

## Effect of counselling based on the PLISSIT model on pregnant women's sexual satisfaction: a randomised controlled trial

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A – Study Design, B – Data Collection, C – Statistical Analysis, D – Data Interpretation, E – Manuscript Preparation, F – Literature Search, G – Funds Collection

**Summary Background.** Sexual satisfaction is often reduced during pregnancy owing to some sexual problems. Sexual counselling offered for pregnant women may reduce the complications of this disorder during pregnancy.

**Objectives.** This study was conducted to evaluate the effect of PLISSIT (permission, limited information, specific suggestions, and intensive therapy) model-based sexual counselling on pregnant women's sexual satisfaction.

**Material and methods.** In this randomised controlled clinical trial, the effect of PLISSIT model-based counselling on the sexual satisfaction of 80 pregnant women referred to health centres in the city of Malayer was investigated. The pregnant women were randomly assigned to intervention and control groups. The intervention group received counselling in 4 sessions of 45–90 minutes, and the control group received no counselling. Data collection tools were made up of demographic and Linda Berg questionnaires. Data analysis was conducted using SPSS-22 software, and a *p*-value lower than 0.05 was considered significant. The results were compared with repeated measurement, the independent *t*-test and chi-square test.

**Results.** Based on the results, the mean age of the mothers in the intervention and control groups was  $26.32 \pm 3.92$  and  $27.10 \pm 4.77$ , respectively. There was a significant difference between the mean score of sexual satisfaction in both the intervention ( $64.50 \pm 7.19$ ) and control ( $58.90 \pm 11.92$ ) groups 2 weeks after the intervention, as well as 4 weeks after the intervention in both the intervention ( $69.65 \pm 5.51$ ) and control ( $60.05 \pm 13.96$ ) groups, respectively.

**Conclusions.** Sexual satisfaction in pregnancy can be enhanced by providing PLISSIT-based sexual counselling.

**Key words:** orgasm, pregnant womec, PLISSIT model.

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## Background

Sexual satisfaction is one of the indicators of mental health and life expectancy, which is regarded as objective sentiment, pleasure, acquiescence and enjoyment by men and women [1]. Painless and satisfactory sexual activity (which is a crucial component of establishing relationships in many couples) is often influenced by the physical and psychological needs of pregnancy [2]. The effects of these factors on the sexual relationship of a pregnant woman can be very different and reflect the unique nature of human sexuality [3]. Women undergo various unwanted changes during pregnancy, including changes in their physical and mental needs. The physical, emotional and economic stress of pregnancy may negatively affect emotional and sexual intimacy. Attitudes and sexual behaviours during pregnancy are influenced by sexual value systems, native culture, traditional beliefs, religious beliefs, physical changes and medical constraints [4]. During pregnancy, sexual satisfaction may remain

unchanged, or it may increase or decrease. Each of these changes can lead to inefficient long-term sexual and mental health in mothers [5]. Most of the sexual problems in pregnancy are due to misconceptions and misunderstandings about the physical and emotional changes during this period [6]. Sexual satisfaction during pregnancy and sexual information about this period are significantly associated with each other in many aspects, and most people do not receive sufficient information from health providers during pregnancy [7, 8]. Paying attention to the sexual health of couples, recognising their concerns, helping to address these concerns and improving sexual function should be the mainstream of care during pregnancy [9]. In addition, individuals must learn the skills needed for satisfactory sexual relationships. This can be achieved through counselling and training, which can lead to increased sexual satisfaction [10]. Providing accurate and scientific information on physical and mental changes during pregnancy through health personnel, especially midwives, as well as providing sexual counselling in pae-



diatric education, are extremely helpful [11]. One of the ways to improve sexual satisfaction is counseling and training based on the PLISSIT model. This model is the most commonly used tool to evaluate performance and ultimate sexual satisfaction, which can be used by all people [12]. This model, consisting of 4 levels of interventional therapy, is a useful tool for counselling and sex intervention, and using the first 3 levels of this model, approximately 80–90% of sexual concerns can be addressed [4]. Studies have shown that using this model reduces sexual problems in women [13]. Pregnancy is a critical period in women's lives. This experience has important and long-term effects on women and their families [14, 15]. Sexual problems, such as lack of orgasm, vaginal dryness, sexual desire and coldness, and some emotional factors like fear of foetal injury and acceptance of a new role, affect sexuality during pregnancy. Dysfunction and sexual dissatisfaction are one of the most common problems during pregnancy, affecting a large number of pregnant women. Midwifery counselling helps couples to have better sexual relationships by providing information, as well as understanding the problem, examining and analysing it and helping them to decide and choose the right solution.

Given that limited studies have been conducted to support the effect of sexual counselling on the sexual satisfaction and marital satisfaction of pregnant women, the present study was conducted to determine the effect of PLISSIT model-based counselling on pregnant women's sexual satisfaction.

## Objectives

This study was conducted to evaluate the effect of PLISSIT model-based sexual counselling on pregnant women's sexual satisfaction.

## Material and methods

### Study design, setting

This research was a randomised controlled trial study conducted in 2015 in the city of Malayer, Hamadan province, Iran.

### Sampling method

In this study, 80 people were examined (40 in the intervention group and 40 in the control group). The sample size was based on the data provided by Rostamkhani et al. [16]. The final sample size was determined to be 40 in each group (intervention and control).

Considering that there are 5 urban centres in Malayer, out of these centres, 2 centres were randomly allocated to the control group, and 2 centres were assigned to the intervention group. The selection of individuals in the centres was based on random numbers (Figure 1).

In each clinic, eligible people were given a number and placed via the lottery method in 2 groups.

### Participants

The study inclusion criteria included a gestational age of 24 to 26 weeks, an age range of 18–35 years, having purely female sexual dysfunction with confirmation of a psychiatrist and no history of sexual dysfunction before pregnancy. The study exclusion criteria included the occurrence of any pregnancy complications during the study, such as abortion, placental abruption, abnormal foetal position, bleeding, diabetes, hypertension, preterm labour, abnormal foetal heart patterns and decreased foetal movements.

### Study instruments

In this study, sexual satisfaction was measured using Linda Berg's sexual satisfaction questionnaire. The questionnaire was prepared by Linda Berg and Cresy in 1997. Likert scaling is as follows: always = 5, most of the times = 4, sometimes = 3, rarely = 2, never = 1. The maximum score is 85, and the lowest score is 17. The validity of this questionnaire was confirmed by Salehy Fadardy in 1999 [17]. The reliability of this questionnaire was confirmed by Cronbach Alpha 0.94.

All of the pregnant women meeting the criteria for entering the study gave written consent for participation. The participants of both the intervention and control groups completed the Linda Berg sexual satisfaction questionnaire before the intervention.

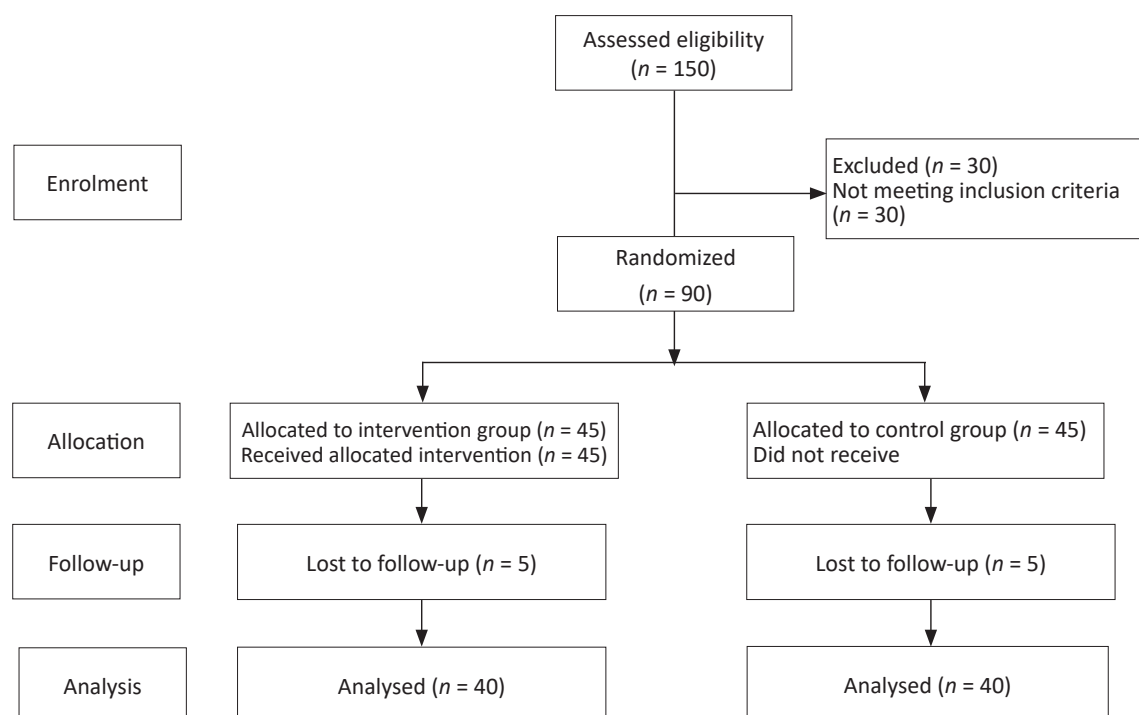


Figure 1. The process of selecting samples

## Intervention

The control group received routine consultation from the midwife of the clinic within a month, while the intervention group, in addition to routine care, received sexual counselling based on the PLISSIT model. This model has 4 steps, as follows:

First level (permission): The patient is allowed to share information about her sex activity. Thus, any concerns are identified [4]. Second level (limited information): Real information is provided in response to a patient's question or experience. Health service providers attempt to correct the mistakes and lack of information in this regard. This is used to solve non-complex problems [18]. Third level (specific suggestions): This stage of counselling involves offering specific suggestions to a pregnant woman and requires a higher level of expertise. Sexual satisfaction is strongly linked to the sexual relationship between a man/woman with a sexual disorder and his/her spouse. At this stage, it is highly important to evaluate couples' sexual relations and provide multiple methods to express sexual needs [19]. Fourth level (referral for specialised care): This intervention should be conducted in the case of severe or prolonged sexual problems. It is necessary to train healthcare providers and, if necessary, refer patients for appropriate care to healthcare professionals [12].

The counselling session was conducted weekly in 4 sessions of 45–90 minutes by a trained midwife. The content of the training sessions at the first session included: introducing the counsellor and participants to each other, explaining the details of counselling sessions and their goals and familiarising the participants with the PLISSIT model, as well as anatomy and maternal physiology during pregnancy (Level 1 of the PLISSIT model). The participants were asked to address their sexual concerns in this regard, and the counsellor responded to questions from clients based on the PLISSIT model and described the various sex positions during pregnancy. The limitations of sex during this period and the health issues needed during sex in pregnancy were explained. Specific suggestions were offered (Levels 2 and 3 of the PLISSIT model). The following-up of the PLISSIT counselling steps for the second session was to examine the areas of sexual function and its changes during pregnancy (Level 1 of the PLISSIT model). The midwife answered the participants' questions, and the 4 phases of the sexual response cycle, as well as the physical and mental differences between men and women, were expressed at each stage of the sexual cycle. Incorrect beliefs about sex during pregnancy were corrected (Levels 2 and 3 of the PLISSIT model). Finally, the consultation session was finalised and planned for the next meeting. In the

third session, the pattern of sexual changes during pregnancy was explained, and the counsellor responded to the questions asked by the patients. The protocol for sexual activity changes during pregnancy was reviewed (Levels 2 and 3 of the PLISSIT model), and finally, a counselling session was scheduled, and a follow-up meeting was planned. In the fourth session, sexual satisfaction and subsequent marital satisfaction in pregnancy were explained. The counsellor's response to the questions about the effective factors of sexual satisfaction and marital satisfaction in pregnancy was then answered, and the counselling process was finalised (Levels 2 and 3 of the PLISSIT model). It should be noted that the content of the training sessions was presented to the recipients in a pamphlet. The researcher also had a weekly phone call to assess the sexual satisfaction of the intervention group. For the post-test, both groups (intervention and control) completed the questionnaire 2 and 4 weeks after completion of the consultation. The psychiatrist examined the pregnant women of both groups before the study, 2 and 4 weeks after the intervention.

## Ethical considerations

The study protocol was approved by the Ethics Committee of the Hamadan University of Medical Sciences (IR.UMSHA.REC.9407284056). The protocol was also registered in the Iranian Registry for Randomised Controlled Trials (IRCT2015070713405N11) and was conducted after obtaining the permission of the Deputy of the Hamadan University of Medical Sciences. This article is the result of a master's thesis on midwifery counselling.

## Statistical analysis

The independent *t*-test was used to comparing means between the intervention and control groups. Chi-square and *t*-tests were used to assess demographic variables in both groups and the one-way repeated-measures ANOVA test was used to examine the effects of intervention at different times. *p*-values less than 0.05 were considered statistically significant. Data was analysed using the SPSS-22 software.

## Results

### Findings related to socio-demographic characteristics

In this study, 80 pregnant women having the inclusion criteria (40 patients in each group) were evaluated. Investigation

Variables	Intervention group	Control group	<i>p</i>
Age (years), Mean (Standard Deviation)	26.32 (3.92)	27.10 (4.77)	0.43
Gestational age, Mean (Standard deviation)	24.77 (0.83)	24.77 (0.80)	1.00
Gravity, Mean (Standard Deviation)	1.62 (0.70)	1.97 (1.04)	0.08
Employment status <i>n</i> (%)	employed	4 (10)	0.73
	housewife	36 (90)	
Education <i>n</i> (%)	elementary	3 (7.5)	0.89
	guidance school	3 (7.5)	
	high school	17 (42.5)	
	academic and higher education	17 (42.5)	
Husband's education <i>n</i> (%)	elementary	3 (7.5)	0.59
	guidance school	4 (10)	
	high school	14 (35)	
	academic and higher education	14 (35)	
Husband's employment status <i>n</i> (%)	employed	39 (97.5)	1.00
	unemployed	1 (2.5)	
Desire for this pregnancy <i>n</i> (%)	yes	27 (67.5)	1.00
	no	13 (32.5)	

of quantitative variables using the Kolmogorov–Smirnov test showed that all variables had normal distribution. The mean age of the intervention and control groups was  $26.32 \pm 3.92$  and  $27.10 \pm 4.77$  years, respectively, and this difference was not statistically significant. The comparison of the 2 groups did not show any significant difference in terms of other variables; therefore, pregnant women were matched in both the intervention and control groups (Table 1).

### Intervention effect

The comparison of means of sexual satisfaction before, 2 weeks after and 4 weeks after the intervention in the control and intervention groups showed a significant difference between the 2 groups ( $p < 0.001$ ). In addition, the comparison of the 2 groups in 3 stages showed that there was no significant difference between the 2 groups in terms of sexual satisfaction score in the pre-test ( $p = 0.59$ ), but there was a significant difference between the 2 groups after 2 and 4 weeks of intervention ( $p = 0.01$  and  $p < 0.001$ , respectively) (Table 2).

**Table 2. Comparison of the means of sexual satisfaction before, 2 weeks after and 4 weeks after the intervention in the control and intervention groups**

Sexual satisfaction Score of the 2 groups	Before the intervention M (SD)	2 weeks after the intervention M (SD)	4 weeks after the intervention M (SD)	One-way repeated measures ANOVA
Intervention	56.82 (9.83)	64.50 (7.19)	69.65 (5.51)	$p > 0.001$ $F = 61.22$
Control	58.25 (13.38)	58.90 (11.92)	60.05 (13.96)	
$p^{**}$	0.59 T = 0.54	0.01 T = 2.54	$p > 0.001$ T = 4.40	

\*\* T – independent.

### Discussion

Based on the present study results, sexual counselling during pregnancy could be effective in increasing pregnant women's sexual satisfaction. The results of the present study were consistent with those of Schulz's study. Schulz's study was a randomised clinical trial study examining 30-year-old women from the third trimester of pregnancy to 66 months postpartum. The study results indicated that preventive intervention could maintain marital quality when becoming a parent. Couples who did not receive intervention experienced reduced sexual and marital satisfaction [20]. The results of Banaei's et al. study, which were in line with the increasing impact of counselling on sexual satisfaction, are consistent with the present study results [21]. The present study indicated that counselling could be useful in increasing sexual satisfaction during pregnancy. Furthermore, in the study conducted by Pakgozar et al., sexual counselling for infertile women in 2 stages before and 3 months after intervention showed a significant difference between the mean sexual and marital satisfaction of couples [22].

Masoumi et al., in their study, concluded that sexual education or marital counselling promoted family health, reduced sexual violence in the family, prevented sexually transmitted diseases and provided a positive attitude toward sexual relations, sexual pleasure, reduced family inequity and sexual satisfaction. As a result, marital satisfaction is attained by couples [23]. Alidost et al., in their study, demonstrated that after sexual counselling, the mean score of sexual satisfaction in the post-test and the 6-month follow-up was significantly higher than that of the pre-test score [9]. The present study results are similar to the above findings and suggest that PLISSIT model-based sexual counselling increases sexual satisfaction.

The present study showed that lack of sexual counselling and intervention in the control group did not show any changes in sexual satisfaction, and thus the results showed no significant difference in each stage compared to the previous one. Our research was in line with the study by Babazadeh et al., in which there was a significant difference between the sexual satisfaction of women in the intervention group before and 2 months after education, while in the control group, there was no significant difference [24].

The results of this study have been consistent with those of the study by Parva et al. on comparing the educational programme on sexual satisfaction in intervention and control groups. The intervention group's couples participated in sessions for 4 consecutive weeks, 2 sessions a week, and a control group was also considered. The groups were evaluated before and after the training sessions. The results showed that spouses who participated in the sexual enhancement programme had more pleasure in their sexual relationship than those in the other group. In addition, the participants in the sexual enhancement programme felt a greater amount of affection, and their overall marital satisfaction improved [25]. Rosier and Tyler showed that sexual skills training could lead to positive emotions, better proximity and sincerity of the spouses, as well as promotion of marital relationships. If continued, it increases the ability to solve conflicts between couples and increases marital satisfaction [26]. Byers investigated the causal link between sexual communication and marital satisfaction and concluded that there was a two-way correlation between sexual satisfaction and marital satisfaction. Their study also showed that sexual satisfaction resulting from counselling based on the PLISSIT model could significantly affect pregnant women's sexual satisfaction, being consistent with the results of our study [27]. The present study is also consistent with the study of Sabeti et al., who investigated the effect of educational intervention on women's sexual function. A total of 130 women participated in 2 intervention and control groups (each one 65 individuals). The intervention group was provided with 2 training sessions of 180 minutes, and the results showed that sexual health training could improve sexual function in women [28, 29]. Abdelhakm et al. concluded that sexual performance counselling in diabetic women using the 4 levels of the PLISSIT model and the FSFI questionnaire was effective in promoting female sexual function [30]. Banaei et al., in their study, indicated that PLISSIT model-based sexual performance counselling in breastfeeding women, even after 3 months of intervention, was effective in increasing female sexual function [31]. Chun, using the PLISSIT model to increase the sexual function of women with gynaecological cancer, concluded that there was a significant statistical difference in FSFI sub-domains, including sexual desire, arousal, lubrication, orgasm and satisfaction, but not pain, and women's sexual function will improve with this model [32]. Overall, the results of these studies were consistent with those of our study.

### Limitations of the study

In this study, the duration of the follow-up was short, which can be considered a limitation.

### Conclusions

It can be concluded that PLISSIT model-based sexual counselling significantly affects sexual satisfaction improvement. This method prevents various sexual disorders during this period.

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