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Research Paper

Evaluation of Sexual Function and Sexual Satisfaction after Laparoscopic Surgery in Women Suffering from Endometriosis

Shirin Sapour [a *] , Taher Tizdast [b]

[a] M.A. of Clinical Psychology, Department of Psychology, Faculty of Human Science, Tehran North Branch, Islamic Azad University, Tehran, Iran
shirin.sapour@hotmail.com

[b] Assistant Professor of Psychology, ,Department of Psychology ,Faculty of Human Science, Tonekabon Branch, Islamic Azad University, Tonekabon , Iran
tahertizdast@yahoo.com

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Abstract

Purpose: Endometriosis is a prevalent and chronic disease in 10 % of women in reproductive ages that can affect mental and social parameters. The purpose of this research was to evaluate the effects of laparoscopic surgery on sexual function and sexual satisfaction in women with endometriosis.

Methods: This research was carried out with a pretest-posttest semi-experimental method during a three-month period. Each group was 40 patients. In these patients, sexual function and sexual satisfaction were assessed by the FSFI questionnaire and SSSW questionnaire. Data were analyzed by using SPSS 18 software, by inferential statistics and ANCOVA.

Results: The results showed sexual function 79% and sexual satisfaction 90% (p<0/05) improvement were seen.

Conclusion: To sum up, laparoscopic surgery has been effective in women with endometriosis and has improved sexual performance and sexual satisfaction.

Keywords: laparoscopic surgery, sexual function, sexual satisfaction, endometriosis.

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Introduction

Endometriosis is a chronic inflammatory disease that affects 10% of women that are in reproductive ages and can influence on psychosocial parameters and leads to decrease mental health and sexual satisfaction (1). Researchers believe that satisfying sexual performance plays an important role in gaining a sustainable culture; therefore, a sexual dissatisfaction leads to sexual dysfunctions. A healthy sexual function and proper marital relationship are the cornerstones of a stable and intimate relationship and are one of the important factors in the sexual and psychological health of couples, and the continuity of the family depends on these relationships (2).

Sexual function likes a cycle, and it is affected by a variety of internal and external biological and environmental factors (3). Sexual satisfaction is one of the most important factors in marital satisfaction. Sexual satisfaction refers to a person's pleasant feelings of sexual intercourse. Satisfaction with sex is one of the important factors in satisfying marital life, which is one of the important factors affecting the health and quality of life of couples and one of the most important indicators of life satisfaction. Sexual satisfaction is an important factor in family and marital affairs, and several studies have indicated that it impacts on marital satisfaction (4).

Studies have shown that a good sexual relationship between a couple can be related to the stable family (3). Sexual satisfaction in family and marital matters is important. Frustration and lack of safety due to lack of sexual satisfaction can endanger the psychological well-being of the spouses (5). In this view, Mishra, Nanda, Gandhi, Aggarwal,

Choudhary, and Gondhali (6) showed that sexual issues are a complex process, and are consistent with neurological, vascular, and endocrine systems. Effective factors in sexual matters are often interconnected. Sexual problems are common in women with endometriosis, especially in women with severe pelvic pain and advanced stages of endometriosis, which causes endometrial glands and tissues to be removed from the normal form. Sexual issues entrap the onset of endometriosis. As a result, sexual function and sexual satisfaction in women with endometriosis should be investigated.

Di Donato et al.'s study (7) indicated a clear impairment of sexual function in 100 female patients. The results showed that women have problems with sexual functions. In 58% of patients, the pain is expressed during sexual intercourse, and in these patients, a high pelvic pain occurs during sexual intercourse. In fact, chronic pelvic pain is strongly associated with severe endometriosis, causing a 40% reduction in sexual intercourse. Studies have shown that women with endometriosis tend to stay away from pain-related relationships that they are looking for better sexual health. Hormone medications do not render endometriosis while reducing the tissue's activity and in some cases, surgery is the only treatment. Laparoscopy is a method of surgical and treatment of endometriosis. Laparoscopic surgery was developed in 1970, and in the early 1980s, for the first time, endometriosis was used in order to use electrical energy or laser treatment. Laparoscopic surgery is far less successful than laparotomy surgery (open surgery), resulting in adhesion formation and there are less damage and adhesion to the surgery. Diagnostic laparoscopy can because of improved in 50% of patients without complete removing of endometriosis. Some researchers reported improvement in pain by laparoscopy in 80-60% of patients (1). Posadzka, Jach, Pityński, and Jablonski (8) aimed to investigate the efficacy of pain complaints in women with endometriosis of the lesser pelvis after laparoscopic electroablation. The results showed that CO2 laser ablation and electroablation can influence endometriosis-related dysmenorrhea. Thus, the dependent variables of the present study were seual functions and satisfaction.

Studies have done to investigate the effects of laparoscopic surgery on sexual functions and satisfaction. For example, in the study of Fritzer, Tammaa, Salzer, and Hudelist (9), women with endometriosis participated in two groups that each group included 40 patients. A significant improvement in painful intercourse after surgery was observed and removal endometriosis was a selective treatment. Hence, it has a magnitude cause to accept this treatment. Moreover, Ruffo et al. (10) investigated postoperative diarrhea, constipation, rectal bleeding, tenesmus, dyschezia, dysuria, dyspareunia, fertility, and recurrence of disease, from January 2002 to December 2010 nine hundred patients underwent laparoscopic bowel resection for endometriosis. 54 months follow-up showed that dyspareunia, constipation, and pelvic pain have a significant improvement. It seems that it is possible that laparoscopic surgery has a mechanism to improve sexual functions. In the other study, Vercellini et al. (11) studied the effects of hormonal treatment in comparison with endometriosis surgery with severing painful intercourse on sexual function, psychological status, and quality of life. The results showed that sexual functions of women, depression, anxiety, and quality of life are improved after the surgery. Furthermore, Ferrero et al. (12) showed that laparoscopic incision of endometriosis reduces the incidence and severity of severe painful intercourse and also increases the quality of sexual activity.

In fact, previous studies have shown that laparoscopic surgery may influence sexual functions in people with endometriosis. However, there is no evidence in terms of sexual satisfaction as a psychological aspect, and this evidence is limited in Iran. Also, the research is a limited part of the research done in this field. On this basis, we can say that it has an innovation. The aim of this study was to investigate the effect of laparoscopic surgery on sexual satisfaction and sexual functions in women with endometriosis.

2. Methods

This research has been done with a semi-experimental design with pre-test and post-test type of a group. The statistical population consisted of all married women aged 20-45 years' old who suffered from endometriosis referring to endometriosis surgery centers in northern Tehran from October 2016 to March 2017 (N=180). In this study, the total population was 180 people that according to the aim, 40 for each group were selected. The samples were selected randomly based on a multi -stage cluster. At the first, laparoscopic centers of endometriosis were identified in Tehran. A district was then randomly selected (North of Tehran).

Dependent variables included sexual satisfaction and sexual functions and the independent variable was the laparoscopic surgery. As regards the literature, we hypothesized that laparoscopic surgery has a significant effect on sexual satisfaction and functions in women with endometriosis.

2.1. The Female Sexual Function Index (FSFI)

This questionnaire was developed by Rosen et al. (13) and is a brief, 19-item self-report measure of

female sexual function that provides scores on six domains of sexual function included desire (2 items), arousal (4 items), lubrication (4 items), orgasm (3 items), satisfaction (3 items), and pain (3 items). The score of 1-5 is considered for desire, and 0-5 for arousal, lubrication, orgasm, satisfaction, and pain. Getting a higher score reflects the better sexual performance. The score of each person in each part by adding the scores of the questions related to the same section and multiplying the sum of the scores in the coefficient of each section - the coefficient of desire (0.6), arousal (0.3), lubrication (0.3), orgasm 0.4), satisfaction (0.4) and pain (0.4) are computed. The range of score for desire, satisfaction, and other sections is 1.2-6, 0.8-6, and 0-6 respectively. The range of the total score is 2-36. The final score, lower than 12 is considered for a weak sexual performance, 12.1-24 is considered for a mediocre performance, and 24.1-36 is considered for a high performance.

According to Rosen et al.' study (13), they accepted the validity and reliability of this scale, and a 0.89 Cronbach alpha was reported. Validity and reliability of this scale in Iran was investigated by Mohammadi, Heidari, and Faghih Zadeh (14) that a 0.70 Cronbach alpha was accepted as a good reliability of the scale. Also, the rest-retest coefficient for each of the domains of the high-performance index (the range of correlation coefficients ranged from 0.73 to 0.86) and the internal validity was within the acceptable range (alpha ranged from 0.72 to 0.90).

2.2. Multidimensional Sexual Satisfaction Scale for Women (SSSW)

It is a self-report and multidimensional scale that measures sexual distress and sexual satisfaction of women. This scale includes 30 items and 5 subscales that consists of contentment (satisfaction with sex), communication (verbal communication and conversation such as the expression of feelings, feedback and suggestions, etc. in the field of sex), compatibility (the awareness of spouses of the sexual needs and the attempt to adapt to the sexual relations), concern-relational (concerns and worries of women from their husbands due to the problems and sexual problems of women and doing sex out-of-wedlock relationships), and concern-personal (concern about having sexual problems and their impact on the dimensions of women's lives that prevent their enjoyment and relaxation in their personal lives) (15). This scale consists of 30 questions that dimensions contains, contentment (questions 1-6), communication (questions 7 to 12), compatibility (questions 13-19), concern-relational (questions 19-24), and concern-personal (questions 25-30). The replies are scored as fully agree (1), slightly agree (2), neither agree nor disagree (3), slightly opposed (4) and totally opposite (5). Questions 1.4, 5.6, 9, 10, 11, 12 are scored in reverse. A higher score means more satisfaction.

Roshan Chesli, Mirzaei, and Nikazin (16) investigated the validity and reliability of the multidimensional sexual satisfaction scale for women (SSSW) in Iranian women. In a descriptive design study, 628 married women students were selected using available sampling. Test-retest coefficient for the sexual satisfaction score and its dimensions ranged from 0.73 to 0.97. In conclusion, the questionnaire has a good validity and reliability.

Procedure

After selecting laparoscopic centers of endometriosis in northern Tehran and determining the size of the population and the samples, a list of patients with endometriosis was prepared and then those who were eligible for the study (women, marital status, age (20-45 years), Medical history (non-chronic) were selected. Then, all participants were asked to fill out the consent form. In the next step, the questionnaires were completed by the presence of a researcher for all subjects (pre-test). Then, the questionnaires were completed again with a three-month interval of laparoscopic surgery (post-test for control and experimental groups). The control group did not receive any treatment. After collecting data, the data was entered into SPSS18.

Data analysis

The software used in data analysis was SPSS18. Descriptive statistics (mean and standard deviation) and inferential index, ANCOVA were used to analyze the data.

3. Results

The mean age of the experimental group and the control group was 30.56, and 29.33 respectively (Table 1).

Educational levels of the study's participants were diploma to the doctorate. Table 2 illustrates this information. The percent of educational levels for the diploma, bachelor, associate, masters, and doctoral degrees were 26.6, 18.6, 10.3, 24.7, and 7.2 respectively (Table 2).

Table 3 shows information about descriptive indexes of research variables. As it is seen, the mean and standard deviation of sexual performance in the experimental group for pre-test were 20.43 and 5.41, and for post-test were 28.25 and 3.22. The mean and SD for pre-test of the control group were 22.66 and 3.87, and for post-test were 23.15 and 2.09. Also, in the sexual satisfaction variable, the pre-test of the experimental group had a mean of 60.45 and a

standard deviation of 13.65 and in the post-test, mean was 97.70 with a standard deviation of 12.43. The mean and SD of the pre-test for the control group were 61.63 and 9.86, respectively. In the post-test, the mean was 68.25 and 8.41, respectively (Table 3).

To apply ANCOVA, the assumptions were primarily investigated. The results showed that the significant level of interaction between pre-test and the independent variable is (F= 3/96, sig = 0/051 ≥0/05). This interaction was not significant in illustrating no interactions between variables. Also, Levene's test showed that the variances across groups are equal. On the other hand, Kolmogorov-Smirnov showed that the normality assumption is met (P>0.05). According to the results of assumptions, ANCOVA was applicable.

Table 4 shows the effect of treatment on sexual function. As it can be seen, the results indicate a significant difference between the averages. As a result, the assumption of the research is confirmed and the zero assumption is rejected. With 95% confidence, it can be said that the laparoscopic surgery can improve female sexual function. With an eta 2 (effect size) of 79%, it can be concluded that a great effect on the sexual function is seen (Table 4).

Table 5 shows the effect of treatment on sexual satisfaction. The results showed that significant average differences among experimental group and control group in sexual satisfaction were observed. It can be concluded that the laparoscopic surgery with 95% confidence leads to an increase in the level of women's sexual satisfaction. Therefore, the assumption of the research is confirmed and the zero assumption is rejected. The value of the effect size expresses a large effect of 90% (Table 5).

Table 1: Descriptive indexes of the age of the participants

Group	N	Mean	SD	Minimum	Maximum
Experimental	40	30.56	5.04	21	41
Control	40	29.33	5.01	22	38

Table 2: Descriptive indexes of Participants Education

Education	Frequency	Percent	Cumulative Percent
Diploma	21	21.6	26.3
Associate	10	10.3	38.8
Bachelor	18	18.6	61.3
Masters	24	24.7	91.3
Ph.D.	7	7.2	100
Total	80	100	

Table 3: Descriptive indexes of Research Variables

Variable	Time	Group	N	Mean	SD
Sexual function	Pre-test	Experimental	40	20.43	5.41
		Control	40	22.26	3.78
	Post-test	Experimental	40	28.25	3.22
		Control	40	23.15	2.09
Sexual satisfaction	Pre-test	Experimental	40	60.45	13.65
		Control	40	61.63	9.86
	Post-test	Experimental	40	97.70	12.43
		Control	40	68.25	8.41

Table 4: Covariance analysis to examine the effect of laparoscopic surgery on sexual function

Source	Sum squares	DF	Mean squares	F	Significant	Eta²
Group	767.442	1	767.442	303.179	0.0001	0.797
Error	194.912	77	2.531			
Total	54132.52					

Table 4: Covariance analysis to examine the effect of laparoscopic surgery on sexual satisfaction

Source	Sum squares	DF	Mean squares	F	Significant	Eta²
Group	18422.023	1	18422.023	754.270	0.0001	0.907
Error	1880.62	77	24.424			
Total	576921.50					

4. Discussion

The purpose of the present study was to investigate the sexual function and sexual satisfaction in women with endometriosis after laparoscopic surgery. The findings showed that laparoscopic surgery has a significant effect on sexual function and sexual satisfaction in women with endometriosis. The findings are consistent with studies of Mishra et al. (6), Posadzka et al. (8), Di Donato et al. (7), Fritzer et al. (9), Leeners (7), and Ferrero et al. (12). For instance, Ferrero et al. (12) showed that laparoscopic incision of endometriosis reduces the incidence and severity of severe painful intercourse and also increases the quality of sexual activity. They also showed that complete vaginal discharge can significantly improve sexual function and pelvic pain. In fact, most studies have shown that laparoscopic surgery has a significant effect on increased sexual function and satisfaction in patients with endometriosis.

Researchers believe that endometriosis nodes in the rectal-vaginal area and the sexually transmitted genital mutilation disrupt the physical fitness during intercourse and cause dyspareunia. On the other hand, reducing estradiol levels in endometriosis, which is an estrogen derivative, disrupts sexual desire and moisture. Also, the prolactin increase due to endometriosis and anxiety can lead to similar complications from partner misunderstandings (18, 19). The factors leading to sexual functions problems. Moreover, couples would like to have a child, infertility caused by endometriosis causes their poor performance in sex. Furthermore, since sexual satisfaction is closely related to sexual function, endometriosis causes pain and disorientation due to the presence of lesions and inflammation, and the loss of desire to start and continue sex due to impaired hormonal effects, it leads to being depressed in patients and it causes to reduce desire in an early stage of sex. Thus, the self-perception as a woman and the sexual relationship ability may be disrupted (20, 21). Therefore, problems in physical and mental status and dissatisfaction of the partner lead to reduce satisfaction.

With laparoscopic surgery, endometriosis lesions that cause pain and inflammation are removed. After discharging the lesions, the pelvis is achieved through its natural structure and its simplicity in physical activity, thereby reducing dyspareunia (22). On the other hand, improving hormonal status in the absence of endometriosis increases libido and creates and maintains lubrication during sexual intercourse, and one will have better experiences of sexual pleasure (23). Additionally, laparoscopy, by releasing the affected areas, initially improves the physical condition and secondly continues the mental state (24). Ensuring that there are no problematic factors and eliminating hormonal disorders can make a person's efforts to improve sexual intercourse with the partner. This makes the partner aspiring to the relationship and psychological support of the individual. The feeling of a healthy woman and an effective sexual function lead to sexual satisfaction. Therefore, the findings of the research generally indicated that a positive and significant effect of laparoscopic surgery on increased sexual function and satisfaction in endometriosis patients.

Although an effective outcome was observed, researchers have found that laparoscopic surgery has complications. It was recommended that supporting counseling and therapy after a surgery should be applied to reduce surgical complications (17). Counseling therapies can have supportive mechanisms for women. Sexual diseases of women should be accompanied by an integrated sexual counseling, actively involving health services.

The research limitations were that the severity of the disease was not differentiated, which could limit the generalization of the results, and postoperative complications were not studied in this study. It is recommended that a study ought to be carried out on repeated measurements in follow-up periods of 6 months, 12 months and 24 months, objective criteria for reporting pain, and

finally, it is suggested that, in endometriosis treatment centers, In addition to medical treatment, it is useful to pay attention to psychological aspects, including sexual problems and quality of sexual relationships that can have a complementary aspect to improve the problems.

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