

The Association Between Body Esteem and Sexual Desire Among College Women

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Abstract Relationships between body image variables and sexuality have been found among several groups of women. However, research has largely focused on generalized experiences of sexuality. With the exception of two studies which focused on specific medical populations, to our knowledge there has been no investigation of the relationship between body image and acute measures of sexual response. In the current study, we investigated the relationships between body esteem, sexual response to erotica in a laboratory-setting, and self-reported sexual functioning in a non-clinical sample of 85 college women. Women participated in one study session, during which mental sexual arousal, perceptions of physical arousal, and sexual desire were assessed. Results showed that higher body esteem was significantly positively related to sexual desire in response to erotica in the laboratory setting. Similarly, higher body esteem was positively related to self-reported measures of sexual desire, as assessed by a validated measure of sexual function. The sexual attractiveness and weight concern subscales of the Body Esteem Scale, which relate to body characteristics that are most likely to be under public scrutiny, were particularly linked to sexual desire. This is the first study to show that body esteem is related to sexual responses to a standardized erotic stimulus in a laboratory setting.

Keywords Sexual function · Sexual desire · Body esteem · Body image · Erotica

Introduction

Research on body image suggests a connection between the way a woman views her body and her sexuality. Among samples of college women, several body image variables, including body satisfaction, self-consciousness about one's body, and objective ratings of body and facial attractiveness, have been related to sexual experience, sexual esteem (e.g., Faith & Schare, 1993; Wiederman, 2000; Wiederman & Hurst, 1998; Young, 1980), sexual assertiveness, sexual anxiety, sexual avoidance (e.g., Weaver & Byers, 2006; Wiederman, 2000), perceived sexual desirability (Holmes, Chamberlin, & Young, 1994), and satisfaction with sex and dating (e.g., Hoyt & Kogan, 2001). Body image and sexuality have also been related among groups of women in middle to late adulthood, with body image being related to sexual optimism (Davison & McCabe, 2005), activity (Koch, Mansfield, Thurau, & Carey, 2005), desire (e.g., Anderson & LeGrand, 1991; Koch et al., 2005; Schiavi, Karstaedt, Schreiner-Engel, & Mandeli, 1992), orgasm, arousal (e.g., Anderson & LeGrand, 1991; Seal & Meston, 2007), and satisfaction (e.g., Fooker, 1994). Relationships between body image variables and sexuality have been shown to exist above and beyond effects of actual body size (e.g., Weaver & Byers, 2006; Wiederman & Hurst, 1997), suggesting that a woman's perceptions and cognitions about her body size, rather than her actual body size, have a unique influence on her experiences of sexuality.

Barlow's (1986) model of sexual dysfunction provides a useful way to conceptualize the potential effects of body image disturbance on sexual function. This model implicates cognitive interference in the cause and maintenance of sexual difficulties and suggests that inspecting, monitoring, and evaluating oneself during sexual activity interrupts sexual performance, with cognitions directed towards one's own

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sexual performance rather than on sensory aspects of the sexual experience. Although Barlow's original model focused on the effects of "performance anxiety" in men (i.e., concerns about erectile function), it has been suggested that physical appearance concerns may have an analogous negative influence on sexual function in women (e.g., Wiederman, 2001). This has been supported by research showing that women report higher levels of appearance-based distraction during sexual activity than men and that appearance-based distraction is predicted by negative body image (Meana & Nunnick, 2006). Previous research also suggests that cognitive distraction can impair women's sexual responses, whether the nature of the distraction is sexual (e.g., Dove & Wiederman, 2000) or not (e.g., Elliott & O'Donohue, 1997; Przybyla & Byrne, 1984). If indeed body image dissatisfaction represents a sexual performance concern for women, it is reasonable to expect women with poorer body image to have difficulty attaining and maintaining sexual response. Two studies suggest that focusing on one's appearance may negatively affect physiological (Meston, 2006) and subjective (Wiederman, 2000) measures of sexual functioning in women. However, it remains unclear to what extent body image, specifically, affects women's overall sexual response.

To our knowledge, only two studies have directly examined the link between body image variables and women's subjective sexual responses to erotic stimuli in a laboratory setting. Both studies focused on specific medical populations. In one study, 13 women who had breast reconstruction following mastectomy rated themselves as more sexually attractive, more satisfied with their current sexual response, and more highly aroused by various sexual stimuli compared to women who did not have breast reconstruction following mastectomy, who reported feeling more sexually turned off by the stimuli (Gerard, 1982). In another study, which consisted of a questionnaire session and an optional assessment of sexual arousal to erotica, four groups of women who had undergone either hysterectomy and/or hysterectomy and oophorectomy with various hormonal treatments were compared to a control group on measures of body image and sexual response. No group differences were found in arousal response to erotica, despite differences in findings regarding women's experiences of body image (Bellerose & Binik, 1993). However, the results may have been influenced by the fact that 46% of the overall sample who took part in the questionnaire portion of the study specifically chose *not* to participate in the assessment of sexual arousal to erotica. As suggested by Bellerose and Binik, results may have been influenced by differences among women who chose to participate in the erotic arousal session versus those who did not.

In the present study, we examined the relationships among body image, self-reported sexual desire and arousal responses to erotica, and self-reported generalized experiences of sexual function in a non-clinical sample of college women.

We predicted that higher body esteem would be related to higher levels of laboratory-induced mental sexual arousal, perceptions of physical arousal, and sexual desire. Likewise, we predicted that higher body esteem would be related to higher scores on the Arousal, Lubrication, and Desire subscales of the Female Sexual Function Index, a validated measure of sexual function.

Method

Participants

Participants were 85 women enrolled in Introductory Psychology courses at a large southwestern U.S. university. All were part of a psychology participant pool as a course requirement and signed up for participation online over two semesters. They received partial course credit for their participation. All participants were sexually active, defined as having engaged in sexual intercourse or other sexual activity with a partner in the past 4 weeks.

Procedure

Those who chose to participate took part in one session for a total of 1 h in a laboratory setting. Prior to beginning any study procedure, each participant provided informed consent to a female research assistant, and was given a chance to ask any questions. They were then left in privacy in a participant room and the research assistant was available in an adjacent laboratory office. Participants completed the Female Sexual Function Index (Rosen et al., 2000), the Body Esteem Scale (Franzoi & Shields, 1984), and a baseline sexual arousal rating scale (see Measures, below). They were then asked to read an erotic story.¹ The story was developed in our laboratory, written specifically for female readers, and described a man and a woman engaging in consensual foreplay and intercourse. Pilot data indicated that other young women had perceived the erotic story as sexually arousing. Immediately after reading the erotic story, participants completed a second subjective sexual arousal rating scale identical to the baseline scale. All procedures were approved by the university's institutional review board.

Measures

Subjective Sexual Arousal Scale

To assess mental sexual arousal, perceptions of physical sexual arousal, and sexual desire responses to the erotic story,

¹ Available from the corresponding author upon request.

we used a self-report rating scale adapted from Heiman and Rowland (1983). Items assessed mental sexual arousal (4 items, e.g., *sexually turned on*), physical sexual arousal (5 items, e.g., *genital tenseness or tightness*), and sexual desire (3 items, e.g., *a desire to be close to someone*). Immediately prior to and immediately following exposure to the erotic story, participants rated each item on a 7-point scale from “not at all” to “intensely” to describe the intensity of their feelings at the present moment. The 12-item scale had good internal consistency (Cronbach’s alpha = .77, calculated using this sample).

Female Sexual Function Index (FSFI; Rosen et al., 2000)

The FSFI is a 19-item self-report measure of female sexual function. Items refer to sexual function over the previous 4 weeks in six domains, which can be aggregated to give a total score. The domains have been confirmed using factor analyses and include: desire (2 items), arousal (4 items), lubrication (4 items), orgasm (3 items), satisfaction (3 items), and pain (3 items). The FSFI reliably discriminated between women with Sexual Arousal Disorder and women with no sexual dysfunctions on each of the six domain scores as well as the Full Scale score. In a later study, the FSFI also reliably discriminated between non-sexually dysfunctional women and women with Orgasmic Disorder and/or Hypoactive Sexual Desire Disorder (Meston, 2003). For the purposes of the current study, we included the domains of arousal, lubrication, and desire. Mean FSFI subscale scores for women in the current sample were within one SD of the mean scores previously reported for women without sexual dysfunction (Wiegel, Meston, & Rosen, 2005; see Table 1).

Body Esteem Scale (BES; Franzoi & Shields, 1984)

The BES is a 35-item self-report measure of body esteem. Participants were asked to rate how they feel about a variety of parts and functions of their bodies using a scale of 1–5, where 1 is “*I have strong negative feelings*” and 5 is “*I have strong positive feelings*.” A principal component analysis indicated a 3-component structure for BES items: sexual attractiveness, weight concern, and physical condition. The sexual attractiveness subscale includes items or functions of the body that are associated with physical attractiveness and that cannot be changed through exercise (e.g., body scent, sex organs, face). The weight concern subscale refers to body parts that can be altered through exercise (e.g., appearance of stomach, thighs, weight) and has been shown to reliably discriminate between anorexic and non-anorexic females. The physical condition subscale includes qualities that are

Table 1 Participant characteristics

	<i>M (SD)</i>
Age (in years)	18.9 (0.9)
Female Sexual Function Index subscales ^a	
Desire ^b	4.0 (1.0)
Arousal ^c	5.1 (0.7)
Lubrication ^c	5.2 (0.8)
Body Esteem Scale	
Sexual Attractiveness Subscale ^d	47.2 (5.9)
Weight Concern Subscale ^e	33.2 (7.0)
Physical Condition Subscale ^f	30.1 (5.4)
Total score (sum of subscales)	110.5 (14.4)
	<i>N (%)</i>
Ethnicity	
American Indian/Alaska Native	1 (1.2)
Asian	9 (10.6)
Black/African American	10 (11.8)
Hispanic/Latina	18 (21.2)
Native Hawaiian/Pacific Islander	1 (1.2)
White non-Hispanic	46 (54.1)
Body mass index category	
Underweight (BMI < 18.5)	7 (8.2)
Normal weight (BMI 18.5–24.9)	57 (67.1)
Overweight (BMI 25–29.9)	12 (14.1)
Obese (BMI ≥ 30)	7 (8.2)
Currently in a steady relationship?	
Yes	50 (59.5)

^a Domain scores; items summed and multiplied by domain factor for each subscale

^b Range from 1.2 to 6, with higher absolute scores indicating higher levels of sexual function

^c Range from 0 to 6, with higher absolute scores indicating higher levels of sexual function

^d Range from 13 to 65, with higher absolute scores indicating more esteem

^e Range from 10 to 50, with higher absolute scores indicating more esteem

^f Range from 8 to 40, with higher absolute scores indicating more esteem

generally not under public scrutiny for women (e.g., physical stamina, energy level, physical coordination). For the purpose of this study, we were interested in generating an overall body esteem score and therefore calculated a BES total score by taking the mean of items in all three subscales (e.g., Goldenberg, McCoy, Pyszczynski, Greenberg, & Solomon, 2000). Mean BES scores for women in the current study fell within one SD of the mean for non-anorexic college females (Franzoi & Shields, 1984; see Table 1).

Results

Participant Characteristics

Table 1 provides demographic data for the sample. Consistent with a college-age population, women in the sample ranged from 18 to 22 years of age ($M = 18.9$ years). Approximately 54% of the women identified as White non-Hispanic, 21% as Hispanic/Latina, 12% as Black/African-American, 11% as Asian, 1% as American Indian/Alaska Native, and 1% as Native Hawaiian/Pacific Islander. The majority (59.5%) of the women in the sample reported being currently involved in steady relationships. We computed each participant's body mass index (BMI) using the formula $\text{weight (lb)}/[\text{height (in)}]^2 \times 703$ (U.S. Department of Health and Human Services, Centers for Disease Control and Prevention), using participants' self-reported height and weight. Research has shown that self-reported body weight and height are reliable (e.g., Larsen, Ouwens, Engels, Eisinga, & van Strien, 2008). Two participants gave incomplete responses for their height, and thus BMI was not calculated for these women. Of the remaining 83 participants, approximately 8% were in an underweight range of body mass ($\text{BMI} < 18.5$), 67% were in a normal range ($\text{BMI} = 18.5\text{--}24.9$), 14% were in an overweight range ($\text{BMI} = 25\text{--}29.9$), and 8% were in an obese range ($\text{BMI} \geq 30$).

Relationship Between Body Esteem and Response to Erotica

Four participants gave incomplete responses to pre- and/or post-erotica sexual response items, and these scores were not calculated. Overall, the erotic story manipulation appeared to be successful in inducing feelings of sexual desire and sexual arousal. The mean sexual desire score reported on the subjective sexual arousal scale increased from 7.42 at baseline ($SD = 3.57$) to 12.25 ($SD = 4.41$) following exposure to the erotic story, $t(82) = 11.62$, $p < .001$. The mean mental sexual arousal score also significantly increased from 10.89 at baseline ($SD = 3.29$) to 17.46 ($SD = 4.91$) after reading the erotic story, $t(81) = 11.08$, $p < .001$. Finally, the mean physical sexual arousal score increased from 6.11 ($SD = 2.57$) pre-erotica to 13.72 ($SD = 6.90$) post-erotica, $t(82) = 10.76$, $p < .001$. Of note, we found that items assessing mental sexual arousal post-erotica were strongly correlated with items assessing physical sexual arousal post-erotica, $r = .76$, $p < .001$.

In order to determine the relationship between body esteem and response to the erotic story stimulus, we computed Pearson correlations between the BES total score and the items measuring sexual desire, mental sexual arousal, and physical sexual arousal post-erotica. We found a significant correlation between the BES total score and items assessing

sexual desire post-erotica, $r = .35$ ($p = .001$). However, items assessing mental sexual arousal and physical sexual arousal did not correlate with BES total score ($r = .22$ and $r = .15$, respectively, $ps > .05$).

Relationship between Body Esteem and Sexual Function

To determine whether the relationships we observed between body esteem and sexual response in the laboratory reflect a broader relationship between body esteem and sexual response in typical sexual activities, we computed Pearson correlations to assess the relationships between BES total score and the FSFI domains of Desire, Arousal (reflecting mental sexual arousal), and Lubrication (reflecting physical sexual arousal). Similar to our findings for the post-erotica questionnaire, we found that the BES total score was significantly correlated with the FSFI Desire domain score ($r = .23$, $p = .037$) but not with the FSFI Arousal domain score ($r = .19$, $p = .092$) or the FSFI Lubrication domain score ($r = .15$, $p = .175$).

Exploration of Body Esteem Domains Related to Sexual Desire

In order to further explore the observed relationship between BES total score and our two measures of sexual desire (desire in response to erotica in the laboratory and the FSFI Desire domain), we computed BES subscores according to Franzoi and Shields' (1984) scoring guidelines. We then computed Pearson correlations between the Weight Concern, Physical Condition, and Sexual Attractiveness subscales scores of the BES, respectively, with both the FSFI Desire domain score and the sexual desire composite score from the scale measuring response to the erotic story. We found that the FSFI Desire domain score was correlated with the Weight Concern ($r = .27$, $p = .013$) and Sexual Attractiveness ($r = .25$, $p = .024$) subscales of the BES, but not with the Physical Condition subscale ($r = -.005$). Similarly, the composite score of items assessing sexual desire responses to the erotic story was significantly correlated with BES Weight Concern ($r = .31$, $p = .005$) and Sexual Attractiveness ($r = .33$, $p = .002$) subscales but not with the BES Physical Condition subscale ($r = .18$, $p = .096$).

Because the BES Weight Concern domain was significantly correlated with the FSFI Desire domain and the desire response to erotica, we tested whether BMI might also be correlated with these scores. After excluding two participants with extreme BMI values ($\text{BMIs} > 40$), we found that BMI was not significantly correlated with either the FSFI Desire domain ($r = .11$) or the desire response to erotica ($r = .02$). Thus, the relationship between weight concern and sexual desire did not appear to be explained by participants' actual body mass.

Discussion

This study examined the relationships between body esteem variables, sexual response to erotica, and sexual functioning. We predicted that higher body esteem would be related to higher sexual arousal and desire responses to erotica and higher sexual arousal and desire scores on a self-report measure of sexual functioning. Consistent with hypotheses, body esteem was positively related to sexual desire, including desire to erotica in a laboratory setting and as well as desire in real life sexual situations, outside of the contrived laboratory setting (i.e., FSFI results). These findings were in line with previous research linking sexual desire to perceived physical attractiveness and body esteem among non-clinical (e.g., Koch et al., 2005) and clinical populations of women (e.g., Anderson & LeGrand, 1991; Schiavi et al., 1992), and extend such findings to acute sexual desire response in a laboratory setting. These findings reinforce the importance of considering body image in conceptualizing women's sexuality. Given that low sexual desire is a primary sexual concern reported by women (e.g., Laumann, Paik, & Rosen, 1999), and that a large portion of women undergoing sex therapy for sexual desire difficulties may not experience significant increases in sexual desire following therapy (e.g., Hawton, Catalan, & Fagg, 1991; Hawton, Catalan, Martin, & Fagg, 1986), a more thorough understanding of the psychological factors involved in sexual desire is important (Brotto, 2006).

We found that the relationships between sexual desire and body esteem were specific to the Weight Concern and Sexual Attractiveness subscales of the BES. These subscales reflect responses about body parts that can be physically altered and that may be associated with physical attractiveness (e.g., thighs, appearance of stomach, weight, face; Franzoi & Shields, 1984). On the other hand, we found no significant relationship between sexual response to erotica or sexual functioning scores and the Physical Condition subscale, which addresses qualities that are less likely to be under public scrutiny (e.g., physical stamina, energy level, physical coordination; Franzoi & Shields, 1984). These findings suggest that sexual desire may be influenced to a large extent by perceptions of one's body parts that are easily observed by others as well as by those that can change (e.g., from exercise), such as thighs and stomach. This lends support for previous research linking enhanced sexual function with changes in body shape (e.g., Morgan, Lacey, & Reid, 1999; Werlinger, King, Clark, Pera, & Wincze, 1997) and body image (e.g., Butters & Cash, 1987). Findings were also consistent with research showing that women tend to focus on their appearance during sexual activity (Dove & Wiederman, 2000; Meana & Nunnick, 2006). This supports the notion that spectating, which refers to inspecting, monitoring, and evaluating oneself during sexual activity (Masters & Johnson, 1970), extends from self-monitoring of one's

performance, as originally suggested by Masters and Johnson, to self-monitoring of one's physical appearance. This form of spectating may be particularly influential to the sexual response of women who regard physical attractiveness as being highly important (Ackard, Kearney-Cooke, & Peterson, 2000), although this was not assessed in the current study. As suggested by Dove and Wiederman (2000), some women may be socialized to believe that being physically attractive or providing their partner with an attractive visual stimulation is an important part of performing well as a sexual partner.

The link between body esteem and sexual desire variables appeared independent of actual body size, as BMI was not related to measures of sexual desire. This is consistent with previous research suggesting that perceptions about one's body affect sexual function after controlling for BMI (e.g., Weaver & Byers, 2006). Although greater body mass may increase susceptibility to body image concerns (e.g., Wiederman, 2000), our findings suggest that body image is more important than actual body mass in predicting sexual function.

Our findings lend support for the hypothesis that appearance-based concerns may detract from female sexual response (e.g., Wiederman, 2001) and may have clinical implications. If women are distracted during sexual activity by concerns with the way they look, then techniques aimed at minimizing their distraction, such as systematic desensitization or cognitive restructuring, may be warranted. For example, desensitization to being seen nude or to anxiety about or discomfort with one's body may help women redirect their focus towards stimuli that evoke sexual desire. Cognitive techniques aimed at body image concerns and/or education about body image and one's partner's perceptions might also be used to dispel distorted beliefs and negative concepts of one's body.

Inconsistent with hypotheses, body esteem was unrelated to all sexual arousal variables. This contradicts previous research relating sexual arousal to assessments of one's body (e.g., Anderson & LeGrand, 1991) as well as research showing increased self-reported sexual arousal to erotic stimuli following increased feelings of attractiveness with breast reconstruction surgery (Gerard, 1982). Findings were also inconsistent with previous studies relating experimentally manipulated body awareness to changes in sexual arousal (e.g., Meston, 2006), suggesting that while changes in one's focus towards or away from body variables are related to arousal, general levels of body esteem may not be. These inconsistencies may be related to differences in samples across studies, with previous samples including older sexually dysfunctional women (e.g., Meston, 2006), women reporting more symptoms and perceived difficulties with arousal (Anderson & LeGrand, 1991), and a medical sample of middle-aged women who had recently undergone surgery

following mastectomy (Gerard, 1982). The current study, on the other hand, focused on a young sample of college women who did not specifically report sexual difficulties and who reported average levels of body esteem. Discrepant findings may also be attributed to methodological distinctions, if any, between sexual desire and arousal. According to recently recommended definitions of sexual disorders (Basson et al., 2004), motivation for attempting to have sexual arousal is a primary component of sexual desire, but not necessarily a component of arousal. On the other hand, it is important to note that correlations between body esteem and sexual arousal variables in the current study tended to be close in magnitude to those between body esteem and sexual desire variables (e.g., $r = .23$ between BES and FSFI Desire, $r = .19$ between BES and FSFI Arousal, and $r = .15$ between BES and FSFI Lubrication). This suggests that lack of significance may have been related to sample size.

Our study had several limitations. First, the study was correlational in nature, and although results indicate associations and influences among variables, causation cannot be implied. A prospective design that included a body esteem manipulation, for example, would have allowed us to examine the causal role of body esteem on sexual desire. Second, significant correlations were generally modest in size and accounted for small proportions of the variance in sexual variables. Hence, body esteem is only one of numerous variables that differentiate sexual responses among women. Third, our sample consisted of a convenience sample of college women who were not specifically reporting sexual complaints. Hence, results may not be generalizable to broader populations. Furthermore, our measure of sexual functioning, the FSFI, may be best used with samples of older and more experienced women, given that it was standardized on women over the age of 18 (Rosen et al., 2000). However, FSFI results were consistent with relationships between body esteem and acute sexual response in a laboratory setting, which we would expect to be less influenced by age. An additional limitation to the current study is related to the potential interpretations of the results. Findings from the current study lend support for the suggestion that appearance concerns may influence sexual response in women (e.g., Wiederman, 2001) and, according to Barlow (1986), this may occur through anxiety and cognitive distraction. However, these variables were not assessed in the current study and thus such suggestions are only speculative. Future research should include such variables to better understand the link between body esteem and sexual response to erotica.

To our knowledge, this is the first study to show that body esteem is related to sexual response to a standardized erotic stimulus in a laboratory setting. Results also extend outside of the contrived setting of the laboratory to self reports of real life sexual situations (i.e., FSFI results). The relationship among body esteem and sexual desire in the current sample

of women, who reported average body esteem, leads one to question whether women with low body esteem might be particularly prone to difficulties with sexual response.

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