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Body Image Concern and Sexual Function Relationship in the Postpartum Period: The Mediating Role of Sexual Self-esteem

Mahin Noroozi Dashtaki[1], Mohammad Sadegh Zamani Zarchi[2], Ali Hosseinzadeh Oskouei[3], Mona Baghbani Nader[4], Amir Sam Kianimoghadam[5*]

1. MSc in Family Counseling, School of Psychology and Educational Sciences, Shahid Beheshti University, Tehran, Iran.
2. PhD Student of Counseling, Department of Counseling, School of Psychology and Education, Kharazmi University, Tehran, Iran.
3. PhD Student in Clinical Psychology, Department of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
4. MSc in Family Counseling, School of Psychology and Educational Sciences, Shahid Beheshti University, Tehran, Iran.
5. Assistant Professor, Department of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.

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ABSTRACT

Introduction: The postpartum period is associated with stress due to extensive psychological and physiological changes that occur in women. These changes may result in a re-evaluation of sexual function and related factors.

Objective: The main aim of this study was to investigate the relationship between body image concern and sexual function with the mediating role of sexual self-esteem among women in the postpartum period.

Materials and Methods: In this descriptive-analytical correlational research, the study population consisted of all women referring to medical centers affiliated with the Tehran University of Medical Sciences, Tehran City, Iran, in 2022. The sample consisted of 239 participants selected by multi-stage convenient sampling. The female sexual function index, body image concern inventory, and sexual self-esteem inventory were used to collect data, which were analyzed using Pearson correlation and structural equation modeling.

Results: The data analyses from 239 participants with a mean age of 32.42±6.60 years indicated a significant correlation between body image concern and sexual self-esteem (P=0.01, r=-0.54). In addition, there was a significant correlation between sexual self-esteem and female sexual function (P=0.01, r=0.43). Although there was a significant relationship between body image concern and female sexual function, this correlation was not strong enough (P=0.01, r=-0.24). The results of path analysis also indicate that body image concern is not directly related to women's sexual function. Still, it can indirectly play a role in women's sexual function through sexual self-esteem.

Conclusion: Based on the results, body image concern affects sexual function among women after childbirth through sexual self-esteem. Thus, mental health professionals are recommended to consider body image concerns and sexual self-esteem to select the most appropriate treatment for sexual dysfunction in women.

*** Corresponding Author:**
Amir Sam Kianimoghadam, Assistant Professor.
Address: *Department of Clinical Psychology, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran.*
Tel: *+98 (910) 1044425*
E-mail: *kianimoghadam@sbmu.ac.ir*

Highlights

- Body image concern is significantly related to sexual self-esteem among women.
- Sexual self-esteem is significantly related to female sexual function among women.
- Body image concern affects female sexual function through sexual self-esteem.

Plain Language Summary

The postpartum period occurs immediately after childbirth, with extensive changes occurring in women. This condition may interrupt sexual function and related factors. Despite a wide range of research on women's sexual function during pregnancy and the postpartum period, the role of psychological factors affecting sexual function has received little attention. Accordingly, this study was undertaken to investigate the relationship between perceived body image and sexual function with the mediating role of sexual self-esteem among women in the postpartum period. The results show that body image concerns affect sexual function among women through sexual self-esteem. Therefore, such factors should be respected by mental health professionals to select the most appropriate interventions for sexual dysfunction in women.

Introduction

Pregnancy and the postpartum period are associated with significant psychological and physiological changes, which in some cases create many challenges among mothers [1]. Sexual function decreases during pregnancy and does not return to its baseline in the postpartum period. Sexual dysfunction includes severe discomfort and stress for at least 6 months [2]. Postpartum sexual function can be affected by various factors such as hormonal changes, postpartum hemorrhage and bleeding, breastfeeding, episiotomy and perineal pain, stress, fatigue and mood swings, sleep disturbance, parental role, baby sleep concerns, physical and mental problems such as postpartum depression and potentially painful and long-term effects of vaginal delivery or cesarean section complications as well as changes in mental perception of the body [3-8]. Specifically, body image and sexual self-esteem are important psychological factors affecting sexual dysfunction [9]. Changes in the body's appearance, especially in the genitals, due to pregnancy, surgery, and childbirth may result in women's new attitudes toward their bodies and, consequently, impaired sexual function [4].

Body image is a multidimensional, dynamic and social structure consisting of an individual's feelings, thoughts, attitudes and behaviors regarding their appearance [10]. After pregnancy and during the postpartum period, whether the change in the body is minor or significant, the individual's attention is allocated toward the reshaped area and there will be a difference between the actual body size and the perceived body image [11].

Body image satisfaction and positive feelings about the body are associated with sexual satisfaction, sexual self-efficacy and sexual self-esteem [12]. On the other hand, negative body image will lead to dissatisfaction with the body, feeling unattractive and ultimately becoming preoccupied with the physical condition of the body [13]. Women with a negative self-image underestimate their sexual self-esteem and are more likely to be sexually rejected by their partners [14]. In contrast, women who are less preoccupied with their body image during intimate relationships with their sexual partners show a higher level of sexual self-esteem and consider themselves as good sexual partners [15].

Sexual self-esteem refers to people's emotional response to the evaluation of their thoughts, feelings, and sexual behaviors [16]. As mentioned before, an individual's feelings about his or her body (as one of the components of sexual self-esteem) may change during pregnancy and after childbirth and the person may lose the feeling of being attractive and desirable. Sexual self-esteem facilitates the awareness, cognition and self-assessment of each person regarding the nature of their sex life, which leads to changes in the psychological process of individuals in sexual relations and has a direct impact on their sexual behavior and performance [17]. Women with high sexual self-esteem have reported higher levels of sexual performance and satisfaction [18-20].

Although examining the history of research in different samples shows the effect of body image and self-esteem on the quality of sexual life among individuals [21-23] and despite extensive research on women's sexual function during pregnancy and postpartum period, the role of such psychological factors affecting sexual function has received little attention. This study was undertaken to investigate the relationship between body image concern and sexual function with the mediating role of sexual self-esteem among women in the postpartum period.

Materials and Methods

The present study is descriptive-analytical correlational. Body image with two components of dissatisfaction with appearance and interference in social functioning was considered an exogenous variable and sexual self-esteem and female sexual function were endogenous variables. The statistical population consisted of married women with a history of childbirth who were referred to health centers affiliated with Tehran University of Medical Sciences, Tehran City, Iran, in 2022. The samples were selected using a multi-stage sampling method. First, several centers were randomly selected, and the samples were taken using convenient sampling based on the number of clients. Regarding the minimum sample size for path analysis studies (n=200) [24] and the possible sample dropout (20%), 250 participants were selected. Ultimately, due to the elimination of invalid or unusable questionnaires, 239 questionnaires were analyzed.

The inclusion criteria comprised married Iranian women aged between 18 and 45 years, spending at least 3 months and a maximum of 6 months after delivery, having a single healthy baby, not having multiple sexual partners, internet accessibility and no medical diseases or drug and alcohol addiction. The exclusion criterion included incomplete or unfinished questionnaires. The data were collected using measures which are addressed in the following:

The female sexual function index (FSFI) is an indicator of women's sexual function developed by Rosen et al. [25]. This 19-item index comprises six domains: Sexual function, sexual arousal, vaginal moisture, orgasm, satisfaction, and pain. The items on this index are graded based on a Likert type. The questions 8, 10, 12, 17, 18, and 19 are scored in reverse. The minimum and maximum scores in the FSFI are 2 and 36, respectively. Scores ≤36 are considered the cut-off score to diagnose women with sexual dysfunction. The Persian version of this index was used in the present study, which was standardized by Mohammadi et al. [26]. The Cronbach α reliability coefficient of this index in the present study was 0.90.

The sexual self-esteem questionnaire (SSFI-W) was developed by Doyle Zeanah and Schwarz [27] and standardized by Farokhi and Shareh in Iran [28]. The main questionnaire consisted of 35 questions that measured the effective answers to women's sexual evaluations in 5 subscales: Experience, skill, attractiveness of control, moral judgment and compliance. Questions are scored on a 5-point Likert scale (1=strongly disagree, 2=disagree, 3=have no opinion, 4=agree, and 5=strongly agree). The questions 4, 5, 9, 11, 12, 15, 16, 18, 19, 20, 21, 24, 25, 26, 27, 29, and 31 are scored in reverse. The minimum and maximum scores are 35 and 175. In the study by Farokhi and Shareh [28], questions 1, 3 and 33 were removed from the total number of questions due to a factor load of less than 0.30, and the number of questions was reduced from 35 to 33. In the present study, the Cronbach α coefficient was 0.91.

The body image concern inventory (BICI) was developed by Littleton et al. [29] to examine a person's dissatisfaction and concern about their appearance and contains 19 items with five options that are rated from 1 (never) to 5 (always). The minimum and maximum scores are 19 and 95. The higher the scores, the higher the individual's concern about appearance and body. Factor analyses supported a two-factor structure of two highly correlated subscales, the first of which tapped dysmorphic appearance concern and the second of which tapped interference in functioning due to appearance concerns. This questionnaire has been standardized by Mohammadi and Sajadinejad [30] in Iran and has appropriate validity and reliability. The Cronbach α reliability coefficient of this inventory in the present study was found to be 0.92.

After obtaining consent from the participants, the necessary information was collected online by Google Forms. The links were shared on WhatsApp and Telegram and the data were recorded in Google Docs. Finally, the research data were analyzed using descriptive statistics (Mean±SD) and inferential statistics (Pearson correlation and structural equation modeling) using Amosv software, version 22.

Table 1. Distribution of demographic variables of samples (n=239)

Variables		Mean±SD/No. (%)
Age (y)		32.42±6.60
Marriage duration (y)		10.10±6.84
Type of delivery	Normal vaginal delivery	87(36.4)
	Cesarean section	146(61.1)
Number of children	1	140(58.6)
	2	78(32.6)
	3	17(7.1)
	4	4(1.7)
Education	Primary/secondary education	8(3.3)
	Diploma	54(22.6)
	Higher education	177(74.1)

Results

The results revealed that the mean age of participants was 32.42±6.60 years. In terms of education, 3.3% of participants were poorly educated (primary/secondary education), 22.6% had a high school diploma or equivalent, and 74.1% were in higher education (bachelor/master/doctoral). The Mean±SD of the marriage duration among the participants were 10.10±6.84, respectively. Regarding the type of delivery, 87 participants

Table 2. The Mean±SD of participants' scores in the research subscales

Variables	Subscale	Mean±SD/No. (%)
Body image concern	Dysmorphic appearance concern	21.49±7.34
	Interference in functioning	18.84±6.81
Sexual self-esteem	Experience and skill	24.18±3.56
	Control	23.38±3.89
	Attractiveness	25.30±5.45
	Moral judgment	28.10(4)
	Adaptiveness	22.69(4.4)
Variables	**Domain**	**Mean±SD**
Female sexual function	Desire	3.77±0.91
	Arousal	4.08±1.19
	Lubrication	2.99±0.54
	Orgasm	3.83±0.68
	Sexual satisfaction	4.71±1.27
	Sexual pain	1.88±0.99

Table 3. Correlation coefficients of research variables

Variables	Body Image Concern		Sexual Self-esteem		Female Sexual Function	
	r	P*	r	P*	r	P*
Body image concern	1					
Sexual self-esteem	-0.54	0.01	1			
Female sexual function	-0.24	0.01	0.43	0.01	1	

*The Pearson correlation coefficients.

(36.4%) had a normal delivery, and 152(63.6%) had a cesarean. Also, 140 participants (58.6%) had one child, 78(32.6%) had two children, 17(7.1%) had three children and 4(1.7%) had four children (Table 1).

The mean of participants' scores in subscales of body image concern (dysmorphic appearance concern and interference in functioning due to appearance concerns), sexual self-esteem (experience and skill, control, attractiveness, moral judgment, adaptiveness), and female sexual function (desire, arousal, lubrication, orgasm, sexual satisfaction, and sexual pain) are presented in Table 2.

Table 3 shows a significant correlation coefficient between body image concern and sexual self-esteem (P=0.01, r=-0.54). In addition, there was a significant correlation between sexual self-esteem and female sexual function (P=0.01, r=0.43). Although there is a significant correlation between body image concern and female sexual function at the level of 0.01, this correlation is not strong enough (r=0.24).

Structural equation path analysis (generalized least squares) was used to investigate the mediating role of sexual self-esteem in the relationship between body image concern and female sexual function. Before performing the analysis and testing the default model, the basic assumptions of this statistical method, namely the study of missing data, the normality of data distribution, and a linear relationship between variables, were examined. According to the results, all the assumptions were confirmed.

Figure 1 shows the standard coefficients of pathways for the default model of the mediating role of sexual self-esteem in the relationship between body image

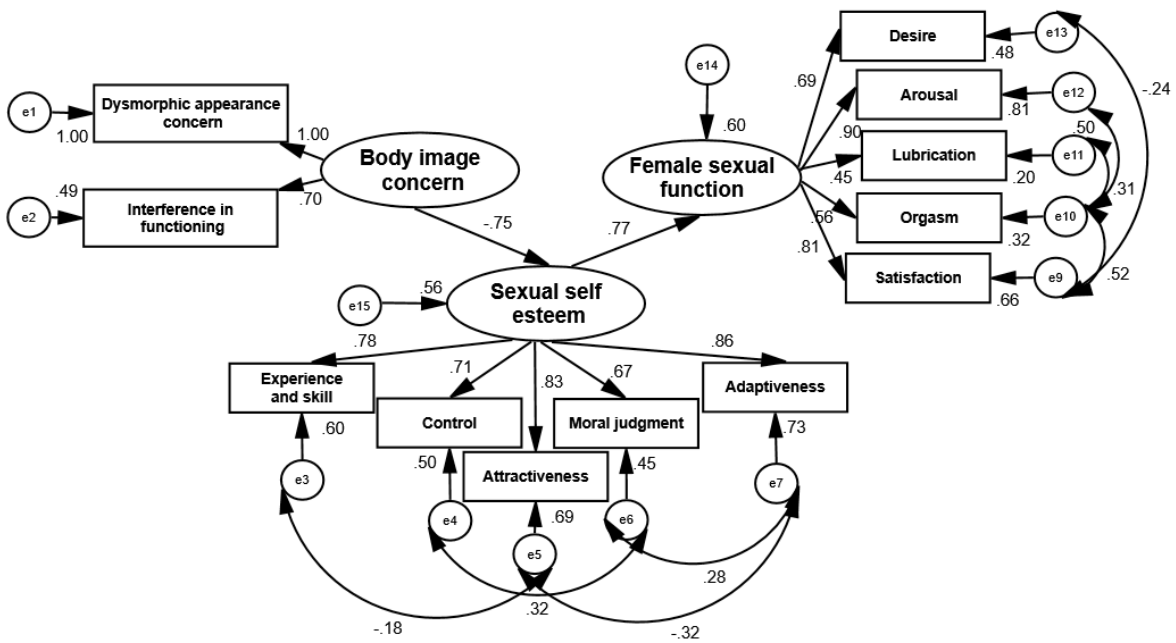

Figure 1. Tested model of the mediating role of sexual self-esteem in the relationship between body image concern and female sexual function

Table 4. Direct effects of standard, non-standard, path coefficients and significance

Path		Bounds		Standard Estimate	Non-standard Estimates	SE	t	P
		Lower	Upper					
Body image concern	Sexual self-esteem	-0.491	-0.355	-0.746	-0.428	0.039	-11.017	0.001
Sexual self-esteem	Female sexual function	0.095	0.144	0.772	0.119	0.014	8.810	0.001

Table 5. Fit indices of the model of the mediating role of sexual self-esteem in the relationship between body image concern and female sexual function

Goodness of Fit Measures	χ^2	df	χ^2/df	CFI	GFI	AGFI	RMSEA
Value collected	129.603	45	2.88	0.72	0.90	0.84	0.08
Value recommended	-	-	<3	>0.80	>0.95	>0.80	<0.09

Abbreviations: χ^2: Chi-square test; χ^2/df: Normed chi-square; GFI: Goodness of fit index; CFI: Comparative fit index; AGFI: Adjusted goodness of fit index; RMSEA: Root mean square error of approximation.

concern and female sexual function. Based on the results, due to the lack of significance in the path coefficient between body image concern and female sexual function, this path was removed from the model. In addition, to modify the default model, the observable variable sexual pain, as one of the female sexual function components, was removed. It should be noted that other path coefficients were significant (P=0.01).

Table 4 indicates that female sexual function is directly affected by sexual self-esteem. In addition, body image concern is directly related to sexual self-esteem. According to the indicators obtained from Amos software, the indirect effect of body image concern on female sexual function was -0.576. Based on the results, although the body image concern is not directly related to female sexual function, it can indirectly play a role in female sexual function through sexual self-esteem. In the following, the model fit indices will be examined.

Table 5 presents the model fit indices. The chi-square test (χ^2), the normed chi-square (χ^2/df), and the goodness of fit index (GFI) confirm the model fit. However, based on the comparative fit index (CFI), adjusted goodness of fit index (AGFI), and the root mean square error of approximation (RMSEA), the present model does not show a good fit. Therefore, while some indices indicate a good fit of the hypothesized model with the data, other indices do not show an acceptable estimate.

Discussion

This study aimed to investigate the relationship between body image concern and sexual function with the mediating role of sexual self-esteem among women with a history of childbirth. Findings indicate a significant correlation between body image concern and sexual self-esteem. In addition, there is a significant correlation between sexual self-esteem and sexual function. Also, body image concern is not directly related to women's sexual function but can indirectly play a role in women's sexual function through sexual self-esteem. The results of the present study are consistent with the findings of the previous research [21-23, 31-33].

Female sexuality is very complicated [34] and can be influenced by an individual's perceived body image and self-esteem [35, 36]. Consistent with the previous research [37], the results show that negative perceived body image is associated with low self-esteem and reduced ability to have sex and sexual self-expression. Therefore, negative body image and low self-esteem both disrupt the sexual cycle [38]. As previously stated, women's body image and sexual self-esteem are considered important predictors of sexual function. In explaining the findings, it should be noted that people with negative body image lack sexual self-esteem, often refrain from sexual intercourse, and demonstrate very low sexual self-expression [39]. In contrast, a positive body image affects sexual self-esteem and sexual function so that women who are more sex-positive and satisfied with their body image experience greater desirable sexual function [40].

Thus, having a positive body image may result in higher levels of sexual self-confidence, higher levels of sex drive, and lower levels of sexual avoidance. On the other hand, women with a negative body image do not find themselves attractive, usually avoid sex, and have lower levels of sexual satisfaction. People with a better idea about themselves are more confident about their sexual abilities. In such a situation, a person will naturally have better sexual function. The results of the present study indicated that women may have a negative body image due to the physical changes caused by childbirth and refuse to have sex, and this, in turn, can interrupt their sexual function.

Sexual self-esteem includes self-confidence in communicating freely with a partner about sex [41] and a sense of self-confidence in one's sexual abilities [42]. Based on the results, positive aspects of sexual self-esteem have a direct and strong relationship with all dimensions of sexual function. In addition, positive sexual self-esteem plays a vital role in improving sexual behavior [43, 44].

Moreover, sexual self-esteem is of particular importance as it is closely associated with non-painful sex. Women with higher sexual self-esteem report more intimacy and engagement in sexual intercourse [45, 46]. Women with high self-esteem and sexual self-awareness recognize their abilities, focus on their positive aspects and traits, and try to introduce these characteristics to others. Therefore, these individuals have better performance in terms of sexual function, and they are more successful in establishing effective relationships with their partners [47]. These patterns have implications for psychological interventions targeting mental and sexual health in women in the postpartum period. Besides, essential pre-pregnancy and pregnancy interventions, along with psychosocial counseling that incorporates sexual counseling, could be integrated by trained individuals to help empower these individuals [48]. Women's bodies change due to aging and biological functions such as pregnancy, childbirth, and breastfeeding. As a result, women may benefit from support towards positive feelings as their bodies adjust and change in ways that help them maintain a sense of physical/emotional attraction during intimacy. A couple's approach or education might help support encouragement, appreciation, and respect from their husbands, as concerns about body appearance can affect marital satisfaction [49].

To date, little research has been conducted investigating the relationship between sexual function and body image concerns among postpartum women. The results of the present study indicated no direct relationship between sexual function and body image concerns. This finding is consistent with the findings of studies by Faridi et al. [50] and is inconsistent with the research by Woertman and Van den Brink [41]. They reported that women's sexual function is strongly related to their perceptions of gender. This issue may indicate the need for further research regarding the role of gender.

According to the results of the present study, body image concerns can affect sexual function through other variables, such as sexual self-esteem. Women who have high sexual self-esteem have better sexual function, and those who have good sexual function also have higher sexual self-esteem. According to the World Health Organization [51], sexual function is a significant part of women's sexual health. To improve family health and, ultimately, public health, it is important to pay attention to sexual health as well as early diagnosis and treatment of sexual dysfunction in couples, especially in the postpartum period. Therefore, studying problems and dysfunctions during the postpartum period is very important. Since body image concern affects sexual function through sexual self-esteem, it is necessary to pay particular attention to the improvement of these issues in the postpartum period.

This study has some limitations which have to be pointed out. Because sex is one of the most private issues and considering the cultural and religious considerations in Iranian society, people may not be able to disclose their sexual issues easily. Therefore, the role of social desirability or hesitation to disclose personal feelings may have occurred in the study. Another limitation of the present study was the lack of access to information about participants' sexual function before pregnancy. This means that it is impossible to compare the results of sexual function before, during, and after pregnancy. The present study only examined body image concerns, sexual self-esteem, and sexual function among women with the experience of giving birth. Thus, researching other variables affecting sexual function can be helpful and instructive.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Ethics Committee of Shahid Beheshti University of Medical Sciences (Code: IR.SBMU.MSP.REC.1401.119). The participants were informed about the research purposes and assured about the confidentiality of their information. Moreover, they were entitled to leave the study whenever they wished, and the research results would be available if desired.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declared no conflict of interest.

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