

The Effect of Training on Women with Postpartum Sexual Dysfunction: A Randomized Controlled Trial

N Bolsoy, S Sen, G Sezer¹, M Cakil¹

Celal Bayar University,
Faculty of Health Sciences,
Midwifery Department,
¹Master Student, Celal Bayar
University, Health Science
Institute, Turkey

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INTRODUCTION

Giving birth is an important event in a woman's life. Physical, hormonal, psychological, and social changes that occur in the postpartum period affect the sexual health of women.^[1,2] Several factors affect postpartum sexual dysfunction such as the number of deliveries, breastfeeding, type of delivery, episiotomy, fatigue, and physical and psychological dysfunction (e.g., postpartum depression).^[3] In the postpartum period, changes including pain during intercourse, lack of sexual desire, vaginal dryness, and failure to reach orgasm can affect a woman's sexual response cycle. Sexual desire and activity decrease during the postpartum period as compared to pregnancy, and sexual problems occur more frequently. Studies have shown that 91.3% of women suffer from postpartum sexual problems.^[4]

ABSTRACT

Background: In the postpartum period, changes including pain during intercourse, lack of sexual desire, vaginal dryness, and failure to reach orgasm can affect a woman's sexual response cycle. **Aim:** This research aimed to determine the effect of midwifery training on postpartum sexual dysfunction among primiparous women. **Subjects and Methods:** This research using a single-blind randomized controlled experimental and follow-up design. The sample consisted of 70 women, divided equally into training and control groups. Research data were collected using an information form, the Female Sexual Function Index and the Arizona Sexual Experience Scale. In the first phase of our study, 306 primiparous women were interviewed. **Results:** The mean Female Sexual Function Index score of the women was 25.18 ± 5.47 and 40.2% reported sexual dysfunction. When comparing the training and control groups before training, the total score average of the ASEX was 10.48 ± 2.13 in the training group and 11.06 ± 3.86 in the control group. The average score in the post-training was higher in the group given education (22.45 ± 2.17) than in the control group (17.08 ± 3.92) and this difference was significant ($p = 0.000$). It was determined that 42% of the change in the third follow-up scores of pregnant women in the training group could be explained by the education session they received. **Conclusion:** Our data showed a positive change in the sexual dysfunction scores of women, suggesting the education program was successful.

KEYWORDS: Postpartum, sexual dysfunction, training

Studies have found that the rate of postpartum sexual dysfunction is between 35% and 80%.^[5-8] In studies conducted in Turkey, the rate of postpartum sexual dysfunction is between 23% and 92%.^[2,9-12]

Most studies referred to the higher prevalence rate of sexual disorders in the first months after childbirth and its subsequent reduction. The different prevalence rates reported by various studies can be attributed to racial, cultural, and social factors as well as the sexual problems examined.

The World Health Organization (WHO) has stressed research is needed on sexual health because of its

Address for correspondence: Dr. N Bolsoy,
Midwifery Department, Faculty of Health Sciences, Celal
Bayar University, 45030, Yunusemre, Manisa, Turkey.
E-mail: nursenbolsoy@gmail.com

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importance independent of reproductive health, as the lack of awareness about sexual health is the underlying cause of many dysfunctions and diseases worldwide. The WHO has emphasized that providing perinatal and postpartum care for mothers and babies and providing information and counseling to women based on their needs is an ideal opportunity to address problems related to sexual health and function.^[4]

Some researchers recommend that couples be counseled about how their postpartum psychology and sexual life will change during pregnancy, but women's sexual function after delivery is often neglected by healthcare professionals.^[1,13-16] Accordingly, providing correct and scientific information about physical and mental changes during pregnancy by healthcare providers, especially midwives, along with sexual counseling is an important part of prenatal education.^[17]

Despite the complexity and significance of this subject, health providers often neglect sexual aspects during pregnancy and postpartum. We believe that a better understanding of the risk factors will lead to more open conversations and improvement in sexual function. This research aimed to determine the effect of midwifery training on postpartum sexual dysfunction among primiparous women.

MATERIALS AND METHODS

Participants and design

The study was a single-blind, randomized controlled and follow-up trial. The study recruited primiparous women at eight family health centers affiliated with Manisa City Center. The research population was 1498 primiparous women; by calculating a 95% confidence interval using a population-based formula, it was determined that 306 primiparous women should be included in the sample. In the first phase of our study, 306 primiparous women were interviewed. The Female Sexual Function Index (FSFI) was administered to 306 primiparous women, of which 123 women scored ≤ 22.7 on the scale and were identified as experiencing sexual dysfunction. The trial was conducted with 70 primiparous women from those identified as experiencing sexual dysfunction and who agreed to participate in further research. Some criteria were determined to ensure consistency between the training and control group. The inclusion criteria were Turkish women who (1) were primiparous, (2) postpartum 9–12 months, (3) had an FSFI score lower than 22.7, (4) spoke Turkish, and (5) were 18 years and over.

Power analysis was performed with a 95% confidence interval at *P* value of less than 0.05 adjudged to significant. Of the 70 women included in the sample, 35

were recruited to the experimental group and 35 to the control group. The power of the study was determined to be 85% when the data obtained according to the Health Practices in Pregnancy Questionnaire-II were used in the G-Power program.

Questionnaires

For the collection of research data, we used Information Form, which consisted of 22 questions, Female Sexual Function Index (FSFI), and Arizona Sexual Experience Scale (ASEX).

Information form

The form consisted of questions about their socio-demographic and marital features, income status, residence, family type (nuclear, extended, etc.), and educational background.^[2,9-12]

Female Sexual Function Index (FSFI)

Female Sexual Function Index developed by Rosen *et al.* (2000) This instrument is composed of 19 questions grouped in six domains or dimensions: desire (items 1 and 2), arousal (items 3–6), lubrication (items 7–10), orgasm (items 11–13), satisfaction (items 14–16), and pain (items 17–19). Each question has a Likert scale score varying from 0 to 5. Scores obtained in a particular domain are added and multiplied by a respective factor that homogenizes the influence of each dimension. The total FSFI score is the sum of all scores obtained in each domain. The higher the score, the better is the sexuality. Subjects obtaining a total FSFI score of 26.55 were defined as having sexual dysfunction.^[18]

The validity and reliability of the FSFI were tested by Aygin and Eti Aslan (2005) and Cronbach Alpha value was found to be .82 for the FSFI.^[19] Subjects obtaining a total FSFI score of ≤ 22.7 were defined as having sexual dysfunction in Turkish version. Cronbach's for the current study was .90.

Arizona Sexual Experience Scale (ASEX)

The ASEX was developed by McGahuey *et al.* (2000) in the University of Arizona in response to the need for evaluating psychotropic drug-induced sexual dysfunction. The ASEX is a brief 5-item questionnaire designed to measure sexual functioning in the following domains: sexual drive, arousal, penile erection/vaginal lubrication, ability to reach orgasm, and satisfaction with orgasm over the past week. Items are rated on a 6-point scale ranging from 1 (hyperfunction) through to 6 (hypofunction), providing a total score range between 5 and 30. A total score >18 , or a score ≥ 5 (very difficult) on any single item or any three items with individual scores ≥ 4 is indicative of clinically significant sexual dysfunction.^[20]

The validity and reliability of the ASEX were tested by Soykan (2004) and Cronbach Alpha value was found to be .90 for the ASEX. Subjects obtaining a total ASEX score of 11 were defined as having sexual dysfunction in Turkish version. Cronbach's for the current study was .90.^[21]

Procedure

Data were collected using an information form, the FSFI, and the Arizona Sexual Experience Scale (ASEX) during face-to-face interviews after the necessary explanations were made by the researcher. Each interview lasted approximately 20–30 minutes.

Randomization

The block randomization method was used to determine group allocation. Six different possibilities numbered in six blocks were determined with the help of a computer program that produces random numbers. The researcher who collected the data only learned which group a woman was part of during the data collection phase. Individual files were created for each woman and were enclosed in opaque envelopes. After determining the women who met the sample criteria of the study and agreed to participate in the study, the envelopes were opened and the woman was assigned to the education or control group. The women in the sample of the study learned which group they were in during the data collection phase after they were included in the study. Knowledge of the education and control groups was hidden from employees at the hospital. To prevent women in the training and control group from contacting each other, appointments were made at different times.

In the first phase, an information form and the FSFI were administered to 306 women with infants aged 9–12 months who attended the center where the study was conducted. Of these, 123 women scored ≤ 22.7 on the scale and were identified as experiencing sexual dysfunction. The trial was conducted with 70 primiparous women who agreed to participate in the research. The primiparous women who were included in the research were divided into two groups: training ($n = 35$) and control ($n = 35$).

In the education group, the ASEX was administered during a second face-to-face interview, and ASEX mean scores were calculated. The education session was delivered once to each woman individually and covered the following topics: What problems occur in the postpartum period? What happens to your body after childbirth? What is sexual dysfunction? The education session included question/answer, lecture, slide show, demonstration on a figure, and showing and making methods. An education booklet covering the educational

content was given to the women in the education group. Four weeks after the second interview, the women in the training group were called by phone, and the ASEX was completed for the last time.

The control group was not given any education by the researcher other than the standard care offered at the health institution. In the second interview, the ASEX was administered and means were determined in line with the collected data. Four weeks after the second interview, the women in the control group were called by phone, and the ASEX was completed for the last time. After the last measurement, the women in the control group were given a brochure containing the training content.

Statistical analysis

Descriptive data are presented as number, percentage, mean, Kolmogorov–Smirnov, Chi-square and Fisher Chi-square test. The data gathered from the groups were compared with the one-sample T test, independent samples t test, Bonferroni test, and Pearson Correlation Test. All analyses were carried out using the SPSS for Windows, release 15.0 (SPSS, Inc., Chicago, IL, USA). A P value of < 0.05 was thought to be crucial for all analyses.

Ethics approval

The necessary written permissions for using the “Health Practices in Pregnancy Questionnaire” were obtained from ER, who developed. Governor of Manisa and Manisa Directorate of Public Health approved the study protocol. This research was approved by the Ethical Board of Celal Bayar University. The participants were recruited to the study on a voluntary basis. Before any meetings took place, the researchers informed the participants about the purpose, length and benefits of the study, and the written, informed consent of the participants was obtained.

RESULTS

The sample characteristics indicate the training group had a mean age of 22.17 ± 2.81 years, and the mean age of the control group was 23.28 ± 3.96 years. Of the women in the training group, 64.3% had graduated from elementary school, 72.7% had a middle income and all were stay-at-home parents receiving social security [Figure 1]. Of the women in the control group, 66.7% had graduated from elementary school, 66.7% had a middle income, and all were stay-at-home parents receiving social security. No significant difference was found between the groups ($p > 0.05$).

The mean total score of the FSFI was 25.18 ± 5.47 , indicating 40.2% of the women had sexual dysfunction and 59.8% had no sexual dysfunction [Table 1]. When

comparing the training and control groups before training, the total score average of the ASEX was 10.48 ± 2.13 in the training group and 11.06 ± 3.86 in

the control group. No significant difference was found between the two groups ($t = -3,866, P > 0.05$; Table 2). When comparing the training and control groups after training, the total score average of the ASEX was 22.45 ± 2.17 in the training group and 17.08 ± 3.92 in the control group. Significant difference was found between the groups ($t = 7.088, P < 0.05$; Table 2).

No significant difference was found between the mean FSFI and ASEX scores of the women in the training and control groups before the training (I. and II. Follow-Up; $P > 0.05$). After the training, the total score average of the training and control groups were significantly different at follow-up ($p = 0.000$; Table 3). Further, when the total scores of women in both the training and control groups were compared, significant differences were determined between the first follow-up and the second follow-up and also between the second follow-up and the third follow-up ($p = 0.000$; Table 3). A significant difference in terms of group, time and group * time interaction was also found ($p < 0.05$; Table 4).

The difference between the total mean scores of the training group (III. Follow-Up) was analyzed by repeated-variance analysis. A statistically significant difference was found between the measurements ($F = 3.156, P < 0.001$). The Bonferroni comparison test was applied to determine which group the difference originated from. A statistically significant difference was found between I. Follow-Up, II.

Table 1: Means and Standard Deviations of Women and FSFI (I. Follow-Up) (n=306)

FSFI scales	$\bar{X} \pm SD$	FSFI	Min	Max
Desire	4,46±0,91	≤3,6	2,40	6,00
Arousal	4,06±1,10	≤3,9	0,00	6,00
Lubrication	4,16±1,09	≤3,6	1,20	6,00
Orgasm	4,17±1,07	≤3,6	1,60	6,00
Satisfaction	4,00±1,61	≤3,6	0,00	6,00
Pain	4,23±1,23	≤4,4	0,00	6,00
FSFI Total	25,18±5,47	≤22,7	11,60	35,40
		<i>n</i>	<i>%</i>	
Sexual Dysfunction		123	40,2	
No Sexual Dysfunction		183	59,8	

Table 2: The distribution of women's total mean scores on ASEX before and after the training

Scale mean score	Training Group (n=35) Mean±SD	Control Group (n=35) Mean±SD	<i>t</i>	<i>P</i>
Pre-training (II. Follow-Up) ASEX	10,48±2,13	11,06±3,86	-3,866	0,080
Post-training (II. Follow-Up) ASEX	22,45±2,17	17,08±3,92	7,088	0,000

SD=Standard Deviation, *t*=Independent sample *t* test

Table 3: The distribution of women's Between Groups scores on FSFI/ASEX before and after the training

Scale mean score	Pre-training FSFI (I. Follow-Up)	Pre-training ASEX (II. Follow-Up)	Post-training ASEX (III. Follow-Up)	¹⁻² <i>P</i> *	¹⁻³ <i>P</i> *	²⁻³ <i>P</i> *
Training Group (n=35) Mean±SD	22,45±0,88	10,48±2,13	22,45±2,17	0,000	0,000	0,000
Control Group (n=35) Mean±SD	21,62±3,29	11,06±3,86	17,08±3,92	0,000	0,000	0,000
<i>t</i>	3,165	3,866	-7,088			
<i>P</i> **	0,098	0,060	0,000			

*Bonferroni *t* test, ** Independent-Samples *T* test

Table 4: The distribution of women's In-group scores on FSFI/ASEX before and after the training

Time Group	Pre-training FSFI (I. Follow-Up) Mean±SD	Pre-training ASEX (II. Follow-Up) Mean±SD	Post-training ASEX (III. Follow-Up) Mean±SD	<i>F</i>	<i>P</i>	
Training Group	22,45±0,88	10,48±2,13	22,45±2,17	3,156	0,000	
Control Group	21,62±3,29	11,06±3,86	17,08±3,92	6,563	0,000	
<i>T</i>	3,165	3,866	-7,088	Group	10,018	0,002
<i>P</i>	0,002	0,000	0,000	Zaman	14,948	0,000
Dual comparison	Training Group	1>2; 3>2		Group * Time	50,238	0,000
	Control Group	3>2				

*Comparison

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Table 5: The Effect of Individual Counseling Training on Health Practices in Pregnancy

FSFI/ASEX	β	t	P	Beta	VIF	F	Model (p)	R^2	Durbin Watson
Pre-training (II. Follow-Up)							0,000	0,180	1,554
Training Group	2,941	7,807	0,000	-0,425	1,000	14,948			
Control Group	-0,062	-3,866	0,000						
Post-training (III. Follow-Up)							0,000	0,425	1,342
Training Group	0,295	1,678	0,098	0,652	1,000	50,238			
Control Group	0,079	7,088	0,000						

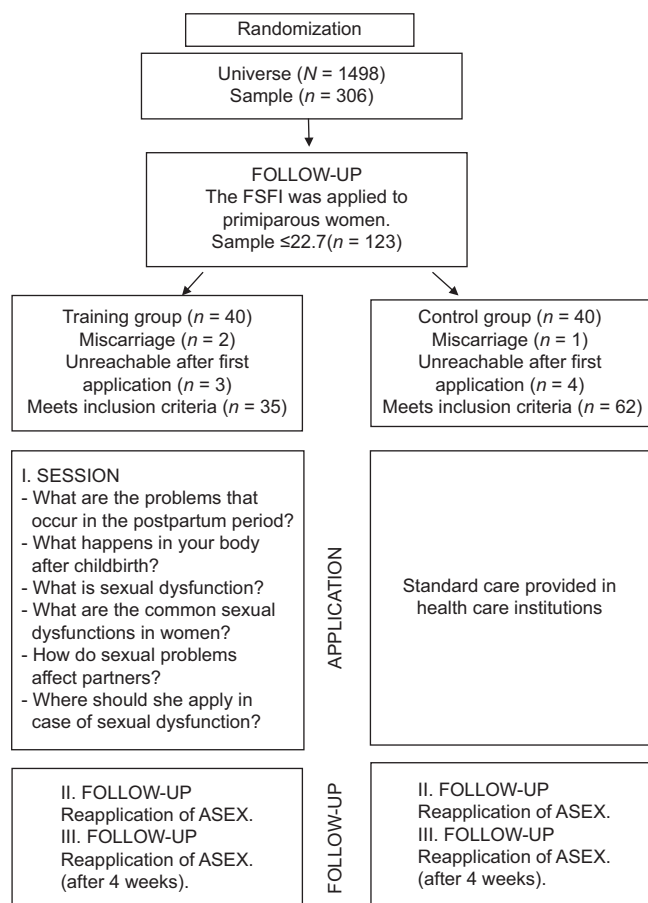


Figure 1: Consort Chart of the Study. Kaynak: Consort 2010 Flow Chart, Moher D, Schulz KF, Altman D. The Consort Statement: Revised Recommendations for Improving the Quality of Reports of

Follow-Up, and III. Follow-Up mean scores ($p < 0.05$; Table 4). In the training group, the first group scored more score than the second group and the third group than the second group.

The difference between the total mean scores of the control group (III. Follow-Up) was analyzed by repeated-variance analysis. A statistically significant difference was found between the measurements ($F = 111.594, P = 0.000$). The Bonferroni comparison test was applied to find out which group the difference originated from. A statistically significant difference was found between I. Follow-Up, II.

Follow-Up, and III. Follow-up mean scores ($p < 0.05$; Table 4). In the control group, the third group scored more score than the second group.

Multiple regression analysis was conducted to explain the effect of training on ASEX scores in the research groups. The results indicate the established model is statistically significant ($F = 94.777, P < 0.005$). It was determined that 42% of the change in ASEX scores of training and control groups could be explained by training ($R^2 = 0.425, P < 0.05$; Table 5).

DISCUSSION

Women’s sexual health is a vital part of life at any age and is influenced by many factors. In particular pregnancy and childbirth bring biological, psychological, and social changes that may alter sexual health. Evidence indicates that sexual function declines during pregnancy and does not return to its baseline levels during the postpartum period.^[1] Factors that impact views of sexuality include culture, religion, laws, gender roles, and societal beliefs/myths. The most important factor affecting one’s sexual development and evolvement is the perception of sexuality in society based on the cultural environment.^[22]

In previous studies, it has been found that the rate of postpartum experiencing sexual dysfunction is between 35% and 80%.^[5-8,23-25] In studies conducted in Turkey, it has been found that the rate of postpartum experiencing sexual dysfunction is between 23% and 92%.^[2,9-12,26,27]

In the first phase of our study, 306 primiparous women were interviewed. The mean FSFI scale score of the women was 25.18 ± 5.47 , indicating 40.2% had sexual dysfunctions. In countries like Turkey where sexuality is taboo, it is difficult to recruit participants and carry out studies on sexual functioning, which limits literature on this matter. This difference is thought to be due to the different possibilities of regions and groups where research is applied.

Our study was carried out to determine the effect of midwifery training on postpartum sexual dysfunction. We determined no significant difference existed between

the scores of the education group (10.48 ± 2.13) and the control group (11.06 ± 3.86) on the ASEX before education.

When the literature is examined, no significant difference was found between the intervention and control groups before the intervention in the mean scores of sexual functions.^[17,28-31] However, a significant difference was observed between 4 and 8 weeks after the intervention.

In our study, the average score following education was higher in the training group (22.45 ± 2.17) than in the control group (17.08 ± 3.92) and this difference was significant ($p < 0.05$). When the data were evaluated, it was determined that there was a positive change in the sexual dysfunction of women who received the education session, indicating the program was successful.

The results of the present study are consistent with the findings of Malakouti *et al.*, who reported that the use of an education program caused a substantial increase in the FSFI total score and the mean score of its subscales in postpartum women.^[28] Shahbazi *et al.*'s results showed that PLISSIT-based counseling reduced sexual problems and significantly increased sexual function across six domains in pregnant women compared to their control group.^[17] In another study, it was shown that the use of an education program caused a substantial increase in the FSFI total score and the mean score of its subscales in breastfeeding women.^[29] Navidian *et al.* also reported that the use of an education program caused a substantial increase in the FSFI total score and the mean score of its subscales in pregnant women.^[30] Yoruk and Karaçam's results also showed that PLISSIT-based counseling reduced sexual problems and significantly increased sexual function in postpartum women compared to their control group.^[31] Based on the literature review, it can be stated that the education programs can greatly affect the treatment of female sexual concerns. In all the above mentioned studies, a significant difference was found between the test and control groups in terms of the six areas of sexual function.

In our study, we found a significant difference among first, second, and third follow-up scores when we compared groups. We also found significant differences in terms of interactivity between group, time and group * time. We believe the significant change in the education group is due to midwifery training, whereas the significant change in the control group is due to the postnatal care given to the women in the first and second steps and the information received from various sources.

The pregnancy and postnatal periods give mothers time to adapt to their parenting role. During these periods, parents become involved in various initiatives, such as counseling

from health institutions, reading books, following the written press, and attending birth preparation classes.^[32] In recent years, especially with the ease of access to the internet through mobile phones and computers, many parents have sought information about pregnancy and childbirth on the internet. However, parents want to get accurate and reliable information about pregnancy, birth, and baby care from health personnel. Many studies have shown that pregnant women and their families prefer to receive information/counseling and care from a healthcare provider.^[33,34] In our study, it was observed that the scale scores of both the training group and the control group during postnatal, but also the scores of the training group were higher than those of the control group.

In our study, it was determined that 42% of the change in the third follow-up scores of pregnant women in the training group could be explained by the education session they received.

Education is defined as the process of gaining desired behaviors in individuals based on the information given about a subject rather than loading information. Ideally, the information gained through education, which is not a static but a dynamic process, is converted into behavior that is maintained and made into a way of life. As shown in the literature, women who receive education turn their education into practice by changing the way they behave.^[17,28-31]

During the natural processes of the postnatal period, physiological and psychological changes occur in women's bodies. Women should be informed about the changes that occur during the postnatal period and about the procedures that should be done routinely. Information about which tests will be done in what month should be given. Health professionals, particularly midwives and nurses, can contribute to how couples can balance their relationships by providing evidence-based information about normal changes in sexual behavior during childbearing. The partner may also benefit from this information, as healthy communication between couples can also reduce sexual problems.

Since the general purpose of education is to change behavior in the individual, it is expected that the behavior of the individual going through the education process will change in the direction of education and the desired direction. When the research is evaluated, it can be said that it parallels our research that education during postnatal creates behavior change and positively affects her life permanently.

CONCLUSIONS

Our results indicate a significant difference between the sexual dysfunctions of women who receive training and

those who do not, and such training positively affects the sex lives of women. It has been determined that the training provided to women is an effective initiative in decreasing the sexual dysfunctions of women.

It is thought that the study provides important data in producing solutions by determining the problems experienced by women with postpartum sexual dysfunction. The fact that midwives serving in family health centers should consider this situation in the provision of services and provide appropriate counseling and care services to those who need sexual counseling constitutes an example of counseling.

Ethical consideration

The necessary written permissions for using the “FSFI” and “ASEX” were obtained from authors, who developed. Governor of Manisa and Manisa Directorate of Public Health approved the study protocol. This research was approved by the Ethical Board of University. The participants were recruited to the study on a voluntary basis. Before any meetings took place, the researchers informed the participants about the purpose, length, and benefits of the study, and the written informed consent of the participants was obtained.

Consent to participate

All participants provided written consent for participation.

Consent for publication

All participants provided oral consent to publication.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

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