

Addressing the sexual problems of Iranian women in a primary health care setting: A quasi-experimental study

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ABSTRACT

Background: The World Health Organization emphasizes on integration of sexual health into primary health care services, educating people and health care workers about sexuality, and promoting optimal sexual health. Despite the high prevalence of sexual problems, these problems are poorly managed in primary health care services. This study was conducted to evaluate the efficacy and feasibility of the first two steps of PLISSIT (Permission, Limited Information, Specific Suggestions, Intensive Treatment) model for handling of women sexual problems in a primary health care setting.

Materials and Methods: This was a quasi-experimental study that was carried out in Zanjan, northwest of Iran. Eighty women who had got married in the past 5 years and had sexual problem were randomly assigned to control and intervention groups. The intervention group received consultation based on PLISSIT model by a trained midwife and the control group received routine services. Female Sexual Function Index (FSFI) questionnaire was used for assessing and tracking any changes in sexual function. Data were collected at three points: Before consultation and 2 and 4 weeks after consultation. Paired *t*-test and repeated measures analysis of variance (ANOVA) test were used for comparison of scores within groups.

Results: Significant improvement was found in FSFI sub-domain scores, including sexual desire ($P < 0.0001$), arousal ($P < 0.0001$), lubrication ($P < 0.0001$), orgasm ($P = 0.005$), satisfaction ($P = 0.005$), pain ($P < 0.0001$), and FSFI total score ($P < 0.0001$) in the intervention group compared to the control group.

Conclusions: This study showed that PLISSIT model can meet the sexual health needs of clients in a primary health care setting and it can be used easily by health workers in this setting for addressing sexual complaints and dysfunctions.

Key words: Iran, primary health care, sexual health, sexual problem

INTRODUCTION

In the new definition of sexual health by the World Health Organization (WHO), sexual health was considered a necessary underlying condition for reproductive health, not only during reproductive years but also throughout the life span. In this new conceptualization, the neglect and denial of sexual and reproductive health was cited as a root of many health-related problems around the world. According to this report, growing recognition of the public health importance of concerns such as gender-related violence and sexual dysfunction has highlighted the need

to focus more explicitly on issues related to sexuality and their implications for health and well-being.^[1]

Despite the international emphasis on sexual health, not enough progress has been made in developing countries.^[2] Reasons include lack of access to information, education, and health care services, poverty, women's lack of control over their own bodies and circumstances, taboos surrounding discussion of sexuality, and service providers' lack of knowledge to deal with sexual issues.^[1,3,4] For achieving the sexual health goals, the WHO has recommended integration of sexual health into existing primary health care services, and comprehensive sexuality education for young people and health care workers has been proposed as a solution.^[1]

Evidence shows the high prevalence of female sexual dysfunction in developed and developing countries.^[5-10] Female sexual dysfunction is also a highly prevalent health problem affecting 31-51% of Iranian women.^[11,12] Despite the high prevalence of female sexual function disorders, these problems are poorly managed in primary health care services. Improvement of knowledge and skills in general practice are the suggested solutions for better management

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of sexual dysfunctions.^[13,14] One of the methods for handling sexual problems is the PLISSIT (Permission, Limited Information, Specific Suggestions, Intensive Therapy) model. The PLISSIT model provides a specific framework for planning of comprehensive care about the sexual problems. This model allows primary care providers to start a discussion regarding sexual issues with individuals and during the next steps of model, useful information and suggestions to be incorporated in the care plan.^[15]

Many researchers have shown the efficacy of PLISSIT model for improving of sexual function. A study in Korea has evaluated the effectiveness of PLISSIT model on female sexual function in women with gynecologic cancer. Results showed significant improvement in Female Sexual Function Index (FSFI) sub-domain scores, including sexual desire ($P = 0.048$), arousal ($P < 0.001$), lubrication ($P < 0.001$), orgasm ($P = 0.007$), and satisfaction ($P < 0.001$).^[16] Another study in Egypt found the efficacy of PLISSIT model in women with dyspareunia. There was statistically significant difference between pre- and post-intervention FSFI scores in the domains of desire ($P < 0.001$), arousal ($P < 0.001$), orgasm ($P = 0.002$), satisfaction ($P < 0.001$), and pain ($P < 0.001$).^[17] Ayaz and Kubilay applied PLISSIT model in Turkey for solving the sexual problems of patients with stoma. They found significant improvement in the mean scores of Golombok Rust Inventory of Sexual Satisfaction and sub-groups.^[18]

Since establishing Primary Health Care Network in Iran in 1984, with the objective of securing equal and fair access of all Iranians to primary health care services, essential sexual and reproductive health programs including preconception, prenatal and postnatal care, family planning, and prevention of sexually transmitted diseases have been integrated, and certified midwives in rural and urban health care centers provide these services. This integration has led to improvement of Iranian health status.^[19-21]

Currently, in Iran's primary health care network, where counseling and education services have been provided on different health topics in the field of reproductive health, there are no sex education programs. The absence of formal system of sex education in Iran leads to misinformation and misunderstandings about sexuality and sexual relationship in Iranian couples, which in turn contributes to sexual problems and dissatisfaction with sexual relationships.^[22] Many studies in Iran have revealed the need for applying programs that meet the needs of clients and care providers in the field of sexuality and sex education in this setting.^[11,22-25]

The PLISSIT model allows four different levels of intervention for sexual problems including: Permission (P), limited information (LI), specific suggestions (SS), and intensive therapy (IT). It starts with permission level that requires communication skills for initiating and maintaining a friendly, encouraging, and comfortable relationship between client and provider for talking about sexual thoughts, concerns, and behaviors. Level 2 of the intervention focuses on increasing the clients' knowledge about the normal sexual behaviors and acts, and conditions that affect them. In step 3, specific information should have been obtained and specific suggestions are provided. Therefore, this step requires more specialized and specific knowledge and skill. The last step involves referring to a specialist.^[26]

Currently, there is no sex education in public health centers of Iran, and midwives in these centers are not capable of counseling and educating about sexual problems. In this study, we evaluate the efficacy of applying the first two steps of PLISSIT model in decreasing women's sexual problems and dysfunction. It seems that in the context of absence of any sex education and counseling, applying the first two steps can improve sexual function in a large number of women, as myths, lack of knowledge, and misunderstandings easily make them candidates for sexual problems and dysfunctions. Indeed, we constructed a sex counseling program in a public health center, in the framework of the first two steps of PLISSIT model. Evidence has shown that most clients would benefit from counseling based on the first two levels of PLISSIT model and fewer clients require steps 3 and 4.^[27] In this study, we evaluated the efficacy of sex counseling based on the first two steps of PLISSIT model for handling sexual dysfunctions among women in a primary health care network. We hypothesize that this model with regard to its construct can be effective, acceptable, and feasible in primary health care setting in a developing country.

MATERIALS AND METHODS

Design and sample

This was a quasi-experimental study carried out in a health center in Zanzan, northeast of Iran. The center was chosen by simple random selection from nine eligible centers in this city. For having similar populations with regard to socio-demographic factors, accessing the health care services, and receiving the health care services by the control and intervention groups, we selected one health center for the study. Participants were married women who were attending in the health center for primary health care services.

Women were included if they (a) were married in the past 5 years and had been living with their husbands, (b) had

self-reported sexual problem, (c) completed secondary education level, and (d) had willingness to participate in the study. The exclusion criteria were as follows: Being pregnant during the study, having severe conflict with the husband, and suffering from psychiatric disorders including depression, and gynecologic and chronic systemic diseases (self-reported) that may affect sexual function. In the randomly selected health center, participants were randomly allocated to control or intervention groups using Balanced Blocked Randomization method [Figure 1]. We used the results of previous studies on PLISSIT model for estimating the sample size.^[16] For identifying a mean difference of 4 in the total FSFI score, a confidence level of 95%, a power of 80%, and a dropout rate of 15%, the sample size was estimated at 40 participants per group using the formula: $N = (z_{1-\alpha/2} - z_{1-\beta})^2 / (\mu_1 - \mu_2 / \sigma\sqrt{2})^2$.

Ethical approval was obtained from the Ethics Committee of the Shahid Beheshti University of Medical Sciences for this research project. This study was registered in IRCT with the number 138904124294 n1. The researcher informed

the participants about the purpose of the study and assured them that confidentiality would be maintained by using codes rather than names. Written informed consent was obtained from all women who participated in the study and their husbands.

Data collection

We gave an announcement in the selected health center for recruiting women with sexual problems, and thus, 92 women were recruited for the study. For data collection, all recruited women completed the first section of the questionnaire about their demographic (age, level of education, occupation, household monthly income) and reproductive (parity, number of children, marriage duration) characteristics. For assessing sexual function, the participants were asked to fill out the FSFI questionnaire. It is a validated and reliable measure for female sexual function, which consists of 19 questions.^[28,29] The questions are grouped and scored for the domains of desire (two questions), arousal (four questions), lubrication (four questions), orgasm (three

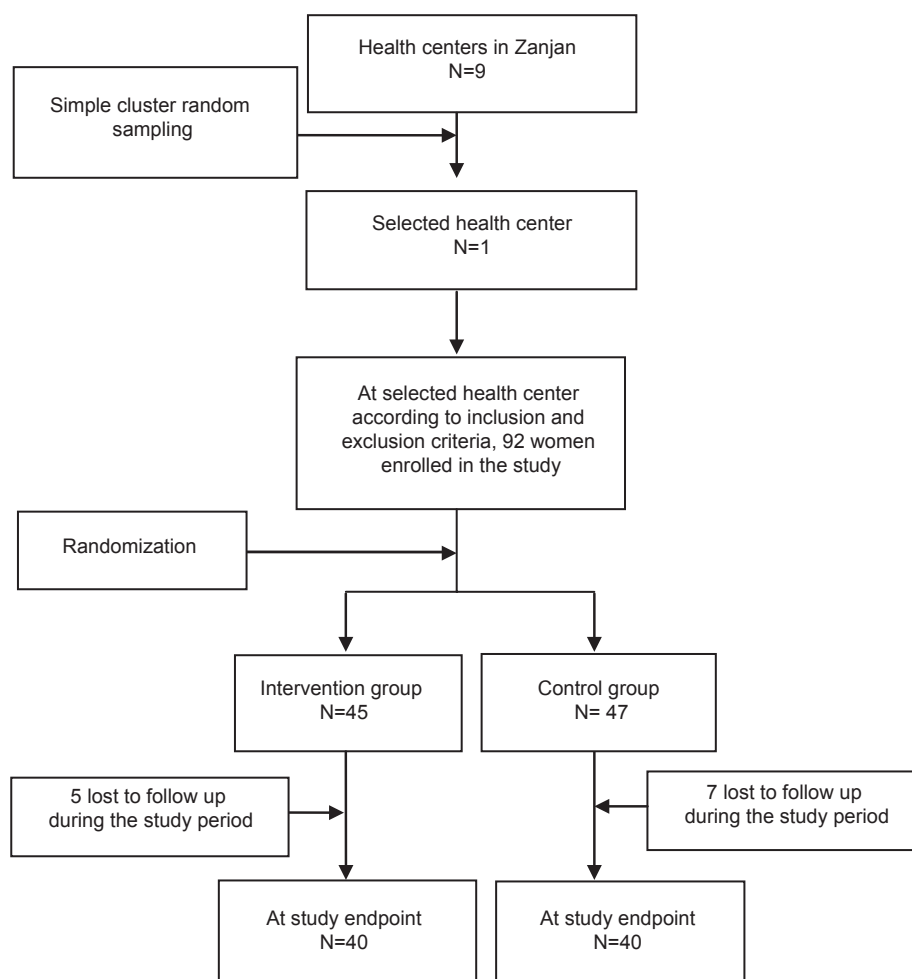


Figure 1: Study design

questions), satisfaction (three questions), and pain (three questions). To calculate each domain's score, the scores of the related items are added, and the result is multiplied by a certain coefficient. Each domain is scored on a scale of zero to six, with higher scores indicating better function for each domain. The total FSFI score is calculated by adding the mean scores of all six domains. The maximal possible score is 36, and the lowest is 2. In our study, the FSFI cut-off points for each domain and the total score were as follows: Desire 3.3, arousal 3.4, lubrication 3.7, orgasm 3.4, satisfaction 3.8, pain 3.8, and total 28.^[30] During the study period, 12 participants dropped out of the study in the control and intervention groups, so we analyzed the data of 80 participants. The Persian version of FSFI questionnaire has been validated in the Iranian population.^[30] Sexuality function of women was evaluated with the FSFI questionnaire in three stages: During the pre-counseling period and 2 and 4 weeks after the counseling. We needed a standard instrument for monitoring and tracking any changes in the sexual function of women in each domain before and after intervention, and for evaluating the efficacy of the applied counseling method. So, we used the FSFI questionnaire as a reliable and valid standard instrument in our study.

Intervention

The control group referred to the obstetric unit of the selected health center for handling of their sexual dysfunction. In Iran, at the obstetric units of health centers, midwives provide family planning services and prenatal care as a daily routine work. They have no training and experiment about sex education and counseling. The intervention group received one session of counseling for 2 h according to the first two steps of PLISSIT model, by a trained midwife. Counseling sessions for the intervention group were being held in a separate and private room in the health center. Six months before the start of the study, the main researcher (midwife with MS degree and had passed courses in the field of sex education) who was planning to conduct the study participated in a workshop to upgrade her knowledge and skills about the PLISSIT model. This workshop was held by a sexologist and all steps of PLISSIT model were described in detail. There was no blindness in the study, because the main researcher has used PLISSIT model in the intervention group.

The PLISSIT model is used for discussing sexuality with individuals and determining their problems.^[31] This model provides a four-step approach to the sexual problems of the individual. These steps include:

- P-Permission: The topic of sexuality is introduced, and the participant is encouraged to discuss his or her sexuality and any problems they may be having
- LI-Limited Information: Limited information that is in direct reference to the participant's sexuality and the concerns mentioned earlier in the permission stage is provided
- SS-Specific Suggestions: The Specific Suggestions stage is based upon a problem-solving approach to address an individual's particular problem, and requires more knowledge and skill than providing Limited Information
- IT-Intensive Treatment: Intensive Therapy involves referral for specialist intervention.

According to these steps, an intervention plan was developed by the researcher.^[31]

In the intervention group, the counseling session was started with open-ended questions like these: How satisfied are you with your sexual functioning? Can you explain your concern about sexual functioning? Is there anything about your sexual activity you would like to change? Do you have difficulty with sexual desire, arousal, orgasm, satisfaction? Open-ended questions give the women permission to talk about sexual concern. By opening the dialog about sexual function, more insight can be gained about many elements that affect women's sexual activity. By reassuring that their feeling is acceptable, the midwife tried to create a comfortable and trusting environment.^[26,32] Based on the results of sexual function assessment using the FSFI questionnaire, during permission step, the midwife tried to identify the possible conditions that altered the domain of sexual function, such as knowledge deficit (related to misinformation and sexual myths), anxiety (related to loss of sexual desire or functioning), fear (related to history of sexual abuse or dyspareunia), pain related to inadequate vaginal lubrication, body image disturbance (related to perceived sexual rejection by spouse), and interrupted family processes. Also, the midwife tried to identify the history of the problem, onset and course of the problem, precipitating factors and changes over time, women's perception of causes of the problem, and past treatment. Talking about sexuality may also give the women some reassurance to continue to engage in their choice of sexual behaviors, provided they are not harmful.^[26,32] Physical examination of genital system was done anytime, if needed. In the case of desire phase disorder, the midwife evaluated reasons such as physical or emotional stress, certain drug use, diseases, body image issues, relationship quality, social isolation, and lack of communication. Anxiety and depression were considered as a main cause of arousal phase disorder and were evaluated. In evaluating orgasm disorders, the midwife focused on personality factors, sexual techniques, grief, depression, illness, and hormonal change. In the presence of pain disorder, problems like infection of

genitourinary system, genital scarring, and pelvic infection were assessed.

In step 2, based on women's altered domain of sexual function, the midwife explained in concise and schematic manner the physiology of female sexual response in the three main phases, desire, excitement, and orgasm, sexual behavior, and sexual intercourse techniques. For this purpose, photos, posters and models of the female and male reproductive system were used. Then, the midwife provided information about the concept and healthy experience of sexuality. At follow-up, the midwife tried to clarify misinformation, dispel myths, and provide factual information. In the case of desire disorder, examples of recommendation were as follows: Providing private room for sex, fantasizing, using of visual, tactile, and smell stimuli, caressing one another while talking about their feeling, good communication before sex, which allows finding the sexual interest and feeling of each other, and verbal sexual encouragement. Using sensate focus exercise, erotic massage, manual stimulation of the genitalia, kissing, oral stimulation, and lubricants were the recommended treatment for arousal disorders. In orgasm disorder, coital alignment technique and self-stimulation was introduced. In the case of pain disorders, lubricants, relaxation exercise, and changing intercourse position were recommended.^[33]

Data analysis

The FSFI scores of each domain were calculated and the mean scores in each domain were compared between the control and intervention groups at three observation time periods: Pre-counseling period and 2 and 4 weeks after counseling. The statistical analyses were performed using SPSS (version 16.0, SPSS Inc, Chicago, IL, 2007) software. Data were given as mean and standard deviation. Paired *t*-test and repeated measures analysis of variance (ANOVA) test were used for comparison of scores within the groups. Statistical significance was considered at $P < 0.05$ for all statistical analyses.

RESULTS

Eighty-nine percent of the women were between 20 and 30 years of age, and 10% were under 20 years of age. Fifteen percent were nulliparous, 72.5% had single parity, and 12.5% were multiparous. There was no statistically significant difference between the intervention and control groups in terms of age, literacy, occupation, length of marriage, income, and number of pregnancy [Table 1]. Distribution of sexual dysfunction between the intervention and control groups before and 4 weeks after intervention is presented in Table 2.

In the pre-counseling period, the FSFI total mean scores of women in the control and intervention groups were 24.4

Table 1: Demographic characteristics of women in intervention and control groups

Characteristic	n (%) (n=40)		t statistic or χ^2	P
	Intervention group	Control group		
Age (years)*	23.7 (3.33)	23.1 (2.93)	0.85	0.396
Literacy				
Secondary	1 (2.5)	2 (5)	0.373	0.83
High school	26 (65)	26 (65)		
University	13 (32.5)	12 (30)		
Occupation				
Housewife	36 (90)	36 (90)	1.33	0.721
Employed	4 (10)	4 (10)		
Length of marriage (years)*	2.73 (1.41)	2.34 (1.29)	1.28	0.202
Monthly income (Rials)				
<3,000,000	15 (37.5)	16 (40)	0.663	0.718
3,000,000-5,000,000	21 (52.5)	18 (45)		
>5,000,000	4 (10)	6 (15)		
House tenure				
House owner	4 (10)	3 (7.5)	0.17	0.919
Renter	18 (45)	19 (47.5)		
Living with relatives	18 (45)	18 (45)		
Number of pregnancy*	1.1 (0.59)	0.88 (0.51)	1.81	0.073

*Mean (SD)

Table 2: Distribution of sexual dysfunction between intervention and control groups before and 4 weeks after intervention

FSFI domains	Group	Baseline n (%)	4 weeks after counseling n (%)	P
Desire	Intervention	14 (35)	1 (2.5)	<0.0001
	Control	10 (25)	14 (35)	0.226
Arousal	Intervention	11 (27.5)	4 (10)	<0.0001
	Control	13 (32.5)	15 (37.5)	0.952
Lubrication	Intervention	7 (17.5)	5 (12.5)	<0.0001
	Control	7 (17.5)	12 (30)	0.545
Orgasm	Intervention	10 (25)	5 (12.5)	0.006
	Control	9 (22.5)	11 (27.5)	0.252
Satisfaction	Intervention	1 (2.5)	1 (2.5)	0.005
	Control	7 (7.5)	8 (20)	0.716
Pain	Intervention	18 (45)	5 (12.5)	<0.0001
	Control	21 (52.5)	20 (50)	0.713
FSFI total	Intervention	25 (62.5)	14 (35)	<0.0001
	Control	32 (80)	33 (82.5)	0.285

FSFI: Female sexual function index

and 25.3, respectively, and *t*-test did not show statistically significant difference between them ($P = 0.423$).

In the first evaluation 2 weeks after counseling, FSFI total mean scores of the women in the control and intervention groups were 24.4 and 28.8, respectively, and *t*-test showed statistically significant difference between

them ($P < 0.0001$). In the second evaluation 4 weeks after counseling, FSFI total mean score of the women in the intervention group was higher than in the control group (23.7 and 29.4, respectively, $P < 0.0001$). There was also significant difference between the control and intervention groups with regard to FSFI mean scores in different domains, including desire, excitement, lubrication, orgasm, satisfaction, and pain, before counseling and during the second evaluation in 4 weeks after counseling [Table 3].

In the intervention group, FSFI total mean scores increased significantly from 25.3 in pre-counseling stage to 28.8 at 2 weeks after counseling and 29.4 at 4 weeks counseling ($P < 0.0001$). This increase was observed in all FSFI domains [Table 4]. In the control group, FSFI total mean scores were not significantly different in pre-counseling stage and 2 and 4 weeks after counseling (24.48, 24.44, and 23.74, respectively).

DISCUSSION

Sexual issue and sexuality are a taboo in Iran and other related cultures. Perceived stigma and embarrassment make people reluctant to discuss and address sexual health issues.^[34] Education about specific sexual behaviors and practices has not been included in the educational materials and primary health care services. Restricted sources of reliable information about sexuality and sexual issues have led to sexual concerns, problems, and frequent dissatisfaction in sexual relationships.^[22] In a sex education and counseling session, one should be capable of talking about sexual values, attractions, history, and behaviors clearly and comfortably. This skill provides satisfying relationship for discussing and managing sexual problems. Clients often need permission and modeling to enable them

to learn how to talk openly about sex and sexuality.^[35] Results of this study demonstrated improvement in the mean scores of all sexual domains and the total score of sexual function. The PLISSIT model helps to initiate discussions about sexual complaints and provides confident and comfortable conditions between client and health provider to talk about sexual issues.

Female sexual function is a complex condition that can be affected by social, psychological, hormonal, environmental, and biological factors in a cyclic manner.^[36] The most common sexual complaint of women in Iran and other societies is decreased desire.^[22,37]

Results of our study demonstrated that all domains of sexual function were improved in the intervention group and this improvement was higher in desire domain. Sexual desire may arise from sexual thoughts, dreams, and fantasies; or it may be secondary to cognitive motivation.^[36] In conservative societies like Iran with certain cultural and religious restrictions, women may be asked to restrain their sexual desire. This may lead to sexual dysfunction and, on the other hand, restricts sexual health-seeking behavior.^[38,39] In the first step of counseling based on PLISSIT model, a trained midwife encouraged the women to express their feelings and thoughts, and desire problems were taken under control by providing information about sexual motivators in step 2. At the beginning of a given sexual experience, a woman may well sense no sexual desire. Her motivations to be sexual include increasing emotional closeness with her partner and often increasing her own well-being and self-image (sense of feeling attractive, feminine, appreciated, loved, and/or desired), or to reduce her feelings of anxiety or guilt about sexual infrequency.^[40]

Table 3: Baseline and post-counseling FSFI score between intervention and control groups

FSFI domains	Group	Mean (SD)		Mean differences (95% CI of differences)	P
		Baseline	4 weeks after counseling		
Desire	Intervention	3.67 (1.08)	4.50 (0.94)	0.82 (0.46-1.18)	<0.0001
	Control	3.70 (1.11)	3.43 (1.11)	-0.27(-0.69 to 0.15)	0.202
Arousal	Intervention	3.94 (0.95)	4.61 (0.99)	0.66 (0.32-1.01)	<0.0001
	Control	3.67 (1.06)	3.69 (1.08)	0.02 (-0.37 to 0.41)	0.909
Lubrication	Intervention	4.43 (0.94)	5.19 (0.86)	0.75 (0.43-1.08)	<0.0001
	Control	4.38 (0.89)	4.26 (0.81)	-0.11 (-0.39 to 0.17)	0.430
Orgasm	Intervention	4.22 (1.34)	4.67 (1.14)	0.45 (0.14-0.75)	0.005
	Control	4.15 (1.19)	3.93 (1.00)	-0.22 (-0.63 to 0.19)	0.290
Satisfaction	Intervention	5.15 (0.79)	5.55 (0.63)	0.40 (0.12-0.67)	0.005
	Control	4.69 (1.07)	4.63 (0.96)	-0.06 (-0.41 to 0.29)	0.733
Pain	Intervention	3.92 (1.30)	4.88 (1.13)	0.96 (0.50-1.41)	<0.0001
	Control	3.88 (1.11)	3.78 (1.18)	-0.10 (-0.61 to 0.41)	0.699
FSFI total	Intervention	25.34 (4.88)	29.40 (4.28)	4.06 (2.64-5.47)	<0.0001
	Control	24.48 (4.69)	23.74 (4.40)	-0.74 (-2.40 to 0.92)	0.375

FSFI: Female sexual function index, SD: Standard deviation, CI: Confidence interval

Table 4: Changes in FSFI domain scores over time in the intervention group

FSFI domains	Mean (SD)			F	P
	Baseline	2 weeks after counseling	4 weeks after counseling		
Desire	3.67 (1.08)	4.39 (0.82)	4.50 (0.94)	21.47	<0.0001
Arousal	3.94 (0.95)	4.59 (0.88)	4.61 (0.99)	15.60	<0.0001
Lubrication	3.94 (0.95)	4.59 (0.88)	4.61 (0.99)	22.10	<0.0001
Orgasm	4.22 (1.34)	4.63 (1.36)	4.67 (1.14)	9.04	0.005
Satisfaction	5.15 (0.79)	5.51 (0.74)	5.55 (0.63)	8.76	0.005
Pain	3.92 (1.30)	4.66 (1.30)	4.88 (1.13)	18.05	<0.0001
FSFI total	25.34 (4.88)	28.81 (4.95)	29.40 (4.28)	33.73	<0.0001

FSFI: Female sexual function index, SD: Standard deviation

Despite women's willingness for receiving information about sexual matters from health care centers and health professionals, researches in Iran and other countries have shown that many primary health care providers find it difficult to talk about sexual issues.^[22,41] Embarrassment, and lack of confidence, education, and training are considered the main barriers for opening sexual discussion.^[22,39] In this study, the contributor midwife had been trained about PLISSIT model in a workshop for 2 days and she conducted the counseling sessions during the research period. The PLISSIT model helps primary care providers to increase their contribution to sexual health care. It provides capabilities for health care workers in a primary care setting for raising matters related to sexual health, asking questions, giving information, seeking appropriate care, and recognizing the possibilities for referral.

Limitation

There are several limitations of this study that should be noted. First, the results may not be generalized to all populations, as only one health center was selected. However, the study could be replicated in different areas and population. Second, because of the nature of the study and intervention, the experimental and control groups and midwives were not blinded to the study. Third, a long time follow-up of women exposed to the PLISSIT model would be necessary to determine whether the observed effects were enduring.

CONCLUSION

Seeking simple and applicable ways of raising and discussing sexual health issues can ease integration and help normalization of sexual health care into a primary health care setting. Our study demonstrated that PLISSIT model can meet the sexual health needs of clients in a primary health care setting and can be used easily by health

workers in this setting for addressing sexual complaints and dysfunctions.

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