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ORIGINAL RESEARCH

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Investigation of sexual quality of life and related factors in women with preinvasive cervical cancer

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Abstract

Background: The surgical treatments for preinvasive cervical cancers may have adverse effects on women's sexual health for a period of a few weeks following surgery, during the post-operative phase. This study was undertaken to ascertain the quality of sexual life and associated factors among women with preinvasive cervical cancer. **Methods**: The study was designed as a prospective descriptive study. This study was conducted in the gynecologic oncology outpatient clinic of a women's hospital in Turkey between February and December 2022. The study was completed with a total of 150 women. The Sexual Quality of Life-Female (SQoL-F) was used to determine the sexual quality of life of women with preinvasive cervical cancer. **Results**: The mean total score for women with preinvasive cervical cancer from the SQoL-F was 49.21 $\pm$ 13.80. It was found that there was a statistically significant difference between the mean SQoL-F scores of women with preinvasive cervical cancer included in the study according to the family type, their sexual life status prior to the operation, impact on their sexual lives following the procedure and effect on their body perception after the operation variables ($p < 0.05$). **Conclusions**: The study revealed that the quality of sexual life of women who had undergone surgical treatment for preinvasive cervical cancer was low. It is thus recommended that further comprehensive studies be conducted to provide education/counseling services related to quality of sexual life, including spouses/partners, for improve the quality of sexual life of women with preinvasive cervical cancer.

Keywords

Preinvasive cervical cancer; Women; Sexual life quality; Nursing; Sexual health

1. Introduction

Cervical cancer represents one of the most prevalent gynecological malignancies among women of reproductive age. It is the second most common type of cancer in statistical results involving both sexes worldwide [1] and the third most common gynecologic cancer after breast and endometrial cancer [2–4]. Cervical cancer persists as a significant women's health concern, with 604,127 new cases (3.1% new case rate) and 342,000 deaths worldwide (2020), particularly in low- and middle-income countries [3, 5]. In Turkey, cervical cancer represents the ninth most prevalent form of cancer, with women of reproductive age over 40 years of age representing the primary risk group for developing this disease [6].

A number of risk factors have been identified as potential contributors to the development of cervical cancer. The human papillomavirus (HPV) is the direct causative agent in the development of cervical cancer. However, factors such as early sexual activity ($\leq$16 years), polygamy, substance abuse, poor genital hygiene and low socioeconomic status have been identified as potential indirect contributors to the development of cervical cancer [7–9]. Cervical cancer has a protracted preclinical period. The lengthy preclinical phase of cancer indicates that cervical tumors commence formation at a designated point in time and undergo a prolonged preinvasive period (10–15 years prior to the development of invasive lesions) [10, 11].

It is recognized that women frequently present with no symptoms during the preinvasive phase. For this reason, it becomes imperative to implement effective follow-up procedures for women at different stages of their lives to monitor the development of preinvasive cervical lesions (genital warts, itching, burning, bleeding, vaginal discharge and dyspareunia symptoms may be present in routine pelvic examination) using existing screening methods (pap smear, *etc.*). Consequently, the early diagnosis of cervical cancer will result in an increased survival rate and a reduction in the incidence of the disease [5, 7]. In the prevention of cervical cancer, it is of the utmost importance to designate the identification of high-risk groups, and the early diagnosis of the disease. Early detection allows for the identification of cancerous cells when they are still asymptomatic. In this manner, solutions may be developed

by focusing on cervical cancer, which is prevalent in society and has a high probability of being treated successfully when diagnosed at an early stage [12].

Pap-smear test is the most effective method for early diagnosis of cervical cancer. Pap-smear test is one of the most important methods preferred because it can diagnose cervical cancer early before 90–95% of cervical cancer appears clinically, increases recovery and survival rates after early diagnosis, allows a decrease in the rate of invasive cancer, and can be applied cheaply and easily [12–14]. Early diagnosis of cervical cancer with a pap-smear test positively affects the sexual health/reproductive health of many women of reproductive age [14]. New cases detected with early detection methods can be treated with a number of medical (radiotherapy, *etc.*) and surgical treatment methods (cryosurgery, excisional conization, Leep, hysterectomy types, *etc.*), and the cancer can be controlled before it progresses to advanced stages [15, 16].

The combination of surgical and medical treatments for cervical cancers may have adverse effects on women's sexual health (communication deficiencies between spouses, sexual conflicts, *etc.*) for a period of 8–12 weeks following surgery, during the post-operative recovery phase. In women are restricted the period of 8–12 weeks of sexual intercourse during this process [15, 17]. In women with cervical cancer, sexual activation after surgical treatment can be achieved within a period of approximately three to six months following recovery. In certain circumstances, this period may be extended to up to 12 months. Therefore, the time for a woman to restart sexual activation varies depending on whether she feels physically, psychologically and sexually ready [11, 17]. The sexual health and quality of life of women after surgical treatment can be affected by a number of factors, including the anatomical position of the cervix, the presence of dyspareunia, and bleeding during coitus. The sexual problems that develop in women after preinvasive cervical cancer treatment may result in communication breakdowns and conflicts between spouses/partners, which can ultimately lead to the abandonment of the sick spouse [18]. In previous studies, it was determined that the rates of depression (52.2%) and anxiety (65.6%) increased in women diagnosed with cervical cancer. These psychological problems were found to affect women's direct sexual lives negatively and to develop disorders in their sexual functions [19, 20].

The natural resumption of women's sexual life after cervical cancer treatment may take a period of 3–12 months, depending on their readiness to do so [11, 17]. During this process, women may develop symptoms that may impair their quality of sexual life, including decreased sexual interest, decreased desire, dyspareunia, inadequate lubrication and vaginal stenosis [14, 21]. In light of the information above, it is believed that this study will contribute to the application mentioned above areas in terms of determining the quality of sexual life of women with preinvasive cervical cancer, revealing the risks that may cause cancer-related sexual problems, taking measures against risks, and developing solutions. Accordingly, the present study was undertaken to ascertain the quality of sexual life and associated factors among women with preinvasive cervical cancer. In this study, answers to the following questions were sought:

- What is the quality of sexual life of women diagnosed with preinvasive cervical cancer?
- What are the factors affecting the quality of sexual life of women diagnosed with preinvasive cervical cancer?

2. Material and methods

2.1 Research type

The study was designed as a prospective descriptive study. This study was conducted in the gynecologic oncology outpatient clinic of a women's hospital in Turkey between February and December 2022.

2.2 Study population and sample

The study population consisted of women who were diagnosed with preinvasive cervical cancer in the gynecologic oncology outpatient clinic of a women's hospital, completed the surgical treatment process, came for follow-up visits in the 3rd–6th month after treatment, and had an active sexual life in the last four weeks. The active sexual life of women was determined according to their statements. The sample size of the study was determined according to the results of the study conducted by Özdemir *et al*. [18] (2023). Accordingly, the Open Source Epidemiologic Statistics for Public Health (OpenEpi) version 3 statistical software program, which is open to general use, was used to calculate the sample size of the study [22]. When power analysis was performed, the sample size was calculated as at least 125 women with preinvasive cancer with a 5% bias level, 95% confidence interval at the two-way significance level, and 80% power. The study was completed with a total of 150 women, estimating a possible loss of cases (approximately 20%). Inclusion and exclusion criteria: Volunteer women who were 18 years of age or older, had no communication/psychiatric problems, underwent a surgical treatment procedure such as Excisional conization or Leep due to a diagnosis of preinvasive cervical cancer, applied to the gynecologic oncology clinic for control at the 3rd–6th month after treatment, and were sexually active in the last four weeks were included in the study. Women who did not meet the inclusion criteria and did not volunteer to participate in the study were excluded.

2.3 Data collection tools

In the study, data were collected with the "Data Collection Form" and "Sexual Quality of Life-Female (SQoL-F)".

2.3.1 Data collection form

The Data Collection Form was created by the researchers after reviewing the studies in the literature [10, 15, 23]. The Data Collection Form consisted of items including sociodemographic (age, Body Mass Index (BMI), marital status, *etc.*), gynecological (gynecological disorder, *etc.*), and sexual characteristics (frequency of sexual intercourse, pre-operative sexual life, change of sexual life after the operation, change of body perception after the operation, *etc.*) of women.

2.3.2 Sexual quality of life-female (SQoL-F)

In the study, the Sexual Quality of Life-Female (SQoL-F) developed by Symonds *et al*. [24] (2005) was used to determine the sexual quality of life of women with preinvasive cervical cancer. The Turkish validity and reliability study of the scale was conducted by Tuğut and Gölbaşı (2010) [25]. The scale is a 6-point Likert-type measurement tool consisting of 18 items. Participants are asked to answer each item in the scale by taking into account their sexual life in the last four weeks. The Cronbach alpha internal consistency level of the scale is 0.83. The Cronbach alpha internal consistency level of the scale is between $0.80 \leq \alpha < 1.00$, it is indicated that the scale is a highly reliable scale [25]. Each item in the scale is answered according to a 1–6 points system (1 = Totally agree, 2 = Greatly agree, 3 = Somewhat agree, 4 = Somewhat disagree, 5 = Greatly disagree, 6 = Never disagree). The lowest score to be obtained from the scale is 18, and the highest score is 108. A high score on the scale indicates a good quality of sexual life [25]. In this study, the Cronbach alpha internal consistency level of the scale was determined to be 0.87.

2.4 Application of data collection tools

Women who have completed treatment for preinvasive cervical cancer are scheduled to present to the gynecological oncology outpatient clinic for follow-up examinations during daytime working hours for a period of 3–6 months after treatment. The researchers conducted interviews with sexually active women who met the inclusion criteria at the outpatient clinic. The researchers developed the pre-interview plan in collaboration with the physicians in charge of the gynecological oncology outpatient clinic, with input from the women included in the study. The researchers gathered the data through in-person interviews, utilizing the data collection form and SQoL-F. The completion of the data collection forms required an average of 15 to 20 minutes.

2.5 Data analysis

The statistical analysis of the data collected in the study was conducted using the Statistical Package for the Social Sciences (SPSS) 28.0 (SPSS version 28.0; IBM, Armonk, NY, USA). The assumption of normality was tested using the Kolmogorov-Smirnov and Shapiro-Wilk tests. A two-sample *t*-test was employed to assess the mean SQoL-F total score, which exhibited a normal distribution according to binary groups. A one-way analysis of variance (ANOVA) was employed to examine the mean SQoL-F total score according to groups of three or more, and multiple comparisons were analyzed with the Duncan test. The relationship between multiple responses and the mean SQoL-F total score was analyzed using a Bonferroni-corrected *Z*-test. The Mann-Whitney U test was employed to examine the mean SQoL-F total score, which was not normally distributed according to binary groups. The Kruskal-Wallis H test was employed to examine the mean SQoL-F total score, which was not normally distributed according to groups of three or more. Pearson's rho correlation coefficient was employed to examine the relationship between normally distributed age and mean SQoL-F score. In contrast, Spearman's rho correlation coefficient was utilized to investigate the correlation between non-normally distributed BMI and mean SQoL-F score. Furthermore, the results of the analysis were presented in two formats: mean ± standard deviation and median (minimum–maximum) for quantitative data and frequency (percentage) for categorical data. The level of statistical significance was set at $p < 0.05$.

3. Results

A statistical analysis of the socio-demographic characteristics of women diagnosed with preinvasive cervical cancer revealed that their mean age was 38.71 ± 9.49 years, with a Body Mass Index (BMI) of 24.28 ± 3.81. The study revealed that 45.3% of the women had completed high school, 52.7% were employed, 73.3% reported an income level that could be considered medium, 100% had social security, 78.0% lived in urban areas, 80.7% had a nuclear family structure, 81.3% were married, and 66.7% had been married for ten years or more. It was determined that 40.0% of the women had a chronic disease, with 31.7% having diabetes mellitus and hypertension (Table 1).

The study revealed that 40.7% of the women included had experienced two pregnancies, 44.0% had two children, 73.3% had not undergone a miscarriage, and 87.3% had not undergone a dilation and curettage (D&C). The study revealed that 32.0% of the female participants had previously experienced a gynecological disorder, with 36.7% of these disorders being myoma uteri and polyps. It was determined that 32.0% of the women received treatment for gynecological disorders, and 38.8% of the women received medication and genital wart treatment. The findings indicated that 40.3% of the women diagnosed with preinvasive cervical cancer had High Grade Squamous Intraepithelial Lesion (HSIL) as their current disease diagnosis. Of these women, 60.7% had a conization procedure. The remaining women did not experience any postoperative complications (Table 2). Additionally, none of the women who underwent conization experienced a recurrence of postoperative discomfort.

The study revealed that 43.3% of the women engaged in sexual intercourse less than once a week, 66.7% of the women's spouse/partners exhibited no sexual disorders, 70.0% of the women's spouse/partners did not receive treatment for sexual diseases, 55.3% of the women had information about the duration of cervical cancer screening, and 34.0% of the women stated that the frequency of cervical cancer screening was once a year. It was determined that 54.0% of the women were aware of the HPV vaccine, and 60.7% of them indicated that their sexual life was positive prior to the procedure. It was determined that 44.7% of the women anticipated no change in their sexual life and 43.3% in their body perception following the operation (Table 3).

The mean total score for women with preinvasive cervical cancer from the SQoL-F was 49.21 ± 13.80. The minimum score received by the women was 8.89, while the maximum score was 83.33 (Table 4). In consideration of these findings, it was determined that women with preinvasive cervical cancer who participated in the study exhibited a diminished quality of

TABLE 1. Distribution of socio-demographic characteristics of women with preinvasive cervical cancer (n = 150).

Characteristics	Mean	SD	Min.	Max.
BMI	24.28	3.81	16.65	34.89
	n		%	
Age, yr				
30 years and down	36		24.0	
31–42 years	67		44.7	
43 years and up	47		31.3	
Mean, SD (Min.–Max.)	38.71	9.49	23.00	60.00
Marital status				
Married	122		81.3	
Single	28		18.7	
Duratation of marriage, yr				
0–5 years	30		20.0	
6–10 years	20		13.3	
10 years and up	100		66.7	
Family type				
Nuclear family	121		80.7	
Extended family	29		19.3	
Education level				
Primary and down	37		24.7	
High School	68		45.3	
University and up	45		30.0	
Place of residence				
City	117		78.0	
District/Town/Village	33		22.0	
Occupation				
House wife	71		47.3	
Employed	79		52.7	
Chronic disease				
Yes	60		40.0	
No	90		60.0	
*Chronic disease (n = 60)				
Anemia	12		20.0	
Asthma	12		20.0	
Bronchitis	12		20.0	
Depression	11		18.3	
Other	6		10.0	
Diabetes mellitus	19		31.7	
Hypertension	19		31.7	
Social security				
Had	150		100.0	
Income level				
High	32		21.3	
Medium	110		73.3	
Low	8		5.3	

*BMI: Body Mass Index; SD: Standard deviation; Min.: Minimum; Max.: Maximum; *Participants selected more than one option.*

TABLE 2. Distribution of gynecologic-obstetric characteristics of women with preinvasive cervical cancer (n = 150).

Characteristics	n	%
Number of pregnancies		
0	18	12.0
1	19	12.7
2	61	40.7
3	24	16.0
4	21	14.0
5 and up	7	4.6
Number of children		
0	22	14.7
1	34	22.7
2	66	44.0
3	21	14.0
4	7	4.6
Number of miscarriages		
0	110	73.3
1	28	18.7
2	8	5.3
3	4	2.7
Number of dilation and curettage (D&C)		
0	131	87.3
1	15	10.0
2	1	0.7
3	3	2.0
Previously experienced a gynecological disorder		
Yes	48	32.0
No	102	68.0
Gynecological disorder*		
Pain	4	8.2
Sexually transmitted infections (STI)	16	32.7
Vaginal bleeding	4	8.2
Myoma-uteri	18	36.7
Ovarian cysts	11	22.4
Polycystic ovary syndrome (PCOS)	11	22.4
Polyps	18	36.7
Received treatment for gynecological disorders		
Yes	48	32.0
No	102	68.0
Gynecological disorder treatments*		
Medication	19	38.8
Cystectomy	13	26.5
Myomectomy	17	34.7
Polypectomy	13	26.5
Probe C	17	34.7
Genital ward treatment	19	38.8

TABLE 2. Continued.

Characteristics	n	%
Current disease diagnosis*		
Surgical field positivity	10	6.7
Other	11	7.4
HSIL	39	26.2
HSIL CIN2	39	26.2
HSIL CIN3	60	40.3
LSIL	29	19.5
Operation type*		
Conization	91	60.7
Leep	49	32.7
Reconization	10	6.7
Post-operative problems		
Yes	58	38.7
No	92	61.3
Post-operative gynecological discomfort recurrence		
Yes	13	8.7
No	137	91.3

**Multiple answers. HSIL: High Grade Squamous Intraepithelial Lesion; CIN: Cervical Intraepithelial Neoplasia.*

sexual life.

It was found that there was a statistically significant difference between the mean SQoL-F scores of women with preinvasive cervical cancer included in the study according to the family type variable ($p < 0.05$). It was found that the mean SQoL-F scores of women with extended family type (X = 54.10 ± 15.18) were higher than those of women with nuclear family type (X = 48.04 ± 13.25) and there was a statistically significant difference between the groups ($t = -2.147$; $p = 0.033$) (Table 5).

The study revealed a statistically significant difference in the mean SQoL-F scores of women according to their sexual life status prior to the operation ($p < 0.05$). The mean SQoL-F scores of women who evaluated their sexual life as good before the operation (X = 51.84 ± 13.61) were found to be higher than those of women who evaluated their sexual life as bad (X = 45.16 ± 13.21). A statistically significant difference was observed between the two groups ($t = 2.972$; $p = 0.003$) (Table 5).

The analysis revealed a statistically significant difference in the mean SQoL-F scores according to the women's perceptions of the impact on their sexual lives following the procedure ($p < 0.05$). The mean SQoL-F scores of women who anticipated a positive change in their sexual life following the operation (X = 53.29 ± 14.41) were observed to be higher than those of women who anticipated a negative change (X = 45.00 ± 14.67). A statistically significant difference was identified between the two groups ($t = 4.624$; $p = 0.011$) (Table 5).

In the study, it was found that there was a statistically significant difference between the mean SQoL-F scores according to the women's thoughts about the effect on their body

TABLE 3. Distribution of sexual characteristics of women with preinvasive cervical cancer (n = 150).

Characteristics	n	%
Frequency of sexual intercourse/week		
1 and down	65	43.3
1–3	63	42.0
3 and up	22	14.7
Sexual disease in spouse/partner		
Yes	50	33.3
No	100	66.7
Sexual disease treatment for spouse/partner		
Yes	45	30.0
No	105	70.0
Cervical cancer screening time information status		
Yes	83	55.3
No	67	44.7
Status of information on cervical cancer screening frequency		
I don't know	24	16.0
Every 6 months	14	9.3
Every year	51	34.0
Every 3–5 years	24	16.0
When I Have a complaint	10	6.7
When a doctor requests	27	18.0
Information status about HPV vaccine		
Yes	81	54.0
No	69	46.0
Pre-operative sexual life		
Superior	91	60.7
Poor	59	39.3
Change of sexual life after the operation		
Positive	27	18.0
Negative	56	37.3
No change	67	44.7
Change of body perception after the operation		
Positive	25	16.7
Negative	60	40.0
No change	65	43.3

HPV: Human Papillomavirus.

perception after the operation ($p < 0.05$). It was found that the mean SQoL-F scores of women who thought that their body perception would change positively after the operation (X = 56.09 ± 10.90) were higher than those of women who thought that their body perception would change negatively (X = 45.07 ± 14.71) and there was a statistically significant difference between the groups ($t = 6.479$; $p = 0.002$) (Table 5).

The study revealed that there was no statistically significant difference between the mean SQoL-F scores of women with preinvasive cervical cancer and socio-demographic,

TABLE 4. Mean scores of sexual quality of life-female (SQoL-F) (n = 150).

Scale	n	Mean	SD	Min.	Max.	Scale score range
SQoL-F	150	49.21	13.80	8.89	83.33	0–100

SD: Standard deviation; Min.: Minimum; Max.: Maximum; SQoL-F: Sexual Quality of Life-Female.

TABLE 5. Comparison of mean SQoL-F scores of women with preinvasive cervical cancer by certain characteristics (n = 150).

Characteristics	Mean	SD	Median	Min.	Max.	Statistical analysis	
Family type							
Nuclear family	48.04	13.25	47.78	8.89	72.22	−2.147	0.033^{t}
Extended family	54.10	15.18	53.33	14.44	83.33		
Pre-operative sexual life							
Superior	51.84	13.61	51.11	21.11	83.33	2.972	0.003^{t}
Poor	45.16	13.21	44.44	8.89	71.11		
Change of sexual life after the operation							
Positive[a]	53.29	14.41	54.44	21.11	83.33	4.624	0.011^{f} a > b
Negative[b]	45.00	14.67	44.44	8.89	75.56		
No change[c]	51.09	11.98	50.00	21.11	72.22		
Change of body perception after the operation							
Positive[a]	56.09	10.90	53.33	42.22	83.33	6.479	0.002^{f} a > b
Negative[b]	45.07	14.71	45.00	8.89	75.56		
No change[c]	50.39	12.79	50.00	21.11	72.22		

SD: Standard deviation; Min.: Minimum; Max.: Maximum; ^{t}: t-test; ^{f}: ANOVA; ^{a,b,c}: multiple comparisons.

gynecologic-obstetric and sexual characteristics, including marital status, marriage duration, education level, place of residence, occupation, chronic disease status and income level ($p > 0.05$).

Furthermore, no statistically significant difference was identified between the mean SQoL-F scores of women according to age and BMI variables ($p > 0.05$) (Table 6).

TABLE 6. Investigation of mean SQoL-F scores by age and BMI in women with preinvasive cervical cancer.

Characteristics	SQoL-F scores	
	r	*p*
Age, yr	-0.100^{n}	0.226
BMI	0.139^{s}	0.091

BMI: Body Mass Indexi; ^{n}: Pearson Correlation Coefficient; ^{s}: Spearman's rho Correlation Coefficient; SQoL-F: Sexual Quality of Life-Female.

4. Discussion

The increase in the survival rate of women after early diagnosis and treatment of cervical cancer has increased the search for solutions to improve the quality of sexual life [26]. In this study, it was determined that women whose surgical treatment for preinvasive cervical cancer was completed had low quality of sexual life. Membrilla-Beltran *et al.* [10] (2023) found that women who completed cervical cancer treatment had significantly lower quality of sexual life due to pain and fatigue compared to women without a diagnosis of the disease. In another study conducted by Özdemir *et al.* [18] (2023), it was determined that the quality of sexual life of women diagnosed with gynecologic cancer was at a moderate level. In a study conducted by Qian *et al.* [26] (2023), it was found that women diagnosed with cervical cancer experienced sexual dysfunction after the disease and had a low quality of sexual life. Our research results are similar to literature. These results suggest that the fact that women with preinvasive cervical cancer face a deadly disease that threatens the body and the perception of sexuality at a time when their sexual life is active causes sexual problems and a decrease in their sexual quality of life.

The study revealed that women with preinvasive cervical cancer and an extended family structure exhibited a superior quality of sexual life compared to those with a nuclear family structure. A review of the literature revealed no comparable results from previous studies. The results of our research might be indicated that women with an extended family type who receive adequate social support due to the patriarchal social structure and meet the needs associated with sharing family responsibilities (*e.g.*, husband/partner) tend to report a higher quality of sexual life. It is therefore anticipated that the findings of this study will contribute to the existing literature on the subject.

The study revealed that the quality of sexual life of women with preinvasive cervical cancer who rated their sexual life as good before the operation was superior to that of women

who rated their sexual life as poor. Prior research has demonstrated that depression and anxiety are prevalent among women diagnosed with cervical cancer, leading to communication difficulties between spouses. These psychological issues often give rise to conflicts, a reduction in sexual intimacy, a lack of emotional sharing, and a sense of being disliked or even abandoned by one's partner [19, 27]. The issues above, which arise due to the disease or its treatments and the current sexual difficulties (such as sexual reluctance or anorgasmia), result in a negative perception of sexual life in women and a reduction in its quality [19, 26]. In other studies, it was demonstrated that the sexual lives of women undergoing gynecological cancer treatment were negatively affected. Additionally, existing sexual problems between spouses intensified, perceptions of fertility and femininity underwent alteration, the frequency of sexual activity declined, and the quality of sexual life deteriorated [28, 29]. These findings suggest that preinvasive cervical cancer, which frequently affects young women, may alter perceptions of femininity and fertility, disrupt body integrity and negatively impact sexual life. It is hypothesized that women who are sexually satisfied prior to preinvasive cervical cancer treatment and who receive adequate support from their spouses or partners will be better able to adapt to changes in their sexual lives following treatment.

The study revealed that the quality of sexual life for women who anticipated a positive change in their sexual life following the operation was higher than for those who anticipated a negative change. In the existing literature, it has been reported that the perception of sexuality for women is related to a number of factors, including appearance, beauty, the maintenance of sexual life, fertility and the continuity of the perception of femininity [4]. Following a diagnosis of gynecological cancer, women experience a decline in their gender role, sexual functions, fertility ability, self-confidence and body perceptions [29]. It has been reported that women with preinvasive cervical cancer experience a sense of physical, psychological, and sexual incompleteness, inadequacy, ugliness, worthlessness and fear of being disliked by their spouses or partners. Additionally, they may perceive a loss of sexual attractiveness and may even consider sexual retirement after the treatment process is completed [7, 30]. In a study conducted by Cianci *et al*. [31] (2023), it was determined that women with cervical cancer experienced a range of sexual difficulties following treatment. These included feelings of sexual inadequacy, sexual dysfunction, a lack of desire for sexual activity, concerns about disease recurrence, worries about transmitting the disease to their spouse, and a deterioration in body image and body perception. These issues result in a shift in sexual habits and reluctance among women following treatment, leading to a decline in sexual quality of life [31]. These findings indicate that a woman's post-treatment sexual outlook, whether positive or negative, is a significant determinant of her sexual quality of life.

The present study revealed that the quality of sexual life of women who anticipated positive changes in their bodies following the operation was higher than that of women who expected negative changes. The development of cancer in the reproductive organs, which are perceived as symbols of femininity and are effective in ensuring the body integrity of women, can cause a multitude of physical, psycho-social and sexual problems for women [20, 32]. The disruption of a woman's body integrity subsequent to treatment may precipitate the development of negative self-perceptions regarding her own body (*e.g.*, as incomplete, unappealing, *etc.*) and sexual dysfunction (*e.g.*, diminished sexual interest, decreased libido, inability to achieve orgasm, *etc.*) [33, 34]. A study revealed that women who underwent surgical treatment for preinvasive cervical cancer exhibited negative attitudes towards their own bodies (*e.g.*, feeling ugly or inadequate, hesitating to show their bodies to their husbands/partners, *etc.*). Additionally, they demonstrated a decline in sexual interest, desire and ability to orgasm [32]. In a separate study conducted by Liberacka-Dwojak *et al.* [11] (2023), it was discovered that women diagnosed with cervical cancer exhibited negative attitudes and behaviors regarding their own bodies, demonstrated elevated stress levels, experienced deficiencies in sexual communication with their husbands or partners, and reported a diminished quality of sexual life. In light of these findings, it can be posited that the positive or negative outlook of women on their own bodies following cancer treatment has an impact on the quality of their sexual lives.

5. Limitations of the study

This study was carried out in a small group, and only women with preinvasive cervical cancer were included in the study. Therefore, the results of this study cannot be generalized. Furthermore, the data obtained from the study are limited to self-report data from the women participants. However, given that sexuality encompasses both fertility and the dynamics of spousal or partner relationships, there is a possibility that the responses provided by women may be constrained by social desirability or may overstate the actual circumstances.

6. Conclusions

The study revealed that the quality of sexual life of women who had undergone surgical treatment for preinvasive cervical cancer was low. The study findings indicated that the quality of sexual life of women with preinvasive cervical cancer who had a large family type, evaluated their sexual life as good before the operation and anticipated positive changes in their sexual life and body after the operation exhibited a high quality of sexual life. It is thus recommended that further comprehensive studies be conducted to provide education and counseling services related to sexuality and quality of sexual life, including spouses/partners, in order to improve the quality of sexual life of women with preinvasive cervical cancer.

AVAILABILITY OF DATA AND MATERIALS

The authors declare that all data supporting the findings of this study are available within the manuscript.

AUTHOR CONTRIBUTIONS

MTA and DA—designed the research study; wrote the manuscript; analyzed the data. MTA—collected the data

of the research study. Both authors contributed to editorial changes in the manuscript. Both authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The necessary permissions were obtained from the Ethics Committee of Cankırı Karatekin University (29.12.2021/24) and the institution where the study would be conducted (25.01.2022/04). The study was conducted in accordance with the Helsinki Declaration 2008 Principles. All women in the sample were informed about the subject, purpose and method of the study before data collection. Women were informed that participation in the study was voluntary, that their information would remain confidential, and that they could withdraw from the study at any time. Verbal and written informed consent were obtained from the women who voluntarily agreed to participate in the study.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

REFERENCES

[1] Fontham ETH, Wolf AMD, Church TR, Etzioni R, Flowers CR. Cervical cancer screening for ındividuals at average risk: 2020 Guideline update from the American Cancer Society. CA: A Cancer Journal for Clinicians. 2020; 70: 321–346.

[2] Tramacere F, Lancellotta V, Casà C, Fionda B, Cornacchione P, Mazzarella C. Assessment of sexual dysfunction in cervical cancer patients after different treatment modality: a systematic review. Medicina. 2022; 58: 1223.

[3] Canfell K, Kim JJ, Brisson M, Keane A, Simms KT, Caruana M. Mortality impact of achieving WHO cervical cancer elimination targets: a comparative modelling analysis in 78 low-income and lower-middle-income countries. The Lancet. 2020; 395: 591–603.

[4] Boa R, Grénman S. Psychosexual health in gynecologic cancer. International Journal of Gynecology and Obstetrics. 2018; 143: 147–152.

[5] Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: A Cancer Journal for Clinicians. 2021; 71: 209–249.

[6] Tekin B, Şık Aytek B. One-year follow-up of patients with abnormal cervical smear results. Mersin University Journal of Health Sciences. 2020; 13: 298–304. (In Turkish)

[7] Wu X, Wu L, Han J, Wu Y, Cao T, Gao Y. Evaluation of the sexual quality of life and sexual function of cervical cancer survivors after cancer treatment: a retrospective trial. Archives of Gynecology and Obstetrics. 2021; 304: 999–1006.

[8] Campos NG, Tsu V, Jeronimo J, Mvundura M, Kim JJ. Evidence-based policy choices for efficient and equitable cervical cancer screening programs in low-resource settings. Cancer Medicine. 2017; 6: 2008–2014.

[9] Durmaz S, Ozvurmaz S, Adana F, Kurt F. Cross-sectional evaluation of reltion between women's attitudes towards the diagnosis of cervical cancer and regular gynecological examination. Adnan Menderes University Journal of Health Sciences. 2021; 5: 26–36. (In Turkish)

[10] Membrilla-Beltran L, Cardona D, Camara-Roca L, Aparicio-Mota A, Roman P, Rueda-Ruzafa L. Impact of cervical cancer on quality of life and sexuality in female survivors. International Journal of Environmental Research and Public Health. 2023; 20: 3751.

[11] Liberacka-Dwojak M, Wiłkość-Dębczyńska M, Ziółkowski S. A Pilot study of psychosexual functioning and communication in women treated for advanced stages of cervical cancer after the diagnosis. Sexuality Research and Social Policy. 2023; 20: 1258–1266.

[12] Gözüyeşil E, Arıöz Düzgün A, Ünal Aslan KS. Evaluation of the women's attitudes towards prevention and early diagnosis of the cervical cancer. Sürekli Tıp Eğitimi Dergisi. 2019; 28: 229–238. (In Turkish)

[13] Schiffman M, Wentzensen N. Human papillomavirus infection and the multistage carcinogenesis of cervical cancer. Cancer Epidemiology, Biomarkers & Prevention. 2013; 22: 553–560.

[14] Serçekuş P, Türkçü SG. Women diagnosed with gynecologic cancer sexuality problems and nursing applications. E-Journal of Dokuz Eylul University Nursing Faculty. 2015; 8: 36–38. (In Turkish)

[15] Appiah EO, Amertil NP, Ezekiel EOB, Lavoe H, Siedu DJ. Impact of cervical cancer on the sexual and physical health of women diagnosed with cervical cancer in Ghana: a qualitative phenomenological study. Women's Health. 2021; 17: 17455065211066075.

[16] Wang CW, Liou YA, Lin YJ, Chang CC, Chu PH, Lee YC. Artificial intelligence-assisted fast screening cervical high grade squamous intraepithelial lesion and squamous cell carcinoma diagnosis and treatment planning. Scientific Reports. 2021; 11: 16244.

[17] Aktaş D, Terzioğlu F. Effect of home care service on the sexual satisfaction of patients with gynecologic cancer. Sexuality and Disability. 2014; 33: 243–252.

[18] Özdemir Z, Alaca C, Gökgün E, Yıldırım H, Ataman G, Öztürk Ö. Determining the effects of gynecological cancers on women's quality of sexual life. Journal of Ankara University Faculty of Medicine. 2023; 76: 101–107.

[19] Klügel S, Lücke C, Meta A, Schild-Suhren M, Malik E, Philipsen A. Concomitant psychiatric symptoms and impaired quality of life in women with cervical cancer: a critical review. International Journal of Women's Health. 2017; 30: 795–805.

[20] Pfaendler KS, Tewari KS. Changing paradigms in the systemic treatment of advanced cervical cancer. American Journal of Obstetrics & Gynecology. 2016; 214: 22–30.

[21] Miles T, Johnson N. Vaginal dilator therapy for women receiving pelvic radiotherapy. Cochrane Database of Systematic Reviews. 2014; 2014: CD007291.

[22] penEpi. Open source epidemiologic statistics for public health. 2022. Available at: http://www.openepi.com/SampleSize/SSPropor.htm (Accessed: 24 March 2023).

[23] Yücedağ M, Karaçor T, Karateke A. Evaluation of the factors affecting the development of recurrence after conization for high-grade cervical intraepithelial neoplasia diagnosis patients. Health Sciences Journal of Adıyaman University. 2021; 7: 38–44.

[24] Symonds T, Boolell M, Quirk F. Development of a questionnaire on sexual quality of life in women. Journal of Sex & Marital Therapy. 2005; 31: 385–397.

[25] Tuğut N, Gölbaşı Z. A validity and reliability study of Turkish version of the sexual quality of life questionnaire-female. Cumhuriyet Medical Journal. 2010; 32: 172–180.

[26] Qian M, Wang L, Xing J, Shan X, Wu J, Liu X. Prevalence of pelvic floor dysfunction and sexual dysfunction in cervical cancer survivors: a systematic review and meta-analysis. International Urogynecology Journal. 2023; 34: 655–664.

[27] Esencan TY, Kızılkaya Beji N. An examination of the studies conducted on sexuality to date. Andrology Bulletin. 2015; 17: 301–310.

[28] Sekse RJ, Gjengedal E, Råheim M. Living in a changed female body after gynecological cancer. Health Care for Women International. 2013; 34: 14–33.

[29] Beesley VL, Alemayehu C, Webb PM. A systematic literature review of trials of survivorship interventions for women with gynaecological cancer and their caregivers. European Journal of Cancer Care. 2019; 28: e13057.
[30] Bilge Ç, Mecdi Kaydırak M, Aslan E. The effects of gynecological cancer on sexual life. Sdü Sağlık Bilimleri Enstitüsü Dergisi. 2016; 7: 31–38. (In Turkish)
[31] Cianci S, Tarascio M, Arcieri M, La Verde M, Martinelli C, Capozzi VA. Post treatment sexual function and quality of life of patients affected by cervical cancer: a systematic review. Medicina. 2023; 59: 704.
[32] Erbil N. Relationship between sexual myths and sexual function of women. International Journal of Caring Sciences. 2019; 12: 1570.
[33] Akcan K, Turhan İ. Sexual counseling models. Gevher Nesibe Journal of Medical and Health Sciences. 2022; 7: 50–56. (In Turkish)
[34] Atlas B, Er Güneri S. Women's awareness of gynecological cancers and factors affecting awareness. Izmir Kâtip Celebi University Faculty of Health Science Journal. 2022; 7: 77–85. (In Turkish)

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