Original Article

Adaptation of the Sexuality Scale for Women with Gynecologic Cancer for Turkish Patients

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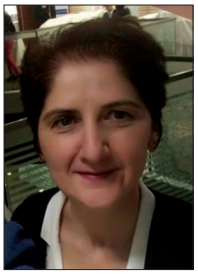

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ABSTRACT

Objective: Diagnosis and treatment of gynecologic cancers can have a negative impact on sexuality. Identification of sexual problems and concerns is key to enable appropriate management. Therefore, there is a need for a valid and reliable instrument for evaluating the sexuality of patients. This study aimed to adapt the sexuality scale for women with gynecologic cancer for Turkish patients with gynecologic cancer. **Methods:** A cross-sectional study of 150 volunteer patients with gynecologic cancer was undertaken in Turkey. The patients completed a semi-structured demographic data form and the sexuality scale for women with gynecologic cancer. We assessed the reliability, language accuracy, and content and construct validities of the Turkish version of the scale. **Results:** Exploratory and confirmatory factor analyses showed that the scale had four factors. In the exploratory factor analysis, seven items were discarded from the scale because their load values were <0.3. In the confirmatory factor analysis, the coefficients were higher than 0.3. The total Cronbach's α was 0.72. **Conclusions:** The sexuality scale for women with gynecologic cancer (Turkish version) is a valid and reliable instrument for evaluating the sexuality of Turkish patients with gynecologic cancer.

Key words: Gynecologic cancers, reliability, sexual life, sexuality scale for women with gynecologic cancer, validity

Introduction

Gynecologic cancers are among three of the seven most common cancers among women worldwide.[1,2] In 2014, 12% of newly diagnosed cancers among women in the USA are gynecologic cancers.[3] Ovarian and cervical cancers in the USA account for over 1.3% and 0.7% of all newly diagnosed cancers, respectively.[4,5] In Turkey, uterine corpus cancer is the fifth most common cancer; ovarian cancer, seventh; and uterine cervical cancer, tenth.[6] Gynecologic cancers worsen the quality of life and the sexual life of an individual.[7]

The World Health Organization[8] describes sexuality as one of the significant factors in human life, covering identity, role, sexual preference, eroticism, pleasure, closeness, and reproduction. Sexual intercourse and sex are among the

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important factors of daily living. Sexuality is a common factor involving touch and closeness, while sex is defined as an activity/action with a partner.[9] Sexual health is a wide area, which covers the social, physical, and psychological aspects of an individual. The health of an individual is, except in some diseases, closely related to interpersonal relationships, education, environment, experience, and self-esteem.[10] Developmental stages, cultural values, and experiences affect sexual expression. The approaches, behavior, values, and outfit styles reflect the sexuality of an individual.[11] In many cultures, such as Chinese, Filipino, and Cambodian, sex is taboo.[12] Similarly, Turkish families perceive sex as a taboo and expect the first intercourse to happen only after marriage.[13]

Cancer causes more serious sexual problems than other diseases.[7] Approximately 10%–90% of the patients with cancer experience problems in their sexual life.[14] Gynecologic cancers worsen the body image,[15-17] mother and partner roles,[18] and the interpersonal relationships of the patients during therapy.[15] Moreover, vaginal dryness, vaginal insensitivity, indifference for sex, unhappiness after sex, dyspareunia during intercourse, no orgasm, bleeding during intercourse, shortened vagina, infertility, warmness, urinary tract infections, and sudden emotional changes can be experienced.[19,20]

Shame is the biggest hindrance to sexual care. Another hindrance is the lack of education among health professionals.[21-23] Because of these factors, health professionals fail to evaluate the sexuality of patients and consequently diagnose and manage their sexual problems.[24] Nurses, who spend more time with patients than other health professionals, have the primary role of evaluating the sexual life of patients. Collecting accurate information from the patients is dependent on the trust established between the nurses and the patients, considering that sex is a difficult topic for both health professionals and patients to talk about. Besides collecting sexual information from patients, nurses must also apply appropriate nursing practice for that sexual problems that they encounter.[7] There are many scales used worldwide for sexual life appraisal. Most scale items evaluate sexual actions and functions.[25] There are existing tools that assess the sexual function (e.g., desire, arousal, lubrication, orgasm, satisfaction, and pain) of Turkish patients with cancer.[26,27] However, no scale has been reported to evaluate the sexual life of patients with cancer in general until date. Therefore, we adapted the sexuality scale for Women with gynecologic cancer[28] for Turkish patients with gynecologic cancer to determine whether it can systematically evaluate the sexual life of patients in general, including their body image, role and relationship issues, and sexual function and activities.

Sexuality scale for women with gynecologic cancer

The scale was developed by Zeng *et al*.,[28] who examined the sexual lives of 156 women with gynecologic cancer in mainland China. They found 20 items that were reliable and valid for sexual activity, sexual function, and additional issue subunits. The total Cronbach's α was 0.83; the Cronbach's α was 0.74 for sexual activities, 0.77 for sexual functions, and 0.86 for additional issues. Four-factor structures, obtained via exploratory factor analysis (EFA), were used to determine the construct validity, which explained 69% of the variance. Their results indicated the validity, reliability, and reflection of obstruction in the sexual issues when higher points were marked on the scale.[28]

However, the original scale (Appendix) provided by the authors contained 32 items and five subscales: body image (five items), role and relationship issues (five items), sexual activities (five items), sexual function (10 items), and additional issues to compare the conditions before and after cancer development (seven items, Table 1). We omitted the additional issues based on an expert's advice. The scale is a four-point Likert scale, and the scale questions measure participants' sexual activity for the last month. The responses for the body image subscale were scored as follows: definitely agree, 4; agree, 3; disagree, 2; and definitely disagree, 1. Those for the role and relationship issue, sexual activity, sexual function, and additional issue subscales were scored as follows: very much, 4; somewhat, 3; a little, 2; and not at all, 1. The number of sexual intercourse during sexual activities was assessed as follows: >4 times, 4; 3–4 times, 3; 1–2 times, 2; and none, 1.

This study aimed to determine the validity and reliability of the sexuality scale for women with gynecologic cancer[28] after adaptation for use in Turkish patients.

Methods

The study had two parts. First, the sexuality scale for women with gynecologic cancer was translated into the Turkish language. Second, the psychometric properties were determined.

Phase 1: Translation and adaptation of the sexuality scale for women with gynecologic cancer into the Turkish Language

Language validity-translation

The back translation method was undertaken by three independent professional expert interpreters to validate the language for the sexuality scale for women with gynecologic cancer. Three professional Turkish-English bilingual interpreters translated the scale into the Turkish language; thereafter, we formed a Turkish version with the most appropriate terms. A linguist, an oncologist,

Table 1: Overall characteristics of patients

Variable	*n* (%)
Educational level (*n*=150)	
Literate*	33 (22.0)
Primary school	78 (52.0)
Junior high school	10 (6.7)
High school	17 (11.3)
University**	12 (8.0)
Profession (*n*=150)	
Housewife	127 (84.7)
Government clerk***	12 (8.0)
Retired	11 (7.3)
Menopause (*n*=150)	
Yes	144 (96.0)
No	6 (4.0)
Diagnosis (*n*=150)	
Ovarian cancer	99 (66.0)
Endometrial cancer	32 (21.3)
Cervical cancer	19 (12.7)
Stage of cancer (*n*=150)	
Stage 1	16 (10.7)
Stage 2	25 (16.7)
Stage 3	96 (64.0)
Stage 4	13 (8.7)
Therapy types (*n*=150)	
Surgery + chemotherapy	101 (67.3)
Surgery	16 (10.7)
Surgery + radiotherapy + chemotherapy	15 (10.0)
Surgery + radiotherapy	8 (5.3)
Radiotherapy + chemotherapy	5 (3.3)
Chemotherapy	5 (3.3)
Chemotherapy types (*n*=126)	
Platinum based therapy	112 (88.9)
Fluoracil based therapy	7 (5.6)
Doxorobucin based therapy	4 (3.2)
Taxane based therapy	2 (1.6)
Targeted therapy	1 (0.8)

*Literate: No education: Just can read and/or write, **University: Three preundergraduate were included into under-graduate group, ***Government clerk: Seven cook, tea man, bank man, and engineer were included in the "government clerk" group

and an English native speaker, who is an English-Turkish interpreter, retranslated the scale into the English language. We observed no difference between the original English and retranslated versions.[29-31]

Content validity

We consulted 10 individuals regarding the Turkish version of the scale. These individuals included two experienced oncology nurses, a family physician, a psychologist, two Turkish linguistics, two oncologists, and two gynecologic oncologists.[29] These experts evaluated each item for openness, clearness, simplicity, and proper use of language by a four-point Likert scale (1 point: Inappropriate; 2 points: Appropriate but requires small modifications; 3 points: Appropriate; and 4 points: Very appropriate).[32] The content validity index (CVI) was used to estimate the validity of the items. A CVI with 3 or 4 points indicates that the content is valid and consistent with the conceptual framework.[33] Seven items in the draft of this scale were deemed invalid because they yielded CVIs of 0.50 (5/10) to 0.70 (7/10) and were then removed from the questionnaire. All the remaining items were valid with CVIs ranging from 0.80 (8/10) to 1.00 (10/10) and were then retained.

Phase 2: Psychometric properties of the Turkish version of the sexuality scale for women with gynecologic cancer

Study design and samples

We conducted a cross-sectional, descriptive study in four hospitals: Dr. Abdurrahman Yurtaslan Oncology Research and Training Hospital, Hacettepe University Hospital, Ankara University Medical Faculty Cebeci and İbni Sina Hospitals. The study was conducted in medical oncology and gynecology clinics and outpatient chemotherapy units of these hospitals. We included patients with primary diagnoses of ovarian, endometrial, cervical, vulvar, vaginal, and fallopian tube cancers; who were older than 17 years and sexually active; who completed first-line therapy (or first cure if on chemotherapy or 1 month after radiotherapy or 3 months after surgery); not in the terminal stage; who were literate and neurologically or psychiatrically normal for filling out the survey; and who volunteered to participate in the study and signed the written informed consent form. We calculated the sample size based on the item numbers and surveyed 150 patients in total, six for each item.[34]

Instruments

We collected data (including age, education, income, and profession, as well as primary diagnosis, cancer stage, and previously completed therapies) using a semi-structured demographic data form and the sexuality scale for women with gynecologic cancer (Turkish version) as adapted in Phase 1.

Pilot study

We conducted a pilot study on 15 patients and asked them if they could read and understand the scale. The scale was then modified and finalized in accordance with their recommendations.

Data collection

We collected data from eligible patients in gynecologic oncology and medical oncology clinics and outpatient chemotherapy units in two universities and a state hospital from April 2013 to February 2014. We obtained the demographic and medical data from the patients' files and pathology reports. The patients completed the self-administered sexuality scale for women with

gynecologic cancer (Turkish version). Each patient took approximately 15 min to complete the questionnaire.

We retested the sexuality scale for women with gynecologic cancer on approximately 27% (n = 40) of the patients at 2 weeks[35,36] and on the volunteer patients.

Statistical analysis

We analyzed the data using the SPSSIBM® (Statistical Package for the Social Sciences for Windows), version 22.0 (IBM, Armonk, NY, USA). We used numbers, percentages, means, standard deviations, and minimum and maximum values to present the demographic data.[37] For the validity of the sexuality scale for women with gynecologic cancer, we assessed the language, content, and construct validities: internal consistency and time-wise consistency for reliability analyses; back translation for language validity; CVIs for content validity; and EFA and confirmatory factor analysis (CFA) findings for construct validity. We applied an EFA since we used the original scale developed by Zeng *et al.*,[28] We tested the sampling for the factor analysis using the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity; the varimax rotation technique was used for the EFA.[36,38]

The statistical procedures for the CFA were conducted using the LISREL 8.80 program.[39] The CFA model was tested using the maximum likelihood estimates.[40] In the CFA, the goodness of fit of the model was evaluated using multiple criteria. We used Cronbach's α for internal consistency and product moment correlation coefficient for retest.[36,41]

Ethical approval

We obtained (1) permission from its authors to adapt the sexuality scale for women with gynecologic cancer in Turkish patients, (2) approval from the ethics committee of Ankara University, and (3) written permissions from Dr. Abdurrahman Yurtaslan Oncology Research and Training Hospital, Hacettepe University Hospital, and Ankara University Medical Faculty Hospital. Finally, we obtained written informed consent from the patients after explaining the details of the study and assured them of their anonymity.

Results

Sociodemographic characteristics

The patients in the study were aged 52.19 ± 8.08 years and comprised as follows: 52% elementary-level individuals, 84.7% of housewives, and 96% of menopausal women. Approximately 66% had ovarian cancer; 21.3%, endometrial cancer; and 12.7%, cervical cancer; 64.0% were in the third stage of the disease. Further, 67.3% underwent surgery with chemotherapy; 88.9%, platinum-based therapy; and 52%, completed therapy. Approximately 37% had mild depression, and 39.3% showed mild hopelessness [Table 1].

Construct validity

We reversed the points of the negative items for body image (first and fourth) and calculated for data fitness: KMO measure as 0.807 and Bartlett's test value as 985.889. The factor analysis was then deemed suitable for the samples (P = 0.0001).[38]

We used the varimax rotation technique because of the expected subgrouping of the scale into nonrelated factors in the EFA. The scale based on the varimax technique yielded four factors [Table 1]. Factor 1 had a power value range of 0.359–0.815; factor 2, 0.540–0.771; factor 3, 0.454–0.741; and factor 4, 0.556–0.839. We eliminated the items fourth, 10th, 15th, 16th, 18th, 24th, and 25th from the scale since their power loadings were <0.3.[36,42] The eliminated items were as follows: "You are physically unattractive," "Has cancer affected your overall sexual relationship with your husband/intimate partner?," "Are you satisfied with the frequency of sexual intercourse this month?," "Are you worried about your partner's overall sexual function?," "Did you feel any sexual desire this month?," "Have you reached orgasm?," and "Did you feel satisfied after having sex?." We included the sixth item to the second factor since it loaded the second value well and appeared appropriate to be in the second one. However, we reversed the points for the integrity meaningfulness. The value for the base components was higher than 1. The four factors explained 58.62% of the total variance. Further, the total item correlation coefficients ranged from 0.228 to 0.554 [Table 2].

The CFA revealed the following results: χ^2/sd, 1.63; RMSEA, 0.065; GFI, 0.88; AGFI, 0.83; NNFI, 0.95; SRMR, 0.084; and CFI, 0.95. The results indicate that the model fit was at the expected level.[39,40,43] In the model, the standardized coefficients for the relationship between the items and their factors are shown in Figure 1. All of the standardized coefficients were significant at the 0.01 level. The coefficients ranged from 0.33 to 0.85 for the items. Thus, the sexuality scale for women with gynecologic cancer with 18 items and four factors was found to be theoretically and statistically appropriate.

Reliability

In terms of internal consistency of the sexuality scale for women with gynecologic cancer,[37,44] the Cronbach's α was 0.76 for the body image subscale (item number: 5, $\bar{x}$ = 14.186); 0.68 (item number: 3, $\bar{x}$ = 4.726) for the role and relationship issue subscale; 0.71 (item number: 4, $\bar{x}$ = 8.653) for the sexual activity subscale; and 0.82 (item

Table 2: Load values for the sexuality scale for women with gynecologic cancer after varimax rotation

Sub scales for women with gynecologic cancer	Item number	Factor 1	Factor 2	Factor 3	Factor 4	Item-total correlation coefficients	Cronbach's α if item deleted
Sexual function	I20	0.815				0.522	0.712
	I23	0.800				0.468	0.720
	I22	0.797				0.554	0.709
	I19	0.781				0.466	0.713
	I21	0.618				0.356	0.717
	I17	0.359				0.385	0.711
Body image	I1		0.771			0.328	0.705
	I5		0.753			0.453	0.700
	I2		0.744			0.282	0.704
	I3		0.667			0.339	0.705
	I6		0.540			0.228	0.696
Role and relationship Issues	I8			0.741		0.328	0.710
	I7			0.728		0.413	0.704
	I9			0.454		0.304	0.720
Sexual activities	I11				0.839	0.407	0.696
	I13				0.649	0.334	0.706
	I12				0.564	0.277	0.703
	I14				0.556	0.300	0.706
Basic components		3.364	3.069	2.069	2.050		
Variance percentage explained		18.69	17.05	11.49	11.39		
Cumulative variance percentage explained		18.69	35.74	47.23	58.62		

number: 6, $\bar{x}$ = 10.586) for the sexual function subscale. The total Cronbach's α of the scale was 0.72.

In terms of test–retest reliability, there was a very strong relationship between the first and second test findings (P = 0.0001) [Table 3].

Previous studies have suggested that the means and standard deviations should be tested for test–retest reliability even if the correlations were high between two applications.[41] In that context, we found greater similarity between the means and standard deviations of the first and the last applications of the sexuality scale for women with gynecologic cancer [Table 4].

We observed that the patients had positive body image perception when they had higher points for the body image subscale, experienced more role and relationship issues when they had higher points for the role and relationship issue subscale, and serious worsening of sexual activity performance and functioning when they had lower points for the sexual activity subscale and higher points for the sexual function subscale (Turkish version).

Table 5 illustrates the 18 final items in both Turkish and English versions.

Discussion

Sexual problems among women are often ignored.[24] Therefore, it is important to adapt the Sexuality Scale for Women with Gynecologic Cancer, which evaluates the body image, role and relationship issues, and sexual function and activities, for patients with cancer.

The adaptation of a scale specific to one culture for another culture is accomplished in several phases. Therefore, we applied several validity and reliability analyses. A scale is considered acceptable and valid if it measures what it is supposed to measure.[37]

Factor analyses were used in our study to reduce the related data structures into a smaller number of independent data structures, i.e., to identify the variables that supposedly explain the cause of the formation and name it when needed. Thereafter, the unnecessary items were discarded on the basis of the factor loading.[36,45] Herein, we discarded seven items with load values of <0.3 after the EFA.[36,42] The cause for discarding the items may be related to what women understand and feel about sex. Moreover, many Turkish women consider sex as a duty to please their husbands. We added the sixth item into the second factor since it showed a better load and seemed logical to be in the second one. After all the analyses, we found that the 18-item Turkish version of the scale had acceptable values, with the lowest values at 0.359 for the 17th item and 0.454 for the ninth item. When we checked the load values of the other items, we observed meaningful load values in the third, sixth, 12th, 13th 14th, and 21st items. The other items had the best load values (>0.70).[31]

It has been thought that "a scale has been constituted of well fitted and related items as the Cronbach's α has increased." It has been expected to be higher than 0.70.[34,36] We calculated the Cronbach's α, which was higher than 0.70 for the sexual function, sexual activity, and body image

Table 3: The relationships of subgroup points and test-retest points for Turkish version of the sexuality scale for women with gynecologic cancer ($n=40$)

Sub scales for women with gynecologic cancer	Body image	Role and relationship issues	Sexual activities	Sexual function
Body image				
r	0.935*			
P	0.0001			
Role and relationship Issues				
r		0.980*		
P		0.0001		
Sexual activities				
r			0.972*	
P			0.0001	
Sexual function				
r				0.985*
P				0.0001

*Significant at 0.0001

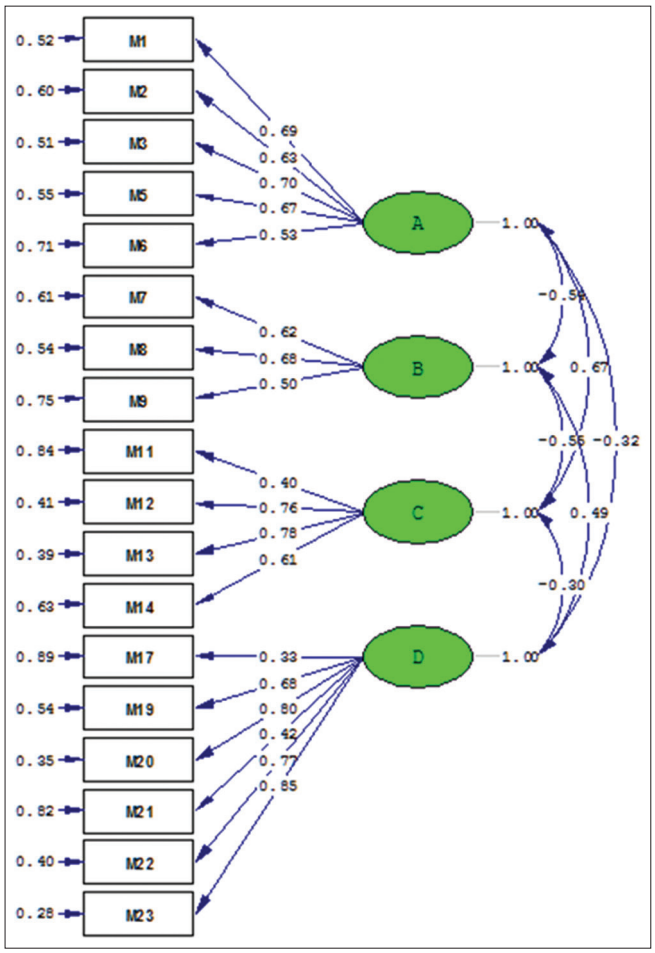

Figure 1: Results of the confirmatory factor analysis: The standardised coefficients for the sexuality scale for women with gynecologic cancer (A: Body image; B: Role and relationship issues; C: Sexual activities; D: Sexual function)

subscales. The value was acceptable at 0.68 for the role and relationship issue subscale.[34,36] Zeng *et al.*,[28] found a Cronbach's α of 0.74 for the sexual activity subscale and 0.77 for the sexual function subscale. These values were nearly close to our values. Their Cronbach's α for the additional issue subscale was 0.86; conversely, we omitted this subscale in our study as suggested by experts. Determining the reliability of a scale necessitates time-wise consistency.

There were some differences in the items between the scale of Zeng *et al.*,[28] and the Turkish version herein. One reason might be that the participants in our study had different sociodemographic and health characteristics. For instance, Zeng *et al.*,[28] conducted their study on patients with cervical cancer; in our study, the majority of the participants were patients with ovarian cancer. Moreover, the number of patients with advanced cancer and taking combination therapy is higher in our study. There might also be some cultural differences. Although both Chinese and Turkish cultures recognize sex as a taboo, their social, individual, and religious differences might have affected the expression of sexual issues.[11]

The limitation of this study is the relatively small sample size (n = 150). This was mainly because of the difficulty for the patients to share private sex issues with the researchers. Future studies should test the sexuality scale for women with gynecologic cancer (Turkish version) in larger populations in different centers and cultures. In this study, the patients with gynecologic problems, not their partners, were interviewed, and the patients' previous sex lives were not evaluated. Furthermore, a second sexual scale was not included to compare the results.

Conclusion

The final sexuality scale for women with gynecologic Cancer (Turkish version) was a valid and reliable tool. The reliability analyses revealed that the Turkish version had high internal consistency and test–retest reliability. Four-factor structures, obtained via the EFA and CFA

Table 4: Frequency of test-retest points for the Turkish version of the sexuality scale for women with gynecologic cancer

Sub scales for women with gynecologic cancer	*n*	Minimum	Maximum	$\bar{x}$	SD
Body image					
Test	40	10.00	20.00	15.575	2.550
Re-test	40	10.00	20.00	15.575	2.630
Role and relationship issues					
Test	40	3.00	10.00	4.700	1.897
Re-test	40	3.00	10.00	4.825	2.135
Sexual activities					
Test	40	6.00	15.00	10.250	2.415
Re-test	40	6.00	15.00	10.175	2.416
Sexual function					
Test	40	6.00	22.00	10.700	4.297
Re-test	40	6.00	23.00	11.025	4.758

Table 5: Turkish and English of the sexuality scale for women with gynecologic cancer

Items for women with gynecologic cancer	
English version	**Turkish version**
Body image	Vücut şekli
You dislike your appearance	Dış görünüşünüzden memnun değilsiniz
You like your look just the way it is they are	Kendi görünüşünüzü olduğu gibi kabul ettiniz
Most people would consider you good-looking	Çoğu insan sizin hoş göründüğünüzü düşünür
Your body is sexually appearing	Vücudunuzu seksi buluyorsunuz
Has cancer affected your sense of femininity?	Kanser, kadınsılığınızı etkiledi mi?
Role and relationship issues	Rol ve ilişki sorunları
After cancer treatment, has cancer affected the way your husband/intimate partner feeling about you as a woman?	Kanserden sonra, eşinizin/kocanızın size kadın olarak bakışında bir değişme oldu mu?
Has cancer affected your role as wife/sexual partners?	Kanser sizin kadın/eş olarak durumunuzu etkiledi mi?
Has cancer affected your role as a mother?	Kanser, annelik rolünüzü etkiledi mi?
Sexual activities	Cinsel eylemler
Was "having sex" an important part of your life	"Sevişmek", hayatınızda önemli bir yer tutar mıydı?
Have you had sexual activity (not limited to sexual intercourse) this month?	Bu ay içinde herhangi bir cinsel etkinliğiniz oldu mu (cinsel birleşme ile sınırlı değil)?
Did you enjoy sexual activity this month?	Bu ay içinde herhangi cinsel etkinlikten zevk aldınız mı?
How frequently did you have sexual intercourse for this month?	Bu ay ne kadar sıklıkta cinsel birleşmeniz oldu?
Sexual function	Cinsel fonksiyon
Are you worried about your overall sexual function?	Kendinizin genel cinsel gücünüzden endişe duydunuz mu?
Did you feel dryness in your vagina during intercourse?	Cinsel birleşme sırasında dölyolu/vajinanızda kuruluk oldu mu?
Have you had any pain or discomfort during sexual intercourse?	Cinsel birleşme sırasında hiç ağrı ya da rahatsızlık oldu mu?
Have you experienced bleeding during intercourse?	Cinsel birleşme sırasında kanama oldu mu?
Did you feel that intercourse was bothersome because your vagina you felt too small?	Cinsel birleşmenin dölyolu/vajinanızı küçük hissetmeniz yüzünden rahatsız edici/zorlayıcı olduğunu düşündünüz mü?
Were you having difficulty in completing sexual intercourse?	Cinsel birleşmeyi tamamlamakta sıkıntı yaşadınız mı?

and used to determine construct validity, were acceptable, significant, and highly valid.

The sexuality scale for women with gynecologic cancer can be used by nurses, doctors, midwives, and psychologists in clinics to evaluate the sexual life of patients. The Turkish version can also be used in studies on the sexual lives of women with gynecologic cancer in Turkey. Moreover, this scale can be translated into various languages and can be utilized in other countries or cultures. Gaining more information on the sexual problems of women with gynecologic cancer in various cultures will enhance the scientific literature.

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Conflicts of interest

There are no conflicts of interest.

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Appendix: Sexuality scale for women with gynecologic cancer

Body image

During the past month	Definitely agree	Agree	Disagree	Definitely disagree
1. You dislike your appearance	□	□	□	□
2. You like your looks just the way they are	□	□	□	□
3. Most people would consider you good- looking	□	□	□	□
4*. You are physically unattractive	□	□	□	□
5. Your body is sexually appearing	□	□	□	□

Role and relationship issues

During the past month	Very	Average	A bit	Not at all
6. Has cancer affected your sense of femininity?	□	□	□	□
7. After cancer treatment, has cancer affected the way your husband/intimate partner feeling about you as a woman?	□	□	□	□
8. Has cancer affected you role as wife/sexual partners?	□	□	□	□
9. Has cancer affected your role as a mother?	□	□	□	□
10*. Has cancer affected your overall sexual relationship with your husband/intimate partner?	□	□	□	□

Sexual activity (not limited sexual intercourse and including any intimate activities (e.g., holding hands, kiss, embrace, and touching) in a sexual nature not affection nature

During the past month	Very	Average	A bit	Not at all
11. Was "having sex" an important part of your life?	□	□	□	□
12. Have you had intimate activity this month?	□	□	□	□
13. Did you enjoy sexual activity this month?	□	□	□	□
14. How frequent did you have sexual intercourse for this month?	□	□	□	□
	5 times or more	3-4 times	1-2 times	Not even once
15*. Are you satisfied with the frequency of sexual intercourse in this month?	□	□	□	□
	Very	Average	A bit	Not at all

Sexual function

During the past month	Very	Average	A bit	Not at all
16*. Are you worried about your husband/intimate partners' sexual function?	□	□	□	□
17. Are you worried about your own sexual function?	□	□	□	□
18*. Did you have sexual desire in this month?	□	□	□	□
19. Did you feel the dryness of your vagina during intercourse?	□	□	□	□
20. Have you had any pain or discomfort during sexual intercourse?	□	□	□	□
21. Have you experience bleeding during intercourse?	□	□	□	□
22. Did you feel that intercourse was bothersome because your vagina felt too small?	□	□	□	□
23. Were you able to complete sexual intercourse?				
24*. Have you reached orgasm?				
25*. Did you feel satisfied after having sex?				

Additional items

Compared to before you were diagnosed with gynecologic cancer	Big changes	Some changes	Little changes	No changes
26**. Has your interest in sexual activity changed?	□	□	□	□
27**. Has your frequency of your sexual activity changed?	□	□	□	□
28**. Has your preference to types of sexual activity changed?	□	□	□	□
29**. Has the dryness of your vagina changed?	□	□	□	□
30**. Do you feel that the size of your vagina changed?	□	□	□	□
31**. Has the pain you experience during sexual intercourse changed?	□	□	□	□
32**. Has the quality of your sexual relationships changes?	□	□	□	□

*We eliminated the items 4th, 10th, 15th, 16th, 18th, 24th, and 25th from the scale since their power loadings were <0.3, **We removed additional items (26th, 27th, 28th, 29th, 30th, 31th, 32th) in line with the suggestions of the experts