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Effect of sexual health education on sexual function and resumption of sexual intercourse after childbirth in primiparous women

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Abstract:

INTRODUCTION: A large number of women experience sexual health problems during the postpartum period. This study aimed to evaluate the effect of sexual health education on sexual function and time of sexual intercourse resumption after childbirth in primiparous women in Southeast Iran.

MATERIALS AND METHODS: This randomized clinical trial was conducted on 94 primiparous women randomly divided into two groups of intervention and control. The intervention group was subjected to three training sessions 3–5, 10–14, and 30–45 days after childbirth (first session lasting 20 min and other sessions 60 min). On the other hand, the participants in the control group only received the routine postpartum training. The Female Sexual Function Index (FSFI) was completed by all participants before and 8 weeks after the intervention. Data were analyzed in SPSS software (version 22) using descriptive and inferential statistics, such as Chi-square test, independent *t*-test, and paired sample *t*-test. $P < 0.05$ was considered statistically significant.

RESULTS: The mean score of FSFI in the intervention group was increased from 12.70 ± 6.166 before the onset of the intervention to 17.36 ± 5.407 after 8 weeks ($P = 0.01$). In the control group, the mean score of FSFI was decreased from 13.09 ± 4.306 to 12.29 ± 3.511 on the 8th week postpartum ($P = 0.06$). The mean times of sexual intercourse resumption in the intervention and control groups were 5.82 ± 0.17 and 5.81 ± 0.22 weeks, respectively, which were not significantly different between the two groups ($P = 0.879$).

CONCLUSION: Sexual health education for women in the postpartum period could improve their sexual function after childbirth. However, it is recommended to use sexual health education programs in women during the postpartum period to promote female sexual function.

Keywords:

Education, postpartum sexual function, primiparous, sexual health

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Introduction

Pregnancy and childbirth are major events in marital life, which exert extreme physical, emotional, and social effects on women, thereby inducing changes in the sexual function of this population.[1,2] These periods are transient in the lives of women. The important goals of reproductive health for women in the postpartum period include enjoying sexual relationships, having a healthy newborn, becoming a mother, and establishing a marital relationship full of emotional and spiritual satisfaction.[3,4] Nevertheless, fertility challenges women's sexual life and marital satisfaction during this period; women are situated in a vulnerable stage of their sexual life.[4] In this period, women face unique issues in terms of physical, psychological, social, cultural, and religious aspects that affect their own and their spouses' quality of life and sexual health.[1-3]

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Childbirth causes significant changes in the resumption and continuation of the sexual relationships in couples; accordingly, it can lead to sexual dysfunction in women.[5] Based on the literature, a great number of women suffer from sexual problems at the postpartum period. The development of these problems would be accompanied with the emergence of multiple physical and mental disorders and marital disruption.[6-8] Researchers believe that perineal muscle damage during labor, especially in primiparous women, causes dyspareunia and eliminates postpartum orgasm.[9] Some other researchers have also reported a relationship between psychological symptoms (e.g. depression) and poor sexual function in the first postpartum year. In this regard, a sexual function score of <26.55 is considered as a risk factor for postpartum depression.[10]

It seems that the postpartum sexual health problem in women is a widespread issue around the world that can interfere with the resumption of postpartum sexual activity.[11-13] This issue is considered as a taboo in Iran due to its specific cultural conditions. Despite the high prevalence of postpartum sexual dysfunction, women often refuse to express their sexual problems.[13]

The results of a study performed in Southern Iran showed that only 29% of people who experienced vaginal delivery resumed their sexual relationship 4 weeks after childbirth.[14] Health-care staff provide women with counseling on a range of issues, including family planning, child care, and maternity-related problems. However, it seems that they have not received adequate education about the importance of sexual counseling and refrain from consulting women in this regard.[15]

According to the recommendations of the World Health Organization, sexual health education and counseling should be included as important health objectives in the programs targeting early childhood and maternal health care. According to this recommendation, the integration of sexual health care into primary care and education of different groups of people and health team are inevitable.[16] Therefore, counseling and sexual education should be taken seriously as part of the routine postpartum care. Some researchers have proposed different methods for the implementation of such training and counseling. Nevertheless, there is controversy over the effect of these trainings on changes in women's sexual behaviors during the postpartum period.[4] Postpartum education regarding sexual behavior and contraceptive use has been effective in modifying the associated behaviors in women at the postnatal period. This education can improve the effective use of contraceptives and delay the onset of sexual activity.[17,18] As previously mentioned, these cares are not routinely provided for women during the postpartum period in Iran. Regarding this, the present study was conducted to determine the effect of sexual health education on sexual function and the time of sexual intercourse resumption in primiparous women referring to the health-care center of Zahedan, Iran.

Materials and Methods

This clinical trial was conducted from February to September 2018 using a pretest–posttest design. The size of population under the study was determined 25 in each group, with a confidence level of 95% and a statistical test power of 95%, in accordance with a similar study. Taking into account the possibility of people leaving the study and increase the validity of the study, the size of each group was estimated at 50, which makes a total of 100 for the two study groups. The study population was randomly divided into two groups of intervention and control. The participants were followed up for 8 weeks after making sure about their willingness to participate in the study. A total of 126 eligible individuals were examined, 26 woman were excluded (14 woman due to not meeting inclusion criteria, 12 woman due to declining to participate). As a result, the study was conducted and followed up on 100 samples. Subsequently, these qualified women were randomly assigned to the intervention and control groups. First, a total of 100 colored pockets identifying the study groups (red pocket = intervention and white pockets = control) were first prepared (random allocation rule). Then, the group to which each woman belonged was determined based on the color of the pocket picked out of the vase. As the eligible participants were determined gradually, one of the extracted list numbers was allocated to the selected women.

To prevent data transfer between the groups, the selection of health centers was based on their physical environment and facilities to provide the intervention group with equipped centers that had separate entrances and were used for the implementation of childbirth classes.

The participants were selected out of a group of primiparous women who met the inclusion criteria and referred to the health centers 3–5 days after giving birth to receive the first postnatal care and take neonatal heel prick test. The inclusion criteria were as follows: (1) age range of 20–35 years, (2) primiparity, (3) healthy perineum or low-grade tears (i.e. Grades 1 and 2 and episiotomy) in the past 3–5 days, (4) healthy term singleton neonate, (5) lack of physical or psychological problems before childbirth based on prenatal records and self-reporting (e.g. diabetes, depression, and psychosis), (6) living with the spouse at the time of study, (7) no medical complications during the prenatal

and postnatal periods, (8) absence of any stressful situations during the prenatal and postnatal periods, and (9) a minimum of literacy.

On the other hand, the exclusion criteria were absence from more than one session of sexual health counseling and incidence of unexpected or acute problems for the mother, neonate, or family that cause anxiety and affect the sexual activity of the couples.

Afterward, if the inclusion and exclusion criteria were satisfied, the researcher submitted the informed consent form participants and explained information on the purpose, process, and time of research to them. They were assured that their information will remain confidential.

The intervention group received a predesigned sexual health educational program. The first training session was held upon the first postpartum visit, which usually occurs during 3–5 days after delivery according to the National Program of Iran. The content of this session included an introduction to the anatomy of the genitals, physiology of sexual activity, changes after delivery, and physiological and psychological aspects of sexual relations after childbirth. This session lasted about 15–20 min, and the participants were provided with a pamphlet and a handout at the end of the class to be reviewed before the next session.

The second session was executed 10 days postdelivery for 60 min after coordinating with the participants and ensuring the review of the previous educational content by these individuals. This session was performed in an interactive manner using question and answer and covered such topics as fears, irrational concerns regarding sexual activity after childbirth, and improvement of postpartum sexual behaviors. Furthermore, the third session was held 6 weeks after delivery for 60 min. The main issues discussed at this session included the prevention of unexpected pregnancies, education of sexual diversity, and sexual life during lactation.

The control group received three visits according to the National Program of Postpartum Care. In the first visit conducted 3–5 days after childbirth, the participants were assessed in terms of postpartum morbidities. The second visit was carried out on the 10–15 days postdelivery for reevaluation, and the third visit was conducted 30–42 days after giving birth. These visits involved no education regarding sexual health, and information on contraceptives was provided if necessary. Posttest was carried out 8 weeks after delivery by all participants in the control and intervention groups. However, at the end of this study, the women of the control group received the educational package. The intervention was implemented by a Master of Midwifery Counseling with clinical experience under the supervision of a specialist with a Ph. D. in Counseling Psychology. To facilitate the participation of women, intervention and visit sessions in this study were planned according to the schedule of routine postpartum care visits in both the intervention and control groups.

The tool applied in the current study was a questionnaire that consisted of three parts, including demographic characteristics (e.g. age, level of education, ethnicity, religion, and information related to maternal issues) and the Female Sexual Function Index (FSFI). The FSFI is a scale designed by Rosen *et al*. to measure sexual function in women.[19] This questionnaire contains 19 items that measure the sexual function of women in six independent dimensions, including sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction, and dyspareunia.

In this standard questionnaire, the individuals are asked to choose the best option that reflects their status.[20] The total score is obtained by summing up the scores of the six domains; accordingly, a higher score is indicative of higher sexual function. The maximum scores for each domain and the total scale are 6 and 36, respectively. A zero score indicates that the individual has had no sexual activity during the past 4 weeks. Therefore, the obtained scores would be in a range of 2–36. The third part of the tool included a question about the status of the resumption of sexual intercourse 8 weeks after childbirth, presented as follows: "Have you resumed your sexual relationships with your spouse after giving birth?" If the answer was yes, they were asked to specify the exact time of the resumption. The validity and reliability of the FSFI standard questionnaire were verified by Rosen and *et al*.[19] Fakhri *et al*. were also determined the validity and reliability of FSFI in Iran.[20] Furthermore, their reliability was verified with $r = 0.92$ in this study.

In a total of the 100 women who were enrolled in the first study, 94 completed the study (47 in the intervention group and 47 in the control group). Three women in the intervention group were excluded during the follow-up period; two participants were excluded due to the infant's hospitalization in the neonatal intensive care unit, and another woman was excluded because of the woman's relocation to her father's home and not living with the spouse during the follow-up. In the control group, three participants were excluded. The reasons for the exclusion of woman from this study include: reluctance to participate in the study, migration and not referral for routine postpartum care sessions.

Data analysis was performed in SPSS (version 22, IMB Company Armonak, NY, USA) using

descriptive (i.e. frequency, mean, and standard deviation) and inferential statistics, such as Chi-square test (for comparing the mean values of qualitative variables) and independent *t*-test (for comparing the mean values of quantitative variables). In addition, paired sample *t*-test was exploited to show the changes in the sexual function score of the participants in both the control and intervention groups. $P < 0.05$ was considered statistically significant.

The primary plan of the research was approved by the Ethics Committee of Zahedan University of Medical Sciences, Zahedan, Iran. In line with the ethical principles of research, the participants were informed about the research objectives. In addition, written informed consent was obtained from the participants before the research.

Results

The participants of the research were within the age range of 18–25 years. With regard to the education level, most of the participants had below diploma degrees. In addition, none of the participants had a history of miscarriage or unwanted pregnancy, and all of them exclusively breastfed their neonates up to the 8th week postpartum. Table 1 presents other demographic and clinical characteristics of the participants.

None of the participants in the two groups had a history of attending educational classes on sexual health. The results of the independent *t*-test revealed no significant difference between the two groups in terms of age. Furthermore, based on the Chi-square test, no significant difference was obtained between the two groups regarding other variables.

According to the results, the mean score of SFI in the intervention group was obtained as 12.70 ± 6.166 at the preintervention stage, which increased to 17.36 ± 5.407 after the intervention (i.e. 8 weeks after delivery). In the control group, this mean score changed from 13.09 ± 4.306 to 12.29 ± 3.511. The results of the independent *t*-test demonstrated a significant difference in the total score of sexual function in the intervention group after attending sexual health educational classes, compared to that obtained before the intervention ($P = 0.001$). Tables 2 and 3 show the comparison of the mean values of the SFI dimensions and the total mean score of the scale, respectively.

The mean times of sexual intercourse resumption were 5.82 ± 0.17 and 5.81 ± 0.22 weeks in the intervention and control groups, respectively, which showed no statistically significant difference between the two groups ($P = 0.879$; Table 4).

Table 1: Demographic and clinical characteristics of participants (*n*=94)

Characteristics	Intervention group (*n*=47)	Control group (*n*=47)	*P*
Age (mean±SD)	20.23±1.784	20.81±2.242	0.173
Level of education			
Below diploma	30	21	0.176
Diploma	10	15	
Academic	7	11	
Spousal education level		8	
Below diploma	17	21	0.058
Diploma	12	18	
Academic	18		
Occupational status			
Housewife	43	47	0.117
Employed	4	0	
Ethnicity			
Sistani	21	21	0.99
Baluch	25	25	
Others	1	1	
Religion			
Shia	25	25	0.99
Sunni	22	22	
Perineal injuries			
Healthy	0	0	0.99
Grades 1 and 2 tears	1	1	
Episiotomy	46	46	
History of participation in pregnancy preparation classes			
Yes	1	1	0.99
No	46	46	

SD=Standard deviation

Table 2: Distribution of Female Sexual Function Index scores in the intervention and control groups before and after the intervention (*n*=94)

Dimensions	Mean±SD		Paired sample *t*-test (*P*)
	Pretest	Posttest	
Sexual desire			
Intervention group	2.25±0.962	3.07±0.872	0.001
Control group	2.51±0.797	2.20±0.742	0.001
Independent *t*-test (*P*)	0.165	0.001	
Sexual arousal			
Intervention group	1.79±1.137	2.60±1.304	0.001
Control group	1.90±1.334	1.97±0.939	0.575
Independent *t*-test (*P*)	0.672	0.009	
lubrication			
Intervention group	1.95±1.342	2.89±1.49	0.001
Control group	1.97±1.443	1.59±1.178	0.001
Independent *t*-test (*P*)	0.947	0.001	
Orgasm			
Intervention group	1.62±1.049	2.38±1.185	0.001
Control group	1.60±1.179	1.48±0.798	0.436
Independent *t*-test (*P*)	0.912	0.001	
Sexual satisfaction			
Intervention group	1.84±1.255	2.79±1.500	0.001
Control group	1.85±1.409	1.84±1.151	0.907
Independent *t*-test (*P*)	0.975	0.001	
Dyspareunia			
Intervention group	2.77±1.576	1.91±1.360	0.020
Control group	2.74±1.665	2.81±1.434	0.654
Independent *t*-test (*P*)	0.939	0.003	

SD=Standard deviation

Table 3: Total Female Sexual Function Index scores in the intervention and control groups before and after the intervention

Total score of FSFI	Mean±SD		Independent *t*-test (*P*)
	Pretest	Posttest	
Intervention group	12.70±6.166	17.36±5.407	0.00
Control group	13.09±4.306	12.29±3.511	
Independent *t*-test (*P*)	0.722	0.001	0.060

FSFI=Female Sexual Function Index, SD=Standard deviation

Table 4: Time of resumption of sexual activity

Variable	Mean±SD		Paired sample *t*-test (*P*)
	Intervention group	Control group	
Sexual intercourse resumption (day)	40.72±1.174	40.68±1.505	0.879

SD=Standard deviation

At the end of 8 weeks postpartum, all women neither had used contraception nor had resumption of menstruation in both the groups.

Discussion

This clinical trial was conducted to determine the effect of sexual health education on sexual function and time of sexual intercourse resumption after childbirth in primiparous women. As the findings of the present study indicated, the education of sexual health affected sexual function among women in Northeastern Iran and increased the total FSFI score. In this regard, our findings are in line with those of a study evaluating the impact of a type of counseling on sexual function among lactating women. They concluded that sex counseling for women in the first 6 months postpartum had a positive effect on their sexual function.[6]

In this regard, our findings are in line with the results obtained from a study conducted by Alimohammadi *et al*. They evaluated the effect of a group counseling kind based on Bandura's self-efficacy theory on the sexual performance of newly married women in Zanjan, Iran. The results of the mentioned study revealed that the participants in the intervention group had a better sexual function after receiving sexual counseling, compared to the control group.[21] Behboodi Moghadam *et al*. conducted a study on 90 married females with sexual dysfunction, who attended a sexual health education program in Qazvin, Iran. They obtained similar results indicated an increase in the total sexual function scores of the intervention group after sexual training classes.[22] Furthermore, Zamani *et al*. in a clinical trial study on 75 postpartum women found that sexual health counseling had increased sexual satisfaction in these women 8 weeks after the intervention.[23]

In the present study, the intervention group showed a significant increase in the total score of FSFI after the intervention. Nonetheless, this mean score was reduced in the control group 8 weeks after delivery. In Iran, talking about sex after childbirth is considered as a taboo.[24] The postpartum period is accompanied with the development of considerable physiological, physical, and social changes in women that affect sexual cycle and quality of marital life in both women and their spouses.[2,25] Sexual problems are common among women in the postpartum period regardless of their parity. However, these problems seem to be more complicated in primiparous women.[17] All women in the present study experienced perineal injury, which was mainly due to the routine use of episiotomy in primiparous women in Zahedan hospitals. Dyspareunia is more common in primiparous women due to perineal injury and can affect the quality of postpartum relationship.

In the current research, sexual function problems in the postpartum period were investigated in six independent domains, including sexual desire, sexual arousal, lubrication, orgasm, sexual satisfaction, and dyspareunia. The results indicate that all women in the present study had sexual dysfunction (FSFI < 26.5). In agreement with our findings, Matthies *et al*. found a score of less than 26.5 in all participants in the third

trimester of pregnancy and 1 and 4 weeks postpartum.[26] In another study, Fuentealba-Torres *et al*. reported that two-thirds of women in the 2-year postpartum period had a score below the cutoff point of FSFI.[27] In the Huy Quoc study, 40.7% of Taiwanese women had sexual dysfunction at 3 months postpartum.[28] In the Khajehei *et al*. study, 64.3% of Australian women had sexual dysfunction after 1 year postpartum.[2] This difference may be due to the timing of sexual function assessment in our study. We evaluated a woman at 8 weeks after delivery. All participants in our study were primiparous, and this can be another difference in our study with these studies. Perineal trauma due to episiotomy may be the cause of sexual dysfunction in the immediate postpartum period in the present study. Another study also showed that sexual dysfunction correlated with parity and female age.[28] Based on the evidence, these areas are affected by various factors. Some researchers believe that the type of delivery and level of damages causing physical problems, such as perineal episiotomy or tear from instrument delivery, might create pain and adversely affect sexual desire, orgasm, and sexual satisfaction in women.[2,24,25] Accordingly, it seems that the women undergoing cesarean section have a better sexual function because of the elimination of these damages in this mode of delivery.[29] However, this theory has not been confirmed by a number of researchers.[14]

In the present study, the total mean score of FSFI increased in the intervention group; however, the mean of this index decreased in the control group. Based on the results, both the groups were within the range of sexual dysfunction. This could indicate the high probability of sexual dysfunction during the prenatal and postnatal periods. This finding is in line with the results of a study, demonstrating that Japanese women had a lower total mean FSFI score in the 1st month after delivery than at any other time during pregnancy and 1 year after childbirth.[25]

Similarly, in another study, it was reported that the women undergoing episiotomy had a lower mean total SFI score than those with cesarean section and healthy perineum.[15] In the same vein, in a study, women with higher perineal tear grades were reported to have a lower sexual function.[7] Perineal damage seems to be one of the factors affecting female sexual function; accordingly, the perineal injuries of higher severity would be accompanied with higher sexual dysfunction.

Another reason for sexual dysfunction in women in our study may be the low estrogen levels resulting from breastfeeding. All women in our study had exclusive breastfeeding which can impair sexual function in women by reducing lubrication due to hypoestrogenemia that caused by high prolactin levels. Consistent with our findings, Zhuang *et al*. showed that 58.3% of women with exclusive breastfeeding had sexual dysfunction (FSFI < 26.5) and decreased frequency of sexual intercourse per month at 23 months postpartum.[30] O'Malley also reported that there was a relationship between breastfeeding and sexual health at 6 months postpartum in primiparous women.[31] Hypoestrogenemia due to breastfeeding with absence of resumption menstrual (which indicates anovulation) may justify this correlation.

Various psychological factors can affect the different dimensions of sexual function in women after childbirth. Postpartum hormonal variations are accompanied with psychological changes and emotional instability in women. On the other hand, many women are worried about their self-image and believe that pregnancy and childbirth reduce their attractiveness due to inducing changes in their body and birth canal.[1,3]

In the present study, all women exclusively breastfed their neonates 8 weeks postpartum. The lack of resumption menstruation and low sexual function is partly due to lactation, because during this period, prolactin secretion undergoes an elevation, while the levels of estrogen, testosterone, and androgen decline.[2,3,25] The results of our research showed that the mean resumption time in both the groups was approximately similar. In this regard, the women in the intervention and control groups resumed their sexual intercourse 5.8 weeks after delivery, which was significantly different between the two groups. Similar to our findings, other researchers reported that the mean time of having the first sex after childbirth was 5–8 weeks postpartum.[3,24] Another similar study showed that women resumed sexual activity at about 8 weeks, regardless of the delivery method (vaginal versus cesarean section).[32] Contrast to these findings, Zhuang *et al*. reported that only one-third of women had resumed sexual activity 3 months after delivery and had no association with menstruation, lactation, and contraceptive use.[30]

In the present study, all individuals in the two groups had resumed their sexual activities. This finding is suggestive of the safety of the onset of sexual activity in the 1st month postdelivery.[24] The first postpartum sexual intercourse can be regarded as a turning point helping the couples resume their regular sexual relations and reachieve their closeness.[3,4] Although the majority of women are able to resume their sexual activities within 4 months of delivery,[14] the time to resume postpartum marital relationships may depend on several factors. Parity, perineal damage and episiotomy, occupational status, fatigue due to increased work pressure and baby care, and sleep disorders, psychological problems caused by pregnancy

and childbirth (e.g. postpartum depression), and lactation are among the factors that can modify the onset of postpartum sexual activity.[3,24,33,34] On the other hand, the religion and cultural customs of the community can influence the onset of this measure.[11,24] In a study, the main reason for the initiation of postpartum sexual intercourse was the request from the husband.[12]

Women in our research were all Muslim, and according to the Islamic teachings, sexual intercourse should be avoided as long as postpartum bleeding is present (i.e. usually 40 days after childbirth). On the other hand, many Iranian women usually stay at their parents' house up to 6 weeks postdelivery. Moreover, if they stay at home, one of their close relatives (usually their mother) would accompany them during this period to help in taking care of the newborn. Therefore, it seems that in this research, like other studies conducted on Muslim women, a combination of religious and cultural factors could explain the reason of resuming sexual relationship 40 days after the birth.

One of the major drawbacks of the present study was the nonparticipation of the women's spouses, which might be due to cultural issues since men usually have no desire to attend these educational sessions. Another limitation of the research was the lack of awareness regarding the prepregnancy sexual function in women. It is recommended that these issues be considered by researchers in future studies.

Conclusion

According to the results of the current study, the education of sexual health in the postpartum period improved sexual function in women. Considering the low total score of women's sexual function after childbirth, it is suggested the education sexual program use in postpartum routine care.

On the other hand, the results of this study showed that postpartum resuming sexual intercourse may be initiated before routine care is prescribed and these individuals may be at risk of unwanted pregnancy. However, it is suggested that specific counseling included routine visits to routine postpartum care for choosing an appropriate contraceptive method.

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Conflicts of interest

There are no conflicts of interest.

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