

## ORIGINAL ARTICLE

# Quality of Female Sexual Function after Conventional Abdominal Hysterectomy – Three Months' Observation

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**SUMMARY**

**Introduction.** Many medical and conservative surgical treatment options are available but still hysterectomy remains the most common gynecological procedure performed worldwide. These procedures are performed because of actual and possible malignant diseases, and benign conditions including pelvic pain, dyspareunia, uterine myomas, adenomyosis, endometriosis, and menometrorrhagia. The impact of hysterectomy on sexual function has always been a great concern to women and is a major source of preoperative anxiety. Data regarding the impact of hysterectomy on women's sexual functioning are not clear and consistent, many women report improvement of sexual functioning after hysterectomy, which may be due to relief of symptoms, while others complain of sexual dysfunction as a result of hysterectomy. Also discussion about advantages of cervix sparing operations is still controversial.

**Aim of the study.** Aim was to assess and compare pre- and post-operative quality of sexual life of gynecological patients undergoing planned hysterectomy, and to find out opinions of patients and their partners about expected impact of operation and changes after surgery.

**Material and methods.** Questionnaire method was used to survey gynecologic patients undergoing planned subtotal / total hysterectomy due to benign indication. Sexual Quality of Life Questionnaire – Female (SQoL-F) was used to assess quality of sexual life before and after surgery. Questions about other influencing factors and patients' opinions before and after operation were added. 38 completed questionnaires were used for data analysis.

**Results.** Only 55% of subtotal hysterectomy group and 38.9% of total hysterectomy group told their partners completely about planned surgery. Mean period of beginning sexual activities after operation was 5.15 weeks after surgery in subtotal hysterectomy and 5.78 weeks in total hysterectomy group. SQoL-F after three months post-operation period was 6.50 points less in total hysterectomy group, which was not statistically significant. There was a slight statistically insignificant decrease of SQoL-F points within each group after three months observation period: -0.44 points in subtotal hysterectomy group and -2.47 points in total hysterectomy group. Although patients of total hysterectomy more frequently (22.2% vs. 5%) indicated negative impact on sexual function after operation, differences were not statistically significant. There were no differences in co-morbidities, concomitant medications, hormone use history and post-operative complications between groups.

**Conclusions.** Patients before hysterectomy are worried about possible negative impact of surgery on their sexual function, they do not talk to their partners candidly about planned surgery. There were no statistically significant changes of sexual quality of life found after subtotal and total abdominal hysterectomy operation after three months observation period.

**Key words:** sexuality, female sexual function, hysterectomy, sexual quality of life, gynecological surgery

**INTRODUCTION**

Hysterectomy is one of the commonest major gynecological operations (8). Most commonly it is performed in women of reproductive age (21). 40% of women all over the world will have hysterectomy by the age of 64 and indication for the majority will be to relieve symptoms and improve quality of life (10). More than half of all hysterectomies are carried out because of abnormal uterine bleeding, which is associated with a wide range of diagnoses that include uterine fibroids, endometriosis, adenomyosis, and dysfunctional uterine bleeding (4). The types of hysterectomy include total (removal of cervix) and subtotal (supracervical removal of the uterus), with or without unilateral or bilateral oophorectomy (13). Some authors argues that leaving the cervix untouched reduces the risk of surgical damage

to the bladder and nearby nerves, and may even allow a woman to enjoy a better long-term sex life, while others state that if a growth develops, removing the cervix alone carries higher risk (19). Subtotal abdominal hysterectomy is easier to perform, with less risk of ureteric damage, but requires that women have regular cervical smears, and may result in cyclical bleeding in a small proportion of women (11). Hysterectomy involves several surgical approaches - traditional abdominal laparotomy, vaginal or laparoscopic hysterectomy (7). Type of hysterectomy performed depends on the disorder to be treated, the size of the uterus and the skills and preference of the surgeon (4). Use of laparoscopic hysterectomy has become more frequent (6). Quality of life measures after surgery did not appear

to vary according to type of hysterectomy, whether an abdominal or laparoscopic approach was used (16). Although hysterectomy is usually done to improve patient's quality of life yet it has its own morbidity and mortality (1). When women face the decision of whether to have a hysterectomy, they should be provided with information relating indications for surgery, surgical procedure, recovery, and sequel by their physicians (9). Hysterectomy related psychological morbidity typically includes depression, anxiety, and stress-related symptoms, it could be triggered by negative perceptions about body image, femininity, youth, energy and activity levels, as well as loss of child-bearing capacity. Physical co-morbidity typically includes increased risk of developing pelvic floor prolapse, urinary incontinence and sexual dysfunction (7). The data regarding the impact of hysterectomy on women's sexual functioning are not clear and consistent, and many practitioners are not well-informed about the possible sexual consequences of hysterectomies. (17). Women who are candidates for hysterectomy are always concerned about the potential negative effect on their sexual function and the possible negative effect on their relations with their partner's. (9). Female sexual dysfunction (FSD) is defined as a disorder of sexual desire, arousal, orgasm or sexual pain that results in significant personal distress (12). Sexual difficulties are very frequent among women and involve 20%–50% of the female population worldwide (5). Factors such as age, menopause, previous pathological conditions and gynecological surgery may adversely affect sexual response (18). The most common independent clinical predictor of recent and lifelong FSD diagnosis was relationship dissatisfaction (2). Despite the importance of sexuality in women's lives, physicians ask about it reluctantly. (3). Women still remain to have poor understanding of the physiology of the genital tract (14). Reproductive, menstrual, and sexual functions of the uterus must be considered. Direct sexual function involves uterine contractions during orgasm, while indirect functions include: feeling less feminine after hysterectomy, concern about sexual difficulties, or changes in the attitude of her partner (9). Gynecological surgery may influence the sexuality in terms of self-image, sexual pain and orgasm difficulty (18). The prevailing view in the literature is that hysterectomy improves the overall quality of life, however, at least some deleterious effects of hysterectomy were reported in almost all of the articles (13). The expected changes can affect both partners, which is considered as a fundamental issue in the relationship (9). The primary medical conditions causing FSD can be hormonal, anatomical, vascular and neural (12). The uterus and cervix may be important factors in the physiology of sensation and orgasm, which is effected by sensory stimuli from contractions of the uterus, cervix, and vagina. Hysterectomy may have a negative influence on this feedback system in the brain (15). Changes depend not only on which nerves were severed by the surgery, but also the genital regions whose stimulation the woman enjoys for eliciting sexual response. Because

clitoral sensation (via pudendal and genitofemoral nerves) should not be affected by hysterectomy (13). Sexuality of women is conditioned by many cultural, religious, physical, affective, emotional, marital and socioeconomic factors. Sexuality is a dynamic process with a high degree of subjectivity and overlapping that imposes difficulties when it comes to assessing each factor involved in the sexual response (18). Long-term controlled studies need to be conducted to properly determine the psychological effects of hysterectomy (7). However, the decision remains up to the women and should be driven by their health needs (9).

#### AIM OF THE STUDY

Aim of this study was to assess pre-operative quality of sexual life of gynecological patients undergoing planned total and subtotal hysterectomy without oophorectomy, to compare it with post-operative quality of sexual life after three months within the groups and between groups of total and subtotal hysterectomy, and to find out patients' and their partners' opinions about expected impact of operation and actual changes after surgery.

#### MATERIAL AND METHODS

Study population was selected to analyze impact only of total and subtotal hysterectomy, excluding potential negative effects of hormone loss after oophorectomy. Study group consisted of gynecological patients from Gynecology Department of Riga East Clinical University Hospital 'Gailezers' undergoing planned hysterectomy due to benign indications. Inclusion criteria were: age 18-50 years, patients who were sexually active and planned sexual activities within at least six months after surgery, patients who voluntarily agreed to participate in study and were able to fill the questionnaire. Exclusion criteria were: age under 18 years, age above 50 years, patients who were no sure about sexual activity after operation, patients who did not agree to participate in study, patients who had different surgery extent during operation – had unplanned unilateral or bilateral oophorectomy, patients who did not proceed with sexual activity within observation period after operation. Study was performed in time period from August 2013 till February 2014. Participation in study was offered to all patients of appropriate age and planned operation until 50 patients were recruited and signed agreement form. 25 patients were planned in each study group – subtotal and total hysterectomy. Questionnaire method was used to survey patients on the day before operation. Standardized and validated Sexual Quality of Life Questionnaire – Female (SQoL-F) (20) was used to assess quality of sexual life before and after surgery. The 18-item SQoL-F was developed to assess the sexual quality of life of women, specifically to assess sexual confidence, emotional well-being and relationship issues. The instrument has been validated for use in broad range of women, it is self-administered in approximately 7 minutes, recall period is the previous four weeks, each item is rated on a 5-point Likert scale, designed for use among women who are 18+ in age.

SQoL-F does not provide cut-scores of sexual function levels, result can be analyzed as primary endpoint. Nine questions were added to find out age, co-morbidities, concomitant medications, history of hormone (estrogen / progestin) use in period of last six month before operation, opinion about expected impact of operation, awareness and women's view about opinion of their partners (partners were not asked separately), emotional well-being with partner, self-assessment of seven domains of sexual function (desire, arousal, lubrication, orgasm, satisfaction, pain, partner). Each questionnaire got a code and no private data were used. Prior to participation, patients were not screened to rule out any particular medical conditions as an indication for operation because of the extensive overlap of gynecological indications for each patient. Patients were divided in two groups: subtotal hysterectomy (Group1) and total hysterectomy (Group2). Initially there were 50 patients - 25 patients in each group. There were five patients excluded from the Group1: one patient refused to continue participation during observation period, one patient divorced from partner after operation, three patients had unplanned oophorectomy during operation, one patient had changed partner after operation. There were seven patients excluded from the Group2: one patient refused to continue participation after reading the questionnaire, five patients had unplanned oophorectomy during operation, one patient did not proceed with sexual activities within three months because of suture complications (gynecologist recommendation). In total 38 (20 in Group1 and 18 in Group2) fully and correctly completed questionnaires were used for data analysis. Study was approved by the Ethics Committee of Riga Stradins University. SQoL-F calculation was performed in compliance with standardized scoring system. Distribution of variables within and between groups was assessed using rxc or 2x2 frequency tables. Statistical significance of differences was tested by Pearson chi2 test or Fisher's exact test. SQoL-F mean scores and standardized parameters before surgery and 3 months after surgery were calculated for both groups. Statistical significance of differences between groups and between different time points within one group was tested by means of paired t test, two sample t test and by means of Mann-Whitney test. P value less than 0.05 was chosen as a level of statistical significance.

## RESULTS

Minimal age of patients was 32 years, maximal age was 50 years. Mean age of Group1 (n=20) was  $45.2 \pm 2.92$  years, mean age of Group2 (n=18) was  $44.5 \pm 4.78$  years. There were 35% (n=7) patients in Group1 and 22.2% (n=4) patients in Group2 who had hormone using history in last six months before operation, differences were not statistically significant (p=0.07). There were 45% (n=9) patients in Group1 and 38.9% (n=7) patients in Group2 having other co-morbidity except gynecological condition. There were 50% (n=10) patients in Group1 and 27.8% (n=5) patients

in Group2 using concomitant medications at the time of operation. Differences between the groups were not statistically significant. Standardized SQoL-F points (to a 0-100 scale) before surgery were 71.61 in Group1 and 68.03 in Group2. Analysis of subjective satisfaction in main domains of sexual function before operation showed comparatively lower rates of satisfaction in domain of pain - 35% (n=7) in Group1 and 27.8% (n=5) in Group2, but differences were not statistically significant (see **Figure 1**). Patients' expectations about impact of planned operation on their sexuality are described in **Table 1**. Although patients of Group2 were worried about possible negative impact more frequently, differences were not statistically significant (p=0.12). Only 55% (n=11) of Group1 and 38.9% (n=7) of Group2 told their partners completely about planned surgery, 30% (n=6) of Group1 and 50% (n=9) of Group2 told their partners partly about planned surgery, but 15% (n=3) of Group1 and 11.1% (n=2) of Group2 did not tell their partners at all about planned surgery. 30% (n=6) of partners of Group1 patients and 38.9% (n=7) of partners of Group2 patients thought that nothing will change about woman's sexuality after operation, 15% (n=3) of partners of Group1 patients and 5.6% (n=1) of partners of Group2 patients thought that woman's sexual function will improve after operation, no one of partners of Group1 patients and 11.1% (n=2) of partners of Group2 patients thought that woman's sexual function will decline after operation, 55% (n=11) patients of Group1 and 44.4% (n=8) patients of Group2 could not answer about their partner's opinion concerning expected impact of operation on their sexual function. Mean period of beginning sexual activities after operation was 5.15 weeks after surgery in Group1 and 5.78 weeks in Group2, all patients from both groups proceeded with sexual activities after operation. Patients from Group1 proceeded with sexual activities more often after 6 weeks (35%, n=7), patients from Group2 proceeded with sexual activities more often after 4 weeks (27.8%, n=5) and 8 weeks (27.8%, n=5). Differences were statistically significant (p=0.03). Five patients from Group1 (25%) proceeded with sexual activities 2 weeks after surgery, which is before recommended post-operative abstinence period (4 weeks). There were no statistically significant differences in postoperative complications in Group1 (10%, n=2) and Group2 (16.7%, n=3). No one of the study group patients had any new co-morbidity during three month period after operation. There was a slight statistically insignificant decrease of SQoL-F points within each group after three months observation period: -0.44 points in Group1 (p=0.92) and -2.47 points in Group2 (p=0.67). Comparing mean standardized SQoL-F points between groups after three months post-operation period, there was a difference 6.50 points less in Group2, which is not statistically significant (p=0.43). 65% (n=13) patients of Group1 and 55.6% (n=10) of Group2 three months after surgery confirmed that they feel emotionally comfortable with their partners, 5% (n=1) of Group1 and 5.6% (n=1) of Group2 did not feel

emotionally comfortable, but it was difficult to answer for 30% (n=6) of Group1 and 38.9% (n=7) of Group2. Subjective reported changes of the main domains of sexual function in both groups are depicted on **Figure 2** and **Figure 3**. Worsening of sexual function seems to be more frequent in Group2, however differences are not statistically significant. Patients' self-assessment about impact of hysterectomy operation on their sexuality is described in **Table 2**. Although patients of Group2 more frequently indicated negative impact, differences were not statistically significant ( $p=0.30$ ). 55% (n=11) of partners of Group1 patients and 38.9% (n=7) of partners of Group2 patients thought that nothing has changed about their partner's sexuality after operation, 20% (n=4) of partners of Group1 patients and 27.8% (n=5) of partners of Group2 patients thought that their partner's sexual function has improved after operation, 10% (n=2) of partners of Group1 patients and 27.8% (n=5) of partners of Group2 patients thought that their partner's sexual function has declined after operation, 15% (n=3) of Group1 patients and 5.6% (n=1) of Group2 patients could not answer about their partner's opinion concerning impact of operation on their sexual function. Although partners of patients of Group2 more frequently indicated negative impact, differences were not statistically significant ( $p=0.40$ ).

## DISCUSSION

Data from this study prove that sexual health and future sexual function is important issue for gynecological patients. Usually people undergoing surgical procedures anticipate emotional support from their family. This study demonstrates that in case of planned hysterectomy there are many patients who did not tell their partners about operation at all (13.16%) or told only partly (39.47%). If the partners are not aware of planned surgery and possible difficulties, patients lose opportunity of wholesome support. Although previous study data support viewpoint that most probably women will neither lose their sexual desire after hysterectomy, nor they will lose their feminine shape or style (9), sexuality after hysterectomy is still cause of great anxiety of patients and continuous ambiguity for health care providers. Women require more information and evidence based data about possible impact of operation to be fully informed about all aspects before consent of scheduled surgery.

This study did not prove statistically significant changes of quality of sexual life after operation not within each study group, nor between two groups of different surgical extent – subtotal and total hysterectomy, which can be explained with relatively small initial number of recruited patients and loss of 12 excluded patients in the study process, however in some positions there was tendency of more frequent expected negative effects and reported negative changes among patients of total hysterectomy group. Analyzing each questionnaire separately, there were examples of marked worsening and examples of marked improvement of sexual function in both study groups. It seems that hysterectomy itself and its surgical

technique are major but not the only essential factors from summary impact on sexual function after surgery. Data showed the same level of emotional partnership well-being before and after operation (women's view). In this study there were no further post-operation interviews and relationship analysis performed about future partnership attitudes and relationship changes in case of telling and not telling partner about operation. There was one patient in subtotal hysterectomy group who divorced from her partner in three months period after operation. Her questionnaire data showed that she did not tell her partner about planned operation, in this case it was impossible to analyze potential reasons for divorce without deeper interview of both partners. Asking woman about their partner's opinions regarding planned operation and post-operative changes brings some risk of misinformation, because partners can have different opinions if asked directly, but according to the protocol, partners were not directly involved in the study. Also telling partner incomplete information about planned operation can change his opinion about expected impact of surgery.

Since there were no statistically significant differences in co-morbidities, concomitant medications, hormone use history and post-operative complications between groups, authors consider both study groups comparable. Wide interpretation of study results and generalization to all population of gynecological patients is restricted by relatively small study group, but it gives an opportunity to see and analyze tendencies and actualize the problem. Disadvantage of questionnaire method is a subjective conception of questions, remembrance failures, as well as impossible verification or particularization of answers. Women should be provided with as much information as possible and invited to participate in the decision making about the type of hysterectomy. Such empowerment may well improve satisfaction rates after surgery (11). Continuous research is necessary to obtain more information about many possible factors that may have an impact on sexual function after hysterectomy. All patients from this study group are continuing participation in study for further observation period to assess quality of sexual life after six months post-operation period.

## CONCLUSIONS

Gynecological patients before scheduled hysterectomy are worried about possible negative impact of surgery on their sexual function. Many patients do not tell their partners about operation or tell only partly, thereby depriving themselves full emotional support from partner. There is no statistically significant impact of hysterectomy on sexual quality of life. There are no statistically significant differences in sexual quality of life between total and subtotal hysterectomy.

**Conflict of interest:** None

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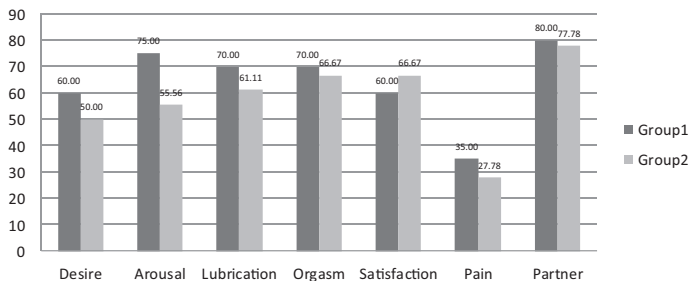


Fig. 1. Satisfaction rates of main domains of sexual function before operation (%)

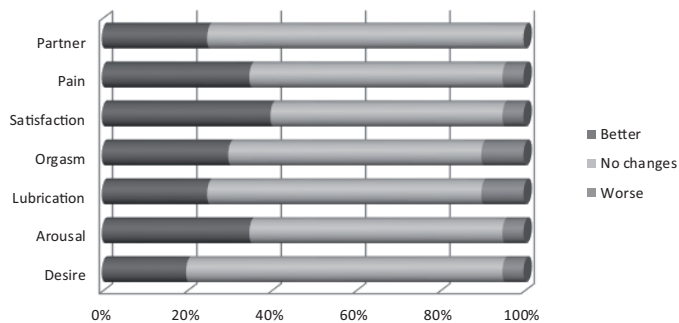


Fig. 2. Changes of main domains of sexual function after operation in Group1 (%)

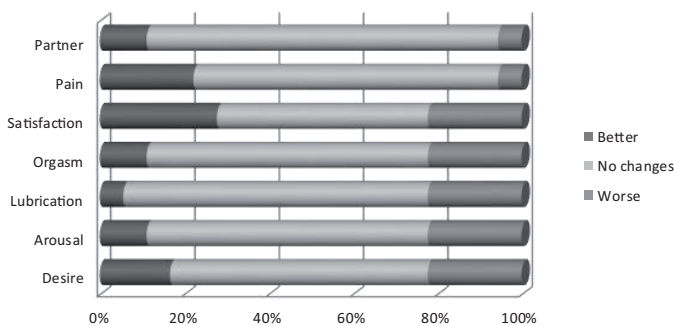


Fig. 3. Changes of main domains of sexual function after operation in Group2 (%)

Table 1. Patients' expectations about impact of planned operation on their sexuality

Expected impact	Group1 n / total (%)	Group2 n / total (%)
Improve	4/20 (20)	1/18 (5.6)
Decline	1/20 (5)	6/18 (33.3)
Nothing will change	8/20 (40)	7/18 (38.9)
Do not know	7/20 (35)	4/18 (22.2)

Table 2. Patients' self-assessment about impact of hysterectomy operation on their sexuality

Reported impact	Group1 n / total (%)	Group2 n / total (%)
Improved	7/20 (35)	5/18 (27.8)
Declined	1/20 (5)	4/18 (22.2)
Nothing has changed	10/20 (50)	9/18 (50)
Do not know	2/20 (10)	0/18 (0)