The relationship between positive body image and sexual satisfaction in women: The role of body awareness and subjective sexual arousal

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2018 (June)

Abstract

Previous research demonstrated an important relationship between positive body image and sexual satisfaction in women. The present study expanded previous research by assessing the mediating role of body awareness and subjective sexual arousal in this relationship. In a cross-sectional design, 148 Dutch women completed an online survey measuring positive body image (BAS-2), body awareness (MAIA), subjective sexual arousal (SAI), and sexual satisfaction (SSS-W). Hypotheses were tested using correlation analyses and a mediation analysis with positive body image as predictor, body awareness and subjective sexual arousal as mediators, and sexual satisfaction as outcome. Results of the correlation analyses showed that a more positive body image is related to more sexual satisfaction. The mediation analysis revealed that this relationship was mediated by more body awareness and subsequently more subjective sexual arousal. These findings may be valuable in selecting the appropriate targets for effective treatment interventions helpful in building a pleasurable and more satisfying sex life, and thereby improve women's overall well-being.

Introduction

Traditionally, there has been done more research into sexual dissatisfaction than into the sexual satisfaction of women (Rosen & Bachmann, 2008). Sexual satisfaction is defined as the subjective evaluation of the degree to which a person is satisfied with his or her sex life (Pinney, Gerrard, & Denney, 1987). According to Lawrance and Byers' interpersonal exchange model of sexual satisfaction (1995; Sprecher, 2002), sexual satisfaction represents a favourable balance of rewards and costs in the sexual aspect of a relationship. Someone who is sexually satisfied has the feeling that sex is joyful and exciting (Henderson-King & Veroff, 1994). Published studies on this topic suggest that a remarkable percentage of women (12 - 68%) are not (fully) satisfied with their sex life (Burri & Spector, 2011; Lee, Nazroo, O'Connor, Blake, & Pendleton, 2016; Read, King, & Watson, 1997). Since sexual satisfaction can affect overall quality of life (Davison, Bell, LaChina, Holden, & Davis, 2009; Rosen & Bachmann, 2008), identifying determinants thereof is important.

Due to the heightened attention inherently placed on the body in the context of sexual activity, it is not surprising that body image is found to be an important determinant of satisfaction with sexual experiences (Masters & Johnson, 1970; Van den Brink, 2017). According to Van den Brink (2017), a positive body image is related to sexual satisfaction, as it may protect individuals from having negative appearance-related thoughts and exaggerated appearance-related self-consciousness during sexual activity, which in turn facilitates positive sexual experiences. A positive body image can be defined as an overarching love and respect for the body that allow individuals to appreciate the unique beauty of their body and the functions that it performs for them (Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Positive body image is conceptually distinct from negative body image and is reflected not just by the absence of a negative body image but also by the presence of satisfaction, acceptance, and appreciation for one's body (Tylka, 2012). As positive body image is not on the same continuum as negative body image, studying the unique outcomes of positive body image in the context of sexual experiences is important. Although relationships between body image and sexual satisfaction have been mostly investigated in negative terms in the past (e.g., Woertman & Van den Brink, 2012), results of recent empirical studies also support the unique relationship between positive body image and sexual satisfaction (Robbins & Reissing, 2018; Satinsky, Reece, Dennis, Sanders, & Bardzell, 2012; Shepler, Smendik, Cusick, & Tucker, 2018).

In the past, the relationship between body image and sexual satisfaction was often explained from Fredrickson and Roberts' (1997) objectification theory. According to this theoretical framework, women who have internalized an observer's perspective as the primary view of their physical selves, negatively evaluate their body on its appearance, which leads to negative-anxious appearance related thoughts. In a sexual context, the habitual body monitoring diminishes the awareness of internal bodily states (Fredrickson & Roberts, 1997). The reduced body awareness can be an underlying factor for sexual dissatisfaction, because it is hard to focus on what is pleasurable and enjoyable during the sexual activity (Masters & Johnson, 1970). More recently, the embodiment model of positive body image (Impett, Daubenmier, & Hirschman, 2006; Menzel & Levine, 2011) suggests that connectedness with and attention for the body is a direct and healthy alternative for self-consciousness during sexual activity. This body awareness involves an attentional focus on and awareness of the

interoceptive body sensations (Mehling et al., 2009). This can facilitate focusing on sexual pleasure and positive sexual experiences (Van den Brink, 2017), and thereby increase sexual satisfaction. According to Tylka (2012), people with a positive body image are more attentive to their bodies and are more aware of body signals. Thus, this indicates that the relationship between positive body image and sexual satisfaction might be explained by body awareness.

The relationship between body awareness and sexual satisfaction, however, is also likely to be explained by the experienced sexual arousal during sexual activity. The awareness of bodily sensations is found to be related to increased sexual response and subjective sexual arousal, but only in conditions in which cognitive distraction does not occur (Seal & Meston, 2007). According to the work of Masters and Johnson (1970), attention can then be focused on the rewarding features of the sexual arousal, making it possible to process erotic signals, which has positive consequences for sexual functioning, and therefore for sexual satisfaction (Frank, Anderson, & Rubinstein, in Meston & Trapnell, 2005). Sexual arousal is defined as an increased autonomic activation that prepares the body for sexual activity and decreases the amount of sexual stimulation needed for an orgasm (Toledano & Pfaus, 2006). According to Paterson, Handy, and Brotto (2017), experienced subjective sexual arousal is more present in women who are more aware of physical changes during or in anticipation of sexual activity. This suggests that more body awareness is related to more subjective sexual arousal, which in turn is related to greater sexual satisfaction. Indeed, study results of Laumann, Paik, and Rosen (1999) indicated that arousal concerns were strongly associated with sexual dissatisfaction in women. This implicates that the experience of subjective sexual arousal is an important determinant of sexual satisfaction and thus should be included in the relationship between body awareness and sexual satisfaction.

To summarize, the work of Masters and Johnson (1970) and other earlier research have shown a positive relationship between positive body image and sexual satisfaction. Based on the embodiment model of positive body image and other previous research, it can be suggested that this relationship is explained by both body awareness and subjective sexual arousal. However, this has not been empirically tested yet. Further research on the relationship between positive body image and sexual satisfaction may provide knowledge valuable in developing effective interventions helpful in building a pleasurable and more satisfying sex life.

The present study

The present study focuses on the relationship between positive body image, body awareness, subjective sexual arousal, and sexual satisfaction in women. Based on previous study results (e.g., Robbins & Reissing, 2018; Satinsky et al., 2012; Shepler, Smendik, Cusick, & Tucker, 2018), there is hypothesized that there is a positive relationship between positive body image and sexual satisfaction in women. Furthermore, based on previous study results (e.g., Menzel & Levine, 2011; Paterson et al., 2017; Seal & Meston, 2007; Tylka, 2012; Van den Brink, 2017), it is hypothesized that the relationship between positive body image and sexual satisfaction is mediated by body awareness and subjective sexual arousal. Specifically, it is expected that a more positive body image is related to more body awareness, which in turn is related to more subjective sexual arousal, which is subsequently related to more sexual satisfaction. In Figure 1, the proposed hypotheses are schematically displayed.

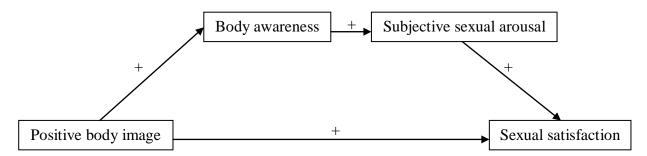


Figure 1. The schematic representation of the hypothesized relationship between positive body image, body awareness, subjective sexual arousal, and sexual satisfaction.

Method

Participants and procedure

Participants were recruited via the Internet. The program 'LimeSurvey' was used to create the online questionnaire. Students of Utrecht University were able to access the online questionnaire via a link on the website of the university which provided an overview of all ongoing research projects. The link to the questionnaire with a short description of the study was also spread via social media and the website SurveySwap. Inclusion criteria for participation were being female, aged 18 years or older, and had been sexually active with a partner in the last six months. Before getting access to the questionnaire, participants had to complete an informed consent form, in which voluntary participation and anonymity were highlighted. The questionnaire measured demographic data (i.e., age, education level, being student at Utrecht University, and relationship duration if one had a relationship), positive body image, body awareness, subjective sexual arousal, and sexual satisfaction. Students of Utrecht University had the opportunity to receive course credit. All other participants were not compensated for participation. On average, it took 15 to 20 minutes to complete the questionnaire.

A total of 148 women fully completed the questionnaire. Age ranged from 18 to 61 years (M=23.8, SD=7.15). Of the participants, 64.9% (n=96) have completed higher professional education or university education and 12.8% (n=19) have completed secondary vocational education. In 20.3% (n=30) of the participants, the highest level of education is comparable to Higher General Secondary Education or pre-university education. Of the participants, 49% (n=73) reported to be a student at Utrecht University. In 70.3% (n=104) of the cases, participants reported to be currently involved in a romantic relationship with a partner. Of the participants currently involved in a romantic relationship, 13.5% (n=14) had a relationship of less than six months, 8.7% (n=9) had a relationship of six months to one year, 59.6% (n=62) of one to five years, 12.5% (n=13) of five to ten years, and 5.8% (n=6) had a relationship of more than ten years.

Measures

Positive body image. To assess positive body image, the Dutch version (Alleva, Martijn, Veldhuis, & Tylka, 2016) of the Body Appreciation Scale-2 (BAS-2; Tylka & Wood-Barcalow, 2015) was used. The scale consists of 10 5-point never-always Likert items (e.g., 'I feel love for my body'). Scores on the items were averaged, with higher scores indicating greater body appreciation and thus a more positive body image. Research supported internal consistency and construct and convergent validity of the BAS-2 (Alleva et al., 2016; Marta-Simões, Mendes, Oliveira, Trindade, & Ferreira, 2016; Swami & Ng, 2015; Tylka & Wood-Barcalow, 2015). In the present study, Cronbach's alpha for this scale was a = .92, which indicated excellent internal consistency.

Multidimensional Assessment of Interoceptive Awareness. To assess body awareness, a Dutch translation of the Multidimensional Assessment of Interoceptive Awareness (MAIA; Mehling et al., 2012) was used. The original scale was translated with the translate-retranslate method (translation by a Dutch English teacher unaffiliated with the study). The MAIA is a

multidimensional self-report measure of interoceptive body awareness. It consists of 32 6-point never-always Likert items (e.g., 'When I am tense I notice where the tension is located in my body'). After recoding appropriate items, the scale score was determined by the average of all items. Higher scale scores indicate higher interoceptive body awareness. Previous studies supported the internal consistency and construct validity of the MAIA (Mehling et al., 2012; Mehling et al., 2013; Valenzuela-Moguillansky & Reyes-Reyes, 2015). In the present study, Cronbach's alpha for this scale was a = .88, which indicated good internal consistency.

Sexual Arousability Inventory. To assess subjective sexual arousal, a Dutch translation of the Sexual Arousability Inventory (SAI; Hoon, Hoon, & Wincze, 1976) was used. The original scale was translated with the translate-retranslate method (translations by a Dutch English teacher unaffiliated with the study). SAI measures perceived arousability to a variety of sexual experiences. The SAI consists of 28 7-point adversely affects arousal – always causes sexual arousal Likert items (e.g., 'When you have sexual intercourse with a loved one'). The arousability scale score is the sum of all items. A higher scale score indicates higher perceived arousability (Hoon et al., 1976). The SAI has a high internal consistency (α = .91) and a good construct and discriminant validity (Hoon & Chambless, 1998; Hoon et al., 1976). In the present study, Cronbach's alpha for this scale was α = .93, which indicated excellent internal consistency.

Sexual Satisfaction Scale for Women. The Dutch version (Aarden, Van Assenbergh, & Huismans, 2016) of the Sexual Satisfaction Scale for Women (SSS-W; Meston & Trapnell, 2005) was used to measure sexual satisfaction. The scale consists of 30 5-point strongly disagree – strongly agree Likert items (e.g., 'I feel content with my present sex life'). After recoding appropriate items, items scores were averaged to compute the scale score. Higher scale scores indicate greater sexual satisfaction. The SSS-W was found to have a good internal consistency and construct validity (Meston & Trapnell, 2005). In the present study, Cronbach's alpha for this scale was a = .94, which indicated excellent internal consistency.

Statistical analyses

All statistical analyses were performed with IBM SPSS Statistics Version 24. In a first step, bivariate associations between the study variables were analyzed using Pearson correlation coefficients. Secondly, a mediation analyses with positive body image as independent variable, body awareness and subjective sexual arousal as mediators, and sexual satisfaction as dependent variable was conducted. The mediation analysis comprises a number of subanalyses that estimated the total, direct, and indirect effects of positive body image on sexual satisfaction. The total and direct effects were estimated by means of a stepwise multiple regression analysis. Total effect refers to the relationship between positive body image and sexual satisfaction, and direct effect refers to the relationship between positive body image and sexual satisfaction while controlling for body awareness and subjective sexual arousal.

As recommended by Hayes (2013), the indirect effects and their significance were determined by means of bootstrap analyses with 10,000 bootstrap samples and bias corrected and accelerated 95% confidence intervals (BCa 95% CI). To this end, the PROCESS macro for SPSS (Hayes, 2013) had been used. First of all, the total indirect effect had been

estimated, followed by indirect effect 1 (IND1; the relationship between positive body image and sexual satisfaction mediated by body awareness), indirect effect 2 (IND2; the relationship between positive body image and sexual satisfaction mediated by subjective sexual arousal), and indirect effect 3 (IND3; the relationship between positive body image and sexual satisfaction mediated by both body awareness and subjective sexual arousal). After this the strength of the indirect effects had been compared with pairwise comparisons. All coefficients have been reported in standardized form.

Results

Bivariate associations between positive body image, body awareness, subjective sexual arousal, and sexual satisfaction

The results of the correlation analyses of the study variables are presented in Table 1. As expected, a more positive body image was significantly related to greater sexual satisfaction. Also, positive significant relationships of positive body image with body awareness and subjective sexual arousal and of body awareness and subjective sexual arousal with sexual satisfaction were found.

Table 1
Means, Standard Deviations, Minimum and Maximum Scores, and Bivariate Correlations between
Positive Body Image, Body Awareness, Subjective Sexual Arousal, and Sexual Satisfaction (N= 148)

	М	SD	Minimum	Maximum	1	2	3	4
1. Positive body image ^a	3.69	0.65	1.70	5.00	-	-	-	-
2. Body awareness ^b	2.95	0.55	1.34	4.53	.46**	-	-	-
3. Subjective sexual arousal ^c	81.33	21.76	8.00	134.00	.36**	.42**	-	-
4. Sexual satisfaction ^a	94.54	16.64	54.50	120.00	.24**	.24**	.30**	-

Note. ^a Scale range: 1-5 with higher scores indicating more positive body image/sexual satisfaction, ^b Scale range: 0-5 with higher scores indicating more body awareness, ^c Scale range: -1-5 with higher scores indicating more subjective sexual arousal p < 0.01.

Total, direct, and indirect effects of positive body image on sexual satisfaction through body awareness and subjective sexual arousal

The results of the multiple regression analysis are displayed in Figure 2. A significant total effect of positive body image on sexual satisfaction is found, adj. R^2 = .050, F(1,146)= 8.81, p= .003. This indicates that more positive body image is related to greater sexual satisfaction. No direct effect of positive body image on sexual satisfaction was found, F(3,144)= 6.21, p= .192. Together, positive body image, body awareness, and subjective sexual arousal explained 9.6% of the variance in sexual satisfaction, ΔR^2 = .06, F(2,144)= 4.69, p= .011; adj. R^2 = .096, F(3,144)= 6.21, p= .001.

Results of the bootstrap analysis revealed a significant total indirect effect, .12, BCa 95% CI [.029, .224]. Specifically, a significant indirect effect of positive body image on sexual satisfaction via body awareness and subjective sexual arousal (IND3) was found, .03, BCa 95% CI [.005, .074]. Also, a significant indirect effect of positive body image on sexual satisfaction via subjective sexual arousal (IND2) was found, .05, BCa 95% CI [.002, .103]. No significant indirect effect of positive body image on sexual satisfaction via body awareness was found (IND1), .04, BCa 95% CI [-.042, .135]. The pairwise comparisons revealed no significant differences between the indirect effects, with (IND1-IND2), -.004, BCa 95% CI [-.111, .110], (IND1-IND3), .009, BCa 95% CI [-.092, .110], and (IND2-IND3), .014, BCa 95% CI [-.049, .070]. Thus, as expected, a more positive body image was related to

more body awareness, which in turn was related to more subjective sexual arousal, which was subsequently related to greater sexual satisfaction.

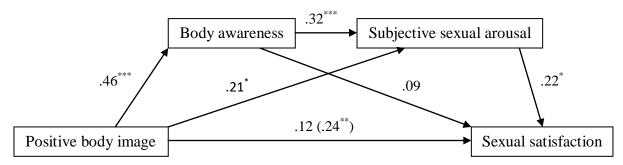


Figure 2. Total and direct effects (β) of the serial mediation model with positive body image as predictor, body awareness and subjective sexual arousal as mediators, and sexual satisfaction as outcome. The total effect is displayed in parentheses.

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

Discussion

The present study investigated the relationship between positive body image, body awareness, subjective sexual arousal, and sexual satisfaction. As expected and in line with previous studies (e.g., Robbins & Reissing, 2018; Satinsky et al., 2012; Shepler, Smendik, Cusick, & Tucker, 2018), a more positive body image is significantly related to greater sexual satisfaction. The present study expands previous research on the relationship between positive body image and sexual satisfaction in women by targeting the role of body awareness and subjective sexual arousal in this relationship.

The results of the mediation analysis showed, as expected and in line with the embodiment model of positive body image (Menzel & Levine, 2011) and previous findings (e.g., Seal & Meston, 2007; Tylka, 2012; Van den Brink, 2017), that the relationship between positive body image and sexual satisfaction is mediated by body awareness and subjective sexual arousal. Thus, the results suggest that women who experience more love and respect for their body are able to focus more on and be more aware of their bodily sensations. This greater body awareness may in turn lead to a greater subjective evaluation of the autonomic activation that prepares the body for sexual activity, which contributes to more sexual satisfaction. This indicates that indeed, positive body image protects individuals from having negative appearance-related thoughts and exaggerated appearance-related self-consciousness during sexual activity (Van den Brink, 2017), but instead are more aware of their interoceptive body sensations. This is in accordance with the embodiment model of positive body image (Menzel & Levine, 2011), because connectedness with and attention for the body seems to be a direct and healthy alternative for self-consciousness during sexual activity. This is supported by the study of Ackard, Kearney-Cooke, and Peterson (2000), who found that positive body image is inversely related to self-consciousness. The awareness of body sensations facilitate focusing on sexual pleasure and positive sexual experiences (Van den Brink, 2017), and thereby increase sexual response and subjective sexual arousal (Seal & Meston, 2007). This has, at last, positive consequences for sexual satisfaction.

From these results it can be concluded that positive body image, body awareness, and subjective sexual arousal are meaningfully associated with sexual satisfaction. However, it must be noted that these variables only explained a small amount of variance of sexual satisfaction. This indicates that sexual satisfaction can also be explained by other variables. According to Ménard and Offman (2009) for example, sexual satisfaction is related to sexual self-esteem. This relationship is mediated by sexual assertiveness, which suggests that sexual satisfaction is greater in women who view their sexuality in a positive light and therefore are more comfortable asserting their sexual needs and initiate their desired sexual behaviours (Ménard & Offman, 2009). The relationship between sexual self-esteem and sexual satisfaction is also found by Higgins, Mullinax, Trussell, Davidson, and Moore (2011). In this study, it is also found that different factors on the individual-, relationship-, and cultural-level are related to sexual satisfaction, for example sexual guilt and relationship quality (Higgins et al., 2011). This underlines that sexual satisfaction can also be explained by other variables than positive body image, body awareness, and subjective sexual arousal. According to Del Mar Sánchez-Fuentes, Santos-Iglesias, and Sierra (2014), there is a lack of theoretical models combining the most important variables to explain sexual satisfaction. The present study has

contributed to this by gaining more insight into a part of the explanatory variables, but more insight into this can be gained by future research.

The results of this study shed light on the importance of paying attention to positive body image in promoting sexual satisfaction in the general population. However, a more direct way to enhance sexual satisfaction is by enhancing body awareness. Based on the results of this study and the embodiment model of positive body image (Menzel & Levine, 2011), it could be said that connectedness with and attention for the body has a positive effect on sexual experiences. More body awareness can facilitate focusing on sexual pleasure and positive sexual experiences (Van den Brink, 2017), and thereby increase sexual satisfaction. It is thus important to have attention for the internal experiences and functionality of the body and to reduce the focus on the external appearance of the body (Tiggemann, Coutts, & Clark, 2014; Van den Brink, 2017). This could be done by participating in embodying activities. These are activities which involve a mind-body integration, characterized by a feeling of being 'at one' with one's body (Menzel & Levine, 2011; Van den Brink, 2017), such as sports, hiking, or training circus skills (Tiggemann et al., 2014). According to Impett et al. (2006), yoga does also lead to embodiment and more body awareness, and does therefore have good implications for sexual satisfaction. Thus, women and girls should be encouraged to participate in such embodying activities throughout the lifespan (Tiggemann et al., 2014).

Participating in embodying activities can also be encouraged in clients in clinical practice treated for improving their sexual satisfaction. According to Silverstein, Brown, Roth, and Britton (2011), mindfulness training, including meditation training, has positive effects on body awareness, highlighting the potential of mindfulness training for improving sexual satisfaction. Mindfulness-based therapies adapted into clinical practice are for example, Mindfulness-Based Stress Reduction and Mindfulness-Based Cognitive Therapy (Silverstein et al., 2011). Furthermore, sexual health could be enhanced by Body Awareness Therapy (Areskoug-Josefsson & Gard, 2015). The word 'awareness' in this concept means being fully mentally present, in the here and now, accepting limitations and assets (Gyllensten, Hansson, & Ekdahl, 2003). The aim of this treatment is to increase bodily and mental balance, freedom in movement and breathing and strengthen the ability to be mentally present. This is done by grounding, paying attention to the postural line, and coordination and centering of movements (Gyllensten, Hansson, & Ekdahl, 2003). In can be concluded that these forms of interventions may be beneficial for improving sexual satisfaction, by improving body awareness at first.

Limitations

Although the present study offers further insights in the association between positive body image and sexual satisfaction, some limitations need to be acknowledged. First of all, the present sample consisted predominantly of highly educated, young Dutch women. Because of this quite homogeneous sample, results of this study may not be representative of the population as a whole. The extent to which the relationship between positive body image and sexual satisfaction, explained by body awareness and subjective sexual arousal also apply to women of all ages and non-Dutch ethnicities remains uncertain. According to Tiggemann and McCourt (2013), older women had higher levels of body appreciation in comparison with younger women. In addition, Altabe (1998) found that in general non-Caucasians have a more

positive body image than Caucasians, indicating the importance of studying multiple ethnic groups. Thus, future research including more heterogeneous samples would be beneficial to the literature.

Furthermore, the quality of the relationship with the partner is not incorporated in this study. The study focused only on the intrapersonal aspects of positive body image, body awareness, and subjective sexual arousal in relation to sexual satisfaction. However, sexual satisfaction (Yeh, Lorenz, Wickrama, Conger, & Elder, 2006) and positive body image (Van den Brink, 2017) are both related to relationship quality. More specifically, the relationship between positive body image and relationship quality can be explained by sexual satisfaction (Van den Brink, Vollmann, Smeets, Hessen, & Woertman, 2018). The interrelation of these variables implicates that it is important to incorporate relationship quality, and maybe other interpersonal variables, in future research into positive body image and sexual satisfaction. Preferably, this would be done with a dyadic design, in which is controlled for the between-person effects within couples.

Also, only one aspect of positive body image (i.e. body appreciation) was assessed in the present study. Future research may use more comprehensive positive body image measures in order to differentiate between the role of the various aspects of positive body image, such as internal body orientation and functional body satisfaction (Homan & Tylka, 2014), in association with sexual satisfaction (Van den Brink, 2017).

Lastly, given the cross-sectional nature of the study, direction of causality could not definitely be determined. Based on previous theorizing and existing research (e.g., Masters & Johnson, 1970; Robbins & Reissing, 2018; Satinsky et al., 2012; Seal & Meston, 2007; Shepler, Smendik, Cusick, & Tucker, 2018), we believe that a positive body image does, in fact, lead to more body awareness, which in turn facilitates subjective sexual arousal and therefore subsequently leads to more sexual satisfaction. However, according to the embodiment model of positive body image (Menzel & Levine, 2011), it is also possible that engaging in embodying activities, such as yoga, enhances body awareness, which in turn contributes to a positive body image. Longitudinal studies are needed to study the effects over time.

Conclusions

Despite these limitations, the study adds to the existing literature by targeting the role of body awareness and subjective sexual arousal in the relationship between positive body image and sexual satisfaction in women. Specifically, it was found that a more positive body image is related to more body awareness, which in turn is related to more subjective sexual arousal, which is subsequently related to more sexual satisfaction. Further understanding of this relationship will be valuable in selecting the appropriate targets for effective treatment interventions helpful in building a pleasurable and more satisfying sex life, and thereby improve women's overall well-being.

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