Iran J Psychiatry Behav Sci. 2018 March; 12(1):e6105. doi: 10.5812/ijpbs.6105.

Published online 2018 January 10. **Original Article**

Effect of a Sex Education Program on Females' Sexual Satisfaction During Pregnancy: A Randomized Clinical Trial

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Received 2017 March 19; **Revised** 2017 April 04; **Accepted** 2017 July 30.

Abstract

Background: Changes in sexual relations are common during pregnancy. These changes may affect couples negatively regarding marital and sexual satisfactions.
Objectives: The current study aimed at investigating the effect of a sexual counseling project on females' sexual satisfaction during pregnancy.
Methods: The current randomized, clinical trial was performed on a sample of 60 pregnant females referred to the prenatal care clinic of Fatemieh hospital of Hamadan, Iran, in 2014. Females were assigned to the intervention and control groups. A 3-part instrument was used including a demographic information form, an inventory of changes in sexual activities during pregnancy, and the Linda Berg sexual satisfaction scale. The intervention group was divided into 3 subgroups of 10, and each subgroup participated in 4 weekly educational sessions. Descriptive statistics, Chi-square test, the independent samples t test, and paired t test were used to analyze the data.
Results: After education, excellent self-evaluation of the quality of sexual relations in the intervention group increased significantly ($P < 0.001$). The mean sexual satisfaction score of the intervention group significantly increased after the intervention compared with that of before intervention (68.32 ± 12.0 vs. 66.24 ± 12.32, $P = 0.029$). Among all variables, only the participants' education level had significant correlation with the effect of the intervention on pregnant females' sexual satisfaction.
Conclusions: The sexual education program implemented in the current study could significantly increase the females' sexual satisfaction score in the intervention group.

Keywords: Education, Pregnancy, Sexual Function, Sexual Satisfaction

1. Background

Satisfactory sexual performance is an important factor in strengthening the family structure, and also in many advances in human life. A study showed that less than 50% of general practitioners asked their patients about their sexual practices and sexual concerns (1).

Pregnancy is one of the most critical periods in a female's life. In this period, females need more emotional support (2). A safe sexual activity has no limitation or side effects during a normal pregnancy (3, 4). However, physical, emotional stressor related to pregnancy, as well as the females' attitudes, sexual values, cultural and religious beliefs, bodily changes, and medical restrictions might affect the intimacy and sexual performance of a pregnant female (5). Studies also reported fatigue and back pain, negative attitudes toward pregnancy, the quality of relationship with the spouse, the female's psychological health status, female's loss of interest in sex due to misconceptions and fears of harm to the fetus, fear of miscarriage and premature labor, fear of a painful intercourse, lack of physical comfort, and some preexisting sexual problems among factors threatening sexual health in pregnant females (6-10).

A sexual disorder in one of the couples may decrease their marital relationships, decrease their self-esteem, and make them depressed (11). Evidence showed that many couples are less satisfied with their sexual relations during pregnancy because they cannot provide enjoyment and sexual pleasure to each other (12). In a study by Smith, some pregnant females experienced violence by their partners

due to their reluctance to have sex in this period (13). In a study, more than 67% of females expressed that they experienced at least 1 type of domestic violence during pregnancy (14).

For this reason, addressing the couple's sexual problems and teaching them the principles of correct and joyful sex are now among the basic elements of the quality healthcare (15, 16). Therefore, the current study aimed at investigating the effect of a sex education program on females' sexual satisfaction during pregnancy.

2. Objectives

The current study aimed at investigating the effect of a sexual counseling project on females' sexual satisfaction during pregnancy.

3. Materials and Methods

The current randomized clinical trial was performed on a sample of pregnant females referred to the prenatal care clinic of Fatemieh hospital of Hamadan, Iran, in 2014. Sample size was calculated based on the results of authors' previous study (17). Considering the m_1 $\mu_1 = 168.8$, $\sigma_1 = 28.2$ for $\mu_2 = 187.3$ control group and $\sigma_2 = 18.2$ for the intervention group, a power of 0.80, the type I error of 0.05, and a possible attrition of 10%, it was estimated that 30 experimental subjects and 30 controls were needed. The subjects were randomly assigned either into the intervention or the control groups. For this reason, a code was assigned to each subject. Then, codes were divided by 2 equal parts kept in 2 separate envelops of A and B. Then, 1 envelop was assigned to the intervention and the other one to the control group.

Inclusion criteria were: gestational age range of 20 to 32 weeks, singleton pregnancy, no addiction to drugs or alcohol, not using any drugs affecting sexual response cycle, lack of any pregnancy-related complications in the present or previous pregnancies and no medical contraindication for sex. A 3-part instrument was used in the study. The first part consisted of demographic information. The inventory of changes in sexual activities during pregnancy (CSADP) and the Linda Berg sexual satisfaction scale (SSS) were used as the second and the third parts of the instrument. The CSADP inventory consists of 8 items on the frequency of intercourse before and after pregnancy, changes in the pattern of sexual activities in the first and the last trimesters of pregnancy, changes in sexual desire intensity during pregnancy, and the quality of sex during pregnancy.

Scores 0, 1, 2, and 3 were given to the answers. The minimum score was 0 and the maximum score was 48.The validity and reliability of CSADP inventory was previously assessed and confirmed by Babazadah (r = 0.87) (18).

The Linda Berg sexual satisfaction scale, developed by Linda Berg and Cresy, consists of 17 items to assess individual's satisfaction with his/her sexual activities. All items are scored based on a 5-option Likert scale ranging from always (5) to never (1). The sum of scores ranged 17 to 85 and a higher score indicated higher level of sexual satisfaction. The score ranges of 17 - 51, 52 - 67, and 68 - 85 were regarded as low, moderate, and high levels of sexual satisfaction, respectively. The Linda Berg questionnaire was previously translated into Farsi by Masoumi and showed good validity and reliability (18). The intervention group was divided into 3 subgroups of 10 in order to participate in the educational sessions. Each subgroup participated in 4 weekly educational sessions held in 4 consecutive weeks. All educational sessions were held at Fatemieh Hospital and each session lasted for 2 hours. The content of the educational materials was prepared using scientific sources and approved by experts.

Four weeks after the last session, all participants were invited to the clinic and the CSADP and the Linda Berg sexual satisfaction scale were distributed among the subjects in both groups. The control group received only the routine services.

3.1. Ethical Considerations

The protocol and the ethical issues of the study were approved by the research ethics committee in Hamadan University of Medical Sciences, Hamadan, Iran. All participants signed a written informed consent and were assured about the voluntary nature of the participation and the confidentiality of their personal information.

3.2. Data Analysis

Data were analyzed using the SPSS software version 13. To check the normality of data, a Kolmogorov-Smirnov test was run. Descriptive statistics were performed. Nominal and categorical variables were compared using the Chi-square test. The mean sexual satisfaction scores of the 2 groups were compared using the independent samples t test, while the paired t test was used for intragroup comparisons. P values of less than 0.05 were considered significant.

4. Results

In total, the mean gestational age in the intervention and the control groups were 28 weeks ($\pm$ 3 days) and 27 weeks ($\pm$ 2 days), respectively. No significant difference was observed between the 2 groups in terms of their demographic characteristics ($P > 0.05$).

After education, the frequency of having sex in a week during the last trimester increased in the intervention group (P = 0.03), but in the control group had no changes. In addition, though no one in both groups had sex for 3 times or more in the last trimester, in the intervention group, the frequency of having sex at least once, twice, or 3 times a week increased significantly, compared with that of the control group (P = 0.03). Besides, before the intervention, changes in the desire for sex during pregnancy in the intervention group was 16.7% and increased to 56.7% at the end of the study (P = 0.05). Moreover, in the intervention group, the frequency of females experiencing pain during sex was 50% before intervention, while the rate decreased to 36.6% at the end of the study. Although the usual desire for sex significantly decreased in the control group, such a desire significantly increased in the intervention group at the end of the study compared with the control group (P < 0.001). Moreover, the rate of excellent sexual relations increased in the intervention group compared with the control group (P < 0.001) (Table 1).

The level of sexual satisfaction in the intervention group increased to 56.7%, while it did not change in the control group (Table 2).

No significant difference was observed between the mean sexual satisfaction scores of the 2 groups at the beginning of the study (P = 0.96). However, in the intervention group, the mean sexual satisfaction score before education was significantly lower than that of the end of the study (68.32 $\pm$ 12.0 vs. 66.16 $\pm$ 13.6, P = 0.029) (Table 3).

Finally, the repeated measures ANOVA was performed using the participant's scores of sexual satisfaction before and after the intervention as intra-subjects (dependent) variables and group, job, and education as inter-subject variables. Among all variables entered the model, only the participants' education level had significant correlation with the effect of intervention on pregnant females' sexual satisfaction. The Bonferroni post hoc test showed that participants with education level higher than high school diploma were more satisfied than the other ones (P < 0.001). The Bonferroni test showed that sexual satisfaction was higher among employed females. But totally, the job had no significant effect on sexual satisfaction (P > 0.05).

5. Discussion

According the current study results, the majority of subjects in both groups experienced pregnancy-related changes in their sexual activity before the education. Both groups also experienced a considerable decrease in their desire and frequency of sex, especially in the last trimester of the pregnancy. These findings were consistent with those of several studies (19-22). A study in Brazil reported that about two-thirds of pregnant females experienced significant changes in their sexual activity during pregnancy.

In another study, Senkumwon et al. reported that most females experienced a gradual reduction in their desire for sex during pregnancy. A lot of females also thought that sexual activity can have harmful impacts on pregnancy outcomes. And some pregnant females stated that changes in sexual activity are attributed to changes in the physiology of the body and body image during pregnancy (23). Assessing sexual issues are among the basic components of prenatal care. Due to the crucial effects of the couples' sexual relations on their overall behaviors and the stability of families, counseling and educational programs about safe sex during pregnancy seem necessary to be provided to all couples especially in their first experience of pregnancy.

In the current study, the level of sexual satisfaction in the intervention group considerably increased at the end of the study. This finding was consistent with the results of Ahmadi et al. that studied the effect of counseling on sexual satisfaction in a group of pregnant females (24).

The current study showed that in the intervention group, the mean of females' sexual satisfaction significantly changed at the end of the study. This finding was in line with the results obtained by Karimi et al. that studied the effect of education on people's sexual satisfaction (25). Shams-mofarah et al., also studied the effect of marital counseling on couples sexual satisfaction and reported that though the intervention increased the couples sexual satisfaction scores, the observed increase was not statistically significant (26). However, Karami et al., implemented a marital counseling program and reported that the intervention could significantly increase the couple's sexual satisfaction (27). Training and counseling had beneficial effects on recognition of changes in sexual relations and the way to adapt to these changes in pregnancy (24).

The current study results showed no correlation between the age of participants and their level of sexual satisfaction in the intervention or the control group. Ahmadi et al., also observed no significant relationship between the females sexual satisfaction and their gestational age, knowledge about sex, and sexual satisfaction before pregnancy (24).

In the current study, the females sexual satisfaction increased with increasing education. Moreover, the level of satisfaction was higher in the employed females than the housewives. These findings were congruent with the results of the studies by Shahsiah et al., Tavakol et al., and Cheung et al. (28, 29). According to the current study, it is essential to establish some educational and counseling programs to improve the couples marital and sexual relations. Such programs are suggested to be integrated in pre-

Table 1. Changes in Sexual Activity During Pregnancy in the Study Groups Before and After the Education

Variables		Before Education			After Education		
		Intervention Group, N (%)	Control Group, N (%)	P Value[a]	Intervention Group, N (%)	Control Group, N (%)	P Value
Changes in sexual activity during pregnancy	Yes	20 (66.6)	23 (76.6)	0.39	23 (76.6)	22 (73.3)	0.76
	No	10 (33.4)	7 (23.4)		7 (23.4)	8 (26.7)	
Frequency of having sex in a week during the first trimester	0	16 (53.3)	14 (46.7)	0.92	6 (20)	16 (53.3)	0.03
	1 time	6 (20)	7 (23.3)		7 (23.3)	6 (20)	
	2 times	0	1 (3.4)		8 (26.7)	2 (6.6)	
	3 times or more	8 (26.7)	8 (26.6)		9 (30)	6 (20)	
Frequency of having sex in a week during the last trimester	0	15 (50)	11 (36.7)	0.07	5 (16.6)	12 (40)	0.09
	1 time	5 (16.6)	13 (43.3)		15 (50)	13 (43.6)	
	2 times	10 (33.4)	6 (20)		10 (33.4)	5 (16.6)	
	3 times or more	0	0		0	0	
Changes in the desire for sex during pregnancy	Decreased	18 (60)	19 (63.3)	0.99	10 (33.3)	17 (56.7)	0.05
	No change	7 (23.3)	7 (23.3)		3 (10)	8 (26.7)	
	Increased	5 (16.6)	4 (13.3)		17 (56.7)	5 (16.6)	
Experimenting pain while intercourse in pregnancy	Yes	15 (50)	16 (53.3)	0.79	11 (33.3)	17 (56.7)	0.05
	No	5 (50)	14 (46.6)		3 (10)	8 (26.7)	
The desire for sex during pregnancy	Not at all	10 (33.3)	9 (30)	0.57	2 (6.6)	16 (53.4)	> 0.001
	Usually	18 (60)	16 (53.4)		23 (76.7)	9 (30)	
	Always	2 (6.7)	5 (16.6)		5 (16.6)	5 (16.6)	
Self-evaluation of the quality of sexual activities	Unfavorable	4 (13.4)	4 (13.4)	0.99	2 (6.7)	3 (10)	0.52
	As usual	7 (23.3)	6 (20)		6 (20)	8 (26.7)	
	Good	14 (46.6)	15 (50)		12 (40)	14 (46.6)	
	Excellent	5 (16.6)	5 (16.6)		10 (33.3)	5 (16.6)	
Self- evaluation of the quality of sexual relations	Unfavorable	17 (56.6)	7 (23.4)	0.028	4 (13.4)	7 (23.4)	> 0.001
	As usual	8 (26.7)	11 (36.7)		6 (20)	12 (40)	
	Good	4 (13.3)	11 (36.7)		4 (13.4)	10 (33.3)	
	Excellent	1 (3.4)	1 (3.4)		16 (53.2)	1 (3.3)	

[a] t test.

marriage educations, and also in prenatal care.

Acknowledgments

The authors would like to express their gratitude to the research deputy of Hamadan University of Medical Sciences the staff of Fatemieh healthcare center, and all those who helped them with the current study.

Footnotes

Authors' Contribution: Sahar Ahmadvand and Seyedeh Nayere Hosseini designed the study. Seyedeh Zahra Masoumi and Narges Kheirollahi collected the data, managed the interviews, and revised the manuscript for intellectual contents. Masoume Beyrami Haghgu conducted statistical analyses. Seyedeh Zahra Masoumi and Alireza Rahimi supervised the study. All authors read and approved the final manuscript.

Declaration of Interest: None.

Table 2. The Level of Sexual Satisfaction in the Study Groups Before and After the Education

Variable	Before Education		After Education	
	Intervention Group, N (%)	Control Group, N (%)	Intervention Group, N (%)	Control Group, N (%)
Level of sexual satisfaction				
Low	2 (6.6)	5 (16.7)	3 (10)	5 (16.7)
Moderate	15 (50)	11 (36.7)	10 (33.3)	11 (36.7)
High	13 (43.3)	14 (46.6)	17 (56.7)	14 (46.6)
P value	0.807			0.5

Table 3. Mean and Standard Deviation of Sexual Satisfaction in the Study Groups, Before and After the Education

Variable	Control Group, Mean ± SD	Intervention Group, Mean ± SD	P Value (t test)
Before education	65.86 ± 11.62	66.16 ± 13.16	0.96
After education	66.24 ± 12.32	68.32 ± 12	0.51
Mean difference	-0.38 ± 3.63	-2.17 ± 5.18	
P value (the paired t test)	0.57	0.02	

Funding/Support: The project was founded by the research deputy of Hamadan University of Medical Sciences, Hamadan, Iran.

Clinical trial registration code: The current study was registered at Iranian registry for clinical trials (IRCT=201612039014N134).

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