

Spousal Postpartum Social Support and Association with Sexual Function and Sexual Quality of Life among Breastfeeding Women

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Abstract

Background: The present study investigated the relationship between spousal support during postpartum period and the sexual function and sexual quality of life among lactating women.

Methods: A cross-sectional study was carried out from October to March 2021 comprising 301 breastfeeding women referred to comprehensive health centers in Qazvin, Iran. The sampling method was performed in two stages. First, via cluster sampling, ten comprehensive health centers were randomly selected. Then based on list of lactating mothers in each center, 31 mothers were randomly selected and invited to complete the survey. The survey included three psychometric instruments (i.e., Postpartum Partner Support Scale [PPSS], Female Sexual Function Index [FSFI] and Sexual Quality of Life-Female version [SQOL-F]) as well as a reproductive and demographic information questionnaire. The findings were analyzed using univariable and multivariable regression models at a significance level of $p < 0.05$.

Results: The participants had a mean age of 30.33 years and mean length of marriage of 7.99 years. A total of 219 women were exclusively breastfeeding (72.8%), and 82 used a combination of breastfeeding and formula milk to feed their infants (27.2%). The mean (standard deviation) scores in the postpartum period were 61.34 out of 80 (SD=11.41) on the PPSS, 86.52 out of 108 (SD=19.68) on the SQOL-F, and 22.78 out of 36 (SD=6.20) on the FSFI. Based on adjusted multivariable regression models, spousal support in the postpartum period was a significant predictor of sexual quality of life ($\beta=0.39$, $p < 0.001$) but not a significant predictor of sexual function. Sexual quality of life was a significant predictor of sexual function ($\beta=0.44$, $p < 0.001$).

Conclusion: Given the importance of spousal support during the postpartum period in relation to sexual quality of life and sexual function, designing and implementing counseling programs based on the role of spousal support during postpartum sexual life would be helpful.

Keywords: social support, sexual function, sexual quality of life, breastfeeding

Background

Pregnancy and childbirth are specific periods in a woman's life which cause hormonal and physical changes which have significant effects on (i) maternal health and quality of life (1), (ii) the women's sexual desire, and (iii) the health of a couple's sexual relationship (2, 3). Breastfeeding can affect both sexual activity and sexual quality of life among women during the postpartum period. Women's sexual health in the postpartum period can also be affected by factors such as age, education level, years of marriage or relationship with their spouse, sexual conditions before and during pregnancy, delivery type, mental problems, and perineal lacerations (2-5).

The decrease of estrogen level during the postpartum period due to breastfeeding reduces sexual function because of vaginal dryness, vaginal epithelium atrophy, and dyspareunia (6, 7). Fatigue, insomnia, and some stressors such as caring for a baby that is very time consuming, as well as changes in body image during breastfeeding are factors which reduce interest in sex and reduce the number of sexual relationships (2, 8). Couples generally experience a significant reduction in postpartum sexual activity due to hormonal changes and compliance with parental role (9, 10).

According to the World Health Organization, "*sexual health is a state of physical, emotional, mental and social well-being that is related to sexuality and it's not just the absence of disease, dysfunction or disability*" [p.1] (11). Sexual function is defined as the absence of problems in the stages of desire, arousal, and orgasm. In addition, the person must have satisfaction with the frequency and outcome of individual and partnered sexual behavior (12). Sexual dysfunction among women is a common problem that can have devastating effects on women's quality of life and can also have economic and social effects. It comprises disorders of sexual desire, arousal, orgasm, and sexual pain that lead to personal discomfort (13).

The overall prevalence of sexual problems during the breastfeeding period has been estimated to be between 22% and 86% (14). Various studies have reported that breastfeeding women's sexual function is worse than before pregnancy, because the prevalence of sexual dysfunction is 19%-63% during the prenatal period (15, 16) increasing to 34%-91% during the postpartum period (17, 18). The prevalence of sexual dysfunction during breastfeeding has been found to vary with reported rates of 31.50% (19), 41.4% (20), and 73.8% to 85.4% (21).

The general quality of life of women after childbirth has been studied but less attention has been paid to the sexual quality of life (SQOL). SQOL is an important concept for assessing short-term and long-term outcomes of sexual problems on individual' QoL (22). Eden and Wylie asserted that female sexual dysfunction can affect perceived SQOL (23). Moreover, SQOL is an interactive and dynamic state, which can change over the course of time and as the circumstances change (24). A study by Elenskaia et al. reported that women's SQOL decreases after childbirth (25). Effectively managing sexual issues in postpartum care is one of the ways to improve women's quality of life during this period (26).

Among breastfeeding women, there is a high probability of fatigue and mood disorders including postpartum sadness, depression, and psychosis, all which adversely affect mental and physical health, and subsequently overall quality of life among women (27, 28). These conditions require social support, especially for first-time mothers who may not be experienced in taking care of a baby and feel overwhelmed (29). Supporting mothers is associated with developing their self-confidence in infant care practices and breastfeeding (30, 31). Therefore, postpartum support for breastfeeding mothers can contribute to improvement of maternal and infants' well-being by helping new mothers to cope with the process of transition to motherhood

(32). According to national and international advice, support is also essential for the well-being of mothers and infants (30). Social support reduces stress and improves quality of life by playing a mediating role between life stressors and the incidence of physical and psychological problems, as well as strengthening individuals' cognition (33, 34). The role of spousal support has been regarded as essential for improving maternal health during the postpartum period (35).

Men have an important role in their family's health across different dimensions (36). The postpartum and breastfeeding period is one of the most important periods during marital life because of its various effects on couple relationships. To best of the present authors' knowledge, previous studies have not investigated the association of spousal support with sexual life components during the postpartum period. Moreover, studies of the determinants of female sexual function and sexual quality of life among breastfeeding women have been limited. In addition, the present study utilizes the Postpartum Partner Support Scale (PPSS), a specific and newly validated tool that assesses spousal support during the postpartum period. More specifically, the present study investigated the relationship between spousal social support and the sexual function and SQOL among breastfeeding women.

Methods

Study design and participants

A cross-sectional survey study was carried out with breastfeeding women referred to comprehensive health centers in Qazvin (Iran) from October to March 2021. All women who have health records are referred to these centers after childbirth and receive various services (breastfeeding counseling, gynecology counseling, family planning, Pap smear, etc.). In the present study, the inclusion criterion of being a breastfeeding woman was based on participant self-report. Other inclusion criteria included being willing to participate in the study, being between six weeks and two years after childbirth, being Iranian, having the ability to read and write, having a healthy baby, being in a monogamous relationship, and living with their spouse, and having resumed the postpartum sexual relationship.

The exclusion criteria included having a history of chronic mental and physical illness (based on both self-report and the person's medical health record), having a history of sexually transmitted diseases, in the participant or spouse, experiencing various physical illnesses that affect sexual function (cardiovascular disease, mental illness, thyroid problems, and various cancers and genital injuries), using medications that affect sexual function (such as psychotropic, cardiovascular, neurological, and hormonal medications), being unwilling to participate in the study, and having major postpartum complications (e.g., psychosis).

Sample size estimation

Based on the study by Shirvani et al. (20) which reported a minimum prevalence of 41.4% sexual dysfunction in the postpartum period, α error was calculated to be 0.05 and estimation error was 0.06. Therefore, the minimum sample size was calculated to be 310 participants with a 20% probability of incomplete completion of the survey.

Sampling procedure

The sampling method was performed in two stages. In the first stage, cluster sampling was performed within the geographical areas of Qazvin (five districts). Two comprehensive health centers were randomly selected from each district (using a random number table). In the second stage, to access the participants in the selected health centers, a list of currently lactating

mothers was extracted from their health records in the selected comprehensive health centers. Then, 31 individuals from each selected comprehensive health center were randomly selected from the list using a random sampling procedure. Selected participants were contacted by telephone to explain the objectives of the study and the confidentiality of information was emphasized. After ensuring informed consent, participants were invited to attend the comprehensive health center to complete the survey. The surveys were self-completed on-site. In order to preserve confidentiality, the surveys were given to the participants in an envelope, and they were asked to place the survey in the envelope after completion.

Measures

The survey comprised four sections including three psychometric scales and a section asking about reproductive and demographic factors and variables:

Reproductive-Demographic Information Questionnaire

The first part of the survey included questions concerning personal demographic characteristics and reproductive characteristics of the participants including age, age of spouse, educational status, occupation, spouse educational status of spouse, occupation of spouse, economic status, housing status, living condition, gravid number, type of childbirth delivery, number of living children, neonate gender, neonate feeding, marriage duration, number of coitus weekly, sexual desire of spouse, dyspareunia before pregnancy, and dyspareunia after pregnancy.

Female Sexual Function Index (FSFI)

The 19-item FSFI developed by Rosen et al. (37) was used to assess sexual function among women over the past four weeks. Items (e.g., “*In the last four weeks, how satisfied have you been with having sex with your spouse?*”) are rated on five-point or six-point scales from 0 or 1 to 5 (with different answers for different questions). The scale assesses sexual function across six domains: sexual desire, arousal, lubrication, orgasm, satisfaction, and pain. The total scores range from 2 to 36 with higher scores indicating better sexual function (38). The scale has been used in many international studies and has shown to have a high degree of internal consistency and reliability (39). The psychometric properties of the Persian version of the FSFI have also been found to be a reliable and valid instrument for assessing sexual function among Iranian breastfeeding women (38, 40).

Postpartum Partner Support Scale (PPSS)

The 20-item PPSS developed by Dennis et al. (41) was used to assess postpartum partner support. Items (e.g., “*My spouse helps me take care of our baby*”) are rated on a four-point scale from 1 (strongly disagree) to 4 (strongly agree). The scale assesses three aspects of social support: emotional support, informational support, and instrumental support. The total scores range from 20 to 80 with higher scores indicating more social support for the mother (41). The psychometric properties of the Persian version of the PPSS has been found to be a reliable and valid instrument for assessing spousal support during the postpartum period among Iranian women (42).

Sexual Quality of Life-Female (SQOL-F)

The 18-item SQOL-F developed by Simond et al. (43) was used to assess sexual quality of life. Items (e.g., “*I feel depressed when I think about my sex life*”) are rated on a six-point

scale from 1 (*strongly disagree*) to 6 (*strongly agree*). The total scores range from 18 to 108 with higher scores indicating a better sexual quality of life (43). The psychometric properties of the Persian version of the SQOL-F has been found to be a reliable and valid instrument for assessing sexual quality of life among Iranian women (44).

Statistical analysis

The study data were analyzed using SPSS software version 24 at a significance level of $p < 0.05$. Continuous quantitative variables were described with means and standard deviations (SDs) and categorical variables were described with frequencies and percentages. First, normal distribution of data was checked and confirmed using central distribution and dispersion indices, histogram, and Shapiro-Wilks test. For the univariable regression analysis, the relationship between SQOL and sexual function as dependent variables with spousal social support in the postpartum period and demographic and fertility characteristics as independent variables were studied. Then, further multivariable linear regression was conducted. Independent variables that had a significant level of less than $p < 0.05$ in the univariable linear regression model were included in the multivariable model using the stepwise approach. Considerations of using linear regression method including normal distribution of dependent variable, absence of outlier data and collinearity between independent variables (all VIFs were less than 1.5 and tolerance less than 1) were controlled and confirmed. Significance level was considered less than $p < 0.05$.

Ethical considerations

The study was approved by the Research Review Board affiliated with Qazvin Faculty of Nursing and Midwifery (decree code: IR.QUMS.REC. 1399.382 in the Ethics Committee affiliated with Qazvin University of Medical Sciences, Approval Date: January 6, 2021). All research process was performed in accordance with relevant guidelines and regulations. Permissions to enter health and medical centers were obtained from authorities of Qazvin University of Medical Sciences. Next, the first author introduced herself to the women. After explaining objectives, assuring the participants about confidentiality of their data and possibility of withdrawing from the study, a written informed consent form was signed by those women who were willing to participate in the study.

Results

In the present study, 310 women were invited to take part and 301 women participated (response rate: 97.1%). The participants had a mean age of 30.33 years, and the mean age of their spouses was 35.01 years. The mean length of marriage was 7.99 years. Regarding educational status, 47.8% of women and 43.9% of their spouses had a university education. Over three-quarters of the participants identified themselves as housewives (78.7%). The majority of participants reported as having independent living conditions (82.4%) and having average family economic status (66.1%). The mean (standard deviation) scores in the postpartum period were 61.34 out of 80 (SD=11.41) on the PPSS, 86.52 out of 108 (SD=19.68) on the SQOL-F, and 22.78 out of 36 (SD=6.20) on the FSFI. Table 1 shows the demographic and reproductive characteristics of the participants.

Results of univariable linear regression assessing the association of these variables with SQoL and sexual function are shown in Table 2. The relationship between spousal postpartum social support with SQOL and sexual function was assessed using univariable and multivariable regression models by controlling the effect of demographic and reproductive variables (Tables 3

and 4). The results (Table 3) showed that each unit of increase in score on the scale of spousal postpartum social support was associated with 0.84 increase in score in the univariable model and 0.67 in the multivariable model on SQOL of breastfeeding women. According to the standardized beta coefficient values (0.49 [$p<0.001$] and 0.39 [$p<0.001$] in the univariable and multivariable models, respectively), spousal postpartum social support had a moderate and significant relationship with SQOL in the postpartum period. Based on the results of the multivariable regression model, other significant independent variables predicting SQOL of women in the postpartum period were female sexual function ($\beta = 0.40, p<0.001$), positive history of dyspareunia before pregnancy ($\beta = -0.18, p<0.001$) and mean number of children ($\beta = -0.12, p<0.001$).

The results of the study (Table 4) showed that spousal postpartum social support had a moderate and significant relationship ($\beta= 0.30, p<0.001$) with sexual function of breastfeeding women only in the univariable association. In the multivariable regression model, spousal postpartum social support was not a significant predictor. Other independent variables predicting female sexual function in the postpartum period were SQOL ($\beta = 0.44, p<0.001$), mean number of weekly coitus ($\beta = 0.40, p<0.001$), and neonate gender (girl vs. boy) ($\beta = 0.10, p=0.003$). A univariable linear regression model was performed to further investigate the relationship between spousal postpartum social support and sexual function subscales (Table 5). The highest effect size was observed in the relationship between spousal postpartum social support and the satisfaction subscale ($\beta = 0.41, p<0.001$). Spousal postpartum social support alone accounted for 24% of the variance for sexual quality of life and sexual function.

Discussion

The present study investigated the relationship between spousal social support during the postpartum period and the sexual function and sexual quality of life (SQOL) among breastfeeding women referred to comprehensive health centers in Qazvin (Iran). The mean (standard deviation) scores in the postpartum period were 61.34 out of 80 ($SD=11.41$) on the PPSS, 86.52 out of 108 ($SD=19.68$) on the SQOL-F, and 22.78 out of 36 ($SD=6.20$) on the FSFI. Postpartum social support was a significant predictor of SQOL in both univariable and multivariable regression models with moderate and significant relationships. Therefore, as spousal postpartum social support increases, women experience a better sexual quality of life. Postpartum social support had moderate and significant relationship with sexual function only in the univariable model. Consequently, spousal postpartum social support can be considered as one of the key variables affecting women's sexual function during the postpartum period. However, in the multivariable model, postpartum social support was not a significant predictor of sexual function.

In the present study, the mean score of the spousal level of postpartum social support was 61.34 out of 80 ($SD = 11.41$). In another study conducted in Iran by Eslahi et al. (34), the spousal level of postpartum social support was 64.32 ($SD = 10.45$). Other studies have used different tools to assess social support to examine the concept of social support. However, in the present study and that of Eslahi et al., specific tools were used assess spousal postpartum social support, and they yielded similar results. The mean score of participants on the SQOL-F was 86.52 (out of 108), which was much higher than the 54.14 reported by Yurtsal in a study of Turkish breastfeeding women (45). In another Turkish study with breastfeeding women by Yilmaz, the mean was 60.07 (46). In an Egyptian study of breastfeeding women (3-6 months after childbirth) by El Sayed et al., with breastfeeding women, the mean score was 56.25 among women who

gave birth vaginally and 55.05 among women who had a cesarean section (47). In the present study, the mean SQOL was much higher than the mean obtained in other similar studies. This may be associated with the different time frames in the existing studies. Most previous studies examined the SQOL up to six months after delivery, while in the present study, breastfeeding women participated in the study up to two years after childbirth. Previous studies have shown that after childbirth as the frequency of sexual intercourse increases and dyspareunia decreases, the quality of women's sexual life increases (48, 49).

The mean score of sexual function in the present study was 22.78 out of 36 (SD=6.20). A sexual function score of 22.24 (SD=7.93) was reported in another study of Iranian breastfeeding women by Rezaei et al. (40). The study of Egyptian breastfeeding women by El Sayed et al. reported a score of 21.41 (SD=2.82) in the vaginal delivery group and 22.27 (SD=2.27) in the cesarean section group (47). The results of these studies show that the mean scores of sexual function during breastfeeding were similar to each other.

The results obtained in the present study showed there was a significant and positive relationship between the spousal postpartum social support and SQOL during the postpartum period. Therefore, individuals with higher levels of spousal postpartum social support experienced a better sexual quality of life, and spousal postpartum social support alone accounted for 24% of the variance the sexual quality of life. Although no previous study has examined the relationship between spousal social support and quality of postpartum sexual life, Jaworski et al. reported that perceived spousal support during pregnancy was associated with increased levels of women's sexual satisfaction after childbirth (50). Nohara also reported that family support had a strong relationship with women's postpartum quality of life (51). Women with low social support experience more postpartum depression and lower quality of life compared to women with good social support (52).

Based on the results of multivariable regression model, other independent variables predicted the women's SQOL in the postpartum period were having a history of dyspareunia and the number of coitus per week. Flynn and Gow's study also found a significant relationship between intercourse frequency and quality of life (53). Shum et al. reported that dyspareunia is one of the predictors of SQOL (54). Yilmaz also reported that dyspareunia was higher among breastfeeding women than in non-breastfeeding women (46).

In present study, the spousal postpartum social support had a moderate but significant relationship with sexual function in the univariable model. However, this association was not significant in the multivariable model after controlling for SQoL and other demographic and reproductive-related variables. The univariable association of social support and sexual function was also reported by Saberi et al. (55). In the multivariable model, SQoL and the number of coitus per week were significant predictors of sexual function during breastfeeding with a moderate effect. This suggests that in examining sexual function, functional factors and sexual behaviors such as the number of coitus per week play a more prominent role than other factors such as social support.

Based on the results of the present study, the role of spousal postpartum social support in the women's SQOL was more prominent and significant than its role in sexual function. Considering the predictive role of spousal support on SQOL and the strong predictive role of SQOL on sexual function, it appears that despite the absence of spousal support's direct association with sexual function, it can affect sexual function by influencing other variables such as SQOL and indirectly leads to improved sexual function of women during breastfeeding.

Sexual function is an objective process that examines an individual's sexual experience regarding the quantity and quality of sex, and this function in the postpartum period is influenced by various issues such as dyspareunia, lack of vaginal lubrication, difficulty in reaching orgasm, irregular vaginal bleeding, perineal pain following sex, and loss of sexual desire due to hormonal status (56). Regarding the predictive role of frequency of coitus on sexual function, Rezaei et al. reported that exclusive breastfeeding was the only factor affecting sexual dysfunction among women during breastfeeding, while other factors such as age, education, and family income did not predict sexual dysfunction (40).

Moreover, in examining the relationship between different dimensions of sexual function and spousal postpartum social support, the results of the present study showed that although all dimensions were related to spousal social support, the relationship between satisfaction and social support was stronger. This also confirms that social support is more related to the impact on individuals' mental perception of sexual satisfaction and sexual quality of life. SQOL is a more general, multidimensional, and subjective concept and is based on an individual's perception of sexual aspects of life (57). Furthermore, many other factors besides sexual function and coitus, such as the age of the woman, education level of the individual and the spouse, employment status and family income, and the quality of the relationship between individuals were determined to have an effect on the SQOL-F score (58). According to the results of the aforementioned studies, receiving spousal support improves women's quality of life. SQOL is one of the dimensions of quality of life that is positively affected by spousal social support.

Strengths and limitations

One of the strengths of the present study is the simultaneous study of demographic and reproductive predictors of sexual function and SQOL. The study also emphasized the role of spousal social support in each of these variables. Moreover, to best of the authors' knowledge, the present study is the first to investigate the predictive role of postpartum spousal social support in the function and SQOL of breastfeeding women using specific and bespoke assessment instruments. There are also limitations associated with the present study. The cross-sectional nature of the study is one of the limitations because directionality between the study variables cannot be assumed (e.g., it could be that sexual functioning issues produce tension and distance among spouses, who are then seen as less supportive). The other key limitation was the use of self-reported data which is subject to various methods biases.

Conclusion

Findings in the present study demonstrated that spousal postpartum social support is a significant predictor of SQOL but not sexual function during the postpartum period. Therefore, it appears that spousal social support should be considered as a fundamental and influential factor during the postpartum period. Training and counseling programs should be considered by health teams during postpartum home visits to educate fathers about the importance of this issue and their effective role in improving the sexual quality of life. Also, considering the probable indirect predictive role of spousal support on sexual function via other variables such as SQOL, further studies with rigorous methodological designs, larger sample sizes, and use of structural equation methods are needed to examine the role of probable mediating variables (including SQOL) on sexual function.

Abbreviations

FSFI: Female Sexual Function Index
PPSS: Postpartum Partner Support Scale
SQOL: Sexual Quality of Life
SQOL-F: Sexual Quality of Life for female

Declarations

Ethical considerations: The study was approved by the Research Review Board affiliated with Qazvin Faculty of Nursing and Midwifery (decree code: IR.QUMS.REC. 1399.382 in the Ethics Committee affiliated with Qazvin University of Medical Sciences, Approval Date: January 6, 2021). Permissions to enter health and medical centers were obtained from authorities of Qazvin University of Medical Sciences. Next, the first author introduced herself to the women. After explaining objectives, assuring the participants about confidentiality of their data and possibility of withdrawing from the study, a written informed consent form was signed by those women who were willing to participate in the study.

Consent to publish: Not applicable

Availability of data and materials: Data and materials will be provided on request from corresponding author.

Competing interests: None to declare.

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Table 1. Distribution of participants' demographic and reproductive characteristics

Variables		Mean (SD)
	Age	30.33 (5.81)
	Spouse age	35.01 (5.51)
	Marriage duration	7.99 (5.12)
	Coitus weekly	2.24 (1.03)
	Spousal sexual desire	3.17 (0.93)
	Age of infant (weeks)	42.86 (16.32)
	Number of living children	1.57 (0.69)
	Partner Social Support (score range: 20 -80)	61.34 (11.41)
	Sexual QoL (score range: 18-108)	86.52 (19.68)
	Female Sexual Function (score range: 2-36)	22.78 (6.20)
		No (%)
Educational status	Under Diploma	50 (16.6)
	Diploma	107 (35.5)
	Academic	144 (47.8)
Job	housewife	237 (78.7)
	Employed	64 (21.3)
Spouse educational status	Under Diploma	66 (21.9)
	Diploma	103 (34.2)
	Academic	132 (43.9)
Spouse job	unemployed	4 (1.3)
	Employed	297 (98.7)
Economic status	Poor	13 (4.3)
	Moderate	199 (66.1)
	Good	89 (29.6)
Housing status	Rental	137 (45.5)
	Landlord	164 (54.5)
Living condition	With Family	53 (17.6)
	Independent	248 (82.4)
Delivery type	NVD	58 (19.3)
	NVD+ Episiotomy	70 (23.3)
	C/S	173 (57.5)
Dyspareunia before pregnancy	No	252 (83.7)
	Yes	48 (15.9)
Dyspareunia after pregnancy	No	237 (78.7)
	Yes	60 (19.9)
Infant gender	Boy	150 (49.8)
	Girl	151 (50.2)
Infant feeding method	Breastfeeding	219 (72.8)
	Breastfeeding+ formula	82 (27.2)
	Withdrawal method	156 (51.8)
Contraceptive use	Condom	93 (30.9)
	Hormonal	32 (10.6)
	Intra uterine devices	12 (4)
	Sterilization	8 (2.7)
Gravid	1	161 (53.5)
	2	111 (36.9)
	3≤	29 (9.7)
Parity	1	137 (45.5)
	2	96 (31.9)
	3≤	68 (22.6)

Table 2. Results of univariable linear regression assessing the association of spousal postpartum social support with sexual function and sexual quality of life

Variables	Sexual quality of life			Sexual function			
	Univariable linear regression results			Univariable linear regression results			
	B	SE	<i>p</i>	B	SE	<i>p</i>	
Age	0.04	0.18	0.85	-0.06	0.06	0.32	
Spouse age	-0.06	0.21	0.78	-0.05	0.07	0.42	
Marriage duration	-0.57	0.22	0.01	-0.05	0.07	0.53	
Coitus weekly	3.57	1.08	0.001	2.95	0.31	<0.001	
Spouse' sexual desire	6.32	1.17	<0.001	2.61	0.36	<0.001	
Gravid	-1.94	0.99	0.05	-0.13	0.32	0.69	
Parity	-3.16	1.66	0.06	0.19	0.53	0.72	
Age of infant	0.05	0.22	0.50	0.06	0.10	0.52	
Number of living children	-3.08	1.64	0.06	0.09	0.53	0.86	
Partner Social Support	0.84	0.09	<0.001	0.16	0.03	<0.001	
Sexual QoL				0.17	0.02	<0.001	
Female Sexual Function	1.65	0.16	<0.001				
Educational status	Under Diploma	R		R			
	Diploma	4.36	3.38	0.20	1.60	1.07	0.14
	Academic	7.07	3.24	0.03	1.23	0.10	0.23
Job	housewife	R		R			
	Employed	4.18	2.77	0.13	-0.32	0.88	0.72
Spouse educational status	Under Diploma	R		R			
	Diploma	2.53	3.09	0.41	1.62	0.98	0.10
	Academic	6.32	2.96	0.03	2.41	0.98	0.01
Spouse job	Unemployed	R		R			
	Employed	5.35	9.92	0.59	2.16	3.13	0.49
	Poor	R		R			
Economic status	Moderate	13.48	5.60	0.02	3.30	1.77	0.06
	Good	12.99	5.81	0.03	3.26	1.84	0.08
Housing Status	Rental	R		R			
	Landlord	2.41	2.28	0.29	0.24	0.73	0.74
Living condition	With Family	R		R			
	Independent	3.11	2.98	0.30	1.14	0.96	0.24
	NVD	R		R			
Delivery type	NVD+ Episiotomy	-0.31	3.50	0.93	-0.44	1.11	0.69
	C/S	4.11	3.00	0.17	0.42	0.95	0.66
Dyspareunia before pregnancy	No	R		R			
	Yes	-8.48	3.06	0.006	-0.39	0.98	0.69
Dyspareunia after pregnancy	No	R		R			
	Yes	-3.07	2.84	0.28	0.35	0.93	0.71
Neonate Gender	Boy	R		R			
	Girl	2.07	2.27	0.36	1.49	0.72	0.04
Neonate Feeding	Breastfeeding	R		R			
	Breastfeeding + formula	2.92	2.55	0.25	-0.13	0.83	0.88
	Withdrawal method	R		R			
	Condom	2.89	2.58	0.26	1.65	0.83	0.05
Contraceptive use	hormonal	4.62	3.87	0.23	1.97	1.22	0.11
	Intra uterine devices	-0.46	5.90	0.94	2.63	1.85	0.16
	Sterilization	-7.88	7.13	0.27	1.32	2.24	0.56

Table 3. Result of univariable and multivariable regression analysis for assessing the predicting role of PPSS for Sexual QoL

		B (95% CI)	S.E.	β	<i>p</i>	Adj R ²
Univariable	Partner Social Support	0.84 (0.67; 1.02)	0.09	0.49	<0.001	0.24
	Female Sexual Function	1.27 (0.99; 1.56)	0.15	0.40	<0.001	
Multivariable*	Partner Social Support	0.67 (0.52; 0.83)	0.08	0.39	<0.001	0.44
	Dyspareunia before pregnancy	-9.53 (-14.10; -4.96)	2.32	-0.18	<0.001	
	Number of living children	-3.48 (-5.97; -1.0)	1.26	-0.12	<0.001	

* All variable with $p < 0.05$ from univariable linear regression analysis were entered in multivariable model.

Table 4. Result of univariable and multivariable regression analysis for assessing the predicting role of PPSS for Female Sexual Function

		B (95% CI)	S.E.	β	<i>p</i>	Adj R ²
Univariable	Partner Social Support	0.16 (0.10; 0.22)	0.03	0.30	<0.001	0.24
	Sexual QoL	0.14 (0.11; 0.17)	0.01	0.44	<0.001	
Multivariable*	Coitus weekly	2.40 (1.86; 2.94)	0.28	0.40	<0.001	0.43
	Neonate gender (girl vs. boy)	1.19 (0.11; 2.28)	0.55	0.10	0.03	

* All variable with $p < 0.05$ from univariable linear regression analysis were entered in multivariable model.

Table 5. Result of univariable regression analysis for assessing the predicting role of PPSS based on FSFI subscales

Female Sexual Function subscales	Mean (SD)	B (95% CI)	S.E.	β	<i>p</i>	Adj R ²
Desire	3.52 (1.1)	0.2 (0.01; 0.04)	0.01	0.25	<0.001	0.06
Arousal	3.75 (1.54)	0.04 (0.02; 0.05)	0.007	0.29	<0.001	0.08
Lubrication	4.12 (1.66)	0.03 (0.01; 0.04)	0.008	0.19	<0.001	0.03
Orgasm	4.1 (1.75)	0.04 (0.02; 0.06)	0.009	0.26	<0.001	0.06
Satisfaction	4.47 (1.33)	0.05 (0.04; 0.06)	0.006	0.41	<0.001	0.16
Pain	2.34 (1.39)	-0.02 (-0.03; -0.002)	0.007	-0.13	0.03	0.01