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The Effect of Hysterectomy on Women's Sexual Function: a Narrative Review

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ABSTRACT

Background: Regarding the contradictions about positive and negative effects of hysterectomy on women's sexual functioning, this study was conducted to review the studies on the effect of hysterectomy on postoperative women's sexual function. **Method:** This study was a narrative review and performed in 5 steps: a) Determining the research questions, b) Search methods for identification of relevant studies, c) Choosing the studies, d) Classifying, sorting out, and summarizing the data, and e) reporting the results. **Findings:** The review of the studies yielded 5 main categories of results as follows: The effect of hysterectomy on Sexual desire, the effect of hysterectomy on sexual arousal, the effect of hysterectomy on orgasm, the effect of hysterectomy on dyspareunia, and the effect of hysterectomy on sexual satisfaction. **Conclusion:** According to the studies reviewed in this study, most of the sexual disorders improve after hysterectomy for uterine benign diseases, and most of the patients who were sexually active before the surgery experienced the same or better sexual functioning after the surgery. An important solution for making these women ready to face with postoperative sexual complications is to train them on the basis of needs assessment in order that the patients undergoing hysterectomy be ready and capable of coping with the complications, and their sexual functioning improves after the surgery.

Key words: Hysterectomy, Sexual Function, literature Review.

1. INTRODUCTION

The uterus has been considered an organ adjusting and controlling the important physiological functions, pregnancy, childbirth, a sexual organ, a source of energy, and an organ maintaining the attractiveness and beauty of women. Moreover, it comprises an important part of women's self-image, and loss of uterus means the loss of sense of femininity (1-2). About 600.000 women undergo hysterectomy every year in the United States, and this number has remained rather constant (3, 4). Although many advantages

of hysterectomy have been known, it is still unknown how it affects the vaginal length and sexual functioning (5). Moreover, women's sexual desires are an essential human right and contribute to women's comfort and welfare (6). Candidates for hysterectomy are always worried about its potential negative effects on their sexual functioning and the relationship with their sexual partner (7). The effects of hysterectomy on the quality of life and sexual functioning differ from one woman to another. The complaints after hysterectomy include the loss of libido, decreased

frequency of intercourse, decreased sexual responsiveness, difficulty with reaching orgasm, diminished sensation of the vagina, dyspareunia (painful intercourse), vaginal shortening, loss of penile penetration, and loss of vaginal elasticity and lubrication (8). A study (2009) stated that more than half of patients were suffering from feelings of premature aging and loss of libido after hysterectomy (9). In another study, the sexual pleasure (frequency of sexual activity, increased More than half of patients were suffering from feelings of premature aging and loss of libido, and decreased sexual disorders) improved considerably in most patients (10). Regarding the contradictions about positive and negative effects of hysterectomy on women's sexual functioning, this study was conducted to review the studies on the effect of hysterectomy on postoperative women's sexual function.

2. METHODOLOGY

This study was a narrative review and performed in 5 steps: a) determining the research questions, b) search methods for identification of relevant studies, c) choosing the studies, d) classifying, sorting out, and summarizing the data, and e) reporting the results.

Determining the research questions: how does hysterectomy affect women's sexual functioning?

Search methods for identification of relevant studies: The studies were identified using academic–research articles and relevant keywords and through advanced searching in electronic publications, including Cochrane library, Magiran, Pro Quest, Springer, Science Direct; and databases of Iran medex, Pubmed, and SID of 1999-2015. The keywords hysterectomy, desire, arousal, orgasm, pain, and dyspareunia were searched. Moreover, reference lists of published articles were reviewed in order to increase the sensitivity and choose more studies.

Choosing the studies: The full text or abstract of all articles, documentations, and reports obtained through the advanced search was retrieved. Once the repeated materials were eliminated, the irrelevant articles were eliminated through reviewing the title, abstract, and full text of the articles, and thus relevant articles were chosen. Having searched the keywords, we selected 150 articles, of which 25 articles were eliminated because they were repeated. Then, the title and abstract of the other 125 articles were reviewed, and 54 irrelevant articles were eliminated. Of the remaining 71 articles, 41 articles were excluded once their full text was reviewed, and 4 articles were added upon reviewing the references of those articles. Eventually, 34 articles were used to write this review study (Figure 1 shows the procedures through which the studies were chosen).

Articles used in writing this review study included English and Persian

case-control, cross-sectional, and prospective and retrospective cohort studies.

Inclusion criteria: The studies examining sexual functioning in women undergoing hysterectomy were included in the study.

Exclusion criteria: The studies examining sexual functioning in women not undergoing hysterectomy were excluded from the study.

Classifying, sorting out, and summarizing the data: The obtained data were classified as shown in Table 2.

Reporting the results: The reported data comprised 5 categories.

3. RESULTS

The review of the studies yielded 5 main categories of results as follows: The effect of hysterectomy on Sexual desire, the effect of hysterectomy on sexual arousal, the effect of hysterectomy on orgasm, the effect of hysterectomy on dyspareunia, and the effect of hysterectomy on sexual satisfaction (Table 1).

4. DISCUSSION

4.1. The effect of hysterectomy on Sexual desire

Two studies reported that most of the patients did not experience any changes in their Sexual desire (11-12). In a study, women who had been sexually active before the surgery maintained their sexual activity after the surgery and reported the same frequency of sexual activity after 6 months (13). Meston's study did not show any significant difference between women undergoing hysterectomy and women with fibroids but not undergoing hysterectomy in terms of desire (14). Another study reported that neither the body image nor the libido decreased after hysterectomy, and no important changes occurred in this regard (15). However, the women undergoing hysterectomy in some studies experienced considerable improvement of Sexual desire (6, 10, 16). Furthermore in Gutl et al's study, sexual dysfunctions, such as the loss of Sexual desire, significantly decreased after the ab-

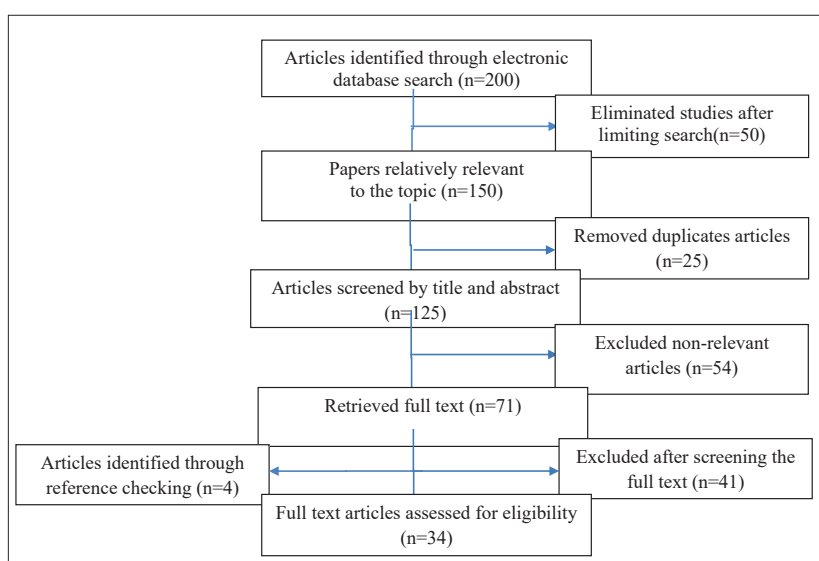


Figure 1. Literature search and review flowchart for selection of primary studies

Author(s)	location	Participants (n)	Methods	Measuring tool	Sexuality function
Pakbaz, et al. (2009)(21)	Sweden	941 women	Retrospective cross-sectional , population- based	questionnaire	Sexual activity were improved.
Goetsch, et al .(2005)(39)	Portland, Ore	105 women	Cross-sectional	open-ended questions	sexual arousal, intensity of orgasms, and the effect of nipple stimulation were the same or increased after hysterectomy for more than 75%, sexual satisfaction increased.
Badakhsh, et al. (2009)(13)	Tehran, Iran	100 females (50 (women before and after hysterectomy and 50 women without hysterectomy)	Cross-sectional	questioner	Sexual quality, desire and sexual satisfaction, dyspareunia decreased but dryness of vagina increased.
Briedite, et al(2014)(10)	Latvia	50 patients	Observation Cross-sectional	Sexual Quality of Life Questionnaire – Female (SQoL-F)	There were no statistically significant changes of sexual quality of life found.
Kuppermann, et al (2005) (17)	4 U.S. clinical centers	135 women	randomized, prospective, comparative	Medical Outcomes Study Sexual Problems Scale	No significant difference in sexual functioning or quality-of-life outcomes.
Fram , et al. (2013)(14)	Jordan	124 patients	Retrospective review of the case records	Questionnaire	Sexual pleasure (frequency of sexual activity, increase in sexual desire, and decrease in sexual problems) is markedly improved among the majority of patients.
Bayram and Sahin (2008) (16)	Istanbul	93 women	Comparative pre-post test, prospective, descriptive study	The Female Sexual Function Index (FSFI) and Beck Depression Inventory (BDI) and semi-structured interviews	A significant decrease in FSFI sexual desire, arousal , lubrication ,orgasm, satisfaction, pain during sexual intercourse, and total FSFI scores .
Author(s)	location	Participants (n)	Methods	Measuring tool	Sexuality function
Demirtas, et al. (2013)(29)	Ankara, Turkey	168 women	Cross-sectional	Index of Female Sexual Function (IFSF)	Women frequently reported problems with dyspareunia (97.1%), vaginal dryness (97.6%), decreased sexual desire (91.1%), and difficulties of sexual arousal (92.9%) related with the cancer treatment process.
Costantini, et al(2013)(9)	Italy	107 patients	Prospective, descriptive, observational, longitudinal cohort study	-Female Sexual Function Index (FSFI) questionnaire -- satisfaction Visual Analogue Scale (VAS) - Urogenital Distress Inventory short form (UDI-6) -Incontinence Impact on Quality of Life short form (IIQ-7)	significant improvements in the total FSFI score and in the domains of desire, arousal and orgasm.
Pieterse, et al (2006)(28)	The Netherlands	94 women	Observational longitudinal study Case-control	Gynecologic Leiden questionnaire	The problems included less lubrication, a narrow and short vagina, numb areas around the labia, dyspareunia, and sexual dissatisfaction.

Table 1. Articles included in review

dominal and vaginal hysterectomy, and women reported the improvement in their Sexual desire and sexual satisfaction 3 months and 2 years after the surgery (17). However, some other studies mentioned the decreased Sexual desire after hysterectomy. In this regard, Jensen et al. found there was a long-term lack of sexual interest in patients 12 months after radical hysterectomy as com-

pared with that before the diagnosis of the cancer and however, many patients who were sexually active before the diagnosis of cancer became active again 12 months after the surgery although they reported fewer sexual intercourses (18). A study revealed that the poor libido was one of the sexual concerns reported after hysterectomy (19). Some other studies also showed that Sexual desire

and frequency of intercourse decreased significantly (20-21). Furthermore, problems related to Sexual desire and feeling of women undergoing hysterectomy were significantly higher than those before the surgery (22). Bayram and Sahin revealed that sexual activity significantly decreased 3 months after hysterectomy and proved obvious symptoms of depression that had affected the sexual functioning negatively (23). Tangjitgamol et al. study on women undergoing radical hysterectomy for treatment of initial stages of the cervical cancer reported dysfunction of all sexual aspects, including a decrease in Sexual desire that was lower than the decrease in other aspects (24). Kuscu et al. study also showed that TAH and TAH+BSO mainly decreased the Sexual desire (25).

4.2. The effect of hysterectomy on sexual arousal

Some studies showed positive effects of hysterectomy on sexual arousal, and some other studies showed negative effects in this regard. Most women in Goetsch's study experienced higher sexual arousal after abdominal and vaginal hysterectomy, and only 25% of the women reported decreased sexual arousal (26). Anonymous also reported that the problems related to sexual arousal generally decreased after hysterectomy (13). In some studies, vaginal dryness decreased after hysterectomy, and women significantly improved in terms of sexual arousal and activity 3 months and 2 years after hysterectomy (6, 16-17). However, some other studies reported that hysterectomy increased vaginal dryness and abnormal vaginal contractions. One of the sexual problems after hysterectomy was inadequate vaginal lubrication that was more constant outcome and eventually decreased sexual satisfaction (9, 12, 19, 27). In Meston's study, women undergoing hysterectomy reported low normal level of vaginal lubrication that implied the potential sexual-mental arousal following the hysterectomy although no significant difference was found between groups undergoing hysterectomy and groups with fibroids but not undergoing hysterectomy in terms of sexual arousal (14). Lowenstein et al. study reported significant deterioration of the sensation of cold and warm stimuli in anterior and posterior vaginal wall after hysterectomy (28). Tangjitgamol's study reported disorders in all aspects of sexual functioning, including decreased sexual arousal and vaginal lubrication, as the most obvious changes were the decreased sexual frequency and vaginal lubrication, and sexual arousal decreased to a less extent (24). In Pieterse et al. study, the patients who had undergone radical hysterectomy for treatment of the initial stages of their cervical cancer reported a negatively significant effect of the surgery, in comparison to their condition before the surgery and to the patients in the control group, on their sexual functioning, such as the less lubrication, narrowness and shortening of the vagina, and numb areas around the labia, during 24 months of follow-up (18, 29). Moreover, Maas et al. found that women with a history of radical hysterectomy showed a significant decrease in maximum vaginal pulse amplitude during sexual arousal, and the variation in vaginal pulse amplitude during sexual arousal occurred with regard to the fact that all the patients experienced equally strong sexual arousal (30).

4.3. The effect of hysterectomy on orgasm

In some studies, most of the patients did not experience any changes in the frequency and intensity of orgasm (11, 14). Goetsch also found that the intensity of orgasm and nipple stimulation after vaginal and abdominal hysterectomy were similar to those before the surgery or increased, and 13% of the women reported a decrease in the intensity of orgasm after the surgery (26). Moreover, Rahimzadeh et al. study showed that hysterectomy had caused sexual disorders, such as the decreased pleasure after the intercourse and reaching orgasm (12). Some studies reported the failure to have orgasm as one of the sexual problems after hysterectomy, which was significantly higher than that before the surgery (19, 22). Tangjitgamol et al. reported disorders in all sexual functions, including a decrease in frequency of orgasm after radical hysterectomy (24). In Thakar et al. study, the patients had experienced severe problems with orgasm and unpleasant sexual intercourses regarding their shortened vagina during 6 months after radical hysterectomy as compared with the patients in the control group (31). However, some other studies mentioned the improvement of orgasm after hysterectomy. In this regard, two other studies reported that the problems with orgasm decreased after the surgery, and there were very few exacerbated problems (13, 17). In some similar studies, women experienced significant improvement of orgasm after hysterectomy, and sexual pleasure considerably improved in most of the patients regardless of the type of surgery (6, 10, 32). In Rhodes' study, the frequency of orgasm increased after hysterectomy, and the failure to have orgasm significantly decreased 12 months and 24 months after the surgery (16).

4.4. The effect of hysterectomy on dyspareunia

Although libido and frequency of intercourses after abdominal hysterectomy was significantly lower than those before the surgery in Kuscu et al. study, no difference was observed in terms of dyspareunia and sexual satisfaction (25). Based on the results of Rahimzadeh et al. study, hysterectomy affected the unusual vaginal contractions and the fear and avoidance of a sexual intercourse but not the pain during intercourse (12). Badakhsh et al. also reported a decrease in dyspareunia, an increase in vaginal dryness, and a decrease in sexual satisfaction following hysterectomy (9). Thakar et al. found that deep dyspareunia decreased 6-12 after hysterectomy, while superficial dyspareunia decreased 6 months after the surgery but increased after 12 months (31). According to Dragisic et al., it seems that hysterectomy causes pain during sexual intercourses (11). The sexual dysfunctions in Pieters's study during 24 months of follow-up after hysterectomy included the narrowness and shortening of vagina and dyspareunia (29). Similarly, sexual problems reported in Bayram et al. study included dyspareunia associated with the shortening of the vagina and decreased vaginal lubrication (19). Jensen et al. reported that the patients who had undergone radical hysterectomy for treatment of the initial stages of the cervical cancer experienced severe dyspareunia during the first 3 months after the surgery, and radical hysterectomy

had adverse long-term and short-term effects on sexual functioning, including dyspareunia and pain and anxiety due to the shortening of vagina during the intercourse as short-term adverse effects (18). Some studies also mentioned the dyspareunia caused by a decrease in vaginal lubrication and vaginal narrowness and shortening as influential sexual problems after radical hysterectomy (24, 33-34). However, some other studies showed a decrease in bleeding disorders and dyspareunia after hysterectomy, which resulted in improvement of sexual functioning, satisfaction and quality of life (13, 16, 21). In Gult et al. study, sexual dysfunctions, such as dyspareunia and vaginismus, significantly decreased after abdominal and vaginal hysterectomy (17).

4.5. The effect of hysterectomy on sexual satisfaction

Based on the review of the relevant studies, the effect of hysterectomy on sexual satisfaction differed from one study to another. In this regard, two studies did not find any difference in the sexual satisfaction before and after the surgery (14, 25). However, women who had undergone hysterectomy for their benign gynecological conditions in two other studies experienced high degrees of sexual satisfaction (10, 27). Anonymous also reported that the favorable sexual satisfaction after the surgery was similar to that before the surgery or even increased, which was not unexpected due to the decreased problems related to the pain, arousal, and orgasm (13). However, some studies stated a decrease in sexual satisfaction after hysterectomy. For instance, Badakhsh et al. found a significant increase in number of people without sexual satisfaction or with poor sexual satisfaction after hysterectomy and a decrease in number of people with favorable and optimum sexual satisfaction, which occurred by the psychological changes following the surgery and increased vaginal dryness (9). Two other studies also reported that the patients' sexual satisfaction decreased after the surgery (22, 24). Moreover, sexual satisfaction significantly decreased in Zafarghandi et al. study, as the decrease was independent from the type of surgery and oophorectomy (20).

Limitations

The present review study focused on the effect of hysterectomy on women's sexual functioning and did not review the studies on the effect of couples' sexual performance and relationship. Furthermore, the studies on the effect of hysterectomy on women's sexual functioning were reviewed regardless of the method of surgery and emotional, mental, and social consequences of hysterectomy.

Strengths

The present study reviewed the effect of hysterectomy on women's general sexual functions, including desire, sexual arousal, orgasm, pain, and sexual satisfaction through reviewing a broad range of studies performed in several years.

5. CONCLUSION

The examination of the sexual functioning after hysterectomy is a complicated multifactorial process that depends on various factors, such as the body image; the

sexual partner's performance; communicative matters; the reason for undergoing hysterectomy; the patient's sexual functioning before the surgery; type of hysterectomy; mental, social, and emotional factors; and total quality of life in patients. According to the studies reviewed in this study, most of the sexual disorders improve after hysterectomy for uterine benign diseases, and most of the patients who were sexually active before the surgery experienced the same or better sexual functioning after the surgery. However, radical hysterectomy for gynecological cancers causes more negative effects on sexual functioning due to the elimination of a large part of pelvic ligaments and pelvic autonomic nerves. One of the important points about these patients before and after the surgery is the psychological supports for them, adaptation with postoperative problems, and especially the sexual partner's support for them. An important solution for making these women ready to face with postoperative sexual complications is to train them on the basis of needs assessment in order that the patients undergoing hysterectomy be ready and capable of coping with the complications, and their sexual functioning improves after the surgery.

Application in education

In general, patients do not receive adequate information about their sexual health and consequences before hysterectomy. The existing barriers in this regard include cultural restrictions, personal and shame from both patients and physicians, and inadequate education and low educational levels. Furthermore, the definitions and consequences of the surgery for women's sexual matters should be integrated and clear, and it is necessary to precisely explain sexual and communicative problems with the sexual partner to patients, preferably by a physician of the same sex.

Application in research

This study reviewed the effect of hysterectomy on women's sexual functioning and revealed the need to perform studies on sexual training requirements of women undergoing hysterectomy. Moreover, this study laid the ground for further studies on the effect of hysterectomy on sexual functioning in terms of the method of surgery and the effect of hysterectomy on women's physical and emotional issues.

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