears to a romantic partner. Past studies have found that self-consciousness about one's appearance in an intimate setting is related to sexual problems for women and men (Sanchez & Kiefer, 2007). Understanding mechanisms that link objectification experiences to body consciousness in romantic contexts, such as perceived discrepancies, may provide potential avenues for addressing body image concerns, and subsequent consequences, in romantic relationships.

### The Present Study

Consequences of objectification in romantic contexts have received little empirical attention in the objectification literature; however research suggests that romantic partners and romantic contexts play an important role in how people perceive their appearance (Meltzer & McNulty, 2013; Park et al., 2009; Sanchez & Broccoli, 2008; Zurbriggen et al., 2011). These studies do not examine how people respond to exposure to sexually objectifying images in romantic contexts, yet it is possible that people experience this form of objectification in romantic contexts, especially if romantic partners consume this type of media (Zurbriggen et al., 2011). We expand upon the existing literature by examining the effect of exposure to sexually objectifying media, a ubiquitous form of objectification, on men and women's perceptions of their current appearance and specifically assess whether exposure to objectifying media affects men and women's perceptions of the body size that is perceived to be ideal by a potential romantic partner. Further, we build upon the existing literature by examining perceived discrepancies between self-perceptions and perceived romantic partner ideals as a key mediator between objectification experiences in romantic contexts and body image self-consciousness, a factor that has been linked to adverse relationship outcomes for men and women (Sanchez & Kiefer, 2007). Thus, the present study sought to accomplish three goals: 1) to examine whether women's exposure to thin sexually objectifying images and men's exposure to muscular sexually objectifying images in a potential romantic partner's virtual environment is related to women perceiving their body as larger than a partner's perceived ideal and men perceiving their body as smaller (i.e., in body mass) than a partner's perceived ideal; 2) to examine whether perceived discrepancies between self-perceptions and partner ideals is a key process linking women's (but not men's) sexual objectification experiences to their body consciousness; and 3) to examine gender differences in whether exposure to sexually objectifying images affects each

component of perceived discrepancies, that is how people see themselves, a perceived partner ideal, or both. Thus, we hypothesize the following:

Hypothesis 1a: Women exposed to thin sexually objectifying images will perceive their own body size as larger than the body size considered ideal to a romantic partner.

Hypothesis 1b: Men exposed to muscular sexually objectifying images will perceive their own body size as smaller (i.e., in body mass) than the body size considered ideal to a romantic partner.

Hypothesis 2: Women's (but not men's) perceived discrepancy is a key process linking women's sexual objectification experiences to their body consciousness. In other words, the perceived discrepancy between self-perceptions and partner-ideals will mediate the relationship between condition and body consciousness for women and not men.

Hypothesis 3: Exposure to sexualized images will affect women's self-perceptions and partner-perceptions whereas exposure to sexualized images will affect men's self-perceptions.

## Method

### Participants

Participants were 121 (61 women, 60 men) undergraduates from a large northeastern university. Participants were recruited from introductory psychology classes and received research credits for completing the survey as part of their course requirements. A majority of participants self-identified as heterosexual (94 %) and the remaining participants (6%) self-identified as lesbian, gay, or bisexual. Participants who identified as lesbian, gay, or bisexual were excluded from the sample given evidence that objectification may influence sexual minorities differently than objectification in heterosexual samples (Duggan & McCreary, 2004; Michaels, Parent & Moradi, 2013). Analyses were based on the remaining 114 participants (57 women, 57 men). Their mean age was 19.26 years ( $SD = 1.49$ ). Full demographic information of the sample is presented in Table 1.

### Procedure and measures

Students were invited to participate in a study entitled *Virtual Room Raiders*, a title that is based on a popular television dating show where three single contestants have their rooms explored by a single man or woman who then chooses to date a contestant based on the contents of their room. In the consenting process, participants were told that the study was examining “whether environmental cues in virtual reality can be used to form impressions of people's personality characteristics and other hobbies.” Participants were then told that they would be “entering the virtual apartment of a potential romantic partner” and that they will be asked “to form an impression of this person.” Once the participants provided their consent, the researcher placed the head mounted display goggles with attached motion tracker on the participant's head and started the WorldViz virtual reality program. The

participant was then left alone in the cubicle room to provide a more private and immersive experience.

The study was a 2 (Participant Gender) x 2 (Virtual Environment: Sexualized/Non-Sexualized) between-subjects design. In the first part of the highly immersive virtual scenario, every participant began in the lobby of Scott's/Sarah's apartment. In the lobby, participants saw the environment from a first-person perspective and were taught how to maneuver around the virtual world. The participant's view through the goggles was changed when they turned their head to look to the side, or when they moved through the environment using a rollerball mouse. After participants demonstrated an understanding of navigating the virtual world, participants entered Scott's/Sarah's apartment and had 5 minutes to observe its contents before the scene faded to black. The details of what participants saw in the virtual apartment are described below by study condition. The in-house software used in this experiment automatically tracked whether the participants approached each region of the apartment where critical images were present. If participants failed to enter a region, or tried to exit the apartment without exploring all of the rooms, specific prompts would remind them to explore the particular room they overlooked. Participants were randomly assigned to either the experimental condition or the control condition. These conditions are described in detail below and example images used in each condition are presented in Figure 1. All images used in the virtual environment were taken from a popular poster website. The researchers used the bestselling poster images that were ordered by men and women for decorating their college dormitory rooms.

**Experimental condition**—Male and female participants were exposed to a series of same-sex sexualized images throughout Sarah's/Scott's apartment. The sexualized body ideals (e.g., posters of male models whose abdominal muscles were prominent or posters of female models emphasizing their stomach/breasts) were dispersed throughout the apartment and located in the following places: on a poster on the wall of the living room and bedroom, in an ad on the right side of an open magazine on the desk in the bedroom, as a screen saver on an open laptop, and on a video game/DVD cover. These images were interspersed with a series of neutral images (e.g., cars in "Scott's" apartment; flowers in "Sarah's" apartment) that were located in the following places throughout the apartment: three neutral posters in the living room, and the ad on the left side of the open magazine on the desk.

**Control condition**—Male and female participants were exposed to the same neutral images as the experimental condition (e.g., cars in "Scott's" apartment; flowers in "Sarah's" apartment). In addition, the sexualized images in the experimental condition were replaced by poster images of people in popular television shows who were fully clothed.

Once participants finished exploring the apartment, the researcher took off their virtual reality goggles and took them to a separate room to complete a series of questions about their perceptions of the romantic partner, body image, intended sexual behaviors with Scott/Sarah, and a demographic questionnaire (in that order); only measures related to perceived self-partner ideal and body consciousness are described below.

**Perceived self-partner ideal discrepancy**—The Thompson and Gray (1995) Contour Drawing Rating Scale was used to assess participants' perceptions of their current body size and also gauged participants' perceptions of Scott or Sarah's ideal body size for a woman/man. The figure rating scale consists of nine adult female or male figures that range from an extremely thin body figure (1) to an obese body figure (9). Participants indicated which figure best represents their current appearance and which figure best represents Scott's/Sarah's preference for an ideal woman/man. To create a measure of perceived body size discrepancy, the difference between participants' perception of their current body size and participants' perception of the body size considered ideal by Scott/Sarah was calculated. For this measure, a score of zero indicates that participants did not perceive themselves to be discrepant from Scott's/Sarah's preferred body size. A positive score indicates that participants thought of themselves as larger than Scott's/Sarah's preferred body size and a negative score indicates that participants thought of themselves as smaller than Scott's/Sarah's preferred body size. The possible range of scores was 8 to -8.

**Body Consciousness**—The Body Image Self-Consciousness Scale (BISC; Wiederman, 2000) assessed negative body-related thoughts that participants would have if they engaged in intimate activities with Scott/Sarah. The scale consists of 15 items that tap into self-consciousness about the appearance of one's body in intimate settings (e.g. "I would be very nervous if Scott/Sarah were to explore my body before sex"; "During sexual activity, I would be concerned about how my body looks to Scott/Sarah"). The scale endpoints were such that participants rated their agreement with each statement: 1 (Disagree Strongly) to 6 (Agree Strongly). Reliability for the measure was .94 ( $\alpha_M = .94$ ,  $\alpha_F = .93$ ).

## Results

For descriptive analyses, a one-way MANOVA with condition (coded as 1= men experimental condition, 2 = men control condition, 3= women experimental condition, 4= women control condition) as the independent variable indicated significant differences by gender and condition in the omnibus test among all study variables, Wilk's  $\Lambda = .36$ ,  $F(9, 263) = 15.02$ . Table 2 provides the results of these analyses for men and women in each condition on each of the measures involved in analyses reported below. For the analyses below, the first set of analyses tested Hypothesis 1a, 1b, and Hypothesis 2; the second analysis tested Hypothesis 3.

### Conditional Indirect Effect of Perceived Self-Ideal Discrepancy

To test our prediction that exposure to sexually objectifying images leads to women's perceived self-partner ideal discrepancy, which in turn leads to their body consciousness, we conducted a mediation analysis using the PROCESS SPSS macro (Hayes, 2013) where the independent variable was condition (coded as 0 = *neutral images*, 1 = *sexually objectifying images*), the dependent variable was body consciousness, and the mediator was perceived self-partner ideal discrepancy. We also tested whether gender moderated each path of our mediation model. Gender was coded as 0 = *men* and 1 = *women*. Testing a moderated mediation model allows us to examine if the following effects differ for women and men: the effect of condition on body consciousness, the effect of condition on perceived

discrepancies (and the direction of these perceived discrepancies as larger or smaller, Hypotheses 1a and 1b), and the effect of perceived discrepancies on body consciousness. In addition, we also examined whether the indirect effect of condition on body consciousness through perceived discrepancies differed for women and men (Hypothesis 2). Bootstrapping was used to test the significance of indirect effects with 95% bootstrapped confidence intervals (represented in brackets in the results below) with 5,000 re-samples. Analyses controlled for relationship status because it is possible that people who are in a committed relationship may be less concerned about the perceptions of a potential romantic partner than those who are not in a committed relationship (Sanchez & Broccoli, 2008). Participants who reported that they were dating exclusively or were living with a romantic partner were coded as 0 (*in a committed relationship*) and all other participants were coded as 1 (*not in a committed relationship*).

Before examining the indirect effect of condition on body consciousness through perceived self-partner ideal discrepancy, we first examined whether any conditional gender effects were present for each path of the mediation model. Gender moderated the effect of condition on perceived self-partner ideal discrepancy,  $b = 1.41$ ,  $t(109) = 2.84$ ,  $SE = .50$ ,  $p = .01$ , but did not moderate any other path in the mediation model. The nature of the gender  $\times$  condition interaction on perceived self-partner ideal discrepancy is shown in Figure 2. Consistent with hypothesis 1a, women exposed to thin sexually objectifying images in a virtual environment perceived their current body size to be larger and more discrepant than what is considered to be ideal by a romantic partner whereas men exposed to muscular sexually objectifying images perceived less discrepancies between their current body size and the body size that is considered to be ideal by a romantic partner. There were no differences in perceived self-partner ideal discrepancies for men and women exposed to neutral images. Examination of the simple slopes revealed that the effect of condition on perceived self-partner ideal discrepancy was significant for women,  $b = .98$ ,  $t(109) = 2.79$ ,  $SE = .35$ ,  $p = .01$ , but not men,  $b = -.43$ ,  $t(109) = -1.25$ ,  $SE = .35$ ,  $p = .21$ . Thus, our hypothesis 1b that men exposed to muscular sexually objectifying images would perceive themselves as smaller was not supported. Relationship status was not associated with perceived self-partner ideal discrepancy,  $b = .30$ ,  $t(109) = 1.14$ ,  $SE = .27$ ,  $p = .26$  but was associated with body consciousness,  $b = .54$ ,  $t(107) = 2.77$ ,  $SE = .19$ ,  $p = .01$ , participants who were not in a committed relationship reported more concern with how their bodies appeared to a potential romantic partner.

Figure 3 displays the mediation model in which we tested for gender differences in whether perceived self-partner ideal discrepancy is a mediator of the sexual objectification experiences-body consciousness link. The indirect effect of sexual objectification experiences on body consciousness through perceived self-partner ideal discrepancy was moderated by gender. Specifically, we found that perceived self-partner ideal discrepancy accounted for the relationship between condition and body consciousness for women, indirect effect = .23 [.04, .58], but not for men, indirect effect = -.10 [-.32, .02], which provides support for hypothesis 2. Exposure to sexually objectifying images was related to women perceiving themselves to be larger than what they thought a romantic partner would find ideal, and in turn, this perceived discrepancy was related to greater body consciousness.



This pattern of effects was not observed in men. Perceived self-partner ideal discrepancy, condition, relationship status, and the respective interactions accounted for 28% of the variance in body consciousness for the full sample.

### Examining Components of Self-Partner Ideal Discrepancy

We also examined gender differences in whether exposure to sexually objectifying images differentially affects each component--self-perceptions, partner ideal perceptions, or both--of self-partner ideal discrepancies. In addition, we examined whether each of these components individually mediated the relationship between exposure to sexually objectifying media and body consciousness and examined gender as a moderator of these effects. Similar to the previous analysis, we conducted a moderated mediation analysis with each component of perceived self-partner ideal discrepancy as a mediator. These analyses revealed that among women, neither current perceived body size, indirect effect = .08 [-.03, .35], nor perceived body size ideal of romantic partner, indirect effect = .04 [-.12, .25], alone accounted for the relationship between condition and body consciousness. However, as predicted in hypothesis 3, condition was significantly associated with women's perceptions of the body size considered to be ideal by a romantic partner,  $b = -.53$ ,  $t(109) = -2.49$ ,  $SE = .21$ ,  $p = .01$ , such that women's exposure to thin sexually objectifying images was associated with their perceptions of Scott desiring women with a smaller body size. Thus, as predicted, it is actually the discrepancy or difference between women's self-perceptions and what they perceive to be a desired body size by a romantic partner that contributes to their body consciousness. Among men, perceived body size ideal of a romantic partner did not account for the relationship between condition and their body consciousness, indirect effect = .01 [-.06, .20]; however, how men perceived their current body size did account for the relationship between condition and their body consciousness, indirect effect =  $-.17$  [-.45, -.01]. In this analysis, condition had a marginally significant effect on men's self-perceptions,  $b = -.64$ ,  $t(109) = -1.87$ ,  $SE = .34$ ,  $p = .06$ , such that men's exposure to muscular sexually objectifying images was associated with their self-perceptions as smaller in body size. Thus for men, condition seemed to have a greater effect on their self-perceptions rather than the self-partner ideal discrepancy.

### Discussion

We found support for our claim that perceived discrepancies between self-perceptions and partner-ideals is a key process linking women's experiences of sexual objectification via visual media to their body consciousness. A romantic context involving salient sexually objectifying images was the condition in which women reported the greatest discrepancies between their self-perceptions and perceived partner ideals. For men, we found that self-perceptions, rather than a perceived discrepancy, linked their experiences of objectification to their body consciousness. Thus, it is a focus on self-perceptions for men and a focus on the discrepancy for women that links sexual objectification experiences to feelings of body consciousness with a romantic partner. These findings shed light on potential consequences of objectification in romantic contexts for women and men but in different ways. Sexual objectification experiences contribute to women (and not men) thinking more about how their bodies look, particularly how their body looks to others, rather than how one feels,

which supports a basic tenet of objectification theory (Calogero et al., 2011; Fredrickson & Roberts, 1997; Morry & Staska, 2001). For men, feeling conscious about one's body is related to how one thinks of themselves without accounting for a partner's perspective. Although both pathways influence body consciousness, it is possible that a self-other perspective in a romantic encounter may be detrimental to other dynamics of romantic relationships, such as feelings of agency and sexual satisfaction during an intimate encounter. Future work is needed to replicate these findings and to examine whether there are asymmetries in objectification responses following other forms of sexual objectification from a romantic partner, including comments about one's body and appearance.

Another goal of the current work was to examine how exposure to sexually objectifying images affects each component of the discrepancy (self-perceptions, perceptions of the romantic partner's ideal, or both). Interestingly, we found that men's self-perceptions were affected whereas women's perceptions of their partner were affected. Exposure to thin sexualized images contributed to women's perceptions that their potential partner wanted someone who is smaller in body size. Thus, when thinking about the discrepancy as a whole, we found that women are thinking about their current body size through the lens of a smaller desired body size from a romantic partner, which results in larger perceived discrepancies that are linked to their body consciousness. We also found evidence that exposure to muscular sexualized images in a potential romantic partner's apartment did not affect men's perceptions of a romantic partner's desired body size but did influence their self-perceptions, which was linked to their body consciousness.

The findings with the men in our study highlight potential complexities of body image concerns in this group. Although we found that the difference between men in the experimental group and control group was not significant when examining difference scores between self-perceptions and partner ideals, the slope was negative, which suggests that men in the experimental group did see themselves as smaller in body size than men in the control group. This negative relationship was also apparent when examining the effect of exposure to muscular ideals self-perceptions, such that men who were exposed to muscular sexually objectifying images saw their current body size as smaller than men in the control condition. However, when examining the negative trend in discrepancy scores, the means for men in both of these groups were positive, which suggest that both groups perceive themselves to be slightly larger than the ideal. In addition, whereas the effect of condition on self-perceptions was negative, the relationship between self-perceptions and body consciousness was positive. This suggests that while our manipulation may have made some men concerned about appearing smaller (i.e., in body mass), on average, men saw themselves as larger in body size, and these perceptions were related to men's body consciousness. There may be two explanations for these results in the current study. Research suggests that men experience pressure to have a lean, more muscular build (Frith & Gleeson, 2004; Baghurst, Hollander, Nardella, & Haff, 2006). Thus, it is possible that when men see muscular sexualized images they are confronted with conforming to ideals of muscularity and thinness. In addition to confronting these multiple ideals, it is also possible that the figure rating measure used in the current study is not sensitive enough to pick up on this complexity. Muscular silhouette measures have been used to assess U.S. men's muscularity ideals and body dissatisfaction such as the Muscle Silhouette Measure and the use of this

type of measure in future studies may yield different results for men (Frederick, Buchanan, Sadehgi-Azar et al., 2007). Although muscular silhouette measures exist, an interesting empirical question is whether priming muscular sexually objectifying images changes how men think of figures on silhouette measures that focus on weight. In other words, it is possible that some men may have thought about the figures with regard to weight, others may have thought about the figure with regard to muscularity, and some may have thought of a combination of both. Research is needed to expand on the complexity of these ideals for men. In addition, future research should tap into more nuanced body ideals in women that were not addressed with our overall measure of body size, such as a combination of a narrow waist and larger breasts (Harrison, 2003; Overstreet et al., 2010).

Our study was conducted with a sample of heterosexual undergraduate students in the U.S., which limits the generalizability of our findings in several ways. First, a majority of the sample identified as heterosexual and we excluded participants who identified as lesbian or gay. Research on consequences of objectification as a result of exposure to muscularity ideals in gay men and heterosexual men has found evidence that exposure to these ideals was associated with social physique anxiety in gay men but not related to physique anxiety in heterosexual men (Duggan & McCreary, 2004) and less work has empirically examined the consequences of exposure to objectifying media among lesbians. However, there is evidence that lesbian women experience similar levels of other objectifying experiences such as sexualized gaze and harassment when compared to heterosexual women and that these experiences are significantly related to their own self-objectification (Hill & Fischer, 2008). Furthermore, there is evidence in a sample of British lesbian and bisexual women that women's feelings about their bodies can be shaped in both positive and negative ways by their romantic partners (Huxley, Clarke, & Halliwell, 2011). Taken together, these findings suggest that lesbian, gay, and bisexual men and women may be susceptible to societal ideals of muscularity and thinness and that romantic partners may play an important role in shaping feelings about body image. However, whether objectification experiences similarly affect body image concerns in sexual minorities is mixed (Michaels, Parent & Moradi, 2013).

Further, research is also needed to understand how sexual scripts shape romantic interactions. For instance, Kim and colleagues (2007) found that the “heterosexual script” in primetime television programs often ties men's pursuit of sex to their masculinity, portrays men as the pursuers of sex and women as the gatekeepers of sexual limits, focuses on men's preoccupation with women's bodies and women's preoccupation with their own bodies, and emphasizes that women's value is connected to their appearance rather than other attributes such as their intelligence or personality. Further, there was evidence with regard to relationship commitments that the heterosexual script supports the gender norms highlighted by Mahalik and colleagues (2005)—women are portrayed as needing to be in a committed relationship whereas men are portrayed as needing to be independent and not tied down to a romantic partner. The current study only scratches the surface of understanding how this heterosexual script may play out with regard to men and women's body perceptions. We found evidence that sexually objectifying environments encourage women to see a thinner body size as ideal to a romantic partner and that being discrepant from this smaller body ideal resulted in greater body consciousness. We also found a trend that suggests that men's

self-perceptions were affected rather than their perceptions of what a potential romantic partner considers to be ideal. These findings align with the concept of a heterosexual script. It would be interesting for future studies to examine whether being in a sexually objectifying romantic context for men heightens other aspects of the heterosexual script such as increased objectification of a potential romantic partner and a desire to seek out sexual fulfillment rather than commitment.

Second, our study also focused on undergraduates in the United States. Idealized images of thinness and muscularity are replete in the United States and many Western nations. For example, a recent meta-analysis on studies conducted in the U.S., Canada, Great Britain, and Australia found that exposure to these ideals in the media have a significant effect on body image concerns in women (Grabe et al. 2008). Furthermore, there is evidence that these ideals negatively affect men (Barlett et al., 2008). Although studies have found evidence of the negative consequences of exposure to media ideals on body image concerns in men and women, it is important to remember a key component of objectification theory that is rarely tested explicitly—women are socialized to value their appearance *and* worry about how their bodies are viewed by others. Our study provides evidence of this key aspect of objectification by showing a critical gender difference in men and women's responses to sexually objectifying media; whereas exposure to sexually objectifying media affected how men saw themselves, exposure to sexually objectifying media affected women's perceptions of their romantic partner's ideal such that they believed that their romantic partner wanted someone who is smaller in body size. In addition, the discrepancy between women's current appearance and the body ideal perceived to be ideal by a romantic partner is a key mediator that links their objectification experiences to body consciousness during intimate encounters with a romantic partner. Future research is needed to understand whether these findings generalize to cultures that also perpetuate ideals of muscularity and thinness.

Finally, our study focused on romantic contexts in virtual contexts and did not define the type of romantic relationships that participants should anticipate, such as a casual relationship or a committed relationship. The limitations of the current study provide several future avenues for research. For instance, we found that objectification experiences differentially predicted body image concerns in men and women in virtual reality; however, it is possible that the effects found in this study may be exacerbated in real world contexts where objectification experiences are varied in people's dating life. The current study focused on objectifying media in the presence of a romantic partner's living environment but there may be a number of ways that people understand the body ideals that are considered desirable by a romantic partner, including direct commentary from a romantic partner. Previous research shows that this commentary may influence positive and negative valuation of the body (Meltzer & McNulty, 2013; Huxley et al. 2011). Although we did not clarify the type of potential romantic partner that participants should expect, it is possible that emphasizing casual relationships may reduce the amount of investment that people have in a romantic partner's opinion whereas a committed relationship would increase how much a person would value a romantic partner's appearance. Future research is needed to understand how objectifying experiences play out in different types of relationships.

In conclusion, this research extends our knowledge of the consequences of objectification in romantic contexts by using novel virtual reality methods. Our work provides support for gender differences in how sexual objectification experiences impact men and women: whereas women's exposure to sexual objectification images affects their perceptions of a romantic partner's ideals to align closer to thinness, men's exposure to sexual objectification images affects their self-perceptions. The current work highlights asymmetries in the experience of objectification in men and women and has theoretical and practical implications for pathways through which objectification experiences influence feelings of body consciousness in romantic contexts.

## Acknowledgments

The research described here was supported, in part, by grants from Christine N. Witzel and the National Institute of Mental Health awarded to Kerry Marsh (R01MH78738) and training grants supporting Nicole Overstreet (T32MH074387; T32MH020031). The authors would also like to thank the Advanced Interactive Technology Center (AITC) at the University of Connecticut for producing the virtual scenes, avatars, and environments, and Victoria Hawley and Nicole Pelegrino for data collection.

## References

- Baghurst T, Hollander DB, Nardella B, Haff GG. Change in sociocultural ideal male physique: An examination of past and present action figures. *Body Image*. 2006; 3:87–91. doi:10.1016/j.bodyim.2005.11.001. [PubMed: 18089212]
- Barlett CP, Vowels CL, Saucier DA. Meta-analyses of the effects of media images on men's body-image concerns. *Journal of Social and Clinical Psychology*. 2008; 27:279–310. doi: 10.1521/jscp.2008.27.3.279.
- Bessenoff GR, Snow D. Absorbing society's influence: Body image self-discrepancy and internalized shame. *Sex Roles*. 2006; 54:727–731. doi: 10.1007/s11199-006-9038-7.
- Buote VM, Wilson AE, Strahan EJ, Gazzola SB, Papps F. Setting the bar: Divergent sociocultural norms for women's and men's ideal appearance in real-world contexts. *Body Image*. 2011; 8:322–334. doi:10.1016/j.bodyim.2011.06.002. [PubMed: 21775228]
- Calogero, RM.; Tantleff-Dunn, S.; Thompson, JK. Objectification theory: An introduction.. In: Calogero, RM.; Tantleff-Dunn, S.; Thompson, JK., editors. *Self-objectification in women: Causes, consequences, and counteractions*. American Psychological Association; Washington, DC US: 2011. p. 3-21. doi: 10.1037/12304-001
- Duggan SJ, McCreary D.R. Body image, eating disorders, and the drive for muscularity in gay and heterosexual men: The influence of media images. *Journal of Homosexuality*. 2004; 47:45–58. doi: 10.1300/J082v47n03\_03. [PubMed: 15451703]
- Ferrer-García M, Gutiérrez-Maldonado J. The use of virtual reality in the study, assessment, and treatment of body image in eating disorders and nonclinical samples: A review of the literature. *Body Image*. 2012; 9:1–11. doi: 10.1016/j.bodyim.2011.10.001. [PubMed: 22119329]
- Fredrickson BL, Roberts TA. Objectification theory: Toward understanding women's lived experiences and mental health risks. *Psychology of Women Quarterly*. 1997; 21:173–206. doi: 10.1111/j.1471-6402.1997.tb00108.x.
- Fredrickson BL, Roberts T, Noll SM, Quinn DM, Twenge JM. That swimsuit becomes you: Sex differences in self-objectification, restrained eating, and math performance. *Journal of Personality and Social Psychology*. 1998; 75:269–284. doi: 10.1037/0022-3514.75.1.269. [PubMed: 9686464]
- Frederick DA, Buchanan GM, Sadehgi-Azar L, Peplau LA, Haselton MG, Berezovskaya A, Lipinski RE. Desiring the muscular ideal: Men's body satisfaction in the United States, Ukraine, and Ghana. *Psychology of Men & Masculinity*. 2007; 8:103–117. doi:10.1037/1524-9220.8.2.103.
- Frith H, Gleeson K. Clothing and embodiment: Men managing body image and appearance. *Psychology of Men & Masculinity*. 2004; 5:40. doi:10.1037/1524-9220.5.1.40.

- Gervais SJ, Vescio TK, Allen J. When what you see is what you get: The consequences of the objectifying gaze for women and men. *Psychology of Women Quarterly*. 2011; 35:5–17. doi: 10.1177/0361684310386121.
- Gosling SD, Ko SJ, Mannarelli T, Morris ME. A room with a cue: Personality judgments based on offices and bedrooms. *Journal of Personality and Social Psychology*. 2002; 82:379–398. doi: 10.1037/0022-3514.82.3.379. [PubMed: 11902623]
- Grabe S, Ward LM, Hyde JS. The role of the media in body image concerns among women: A meta-analysis of experimental and correlational studies. *Psychological Bulletin*. 2008; 134:460–476. doi: 10.1037/0033-2909.134.3.460. [PubMed: 18444705]
- Harrison K. Television viewers' ideal body proportions: The case of the curvaceously thin female. *Sex Roles*. 2003; 48:255–264. doi:10.1023/A:1022825421647.
- Hayes, AF. *Introduction to Mediation, Moderation, and Conditional Process Analysis*. Guilford Press; New York: 2013.
- Higgins ET. Self-discrepancy: A theory relating self and affect. *Psychological Review*. 1987; 94:319–340. doi: 10.1037/0033-295X.94.3.319. [PubMed: 3615707]
- Hill MS, Fischer AR. Examining objectification theory: Lesbian and heterosexual women's experiences with sexual-and self-objectification. *The Counseling Psychologist*. 2008; 36:745–776.
- Huxley CJ, Clarke V, Halliwell E. “It's a comparison thing, isn't it?” Lesbian and bisexual women's accounts of how partner relationships shape their feelings about their body and appearance. *Psychology of Women Quarterly*. 2011; 35:415–427. doi:10.1177/0361684311410209.
- Kim JL, Sorsoli CL, Collins K, Zylbergold BA, Schooler D, Tolman D. From sex to sexuality: Exposing the heterosexual script on primetime network television. *Journal of Sex Research*. 2007; 44:145–157. doi:10.1080/00224490701263660. [PubMed: 17599272]
- Mahalik JR, Morray EB, Coonerty-Femiano A, Ludlow LH, Slattery SM, Smiler A. Development of the conformity to feminine norms inventory. *Sex Roles*. 2005; 52:417–435. doi:10.1007/s11199-005-3709-7.
- McKinley NM. Gender differences in undergraduates' body esteem: The mediating effect of objectified body consciousness and actual/ideal weight discrepancy. *Sex Roles*. 1998; 39:113–123. doi: 10.1023/A:1018834001203.
- McKinley NM, Hyde JS. The objectified body consciousness scale development and validation. *Psychology of Women Quarterly*. 1996; 20:181–215. doi:10.1111/j.1471-6402.1996.tb00467.x.
- Meltzer AL, McNulty JK. “Tell me I'm sexy... and otherwise valuable”: Body valuation and relationship satisfaction. *Personal Relationships*. 2013; 21:68–87. doi: 10.1111/per.12018. [PubMed: 24683309]
- Michaels MS, Parent MC, Moradi B. Does exposure to muscularity-idealizing images have self-objectification consequences for heterosexual and sexual minority men?. *Psychology of Men & Masculinity*. 2013; 14:175. doi:10.1037/a0027259.
- Moradi B, Huang Y. Objectification theory and psychology of women: A decade of advances and future directions. *Psychology of Women Quarterly*. 2008; 32:377–398. doi: 10.1111/j.1471-6402.2008.00452.x.
- Morry MM, Staska SL. Magazine exposure: Internalization, self-objectification, eating attitudes, and body satisfaction in male and female university students. *Canadian Journal of Behavioural Science/Revue Canadienne Des Sciences Du Comportement*. 2001; 33:269–279. doi: 10.1037/h0087148.
- Oehlof MEW, Musher-Eizenman D, Neufeld JM, Hauser JC. Self-objectification and ideal body shape for men and women. *Body Image*. 2009; 6:308–310. doi: 10.1016/j.bodyim.2009.05.002. [PubMed: 19570734]
- Overstreet NM, Quinn DM, Agocha VB. Beyond thinness: The influence of a curvaceous body ideal on body dissatisfaction in black and white women. *Sex Roles*. 2010; 63:91–103. doi: 10.1007/s11199-010-9792-4.
- Park LE, Calogero RM, Harwin MJ, DiRaddo AM. Predicting interest in cosmetic surgery: Interactive effects of appearance-based rejection sensitivity and negative appearance comments. *Body Image*. 2009; 6:186–193. doi: 10.1016/j.bodyim.2009.02.003. [PubMed: 19409866]

- Quinn, DM.; Chaudoir, SR.; Kallen, RW. Performance and flow: A review and integration of self-objectification research.. In: Calogero, RM.; Tantleff-Dunn, S.; Thompson, JK., editors. *Self-objectification in women: Causes, consequences, and counteractions*. American Psychological Association; Washington, D.C.: 2011. p. 119-138.
- Saguy T, Quinn DM, Dovidio JF, Pratto F. Interacting like a body: Objectification can lead women to narrow their presence in social interactions. *Psychological Science*. 2010; 21:178–182. doi: 10.1177/0956797609357751. [PubMed: 20424041]
- Sanchez DT, Broccoli TL. The romance of self-objectification: Does priming romantic relationships induce states of self-objectification among women? *Sex Roles*. 2008; 59:545–554. doi: 10.1007/s11199-008-9451-1.
- Sanchez DT, Kiefer AK. Body concerns in and out of the bedroom: Implications for sexual pleasure and problems. *Archives of Sexual Behavior*. 2007; 36:808–820. doi:10.1007/s10508-007-9205-0. [PubMed: 17657464]
- Szymanski ML, Cash TF. Body-image disturbances and self-discrepancy theory: Expansion of the Body-Image Ideals Questionnaire. *Journal of Social and Clinical Psychology*. 1995; 14:134–146. doi: 10.1521/jscp.1995.14.2.134.
- Thompson MA, Gray JJ. Development and validation of a new body-image assessment scale. *Journal of Personality Assessment*. 1995; 64:258–269. doi:10.1207/s15327752jpa6402\_6. [PubMed: 7722852]
- Weinberg MS, Williams CJ. Bare bodies: Nudity, gender, and the looking glass body. *Sociological Forum*. 2010; 25:47–67. doi: 10.1111/j.1573-7861.2009.01156.x.
- Wiederman MW. Women's body image self-consciousness during physical intimacy with a partner. *Journal of Sex Research*. 2000; 37:60–68. doi: 10.1080/00224490009552021.
- Wohn DY, Wash R. A virtual “room” with a cue: Detecting personality through spatial customization in a city simulation game. *Computers in Human Behavior*. 2013; 29:155–159.
- Zurbriggen EL, Ramsey LR, Jaworski BK. Self-and partner-objectification in romantic relationships: Associations with media consumption and relationship satisfaction. *Sex Roles*. 2011; 64:449–462. doi: 10.1007/s11199-011-9933-4. [PubMed: 21475650]



Female Experimental Condition



Female Control Condition



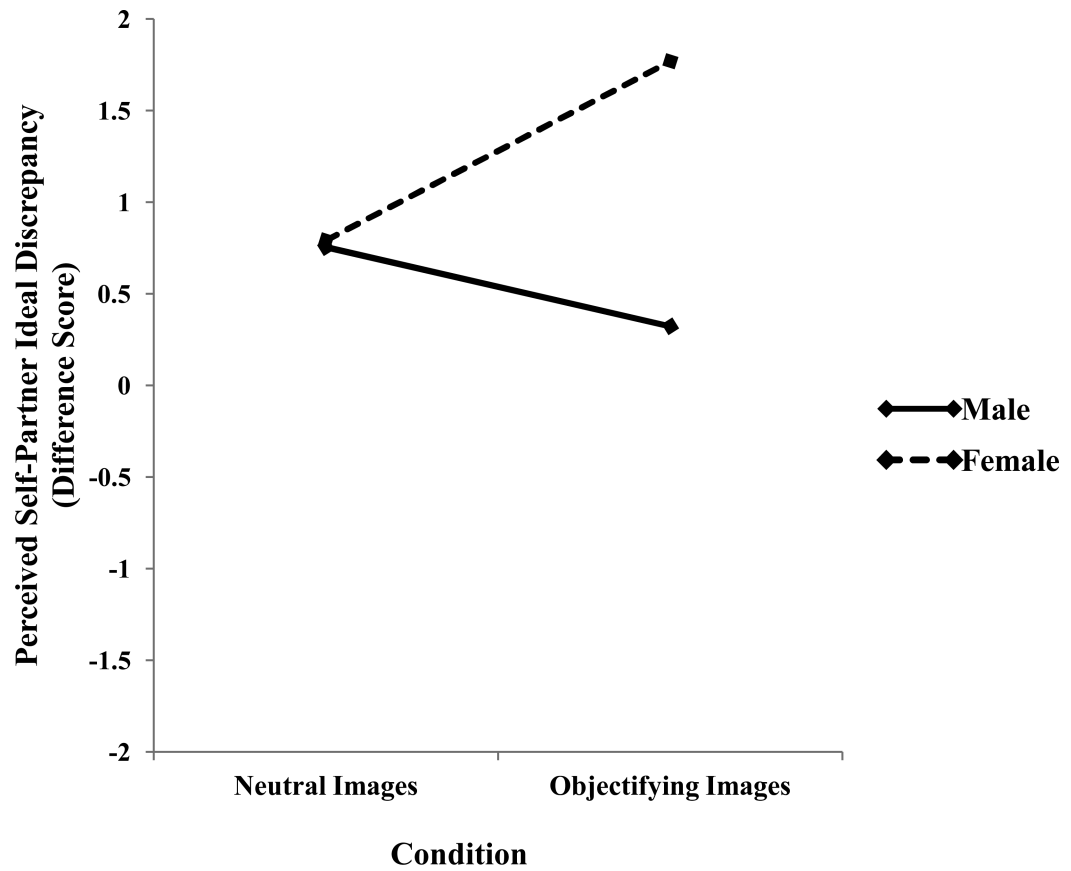
Male Experimental Condition



Male Control Condition

**Figure 1.**  
Example images throughout the apartment by condition.

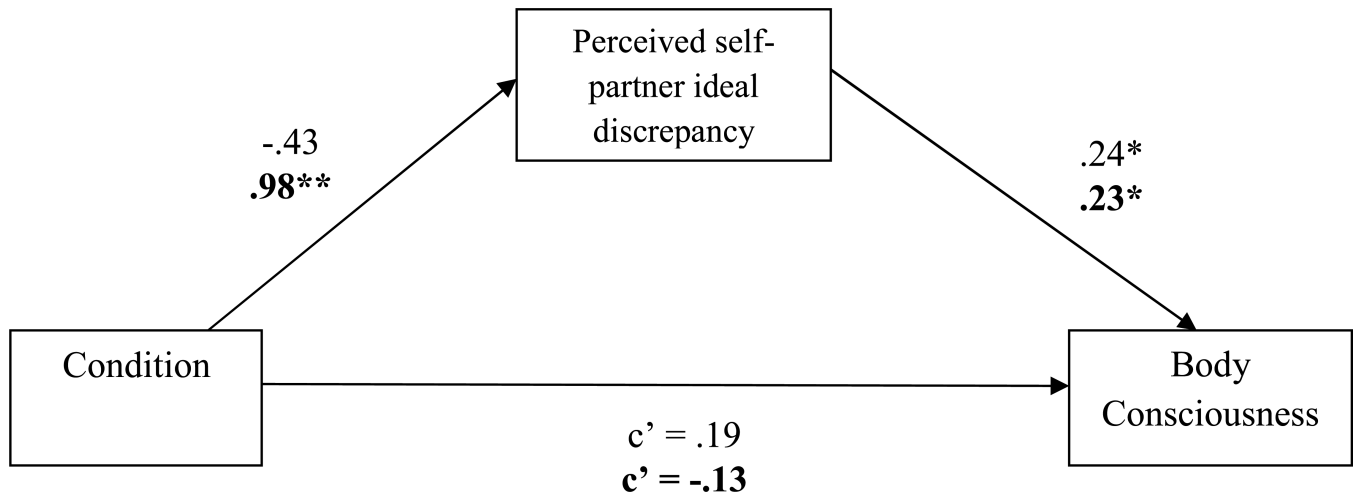




**Figure 2.**

Perceived self-partner ideal discrepancy as a function of participant gender and condition

*Note.* A score of zero indicates that participants did not perceive themselves to be discrepant from Scott's/Sarah's preferred body size. A positive score indicates that participants thought of themselves as larger than Scott's/Sarah's preferred body size and a negative score indicates that participants thought of themselves as smaller than Scott's/Sarah's preferred body size. The possible range of scores was 8 to  $-8$ .



**Figure 3.**

Effect of exposure to media images on body consciousness through perceived self-partner ideal discrepancy for women and men

*Note.* Unstandardized estimates for **women** are in **bold**, for men in regular type face.

Condition coded 0: control (neutral images), 1: experimental (sexualized images).  $c'$  = direct effect.  $*p < .05$ ,  $**p < .01$

Table 1

## Demographic characteristics of sample

	Women Neutral Images ( <i>n</i> =29)	Women Objectifying Images ( <i>n</i> =28)	Men Neutral Images ( <i>n</i> =28)	Men Objectifying Images ( <i>n</i> =29)	F
Demographics	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	Mean ( <i>SD</i> )	
Age	19.10 <sub>a</sub> (1.15)	18.86 <sub>a</sub> (1.24)	19.61 <sub>a</sub> (2.06)	19.50 <sub>a</sub> (1.09)	.06
	Range:	Range:	Range:	Range:	
	18-22	18-23	18-29	17-23	
BMI	22.40 <sub>a</sub> (2.95)	24.22 <sub>ab</sub> (4.27)	26.73 <sub>b</sub> (5.34)	24.45 <sub>ab</sub> (3.75)	6.85 <sup>*</sup>
	Range:	Range:	Range:	Range:	
	17.23-31.88	19.48-37.12	19.51-44.63	19.66-4.30	
Year in school					
Freshman	41% (12)	57% (16)	29 % (8)	18 % (8)	
Sophomore	41% (12)	25% (7)	43% (12)	41% (12)	$\chi^2$ (9) = 8.19
Junior	14% (4)	11% (3)	21% (6)	24% (7)	
Senior	3% (1)	7% (2)	7% (2)	7% (2)	
Ethnicity					
White	52% (14)	61% (17)	71% (20)	83% (24)	
Asian	22% (6)	14% (4)	11% (3)	10% (3)	$\chi^2$ (9) = 12.31
Latino	7% (2)	14% (4)	14% (3)	7% (2)	
Black	19% (5)	11% (3)	4% (1)	0% (0)	
Relationship status					
Not dating anyone	48% (14)	61% (17)	61% (17)	62% (18)	
Dating casually	7% (2)	21% (6)	14% (4)	0% (0)	$\chi^2$ (9) = 16.28 <sup>+</sup>
Dating one person	38% (11)	18% (5)	25% (7)	38% (11)	
Living with partner	7% (2)	0% (0)	0% (0)	0% (0)	

*Note.* Means sharing the same subscript are not significantly different from each other (Tukey's HSD,  $p < .05$ ). Age and BMI data were missing for one man in the experimental condition. Ethnicity data were missing for two women in the control condition.

\*\* $p < .01$ .

<sup>+</sup>  $p < .10$

\*  $p < .05$

**Table 2**

Scale means for key study variables by gender and condition

Measure	Scale Range	Women Neutral Images	Women Objectifying Images	Men Neutral Images	Men Objectifying Images	$\eta^2$
		Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	
Self-Perception	1 to 9	4.52 <sub>c</sub> (1.18)	5.07 <sub>b,c</sub> (1.74)	6.18 <sub>a</sub> (1.06)	5.48 <sub>a,b</sub> (1.09)	.19
Partner Ideal	1 to 9	3.86 (.92)	3.36 (.91)	5.50 <sub>a</sub> (.69)	5.28 <sub>a</sub> (.59)	.58
Self-Partner Ideal Discrepancy	8 to -8	.66 <sub>b,d</sub> <sup>+</sup> (1.26)	1.71 <sup>+</sup> (1.56)	.68 <sub>a,d</sub> (.94)	.21 <sub>a,b</sub> (1.35)	.16
Body Consciousness	1 to 6	2.64 <sub>b</sub> (.99)	2.90 <sub>b</sub> (1.07)	2.02 <sub>a</sub> (.97)	2.04 <sub>a</sub> (.90)	.13

*Note.* Means sharing the same subscript are not significantly different from each other (Tukey's HSD,  $p < .05$ ; means with + superscript are significantly different at  $p < .10$ ). Higher numbers mean larger body size perception of self or partner ideals and greater body consciousness. Positive self-partner ideal scores indicate that participants see their current body size as larger than partner's ideal.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript