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An assessment of body appreciation and its relationship to sexual function in women

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ABSTRACT

Objectification theory posits internalization of an observer's gaze may negatively impact women's feelings about their bodies, which may subsequently affect their sexual function. Subjective body image and body size (i.e., body mass index [BMI]) have mixed relationships to women's sexuality, but assessment of positive body image as a sign of resistance to objectification has not been researched. This study explored relations between body appreciation and sexual function in women and assessed whether body size impacted this relationship. Cross-sectional data were collected online from 247 women, ages 18 to 58. Body appreciation scores were modestly negatively correlated with BMI, while BMI was not related to sexual function scores. After controlling for sexual orientation, partner status, and age, body appreciation predicted the arousal, orgasm, and satisfaction aspects of sexual function. Practitioners' encouragement of body appreciation may improve sexual function in a way that encouraging a reduction in body size may not.

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Introduction

Given the importance of bodily feelings in sexual activity, body image has been extensively researched for its relationship to sexual health outcomes in women. Studies of young women have found relationships between negative body image and engagement in behaviors that increase risk of sexually transmitted infections, HIV transmission, or unintended pregnancy: sexual activity with casual partners, not using condoms or contraceptives, or intoxication during sexual activity (Eisenberg, Neumark-Sztainer, & Lust, 2005; Gillen, Lefkowitz, & Shearer, 2006; Neumark-Sztainer, Story, Dixon, & Murray, 1998). Body image has also been explored with regard to the affective, attitudinal, and emotional components of women's sexuality: women who feel more negatively about their bodies present lower levels of sexual desire and arousability (Koch, Mansfield, Thureau, & Carey, 2005; Seal, Bradford, & Meston, 2009), report less frequent sexual initiation or sexual avoidance (Ackard, Kearney-Cooke, & Peterson, 2000; Faith & Schare, 1993; Reissing, Laliberte, & Davis, 2005), and experience decreased plea-

sure, orgasm, and sexual satisfaction (Sanchez & Kiefer, 2007; Shulman & Horne, 2003; Weaver & Byers, 2006; Yamamiya, Cash, & Thompson, 2006).

Both body image and sexuality are phenomena shaped not just by intrapersonal but also by interpersonal and social experiences (Cash, 2002; Gagnon, 1990; Longmore, 1998; Paquette & Raine, 2004; Tantleff-Dunn & Gokee, 2002; Tiggemann & Lynch, 2001). A well-established framework for connecting bodily perceptions and sexual experiences in women is objectification theory (Fredrickson & Roberts, 1997). This theory focuses on the sociocultural contexts women inhabit and their experiences of being sexually objectified within these milieus. Objectification theory posits that because of the consistent and insistent sexualization of women's bodies, girls and women learn early to view their physical selves from the perspective of outside observers, who are evaluating their appearance as an indication of their worth (Fredrickson & Roberts, 1997). The authors argue that this perspective, which treats women primarily as bodies meant for consumption, can lead to habitual body monitoring, a variable that impacts sexual experience and expression. Fredrickson and Roberts hypothesize that internalization of objectification can impact sexual function by encouraging body-based shame and anxiety, decreased attention to the internal body states such as physical pleasure that are integral to positive sexual experiences, and self-conscious body scrutiny. Subsequent research into the specific sexual health outcomes of objectifying environments

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have indeed indicated that objectification is negatively related to women's sexuality. "Cognitive distraction" during sexual activity, where a woman feels unable to concentrate on her sexual experiences because of concerns about her appearance, has been found to predict less arousability, less consistent orgasms, and sexual dissatisfaction (Dove & Wiederman, 2000; Meana & Nunnink, 2006). Increased body shame has also been connected with women's sexual dissatisfaction (Sanchez & Kiefer, 2007; Steer & Tiggemann, 2008).

The relationships between women's negative body image and sexual difficulties or dissatisfaction have often resulted in researchers and practitioners suggesting reducing negative body image to improve sexual health (Pujols, Meston, & Bradford, 2010; Seal et al., 2009; Seal & Meston, 2007). However, in most studies body image has only been measured as a negative construct, i.e., the degree to which one feels poorly about her body, rather than the degree to which one appreciates her body (Avalos, Tylka, & Wood-Barcalow, 2005; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Therefore, the vast majority of extant research into body feelings has focused on women's negative impressions of their bodies and the correlative negative outcomes (Avalos et al., 2005).

There has been a call in the social sciences to change the focus from repairing negative outcomes to building positive qualities as a form of primary prevention (Seligman & Csikszentmihalyi, 2000). Proponents of this movement have argued that researchers need to be reminded that psychology is not just the study of pathology, weakness, and damage, but it is the study of positive personality traits that contribute to and maintain overall psychological health. Studying positive body image could aid researchers in understanding how to prevent body image disturbance, as they would uncover human strengths that act as buffers against this distress (Avalos et al., 2005). One important construct of positive body image is body appreciation.

Body appreciation as a construct encompasses different components beyond satisfaction or dissatisfaction: respect for and protection of one's body, holding favorable opinions of one's body, acceptance of one's body regardless of its shape or size, as well as the explicit rejection of unrealistic body standards (Avalos et al., 2005). Based on the theory of positive psychology, the construct of body appreciation needs to be studied as a factor that may prevent negative health outcomes. Body appreciation may well be related to variables that have not been documented in studies of negative body image. Though researchers have focused on the ways in which negative body image has impacted sexuality, little has been done to determine the characteristics of those women who are body-appreciating, and whether this construct may have equal weight with regards to sexuality outcomes.

The antecedents and outcomes of body appreciation with regards to sexuality are as of yet unknown. A woman who is resisting the discursive constraint of body negativity, who feels instead that she appreciates her body despite its limitations may have a different perception of her bodily appearance to others, a different reaction to a partner's attraction to her, and subsequently, may experience a more integrated and satisfying sexual self, which could impact her sexual function. This notion could be challenged, however, by the internalized social norms that even body-appreciating women may hold. An additional factor that might impact the relationship between body appreciation and sexual function is actual body size.

As body image is evaluative and subjective, it is not always congruent with actual body size, though they are related (Davis, Durnin, Dionne, & Gurevich, 1994; Madrigal et al., 2000). Body size often impacts individuals' experiences both generally (Puhl & Heuer, 2009) and within romantic and sexual relationships (Boyes & Latner, 2009; Carr & Friedman, 2006; Chen & Brown, 2005). Specifically, women's body size can have a direct impact on their

social and sexual experiences through the mechanisms of weight-based stigma, bias, or fat phobia (Swami, Pietschnig, Stieger, Tovee, & Voracek, 2010). Women of larger body sizes experience discrimination in employment (Fikkan & Rothblum, 2005), accessing health care (Amy, Aalborg, Lyons, & Keranen, 2006; Banerjee, Findley, & Sambamoorthi, 2008), and interpersonal interactions, including romantic and sexual relationships (Aruguete, Edman, & Yates, 2009; Bookwala & Boyar, 2008; Halpern, King, Oslak, & Udry, 2005). Given the differential social encounters of women of larger size, it is important to investigate the experiences of those at the higher end of the weight continuum. Though there has not been agreement on the best way to assess body size when conducting large-scale data collection, the most frequently used measure is body mass index (BMI), due to its ease of calculation from participants' self-reported height and weight. There is a good deal of controversy about the validity of BMI as a means of determining health status (Janssen, Katzmarzyk, & Ross, 2004; Romero-Corall et al., 2006; Stefan et al., 2008; Wildman et al., 2008), but BMI can serve as an adequate means of assessing actual body size for large samples in the absence of other measures.

The findings regarding BMI and sexuality outcomes are mixed. Some studies have found that women of higher BMIs are more likely to report ever having intercourse (Kaneshiro, Jensen, Carlson, Harvey, Nichols, & Edelman, 2008), but others have found no significant connection between BMI and age at first intercourse, frequency of intercourse, condom use, or the number of current or lifetime sexual partners (Kaneshiro et al., 2008; Wee, Huang, Huskey, & McCarthy, 2008). Indeed, subjective body image is more salient in predicting sexual function than actual body size (Larsen, Wagner, & Heitmann, 2007; Weaver & Byers, 2006). Given the variety of interactions between BMI, body image, and sexual function, it is important to parse the contribution of actual body size to the relationship between body appreciation and sexual function.

There are various demographic characteristics that could influence the relationships between body appreciation, sexual function, and BMI. Specifically, the correlates of age, sexual orientation, and partner status have evidenced varying effects on both body image and sexual function. Anderson, Eyler, Galuska, Brown, and Brownson (2002) found that age was positively linked with body satisfaction in their sample; however, Augustus-Horvath and Tylka (2011) found that age was marginally related to body appreciation in a negative direction in their sample of emerging, early, and middle adult women. Overall, increased age has been found to be related to decreased sexual function in women (Avis, Stellato, Crawford, Johannes, & Longcope, 2000; Hayes & Dennerstein, 2005). Multiple studies have found that women who identified as other than heterosexual evidenced higher levels of body satisfaction (Austin, Ziyadeh, Kahn, Camargo, Colditz, & Field, 2004; Conner, Johnson, & Grogan, 2004; Polimeni, Austin, & Kavanagh, 2009), while others have noted that cross-gender differences in body image are more likely than cross-sexual orientation differences for women (Koff, Lucas, Migliorini, & Grossmith, 2010; Peplau, Frederick, Yee, Maisel, Lever, & Ghavami, 2009). Additionally, lesbian women are at lower risk for female sexual dysfunction than heterosexual and bisexual women (Beaber & Werner, 2009; Breyer, Smith, Eisenberg, Ando, Rowen, & Shindel, 2010).

Finally, having a romantic partner may impact both arenas. Given that construction and experience of both body image and sexuality happen at intrapersonal, interpersonal, and social levels, being in a partnered relationship can impact an individual's experiences with both domains. Avalos and Tylka (2006) surmised that women who had an influential significant other who offered unconditional acceptance of their appearance may be better able to resist objectifying their own bodies. Similarly, women in exclusive relationships reported feeling less self-conscious during sexual activity than women who reported that they did not have a partner

(Steer & Tiggemann, 2008). Therefore, controlling for women's partnered status may be important for exploring the interconnections between body size, body image, and sexual function.

Both subjective body image and body size have been found to have mixed relationships to sexuality in women, but the literature is limited by its focus on negative body image. The purpose of this study was to explore relationships between body appreciation and sexual function in women of various body sizes and to assess whether a measure of body size such as BMI alters this relationship. We theorized that higher body appreciation will have a positive relationship with sexual function, and that higher body size as measured by BMI may reduce sexual function. We tested three hypotheses: Hypothesis 1 was that BMI would predict overall sexual function and specific components of sexual function. Hypothesis 2 was that body appreciation would predict overall sexual function and specific components of sexual function. Hypothesis 3 was that BMI would moderate the relationship between body appreciation and sexual function.

Method

Participants

The study was open to those individuals who had either identified as or had been socialized as female. Participants were screened by being asked to report their gender during study registration. Of the 494 women who registered, 247 completed all the relevant items. Participants' age ranged from 18 to 58 years ($M = 29.76$, $SD = 7.77$); more than half fell between the ages of 25 and 39 years (63.2%, $n = 156$). Most identified as female (97.6%, $n = 241$), with a small proportion identifying as transgender female-to-male or female genderqueer. Ethnicity/race was recorded for only 189 of the 247 participants, with the majority being White (66.8%, $n = 165$). More than half of the sample (53.0%, $n = 131$) identified as heterosexual/straight and 27.1% ($n = 67$) identified as bisexual, while 7.7% ($n = 19$) identified as queer and 3.2% ($n = 8$) identified as lesbian. Participants were well-educated, with 205 of 246 participants (83.0%) reporting having received an undergraduate degree or higher (Masters, Professional, or Doctoral degree). The majority of participants were employed full-time or part-time (61.5%, $n = 152$), and one quarter were students (25.1%, $n = 62$). Participants specified their relationship status (single, not currently partnered or married, dating multiple people, partnered, living with partner, partnered, not living with partner, married, divorced, in polyamorous relationships, in an "open relationship"). Responses of "single", "divorced," and "dating multiple people" classified participants as "unpartnered." Participants who chose any other relationship status option were categorized as "partnered." The majority were in partnered relationships (74.5%, $n = 184$). Participants were asked to describe the nature of their relationships, and as they could choose all descriptors that applied, percentages could have exceeded 100%. Roughly one-fifth (20.2%, $n = 50$) were single, and 12.6% ($n = 31$) were dating multiple people. Approximately equivalent numbers of participants lived with their partners (21.1%, $n = 52$), or were partnered and not cohabitating (23.1%, $n = 57$). One-quarter of participants (25.5%, $n = 63$) were married and living with their partners, and 4.5% ($n = 11$) were divorced. There were a number of participants who reported being in non-traditional relationship constellations: 20.2% ($n = 50$) were in a polyamorous relationship and 8.1% ($n = 20$) were in open relationships.

In addition to their romantic relationship status, participants reported their current sexual relationship status (in an exclusive or monogamous sexual relationship, in active sexual relationships with more than one person, not currently in a defined sexual relationship), and the gender of their sexual partners within the

previous four weeks (men, women, transgender men, transgender women, and genderqueer individuals). When asked "With whom do you primarily engage in sexual behaviors (oral, anal, manual, vaginal sex, or any other genital stimulation or sexual play)?" the largest proportion of participants (92.3%, $n = 228$) reported that their sexual partners were men. With regards to sexual behavior in the previous four weeks, a majority of participants (74.5%, $n = 184$) had been sexually active with only men in the previous four weeks. More than half (57.1%, $n = 141$) were in exclusive or monogamous sexual relationships.

The sample included a high proportion of non-traditional participants with regards to sexual orientation and partner status, though these groups were not deliberately targeted for recruitment. During the course of the study, one woman communicated to the study researchers that she had found the study link through a posting on a website dedicated to individuals who were interested in Bondage, Domination/Discipline, Submission/Sadism, and Masochism (BDSM) activities and multi-partner sexual and romantic relationships. Women who accessed the study website through the BDSM-related portal may constitute many of the non-heterosexually identified as well as non-monogamous participants in the sample. However, participants were not asked how they found the study website and therefore this cannot be stated with certainty.

Measures

Body mass index. Study participants reported their height in feet and inches and weight in pounds, and we calculated body mass index (BMI) for the sample. Participant height ranged from 4'9" to 6'5", with an average height of 5'5" ($SD = 2.91$ inches). There was great variation within participants' weights, though half (51.5%, $n = 127$) fell between 101 and 200 pounds, and average weight was 187.6 pounds ($SD = 68.4$). The range of BMIs was from 16.64 to 71.73 ($M = 30.53$, $SD = 10.38$).

Body appreciation. Participants completed the 13-item Body Appreciation Scale (BAS; Avalos et al., 2005). Items were rated along a scale of 1–5, with 1 corresponding to "never," and 5 corresponding to "always." Responses to scale items are averaged to obtain a body appreciation score. Higher scores are indicative of higher levels of body appreciation. This scale has evidenced a unidimensional structure and test-retest reliability over a three-week period with U.S. college women (Cronbach's $\alpha = .91$ to $.93$; Avalos et al., 2005), as well as internal consistency estimates of Cronbach's $\alpha = .81$ for British women (Swami, Hadji-Michael, & Furnham, 2008) and Cronbach's $\alpha = .90$ for German women (Swami, Stieger, Haubner, & Voracek, 2008). An estimate of internal consistency for this sample was high (Cronbach's $\alpha = .93$). The BAS has been found to be inversely correlated with established measures of negative body image, suggesting construct validity (Avalos et al., 2005).

Sexual functioning. Sexual functioning for the previous four weeks was assessed via the Female Sexual Function Index (FSFI; Rosen et al., 2000), a widely-used 19-item scale assessing six sexual function domains: desire (two items), arousal (four items), lubrication (four items), orgasm (three items), satisfaction (three items), and pain (three items). Items were rated from 0 to 5, with 0 corresponding to "no sexual activity." A score of 1 corresponded to lowest levels of response for the item ("almost never/never," "extremely difficult or impossible," "very low or none at all," "very dissatisfied") and scores of 5 corresponded to highest levels of response for the item ("very satisfied," "very high," "almost always or always," "not difficult"). Scores for individual domains were calculated by adding the scores of the items comprising that domain and multiplying by the domain factor, as indicated by Rosen et al. (2000). The domain factors were as follows: 0.6 for the desire subscale, 0.3 for the arousal, and lubrication subscales, and 0.4 for the orgasm,

Table 1
Means, standard deviations, and correlations among measures.

Measure	Response			Measure											
	M	SD	Range	1	2	3	4	5	6	7	8	9	10	11	
1. Age	29.8	7.77	18–58												
2. Sexual orientation				.04											
3. Partner status				.12	.02										
4. BAS score	3.67	0.69	1.69–5.00	–.11	.06	.15									
5. BMI	30.53	10.38	16.64–71.73	.33**	.22*	–.05	–.22*								
6. FSFI: Desire subscale	3.43	0.98	1.20–4.80	.07	.10	–.01	.04	.10							
7. FSFI: Arousal subscale	4.74	1.04	1.20–6.00	.15	.15	.00	.19*	.06	.50**						
8. FSFI: Lubrication subscale	5.22	1.24	0.30–6.00	.03	.03	–.13	.11	–.01	.23**	.50**					
9. FSFI: Orgasm subscale	3.75	0.86	0.00–5.60	.18*	.16	.02	.20*	.05	.17	.44**	.24**				
10. FSFI: Satisfaction subscale	4.46	1.39	0.80–6.00	.15	.10	.39**	.35**	–.01	.20*	.47**	.31**	.19**			
11. FSFI: Pain subscale	5.30	1.18	0.00–6.00	.09	–.13	–.01	.07	.00	.13	.29**	.34**	.06	.18*		
12. FSFI: Full Scale	26.90	4.35	9.50–33.50	.17*	.11	.13	.28**	–.02	.57**	.78**	.66**	.46**	.70**	.46**	

Note. $n = 247$.* $p \leq .005$.** $p \leq .001$.

satisfaction, and pain subscales. Full FSFI scale scores were calculated by summing all six domain scores. Higher scores on all subscales indicated better sexual functioning; higher pain subscale scores indicated lower frequency of pain, and therefore, better sexual functioning. FSFI scores have demonstrated reliability and validity in samples of women with and without sexual dysfunction (Herbenick & Reece, 2010; Herbenick, Reece, Hollub, Satinsky, & Dodge, 2008; Meston & Derogatis, 2002; Rosen et al., 2000; Verit & Verit, 2007; Wiegel, Meston, & Rosen, 2005). Cronbach's α for this sample was .87.

Procedure

During March 2010, study recruitment advertisements were posted to various Internet forums and list serves and on a popular social networking site. In order to include women of varying body sizes and levels of body appreciation, advertisements were sent to list serves for individuals involved in size acceptance, as well as the academic discipline of "Fat Studies." McKinley (2004) characterizes size acceptance attitudes as a continuum ranging from an individual accepting her or his body, but thinking it might be better if her/his body were changed, to those individuals who advocate for social change on behalf of people of size, and if given the chance, would not change their bodies. Recruitment messages were also sent to email discussion groups on female sexuality and sexuality research. An ad targeted to women in the United States over the age of 18 was placed on Facebook, which depicted the logo of the authors' university and the tagline "Your body, your sexuality! We are conducting a study on body image and sexual health among women. Come participate!" Advertisements invited women to visit the study website, read information about the study and an informed consent statement, and decide whether they wanted to participate. Potential participants were told that they would be entered into a drawing for one of ten \$100 gift cards as an incentive for participation. Women who consented were directed to a registration page to establish a participant account (e-mail and password). After registration, an email was sent to participants asking them to return to the website. Data were collected in two phases, including: (a) an initial questionnaire on sociodemographics, health indicators, body appreciation, and sexual health attitudes and behaviors, and (b) a daily diary component where women were asked to return to the study website daily for a period of 35 days to respond to questions about their behaviors during the previous day.

The results of the completed initial study questionnaire are discussed here. Data from the daily data collection component of the larger study are reported elsewhere. All study protocols were

approved by the Institutional Review Board of the authors' academic institutions.

Results

Preliminary Analyses

Sexual orientation and partner status were both dummy-coded to allow their inclusion in multivariate analyses. Sexual orientation was coded so that heterosexual identification = 0 and non-heterosexual identification = 1, and partner status was coded so that unpartnered = 0 and partnered = 1. To guard against experimentwise error rate rising to an unacceptable level, a Bonferroni correction was applied to acceptable p levels for intercorrelations ($.05/11 = .005$).

Table 1 includes means, standard deviations, and intercorrelations of age, sexual orientation, partner status, BMI, BAS, and FSFI total scores and subscale scores. After examining variable intercorrelations, BMI and sexual orientation were not found to be correlated with sexual function scores. Therefore, Hypotheses 1 was not supported. Among the variables of interest, BMI was solely correlated with age and body appreciation, and body appreciation was correlated with the Arousal, Orgasm, and Satisfaction subscales and the Full Scale scores of the Female Sexual Function Index.

Prior to regression analysis, data were examined for violations of statistical assumptions of normality, linearity, and homoscedasticity. Due to significant positive skewness, logarithmic transformation was applied to participant BMI. This resulted in BMI becoming normally distributed, and no other violations were found. Additionally, data were screened for outliers via Mahalanobis distance in the relationships between BAS and FSFI total scores and subscale scores, as well as BMI and FSFI total scores and subscale scores. No cases of large Mahalanobis distances were found. Prior to conducting multiple regression analyses, BMI and BAS scores were centered as suggested by Frazier, Tix, and Barron (2004) in order to reduce multicollinearity.

Regression Analyses

We used hierarchical multiple regression analyses to test Hypotheses 2 and 3. Hypothesis 2 explored whether body appreciation predicted unique variance in sexual function (FSFI total and subscale scores), above and beyond the variance accounted for by age and partner status. To do this, we entered age and partner status at Step 1 of the regression equation, and body appreciation at Step 2. Hypothesis 3 explored whether BMI moderated the relationship between body appreciation and sexual function. For

Table 2
 Hierarchical multiple regression analyses predicting Female Sexual Function Index subscale and Full Scale scores from Body Appreciation Scale score, BMI, age, and partner status ($n = 246$).

Variable	<i>B</i>	<i>SE B</i>	β	Cumulative R^2	Adjusted R^2	ΔR^2	<i>t</i>
Dependent variable: FSFI Desire subscale							
Step 1				.02	.01	.02	
Age	0.02	0.01	.17				2.05
Partner status	0.05	0.17	.02				0.32
Step 2				.03	.02	.01	1.17
BAS	0.12	0.10	.09				
Step 3				.05	.02	.01	-1.65
BAS \times BMI	-0.01	0.01	-.13				
Overall $F(4, 242) = 2.18$							
Dependent variable: FSFI Arousal subscale							
Step 1				.04	.03	.04	
Age	0.03	0.01	.20				2.78*
Partner status	-0.10	0.18	-.04				-0.56
Step 2				.11	.10	.07	3.80**
BAS	0.39	0.10	.27				
Step 3				.11	.09	.00	0.30
BAS \times BMI	0.00	0.01	.02				
Overall $F(4, 242) = 5.70^{**}$							
Dependent variable: FSFI Lubrication subscale							
Step 1				.03	.02	.03	
Age	-0.01	0.01	-.08				-1.06
Partner status	-0.46	0.21	-.16				-2.17
Step 2				.06	.04	.03	2.21
BAS	0.28	0.13	.16				
Step 3				.07	.05	.02	-1.72
BAS \times BMI	-0.02	0.01	-.13				
Overall $F(4, 242) = 3.68^*$							
Dependent variable: FSFI Orgasm subscale							
Step 1				.03	.02	.03	
Age	0.02	0.01	.16				2.17
Partner status	0.90	0.15	.04				0.61
Step 2				.08	.07	.06	3.33**
BAS	0.28	0.08	.24				
Step 3				.08	.06	.00	0.26
BAS \times BMI	0.00	0.01	.02				
Overall $F(4, 242) = 4.22^*$							
Dependent variable: FSFI Satisfaction subscale							
Step 1				.14	.13	.14	
Age	0.02	0.01	.09				1.34
Partner status	1.14	0.23	.35				5.01**
Step 2				.27	.25	.13	5.73**
BAS	0.72	0.13	.37				
Step 3				.28	.26	.01	-1.71
BAS \times BMI	-0.02	0.01	-.11				
Overall $F(4, 242) = 17.64^{**}$							
Dependent variable: FSFI Pain subscale							
Step 1				.00	-.01	.00	
Age	0.00	0.01	-.03				-0.43
Partner status	0.09	0.2	.03				0.43
Step 2				.03	.01	.03	2.31
BAS	0.28	0.12	.17				
Step 3				.03	.01	.00	-0.2
BAS \times BMI	0.00	0.01	-.02				
Overall $F(4, 242) = 1.42$							
Dependent variable: FSFI Full Scale							
Step 1				.02	.01	.02	
Age	0.06	0.04	.11				1.56
Partner status	0.81	0.75	.08				1.08
Step 2				.14	.12	.11	4.93**
BAS	2.06	0.42	.35				
Step 3				.14	.13	.01	-1.36
BAS \times BMI	-0.05	0.03	-.01				
Overall $F(4, 242) = 7.74^{**}$							

* $p \leq .017$.

** $p \leq .001$.

each regression, we added a Step 3, which included a centered interaction term of body appreciation \times BMI. In order to account for experiment-wise error due to performing multiple hierarchical regression analyses, we set the p level at .007 (.05/7). Table 2 displays the results of analyses of Hypothesis 2. BMI did not significantly moderate the relationships between body appreciation and

any of the components of sexual function. Therefore, Hypothesis 3 was not supported.

Multiple regression analyses indicated that, after controlling for age and partner status, body appreciation significantly predicted sexual arousal, sexual satisfaction, orgasm, and overall sexual function, therefore supporting Hypothesis 2.

Discussion

The novel aspect of this study is that we explored whether positive body image was related to women's sexual functioning. This may be among the first studies to explore sexual function, body appreciation, and body size in either a non-clinical or non-college student specific population of women.

One of our initial three hypotheses was supported: overall, having higher body appreciation positively predicted sexual function, particularly in measures of arousal, satisfaction, and orgasm. Notably, body appreciation was not related to sexual desire or lubrication, in contrast to other findings that negative body image often suppresses sexual desire in both undergraduate women (Seal et al., 2009) and women in midlife (Koch et al., 2005). Therefore, appreciation of the body's appearance and satisfaction with its abilities does not seem to predict participants' sexual desire for interaction with others. It may be that, in alignment with objectification theory's claim that sexual objectification alienates women from their sexual physicality (Fredrickson & Roberts, 1997), these women are not taking their own bodily feelings into account when considering their level of sexual interest in others.

Previous studies of the epidemiology of sexual dysfunction in women have found that psychosocial and interpersonal variables are associated with the various components of sexual function. Specifically, Jiann, Su, Yu, Wu, and Huang (2009) found that the quality of a woman's relationship with her partner, as well as her perceptions of her partner's sexual function were risk factors for dysfunctions of desire, arousal, orgasm, and satisfaction. Positive body image as measured by body appreciation could serve as an indication of both better psychosocial functioning as well as interpersonal experiences, which could explicate the positive relationships we found between body appreciation and sexual arousal, orgasm, and sexual satisfaction. Returning to the lens of objectification theory, Fredrickson and Roberts (1997) point out that orgasm in women frequently requires attention to physical experiences and responsiveness to physiological signals. Body appreciation, with its focus on attending to what one's body can do, rather than solely what it looks like (Avalos et al., 2005), may offer a means of bridging the gap between sensitivity to bodily feelings during sexual activity and orgasmic response, as evidenced by the positive relationship we found between body appreciation and orgasm.

Given that social experience of weight stigma might impact the body image and/or body appreciation of women at higher body sizes (Puhl & Heuer, 2009; Swami et al., 2010), we hypothesized that higher BMI may moderate the relationship between body appreciation and sexual function. This was not the case. Despite the degree to which participants adhered to or deviated from traditional body standards in our sample, BMI was not solely predictive of sexual function. Additionally, the relationship between level of body appreciation and sexual function was not moderated by body size at any level of BMI. Other studies that have used body assessments such as BMI in relation to sexual function have found that higher BMIs are associated with lower sexual function scores (Esposito et al., 2007; Esposito, Ciotola, Marfella, Di Tommaso, Cobellis, & Giugliano, 2005; Larsen et al., 2007) in contrast to our findings. However, these studies have been conducted with women who enrolled in clinical weight-loss programs or underwent bariatric surgery (Assimakopoulos, Karavazoglou, Panayiotopoulos, Hyphantis, Iconomou, & Kalfarentzos, 2011; Bond et al., 2011), which indicates both high interest on the participants' parts in changing their body's shape and size and high body dissatisfaction. These studies also did not distinguish between actual physiological body changes and psychological or social factors in interpreting better sexual function after weight loss. Therefore, better sexual functioning in these studies may in fact be an indicator of one of the byproducts of sexual objectification: that changing

one's body to be in closer alignment with beauty norms may make an individual feel more sexually viable. When women of higher body sizes are studied with regard to their sexual function but other psychological factors are considered, correlates such as eating disorder symptomology (Castellini et al., 2010; Jagstaidt, Golay, & Pasini, 2001) and depressive mood (Kadioglu, Yetkin, Sanli, Yalin, Onem, & Kadioglu, 2010) or lower self-esteem (Kinzl, Trefalt, Fiala, Hotter, Biebl, & Aigner, 2001) show stronger relationships with sexual function than actual body size. This may also be a limitation of the measurements themselves: BMI is a relatively crude measure that takes into account only weight and height and does not consider age, frame size, gender, or lean muscle mass. Better means of assessment of participants' bodies are warranted. Further research should refine these measures; more accurate bodily measurements may yield different results.

Finding a strong connection between body appreciation and sexual function offers additional insight into the experiences of those women who demonstrate higher levels of body appreciation. Researchers should further explore what differentiates women who are higher in body appreciation from women who are lower, with the goal of promoting resiliency and improving sexuality in women. Resistance to dominant body norms via body appreciation may offer a positively nuanced view of women's sexuality.

Limitations

Several limitations are worth noting. Conducting the study online may have limited the participant pool and may have contributed to the lack of ethnic diversity in the study sample. Also, the BAS is a trait-level instrument, making it difficult to connect it to individual sexual experiences. This shortcoming could be alleviated through event-level data collection on body image, size, and sexuality, which would offer within-participant information as well as between-participant information. In addition, we did not ask participants to rate the quality of their partnered relationships. As the quality of a partnered relationship could have an impact on both sexual satisfaction (Byers, 2002; Jiann et al., 2009; Witting et al., 2008) and the level of unconditional acceptance of one's appearance discussed by Avalos and Tylka (2006), relationship quality and satisfaction could be an additional avenue for exploration in future research regarding these variables.

It is important to note the variety of sexual orientation and relationship constellations in this sample. In contrast to many research samples of women, there were more non-heterosexual, as well as non-monogamous, women in this group. Having a broader demographic range among study participants is certainly a benefit. With regards to interpretation of the findings however, it is important to question whether the characteristics of this sample might have impacted our findings and therefore limit the generalizability of our findings. It is possible that non-heterosexual identity or participation in non-monogamy may indicate overall lower adherence to dominant cultural norms, possibly including beauty norms, thereby influencing levels of body appreciation or sexual function. In this sample, sexual orientation was not associated with body appreciation or sexual function, but other measures of social non-conformity were not included. Future research should strive for participant diversity not only around ethnicity, but around sexual-ity and gender variables as well as ideology, in order to tease out this possibility further.

Implications

This study's findings have multiple implications for those who work with women around body attitudes and sexuality. Body appreciation includes the rejection of unrealistic images of women, which should be especially encouraged in women who fall into

higher weight categories as they are further from the media constructs of the physical ideal. Much of the literature on women of higher body weight focuses on their ability and desire to lose weight, and previous studies of bigger body size and sexuality have promoted weight loss as a means of improving sexuality outcomes (Bond et al., 2011; Esposito et al., 2005, 2007; Larsen et al., 2007). Focusing on body appreciation may encourage women to feel better about their sexual selves as well as improve sexual function in a way that encouraging a reduction in BMI may not. In addition, encouraging weight loss through dieting may be a precursor to insensitivity to bodily signals such as hunger and satiety (Avalos & Tylka, 2006; Fredrickson & Roberts, 1997) which may ultimately result in negative sexuality outcomes, making weight loss promotion counter to the goal of improving sexual function.

Augmenting the previous literature, this study indicates that positive perceptions of one's body may be a better predictor of sexual health outcomes, as measured by sexual function, than body size. Higher rates of body appreciation may indicate resistance to internalization of body norms. Therefore, encouraging body appreciation may offer a means of resistance to normative body discontent, and a step toward valuing what a body does instead of how it looks, ultimately promoting healthy sexuality. Overall, the discovery that body appreciation is related to sexual function in women is a hopeful one, and offers an innovative means of indirectly promoting sexual health outside of the measurement and lessening of negative body image.

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