

## Original article

## The effect of sexual counseling on self-concept and sexual satisfaction of women with pelvic organ prolapse: A randomized clinical trial study

Niloofer Ladoni<sup>a</sup>, Mansoureh Refaei<sup>b,c</sup>, Farideh Kazemi<sup>a,b</sup>, Ensiyeh jenabi<sup>b</sup>, Azita Tiznobaik<sup>a,b,\*</sup>, Nahid Radnia<sup>d,e</sup>

<sup>a</sup> Department of Midwifery and Reproductive Health, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

<sup>b</sup> Mother and Child Care Research Center, Institute of Health Sciences and Technologies, Avicenna Health Research Institute, Hamadan University of Medical Sciences, Hamadan, Iran

<sup>c</sup> Department of Mother and Child Health, School of Nursing and Midwifery, Hamadan University of Medical Sciences, Hamadan, Iran

<sup>d</sup> Clinical Research Development Unit of Fatemeh Hospital, Hamadan University of Medical Sciences, Hamadan, Iran

<sup>e</sup> Department of Obstetrics and Gynecology, School of Medicine, Fatemeh Hospital, Hamadan University of Medical Sciences, Hamadan, Iran

## ARTICLE INFO

## Keywords:

Sexual counseling  
Sexual self-concept  
Sexual satisfaction  
Pelvic organ prolapse

## ABSTRACT

**Introduction:** One of the most common complaints of women with pelvic prolapse (POP) is sexual dissatisfaction. The study aimed to determine the effect of counseling on the self-concept and sexual satisfaction of women with pelvic organ prolapse.

**Method:** In 2022, a parallel randomized clinical trial was conducted in ...., involving 60 women with pelvic organ prolapse. A random block method was used to divide participants into two groups. The demographic profile questionnaire, the multidimensional sexual self-concept questionnaire, and the Linda Berg sexual pleasure questionnaire were used as the data-gathering tools. Four individual counseling sessions were conducted in four consecutive weeks. ANCOVA analysis was used to compare groups. The data was analyzed by helping STATA software version 13 with a meaningful level of less than 0.05.

**Results:** The study consisted of 60 participants with an average age (standard deviation) of the intervention group 44.60 (4.01), and the control group 41.57(5.94) years, data from 60 participants were analyzed. The demographic and clinical specifications of the two groups were relatively similar ( $p < 0.05$ ). After the intervention, sexual self-concept, and sexual satisfaction scores were measured and adjusted for interfering factors. In the intervention and control group, respectively, the mean score (standard deviation) of negative sexual self-concept scores were 16.63 (2.64), and 22.14 (2.64) ( $p < 0.01$ ) with effect size 2.09 [MD = 5.51 (95 % CI: 4.16,6.87)], and the mean score (standard deviation) of sexual satisfaction scores were 59.79(5.67) and 51.91(5.67) ( $p < 0.01$ ) with effect size 2.13[MD = 8.18 (95 % CI: 6.19,10.16)]. The difference in mean scores in both variables was meaningful.

**Conclusion:** Individual sexual counseling significantly increases the sexual self-concept and sexual satisfaction of women with the prolapse of pelvic organs. Research is needed to determine suitable and effective therapies that support women's sexual health since self-esteem and sexual pleasure play a significant role in enhancing sexual function and bolstering marital relationships.

## 1. Background

Based on the World Health Organization, women who are in perfect physical, mental, and emotional health can build a strong foundation for a healthy family. Moreover, sexual health plays an important role in

ensuring the health of individuals and public health.<sup>1</sup> Without fulfilling sexual interactions, the stability of married marriages is jeopardized. One of the most significant pleasures a person may have in life is sexual pleasure, which also serves as a buffer against life's hardships and marital issues.<sup>2</sup> Sexual dissatisfaction in women can be affected by the

\* Corresponding author. Mother and Child Care Research Center, Institute of Health Sciences and Technologies, Avicenna Health Research Institute, Hamadan University of Medical Sciences, Hamadan, Iran.

E-mail addresses: [Nilin8204@gmail.com](mailto:Nilin8204@gmail.com) (N. Ladoni), [mansourehrefaei@yahoo.com](mailto:mansourehrefaei@yahoo.com) (M. Refaei), [faridehkazemi21@yahoo.com](mailto:faridehkazemi21@yahoo.com) (F. Kazemi), [en.jenabi@yahoo.com](mailto:en.jenabi@yahoo.com) (E. jenabi), [Azita.tizno@gmail.com](mailto:Azita.tizno@gmail.com) (A. Tiznobaik), [Radnia\\_n@yahoo.com](mailto:Radnia_n@yahoo.com) (N. Radnia).

<https://doi.org/10.1016/j.cegh.2025.101942>

Received 17 August 2024; Received in revised form 4 January 2025; Accepted 16 January 2025

Available online 17 January 2025

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physical condition of sexual organs, such as prolapse of pelvic organs, and social and psychological factors.<sup>3</sup> The prolapse of pelvic organs means the withdrawal of pelvic organs, such as the uterus bladder small intestine rectum or vagina from their normal anatomical location.<sup>4</sup> One of the most common complaints of patients with pelvic prolapse is sexual dissatisfaction. About a third of people with POP suffer from sexual dissatisfaction. Statistics show that good sex 60 to 70 percent improves marital life, and unfortunately, many divorces are in terms of lack of good sex, and it is necessary for each person to have sufficient knowledge and information about their sexual relations.<sup>5</sup> 7.8 % of divorces, according to an evaluation conducted in Iran, were the result of marital discontent.<sup>6</sup> However, it is crucial to recognize that sexual self-perception is a critical component of human sexual life. It serves as a significant indicator of how couples will develop their behaviors and can be promoted to improve the mental and sexual health of individuals, particularly by increasing satisfaction during stressful situations. Genital changes or prolapse of pelvic organs can be considered a stressor in sexual activity.<sup>7</sup> Sexual self-perception is a cognitive view of the sexual aspects of the individual himself, which refers to the thoughts, feelings, and actions of a person about himself as a tersexual being, which is the core of sexual desire, and the predictor of sexual consequences.<sup>8</sup> Almost 25 % of women in the United States and almost 50 % of women worldwide develop the disease.<sup>9</sup> In the study conducted in China, the prevalence of Stage Two, and above prolapse was 9.56 %.<sup>10</sup> Following urinary stress incontinence, pelvic organ prolapse ranks second in prevalence according to a study conducted in Turkey. 19.7 % of cases involve pelvic organ prolapse.<sup>11</sup> 8.80 % of the 365 women examined in the province of Ilam had varying degrees of prolapse.<sup>12</sup> The women with positive sexual self-concept have a higher level of sexual responses, and their sexual satisfaction, marital satisfaction, marital compatibility, sexual self-esteem, sexual optimism, sexual self-efficacy, sexual alertness, and sexual problem management increase, while the presence of negative sexual self-esteem in the women leads to undesirable sexual function, sexual problems, feelings of sexual anxiety, sexual fear, and sexual depression, and less effort and sexual activity to adapt to their sexual problems. They experience less.<sup>13</sup> Female sexual satisfaction is predicted by both positive and negative forms of sexual self-esteem.<sup>14</sup> Various interventions are utilized to address prolapse of the pelvic organs, encompassing both surgical and non-surgical approaches. Non-surgical procedures include the exercise of pelvic floor muscles, medication interventions, and using a vaginal pessary. Many women with low degrees of prolapse are reluctant to undergo surgical treatments.<sup>9</sup>

Gynecological counseling involves providing the appropriate treatment options regarding the clinical condition, and its risks and benefits. However, many experts believe that offering treatment and providing sufficient details to obtain informed consent is consulting.<sup>15</sup> Sexual counseling is one of the main elements of sexual hygiene, and sexual enhancement. The effectiveness of health counseling programs is largely contingent on the appropriate application of diverse health models.<sup>16</sup> To accomplish these objectives, a certified midwife must establish efficient channels of communication with colleagues, family members, and professionals from other fields of expertise.<sup>17</sup> Regarding the importance of sex in marital life, the adverse effect of sexual dysfunction on the occurrence of physical and mental problems and its effect on family and Community Health and the need for women with pelvic prolapse to develop a comprehensive counseling program to manage this disorder, the present study aimed to determine the effect of sexual counseling on self-concept, and sexual satisfaction of women with prolapse of pelvic organs in western Iran.

## 2. Methods

This randomized controlled clinical trial was conducted in intervention and control groups with a pre-and post-design in the department of pelvic floor disorders in one of the largest hospitals in the western

Iranian referral in the city of .... in 2023.

### 2.1. Participants

The research community included all women with the prolapse of pelvic organs visiting the pelvic floor disorders center at the .... medical training center. Criteria for study entry include the willingness to participate in the study, the patients with a preliminary diagnosis of second-degree pelvic prolapse disease, having a negative sexual self-perception, lack of intervention of drug, and surgical treatment, marital, and lack of sexual problems with a spouse, reading and writing literacy, a history of at least two years of married life, lack of any underlying disease including diabetes, high blood pressure, thyroid, etc., lack of mental illness based on patient record, women aged 30–50 years, lack of menopause, and receiving the same treatment.

### 2.2. Sampling

Based on the sexual satisfaction variable that was the main result of this study, considering  $\alpha = 0.05$ , power = 0.80,  $m_1 = 15.9$ ,  $m_2 = 21.6$ ,  $sd_1 = 9.63$ ,  $sd_2 = 9.88$  and attitude rate of 25 %, using the sampsi module in Stata-13 software the number of samples was determined to be 30 in each group<sup>5</sup> Random allocation software determined the sequence of randomization using substitution blocks 4. After the sequence was identified, 60 matte envelopes were prepared, in which the set sequence was placed and numbered from 1 to 60. During sampling, envelopes were opened in order of number, and the person was assigned to the designated group. The person who performed the sampling was not aware of the sequence order.

### 2.3. Ethical considerations

This study is based on the code of ethics ...., and IRCT code: IRCT20120215009014N428 were approved by the research and Technology Department of the University of Medical Sciences of .... The necessary permits for the research were obtained from the Research, and Technology Department of the University of Medical Sciences, and the written consent form was completed by the subjects. The individuals' information was kept private and used only for research, and the participants' identities were withheld. The subjects were allowed to continue taking part in meetings and study at any time. Honesty in the collection and analysis of information was observed. The objectives of the study were explained to the subjects.

### 2.4. Data collection tools

**Demographic information questionnaire:** this questionnaire included questions on the demographic status of participants (age, education, occupation, age of the spouse, education of the spouse, occupation of the spouse, age of marriage, number of children, income status and place of residence). The opinions of ten faculty members of the Faculty of Nursing and Midwifery of .... University of Medical Sciences were used to determine the validity of the demographic questionnaire.

**MSSCQ:** this questionnaire is an objective self-reporting tool whose Persian version has 78 questions and 18 domains and was validated by Zia in 1392 in Iran.<sup>18</sup> Positive, negative, and situational sexual self-perception are some of the bigger areas that are divided into questions based on the Likert scale, which goes from zero (not true of me at all) to four (totally true of me). Negative self-esteem includes 4 areas sexual anxiety, sexual monitoring, fear of sex, and sexual depression. The minimum score on the negative self-concept dimension was zero, and the maximum score was 64. In the research of Jafarpur et al., in 2016, the base ratio of the 18 areas of the questionnaire was calculated using the Cronbach Alpha coefficient from 0.74 to 0.91.<sup>14</sup>

**Lindaberg questionnaire:** The sexual satisfaction questionnaire was developed in 1997 by Lindaberg and Cressy. Sexual satisfaction is

the score that the research unit scores after responding to the sexual satisfaction scale. Each Likert five point on this scale is represented by 17 questions (always: 5, most of the time: 4, occasionally: 3, infrequently: 2, and never: 1). Points earned might range from 17 to 85, minimum and maximum, respectively. The range of ratings for sexual pleasure was 17–51 bad, 52–67 acceptable, and 68–85 excellent. The basis of this questionnaire was confirmed by Salih Federi in 1377.<sup>19</sup> The questionnaire was approved by Lindberg in 1997 which was concluded by the valuers' agreement method with a correlation coefficient of  $R < 0.07$  and  $R = 0.83$ , respectively.<sup>20</sup>

Cronbach alpha was used to check the basics of both of the above questionnaires, and the questionnaires were completed by 30 people, the results showed that Cronbach alpha levels were in the area of sexual anxiety 0.85, the area of fear of sex 0.75, the area of sexual surveillance 0.67, the area of sexual depression 0.81 and in general 0.82, and sexual satisfaction was 0.86.

## 2.5. Method of data collection

After obtaining the permission of the Ethics Committee in the research of the University of Medical Sciences Of .... and after obtaining permission from the officials of .... hospital and coordinating with the Center for pelvic floor disorders, women were studied with prolapse of the pelvic organs visiting the Center for pelvic floor disorders of ... hospital. Gynecologists and obstetricians made the diagnosis and determined the severity of prolapse. Initially, the participants in the research were told of its goals and provided their signed informed permission. They were also informed of the number of counseling sessions. To do this, the allocation sequence was first determined using four AABB blocks before the study began, then the type of intervention was based on the specified sequence, written inside matte closed envelopes, and numbered in sequence order. The demographic information questionnaire, sexual self-concept, and sexual satisfaction were numbered in the same order. Before entering the study, participants completed the demographic information questionnaire, self-reported questionnaires and sexual satisfaction and received an envelope. Then, the people were placed in one of the control or intervention groups based on the contents of the envelope. In the intervention group, women were individually consulted in four sessions (four consecutive weeks). By telephone, the patients were informed to attend counseling sessions at the appointed time. These sessions were held at intervals of one week and each session for 45–60 min at the clinic of Fatemeh Hospital. Research units received a booklet outlining the session's content after each consultation, and the intervention group remained in constant contact with the researcher by phone and WhatsApp throughout the consultation. Two months after the last counseling session, the researcher completed sexual self-concept questionnaires, and sexual satisfaction for people in intervention and control groups. The women in the control group did not receive any counseling during this time. Regarding the ethical considerations at the end of the study, the pamphlets containing the content of consultations were given to the women in the control group. Counseling was based on counseling steps (GATHER) in all counseling sessions (Table 1).

## 2.6. Blindness

Considering that participants were attending counseling sessions and were aware of which group they were in. So, blindness has not been done.

## 2.7. Method of data analysis

The data was analyzed using STATA version 13. Quantitative variables were described using central and scattering indicators. Tables, graphs, abundance, and percentages were also used to describe the qualitative variables. Smirnov's Kolmogorov test was used to verify whether the quantitative data distribution was normally distributed.

**Table 1**  
Counseling sessions.

Sessions	Content	Time
First session	- Explanations about the anatomy and physiology of the reproductive system - Explanations about prolapse of the pelvic organs and the factors that cause it	45–60 min
Second session	- Explanations about the sexual cycle - Helping clients to express their wishes and needs - Helping clients to express their concerns and questions - Helping clients to discover the main problem in sexual function	45–60 min
Third session	- Overview of previous sessions - Retelling the material taught by references and stating new problems - Advice on the types of positions suitable for sex and how to express sexual expectations from the spouse - Advice on the meaning of sexual satisfaction	45–60 min
fourth session	- Overview of previous sessions - Explanations about ways to improve sexual performance - Expressing the importance of positive and negative sexual self-concept and its effect on the quality of sexual life and ways to avoid negative sexual self-concept by acquiring physical attractiveness - Suggestions for obtaining more sexual satisfaction according to the patient's condition	45–60 min

The comparison of two groups in terms of demographic and contextual variables if the data is small, was done with the independent *t*-test or Whitney I-test, and if it is qualitative, with the Kai-two Test. The ANCOVA test was used to examine the differences between the two groups in terms of different areas of negative self-esteem, and sexual satisfaction. Intra-group comparisons were made using T-couple and inter-group tests with the Independent Team test. The meaningful level in all statistical tests was considered to be less than 0.05.

## 3. Results

Fig. 1 shows how people enter clinical trials. The mean (standard deviation) age of women in the study was 44.60 (4.01) and 41.57(5.94) years in the intervention and control group, respectively, and the two groups were not statistically homogeneous ( $P = 0.02$ ), which was considered in statistical analysis. In other specifications the number of births ( $P = 0.46$ ). The duration of marriage ( $P = 0.06$ ), the number of pregnancies ( $P = 0.22$ ), the type of birth ( $P = 0.83$ ), the ownership of place of residence ( $P = 0.08$ ), income ( $P = 0.99$ ), the level of education of women ( $P = 0.10$ ), the level of education of spouse ( $P = 0.94$ ). Spousal occupation ( $P = 0.48$ ) in two intervention, and control groups, there was no significant statistical difference (Table 2).

The comparison of mean and standard deviation of sexual anxiety scores in the post-intervention stage in two intervention, and control groups was 4.61(1.63) and 8.03(1.63) respectively. Using the ANCOVA test to account for pre-intervention scores and age, it was determined that the average score in the intervention group was much lower than that of the control group, with a statistically significant difference ( $P = 0.01$ ). The comparison of mean and standard deviation of scores in the area of fear of sex in the post-intervention stage in the two intervention and control groups was 6.31 (1.29), and 6.26(1.29) respectively. By controlling the effect of pre-intervention scores, and age with the ANCOVA test, although the average score in the intervention group was lower than in the control group, this difference was not statistically significant ( $P = 0.89$ ). The comparison of average scores in the field of sexual monitoring in the post-intervention stage in two intervention, and control groups was 2.80 (0.82), and 3.56 (0.82) respectively. By controlling the effect of pre-intervention scores and age with the ANCOVA test, the average score in the intervention group was lower than in the control group, and this difference was statistically significant ( $P = 0.01$ ). The comparison of average scores in the area of sexual

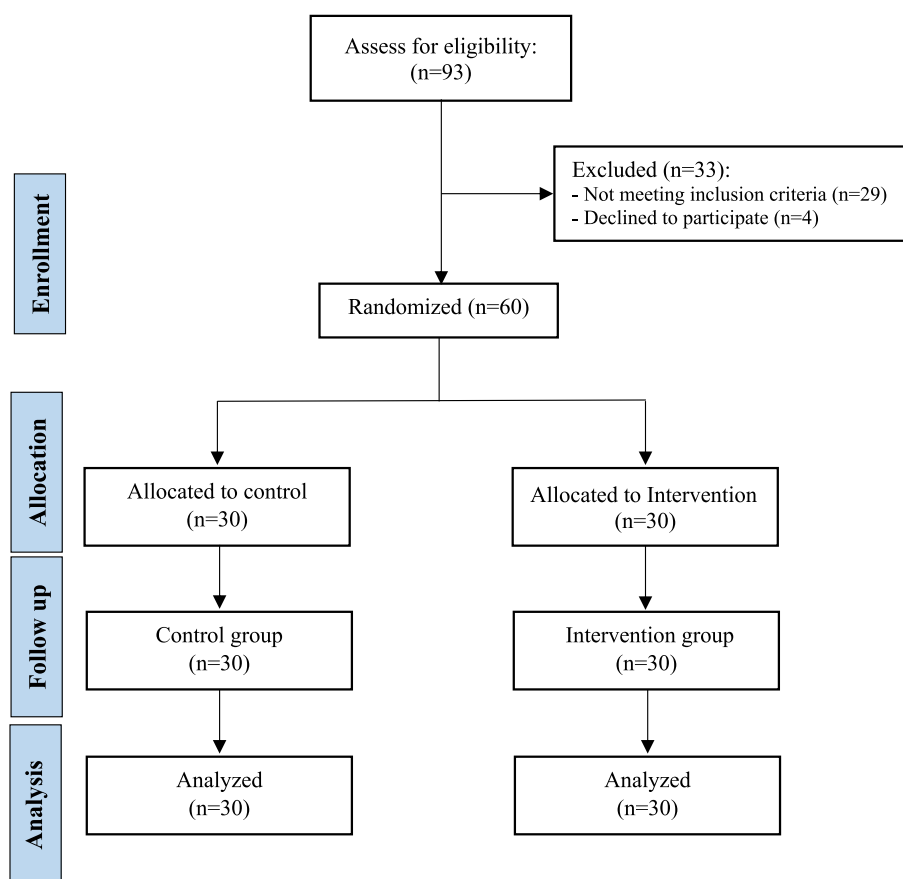


Fig. 1. CONSORT flow diagram.

depression in the post-intervention stage in two intervention and control groups was 3.07 (0.84) and 4.13 (0.84) respectively. The ANCOVA test, which accounted for the influence of age and pre-intervention scores, revealed that the mean score in the intervention group was notably lower than that of the control group. This disparity was found to be statistically significant ( $P = 0.01$ ) (Table 3). Finally, After the intervention, sexual self-concept, and sexual satisfaction scores were measured and adjusted for interfering factors. In the intervention and control group, respectively, the mean score (standard deviation) of negative sexual self-concept scores were 16.63 (2.64) and 22.14 (2.64) ( $p < 0.01$ ) with effect size 2.09 [MD = 5.51 (95 % CI: 4.16, 6.87)], and the mean score of sexual satisfaction scores were 59.79 (5.67), and 51.91 (5.67) ( $p < 0.01$ ) with effect size 2.13 [MD = 8.18 (95 % CI: 6.19, 10.16)]. The difference in mean scores in both variables was meaningful (Table 4).

#### 4. Discussion

The present study showed that the average score in the area of sexual anxiety, sexual surveillance, sexual depression, and the main variable of negative sexual self-concept in the women with pelvic organ prolapse decreased in the intervention group relative to the control group after counseling, and the average difference between two groups in these areas was significant. Following counseling, the intervention group's average score on the primary measure of female sexual satisfaction rose in comparison to the control group, and this average difference between the two groups was statistically significant. Saleh et al. reported in 2015 that public self-esteem and self-concept correlate positively, and meaningfully with sexual anxiety, and fear of sex and correlate negatively with self-efficacy and sexual self-concept.<sup>21</sup> Hashemi et al. reported that there was a significant difference between the study groups

in the post-test in terms of sexual anxiety after the intervention, and intervention had a significant effect on reducing sexual anxiety,<sup>22</sup> which was consistent with the results of this study. In the study of Bowie et al., sexual education reduced sexual anxiety, and sexual depression and increased sexual self-expression, sexual optimism, and sexual self-efficacy in women in the experimental group.<sup>23</sup> The sexual counseling also reduced anxiety and fear, but this decrease was not meaningful in the scope of fear of sex. The difference in the findings of the current study compared to the study conducted by Bowie et al. may be attributed to variations in the individual and clinical characteristics of the participants, especially their age. The age of subjects was often at the end of the reproductive age, while in the Bowie et al. study, young subjects were advised to be more courageous in sexual intercourse. Other reasons for the difference in the results of this study with the study of Bowie et al., can be related to people's expectations of sex, as well as the expression of sexual problems, which vary in different societies, and cultures and can lead to different results.<sup>3</sup> In the present study people who underwent sexual counseling enjoyed better sexual self-esteem than the control group, and this reflects the effect of education informing changing attitudes expectations and beliefs of people, especially in our country which has caused false beliefs excesses and distractions in families throughout life in terms of the very severe inconsistency between the sexual education of people since childhood, and the lack of proper and scientific treatment of this important human phenomenon, as well as the lack of timely information leading to experiences of self-awareness and negative and inappropriate sexual fantasies, and thus causing harm it's a sexual self-image of people. Since in our country women's sexual problems are less addressed in society, timely and appropriate communication with the culture of society at every stage of a person's life seems necessary, and inevitable.<sup>24</sup> Individuals with superior physical prowess exhibit more sexual self-assurance, which

**Table 2**  
Characteristics of participants.

Variable	Control (n = 30)	Intervention (n = 30)	p-value
age (year) (Mean ± SD)	41.57 ± 5.94	44.60 ± 4.01	0.02 <sup>a</sup>
number of births (Mean (SD))	4.37 ± 1.13	4.17 ± 0.95	0.46 <sup>a</sup>
Duration of marriage (Mean (SD))	22.37 ± 7.18	25.60 ± 5.59	0.06 <sup>a</sup>
Settlement (N (%)):			
Ownership	21 (70)	22 (73.3)	0.08 <sup>b</sup>
The rent	9 (30)	8 (26.7)	
Economic Status (N (%)):			
Desirable	24 (80)	24 (80)	0.99 <sup>b</sup>
Undesirable	6 (20)	6 (20)	
Women's education (N (%)):			
Elementary	13 (43.3)	7 (23.3)	0.10 <sup>c</sup>
Middle school	9 (30)	8 (26.7)	
High school	4 (13.3)	12 (40)	
Diploma and more	4 (13.3)	3 (10)	
Spouse's education (N (%)):			
Elementary	10 (33.3)	8 (26.7)	0.94 <sup>c</sup>
Middle school	10 (33.3)	10 (33.3)	
High school	7 (23.3)	8 (26.7)	
Diploma and more	3 (10)	4 (13.3)	
Spouse's job (N (%)):			
Self-employed	18 (60)	20 (66.7)	0.48 <sup>c</sup>
Worker	8 (26.7)	4 (13.3)	
Employee	4 (13.3)	5 (16.7)	
Retired	0 (0)	1 (3.3)	
Gravida (N (%)):			
1	3 (10)	1 (3.3)	0.22 <sup>c</sup>
2	3 (10)	9 (30)	
3	9 (30)	10 (33.3)	
4	11 (36.7)	9 (30)	
≥5	4 (13.3)	1 (3.3)	
Type of delivery (N (%)):			
Normal Vaginal Delivery	4 (13.3)	3 (10)	0.83 <sup>c</sup>
Cesarean section	4 (13.3)	3 (10)	

<sup>a</sup> Independent *t*-test.  
<sup>b</sup> Chi-square.  
<sup>c</sup> Fisher's exact test.

encompasses the overall inclination to evaluate one's ability to

participate in wholesome sexual activities and embrace sexual encounters.<sup>25</sup> As women's anxiety and psychological stress increase, their sexual performance matching decreases, while the sexual depression of a woman reduces the sexual satisfaction of her husband, on the other hand, it should be noted that for women, the freedom of thought and the reduction of tensions increase sexual excitement and arousal, as well as embarrassment, conservatism and anxiety are associated with the index of neurosis and sexual depression in them.<sup>26</sup> Therefore, based on the results, interventions, such as sexual counseling, which is a kind of increased confidence in sexual self-esteem, that is a comprehensive desire to positively assess individual capacity to engage in healthy sexual behaviors, pleasant sexual experience and sexual satisfaction, reduce tension in women, as well as increase sexual arousal and ultimately reduce sexual depression.<sup>27</sup> In these findings, it is possible that sexual counseling is designed to be useful for people whose level of fantasy was minimized by teaching fantasy techniques, spontaneity, self-motivation. Education includes developing an optimum mental picture of the body as well as changing common misunderstandings, and these abilities, as well as changes in people's attitudes toward beliefs and mental images, contribute to an increase in sexual self-concept.<sup>26</sup> The average total sexual satisfaction score in the women with prolapse of the pelvic organs visiting the pelvic floor disorders center in .... significantly increased after the sexual counseling intervention (*p* < 0.01). In the study of Bokaie et al.,<sup>28</sup> sexual counseling had a significant effect on improving sexual satisfaction in people, which is consistent with the results of this study. Braekken et al. reported in 2015 six months of pelvic floor muscle exercises in the intervention group had significantly increased sexual function relative to the control group.<sup>29</sup> In 2017, Li-Yun-Fong et al. found a substantial correlation between the prolapse of the pelvic organ and poor levels of enjoyment of sex. Specifically, participants reported moderate levels of sexual arousal and orgasm, along with low levels of sexual desire and pleasure.<sup>7</sup> Baron et al. reported in 2006 that sexual education or marital counseling plays an important role in family health, reducing sexual violence in the family, preventing STDs, positive attitudes towards sexual relations, sexual pleasure, reducing family incompatibility, and gaining enjoyable sexual experiences, and thus the sexual satisfaction of couples.<sup>30</sup>

In this study, in addition to conducting in-person training, the

**Table 3**  
Comparing of dimensions of negative sexual self-concept between two groups.

Variable	Groups	Before intervention (Mean ± SD)	ANCOVA analysis results after the intervention				
			Adjusted (Mean ± SD)	F	p-Value	MD <sup>a</sup> CI (0.95 CI)	Cohen's d <sup>b</sup> CI (0.95 CI)
sexual anxiety	Control	8 ± 4.35	8.03 ± 1.63	63.03	0.01	3.42 (2.58,4.26)	2.65 (1.95,3.34)
	Intervention	7.50 ± 3.65	4.61 ± 1.63				
Fear of sex	Control	6.17 ± 1.68	6.26 ± 1.29	00.02	0.89	0.05 (−0.62,0.72)	0.04 (−0.46,0.54)
	Intervention	6.83 ± 2	6.31 ± 1.29				
Surveillance and sexual monitoring	Control	4.50 ± 1.76	3.56 ± 0.82	10.74	0.01	0.76 (0.34,1.18)	0.93 (0.39,1.46)
	Intervention	2.50 ± 1.66	2.80 ± 0.82				
Sexual depression	Control	4.50 ± 2.85	4.13 ± 0.84	22.50	0.01	1.06 (0.63,1.49)	1.26 (0.70,1.81)
	Intervention	3.97 ± 2.21	3.07 ± 0.84				

<sup>a</sup> Mean Difference.  
<sup>b</sup> Cohen's d effect size: Considered small: 0.20–0.40, Considered moderate: 0.50–0.70, and Considered large: ≥0.80.

**Table 4**  
Comparing of Sexual self-concept and Sexual satisfaction between two groups.

Variable	Groups	Before intervention (Mean ± SD)	ANCOVA analysis results after the intervention				
			Adjusted (Mean ± SD)	F	p-Value	MD <sup>a</sup> CI (0.95 CI)	Cohen's d <sup>b</sup> CI (0.95 CI)
Sexual self-concept	Control	23.17 ± 7.42	22.14 ± 2.64	61.67	0.01	5.51 (4.16,6.87)	2.09 (1.45,2.71)
	Intervention	20.8 ± 7.14	16.63 ± 2.64				
Sexual satisfaction	Control	54.80 ± 12.47	51.91 ± 5.67	20.59	0.01	8.18 (6.19,10.16)	2.13 (1.49,2.76)
	Intervention	48.33 ± 8.59	59.79 ± 5.67				

<sup>a</sup> Mean Difference.  
<sup>b</sup> Cohen's d effect size: Considered small: 0.20–0.40, Considered moderate: 0.50–0.70, and Considered large: ≥0.80.



researcher was available full-time through virtual space so that participants could also benefit from online consultations. Therefore, the results of the study indicate the importance of the role of online consultations in providing gynecological consultations. Previous studies have shown that modern methods of artificial intelligence strategies can help improve diagnosis, develop effective treatments, telemedicine, and develop monitoring devices.<sup>31,32</sup> One of the effective methods for providing offline consultations is the use of a chatbot strategy. This tool plays an important role in designing electronic medical services and increasing the efficiency of healthcare workers. By providing a safe environment in hospital and medical clinic systems, Chatbots enable immediate interaction of patients with doctors and healthcare providers with high accuracy. The most important advantages of Chatbots include providing remote consultations, full-time availability, training tailored to individual needs, symptom tracking, emotional support, advanced communication and care coordination, establishing improved communication, scheduling appointments, and so on.<sup>33</sup> Therefore, the use of this technology in providing gynecological consultations to women is recommended, especially for women living in remote areas with low access to care levels and women with disabilities. Although, Chatbot technology for gynecological consultations is still under development. While it holds great promise, it is crucial to prioritize patient safety and ensure that these technologies are used responsibly and ethically to complement, not replace human expertise.<sup>34</sup>

Sexual counseling in this study, in addition to promoting, and improving general information about pelvic organ prolapse, is related to the field of cognition (information and knowledge), to the field of emotion (emotions, values and attitudes), and the field of behavior (communication and decision-making skills). Therefore, it would seem from this research that sexual therapy has been successful in raising participants' levels of sexual information and knowledge as well as their attitudes about sexual problems, therefore boosting their self-concept and degree of sexual pleasure.

#### 4.1. Limitation of the present study

The most important limitation of this study is the selection of patients from a single treatment center, whereas a multicenter study could provide a more representative sample of women with POP. In addition, several factors and variables, including biological, cultural, and social variables, affect sexual performance. Although careful research design minimized these factors, they were not fully controlled.

## 5 Conclusion

The study found that the implementation of individual sexual counseling improves women's self-concept and sexual satisfaction with pelvic organ prolapse, so it is recommended to use the guidelines for women with pelvic organ prolapse in hospitals, and health centers as a helping part of the treatment of these patients.

## Data availability

Study data will be made available to interested parties upon direct request to the corresponding author.

## Ethical improvement

This study is based on the code of ethics ....., and IRCT code: ....were approved by the research and Technology Department of the University of Medical Sciences of ....

## Authors' contribution

All authors have substantial contributions to this work. All authors were involved in the acquisition, analysis, and interpretation of data for

the work, with final statistical analyses performed by F.K. all contributed to drafting the paper and revised it critically for important intellectual content including final approval of the version to be published. All authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

## Funding

This article is obtained from a master's thesis in counseling in midwifery, grant number 140104212866.

## Declaration of competing interest

The authors declare that they have no conflicting interests.

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