Sex Disabil (2016) 34:49–62
DOI 10.1007/s11195-015-9411-y

ORIGINAL PAPER

Evaluation of Sexual Dysfunction and Affecting Factors in Turkish Women with Gynecological Cancer

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Published online: 28 August 2015
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Abstract This study was performed to determine the prevalence of sexual dysfunction (SD) and affecting factors in women with gynecological cancer, in a cross-sectional, descriptive and qualitative design. The study was held during the period between May 1st and June 30th 2013, in women diagnosed with gynecological cancer and the sample size consisted of 230 patients. The collection of data employed Patient Information Forms, Index of Female Sexual Function (IFSF) and In-Depth Interview Forms. In-Depth interviews were conducted with 20 women with SD. The data were evaluated by Mann–Whitney U, Kruskall-Walls, Multiple Regression and Content Analysis techniques. The average IFSF score of women diagnosed with gynecological cancer was revealed to be 20.36 ± 10.32, and SD was observed in 80 % of these women. According to the collected data, more cases of SD were observed in women who are 50 years of age or older, with low levels of education (primary school), unemployed, married through arrangement, married for more than 30 years, diagnosed with endometrial cancer, and underwent surgical operations ($p < 0.05$). At the end of the interviews conducted with these women, it was concluded that body image, sexual role, sexual functions and reproductivity, representing the four major dimensions of sexual health associated with diagnosis and treatment process were adversely affected at a great extent. SD is a common problem in patients with gynecological cancer. In this respect, it is of utmost importance for health professionals to adopt a holistic approach towards the sexual problems of women and initiate multidisciplinary attempts for their solution.

Keywords Women · Gynecological cancer · Sexual dysfunction · Turkey

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Introduction

Currently, cancer is considered a chronic disease that affects physical, psychological and sexual health. A diagnosis of cancer, combined with subsequent medicinal and surgical therapies administered, affects life detrimentally and presents significant challenges [1, 2]. According to the American Cancer Society, 7.6 million people lost their lives to cancer during 2008 and this mortality figure is expected to reach 12.9 million, in 2030 [3]. Cancer-related deaths in Turkey rank second among the widest reported causes of death. In particular, 16 % of women pass away for reasons connected to cancer, and gynecological cancer comes after breast cancer within the highest global mortality rates associated with cancer [4]. According to the Turkish Cancer Survey results, which are representative of Turkey, gynecological cancers, led by ovarian, endometrial and cervical cancers have a major share in the most commonly encountered types of the cancer observed in women of the country [5].

Gynecological cancers have adverse effects on women's health. While the surgical procedures conducted and issues occurring in the aftermath of treatments like radiotherapy and chemotherapy affect the physical, structural, hormonal and psychological well-being, concerns about family and work life and ambiguities about life in the future deteriorate the social and moral integrity in women [6]. Studies performed show that the worst effect of being diagnosed with cancer and taking the related therapies is on sexual health [1, 2, 6]. Since reproductive organs are the main identifiers of womanhood and as such, have a paramount role to play in the formation of body image and self-respect. Sickness or absence of these organs may lead to the feeling of loss of identity and of being defective or incomplete [6].

In addition, studies indicate that a majority of women diagnosed with gynecological cancer face sexual dysfunction (SD) in the form of loss of sexual desire, orgasmic disorder, dyspareunia or decrease in frequency of sexual intercourse, following surgical or medical treatment [7–9]. In the meantime, women no longer find themselves sexually appealing as a partner because they feel less of a female, by losing their fertility, as a result of the surgical procedures followed as part of cancer treatment [1, 2, 6, 7]. Cancer patients may behave shyly about asking for informed help on sexual matters, partly because of the cultural restraints and partly because of reticence. That is why, the need is prominent for a multidisciplinary teamwork, to enable going around the individual, in bio/psycho-social and cultural terms, for bringing solutions to sexual problems.

This study was carried out to explore the SD prevalence in women with gynecological cancer and to evaluate the associated factors.

Materials

Study Design

The study was conducted to evaluate SD and affecting factors in Turkish women with gynecological cancer, in a cross-sectional descriptive and qualitative design. During the period between May 1st and June 30th, 2013, the study was performed at Outpatient Clinic Gynecological Medical School Hospital of Baskent University in Ankara. Patients admitted to outpatient clinic gynecological within 1 year have constituted the population of this study (N = 700). Its sampling size, was calculated according to the sample size

computation technique where population was known. In order to calculate the sample size, a simple random sampling method was used. The sample was completed with 95 % confidence and out of 230 subjects, at least 227 were calculated.

The sample of study was composed of women who: (1) were diagnosed with gynecological cancer and stage I, stage II and stage III; (2) were sexually active and have healthy partners; (3) volunteered for the study; (4) had no hearing or speech problems that would render communication difficult; (5) had no known psychiatric disorders; (6) had undergone cancer treatment (i.e. Chemotherapy-CT, Radiotherapy-RD and surgery) at least 12 weeks ago without any complications; and (7) had not had any different systemic disease or disorder that would have interfered with sexual function.

The study protocol was approved by the Research and Ethics Board of Baskent University, for the conduct of the study. The women participating in the study were informed about its subject and purpose and were required to give their informed consents both in writing and verbally after having received the necessary reassurances that all personal information belonging to them would be kept confidential, in line with confidentiality and privacy rules.

The independent variables of the study consisted of women's individual, obstetric, diagnostic/therapeutic characteristics and pre- and post-disease sexual health traits, while Index of Female Sexual Function (IFSF) score averaging was the only dependent variable.

Data Collection

The main data collection tools used for the purpose of this study are; Patient Information Forms, IFSF and In-Depth Interview Forms.

The Patient Information Form

The patient information forms were prepared in compliance with the literature and included a total of 52 questions to be directed to and answered by the female respondents for determining their socio-demographic (16 questions) and obstetric (7 questions) characteristics, the diagnostic and therapeutic procedures they were subjected to (12 questions) and their sexual health conditions, both before and after the disease [1, 2, 7–9].

The Index of Female Sexual Function

The IFSF, which has been developed by Kaplan et al. [10] to consist of nine questions, inquires the sexual health of women during the recent period of 1 month. The reliability and validity testing of the scale in Turkish was performed by Yilmaz and Eryilmaz, in 2004. The study performed by Yilmaz and Eryilmaz [11] has indicated the Cronbach's Alpha reliability coefficient is 0.82. In this study, the Cronbach's Alpha reliability coefficient was found to be 0.94. The average cut-off point of the scale is 30 (min = 5, max = 45). The average of scores derived from the scale calculated at or below 30 is indicative of SD presence. The scale is formed by the three sub-dimensions of discomfort during sexual intercourse, frequency of sexual intercourse/libido and sexual satisfaction. The sub-dimensional average score for discomfort during sexual intercourse falls in the range of 0–10, while that for frequency of sexual intercourse/libido and sexual satisfaction remains in the ranges of 3–20 and 2–15, respectively [11]. SD tends to increase as the scale's average scoring tend to decline.

The In-depth Interview Form

The semi-structured in-depth interview forms that were developed for the purpose of identifying the impacts of gynecological cancers on sexual health of women consisted of four open-ended questions, which evaluate the body, image, sexual role, sexual functions and reproductivity in women with cancers [6]. The semi-structured interviews were recorded on voice recorders and analysed, subsequently.

Statistical Analysis

The analysis of data obtained from the study used the SPSS version 15.0 software package for statistics. For evaluation of quantitative data, number, percentage, standard deviation, mean value, and for similarity of distribution in two independent groups Mann–Whitney U-testing was utilized. In more than two independent groups Kruskall-walls, Mann–Whitney U-test with Bonferroni adjustments and Multiple Regression techniques were employed. The statistical level of significance was adopted to be $p < 0.05$. The content analysis was used to analyse qualitative data concerning the sexual health problems of women.

Results

Distribution of Women Socio-demographic Characteristics and by IFSF Score Averages

The study was conducted with 230 women and their mean age was 48.2 ± 10.3 (min = 30, max = 75), and 34.8 % of them were university or higher graduates. 98.4 % of the women were married and from the married group the mean age was 22.1 ± 6.2 (min = 16, max = 45). 8.3 % of the women declared that they have received sexual guidance. In addition, the ratio of women who have stated that they had a change in their sex lives after the disease remains pretty high (66.1 %). 46 % of the women said they had sexual aversion before the disease and 54.3 % revealed their frequency of having sex to be once a week, when they were questioned about their sexual health for the period before the disease. In the post-disease period, however, most of the women (47.4 %) reported a decline in frequency of having sex revealing a tendency towards engaging in sexual activity once in a month or less.

Table 1 demonstrated that the IFSF average score for these women is 20.36 ± 10.32 and 80 % of them had SD. The sub-dimensional average score for discomfort during

Table 1 IFSF and the average range of subscales cores (n = 230)

	X ± SD	Minimum	Maximum
IFSF Subscales			
Quality of sexual intercourse	5.62 ± 3.44	2	12
Frequency of sexual intercourse/Libido	7.77 ± 3.60	4	18
Sexual satisfaction	6.93 ± 3.88	3	16
Total IFSF	20.36 ± 10.32	9	43

sexual intercourse was 5.62 ± 3.44, while that for frequency of sexual intercourse/libido and sexual satisfaction were 7.77 ± 3.60 and 6.93 ± 3.88.

Table 2 demonstrated that Bonferroni correction was applied to the analysis performed for determining which of the groups involved in the study had significant differences between them. A significant relation was found to exist between the women's age distributions and their IFSF average scores ($p < 0.001$). The IFSF average scores were observed higher in the age group of 30–39 than the age group of 50 or older ($p < 0.05$). This suggests that women of the 50 or older age group have more SD. A significant relation was also found between the education levels and IFSF average scores of the women inferred ($p < 0.001$), as the IFSF average scores of graduates of colleges or higher institutions of education were much greater than primary school graduates ($p < 0.05$). The IFSF average score for working women (23.28 ± 11.12) was observed to be much higher than non-workers (18.59 ± 9.41; $p < 0.001$), and of married women, to be much higher in those entering into a consented (love) marriage (22.16 ± 10.69) than those entering into prearranged marriage (18.65 ± 9.76; $p = 0.010$). There was a significant relationship between the length of marriage and IFSF average score for women ($p < 0.001$), as revealed by the higher IFSF scores observed in wives 0–9 years old, compared to the 30 years or older. It was found that there was not a statistically

Table 2 The range of mean scores of IFSF according to sociodemographic characteristics of the patients (n = 230)

Variables	n (%)	X ± SD	Statistical analysis
Age (years)			
30–39	50 (21.7)	27.10 ± 10.51	KW = 30.832
40–49	77 (33.5)	20.82 ± 10.20	$p < 0.001$*
≥50	103 (44.8)	16.75 ± 8.55	
Education satatus			
Primary school	69 (30)	16.00 ± 8.91	KW = 21.334
Secondary school	24 (10.4)	19.79 ± 8.56	$p < 0.001$*
High school	57 (24.8)	21.25 ± 10.15	
≥University	80 (34.8)	23.66 ± 10.86	
Employment			
Employed	87 (37.8)	23.28 ± 11.12	z = 3.202
Unemployed	143 (61.7)	18.59 ± 9.41	$p < 0.001$*
Marriage type (n = 228)[a]			
Arranged marriage	115 (50.4)	18.65 ± 9.76	z = 2.576
Love marriage	113 (49.6)	22.16 ± 10.69	$p = 0.010$*
Duration of marriage (years) (n = 228)[a]			
0–9	30 (13.2)	27.97 ± 10.89	KW = 28.530
10–19	45 (19.7)	23.29 ± 11.12	$p < 0.001$*
20–29	73 (32.0)	19.58 ± 8.72	
≥30	80 (35.1)	16.66 ± 9.25	

* Significance level was accepted as $p < 0.05$

[a] This question is answered only those who are married

significant difference between the perception of income and family type among the studied women ($p > 0.05$).

Distribution of Women Patients by Medicinal Properties

Table 3 showed that a significant relationship was found to exist between the women's medical diagnoses and their IFSF average scores ($p < 0.001$) and the IFSF average scores of those diagnosed with vulvar cancer were observed to be higher than those diagnosed with endometrial cancer ($p < 0.05$). Likewise, the IFSF average score was found to be higher in women who did not undergo surgical intervention (25.38 ± 10.49) than in those who did (18.12 ± 9.45; $p < 0.001$). As regards to the surgical interventions, it was observed that the IFSF average score of women who underwent Total Abdominal Hysterectomy-Bilateral Salpingo-Oophorectomy (TAH-BSO) was pretty low. However, no statistically significant difference could be found between the type of operation received and the IFSF average score ($p > 0.05$). Moreover, no statistically significant difference could be found between the particular stages of the disease clinically monitored and the IFSF average score ($p > 0.05$).

Multiple Regression Analysis for IFSF Average Scores for Women Using Independent Variables

The evaluation of the effects of IFSF average scores in women observed for level of education, working status, type of marriage, years of marriage, medical diagnosis and surgical intervention status, on SD using the multiple regression analysis method was

Table 3 The range of mean scores of IFSF according to diagnosis and treatment-related characteristics

Characteristics	n (%)	X ± SD	Statistical analysis
Cancer type			
Endometrial cancer	101 (43.9)	17.99 ± 9.89	KW = 16.924
Ovarian cancer	87 (37.8)	21.11 ± 9.72	$p < 0.001$*
Cervical cancer	38 (16.5)	25.18 ± 11.12	
Vulvar cancer	4 (1.7)	26.75 ± 14.15	
Disease stage			
Stage I	132 (57.4)	21.55 ± 10.43	KW = 4.932
Stage II	61 (26.5)	18.70 ± 10.54	$p = 0.085$
Stage III	37 (16.1)	18.86 ± 10.07	
Surgical interventions experience			
Yes	159 (69.1)	18.12 ± 9.45	z = 4.777
No	71 (30.9)	25.38 ± 10.49	$p < 0.001$*
Operation type (n = 156)[a]			
TAH	16 (10.1)	23.56 ± 9.93	KW = 9.847
TAH-BSO	139 (87.4)	17.13 ± 8.81	$p = 0.070$
Oophorectomy	4 (2.5)	30.75 ± 14.97	

* Significance level was accepted as $p < 0.05$

[a] This question is answered only those who undergo an surgical operation

found in Table 4. Working status, years of marriage, type of marriage and medical diagnosis had no effects on sexual functions ($p > 0.05$). According to the results of further analysis, the ages, levels of education of the women and whether they underwent a surgical intervention were found to form a significant effect on SD ($p < 0.05$). Independent variables were found to be determinative on SD, at a rate of 17 % ($p < 0.05$).

Qualitative Data Concerning the Sexual Health Problems of Women

Women were taken to in-depth interviews concerning the body image, sexual role function, sexual functions and reproductivity, affected adversely due to the cancer diagnosis and treatments performed.

Body Image

The female respondents were asked, "How did your illness and the treatments performed to cure it affect your external image?" Most women answered that the excessive fat they gained throughout the treatment and the scars and hair loss caused by the operations they had to undergo devoured their image, while others said they considered themselves lucky for having a chance to continue their existence among the living. At the end of the treatment period, the women were proud of themselves that they made it through this difficult time, and they seemed to gain strength with these experiences.

One of the respondents expressed, "I received surgery thrice and had stitch marks left all over my body, massive hair loss and excessive weight gain, not to mention my branching out intestines. I used to enjoy spending time in front of the mirror, but now, I feel torn, worn and incomplete, which is why I no longer want to see my image there." (42 years old, with ovarian and endometrial cancer).

Another respondent said, "My sister also received the same diagnosis and underwent the same therapy before me and she lost her hair throughout this process. Making an example of what she went through, I had all my hair cut, but it is completely different when you come to experience it. The treatment part was so hard to bear that I turned in upon myself, getting absolutely no taste from anything, grounding myself to home for a month after release, wearing the same lousy socks, slippers and pyjamas every single day, which

Table 4 Total IFSF mean score and results of multiple regression of independent variables (multiple regression analysis-enter method)

Independent variables	Std. β	*t*	*p*
A (fixed)		20.815	0.000*
Age (≥50 years)	−.179	−2.168	0.031*
Education status (primary school)	−.201	−2.908	0.004*
Employment (unemployed)	−.026	−.360	0.719
Duration of marriage (≥30 years)	−.006	0.066	0.947
Marriage type (arranged marriage)	0.026	0.350	0.727
Cancer type (endometrial cancer)	0.086	1.400	0.163
Surgical interventions experience (yes)	−.226	−3.336	0.001*

$R = 0.444$, $R^2 = 0.197$, Adjusted $R^2 = 0.171$, $F = 7.711$, $p < 0.001$

* Significance level was accepted as $p < 0.05$

defined how totally messy I was, so I'd never let anyone see me in that state." (31 years old, with ovarian cancer).

Another respondent's testimonial was as follows, "I feel sort of happy because my illness was in my ovary, which could be my breasts, in which case, they would be gone just like my ovary. I consider myself one of the God's chosen, since I lost nothing from my external image." (49 years old, with endometrial cancer).

Sexual Role

The women were asked "How do you think the treatment you received and its consequences affect you as a woman, a spouse/partner or a mother?" and in response, many pointed to their reproductive organs as the main symbol of femininity, adding also that they can't find time to care for their children as their mothers, which was why they were worried; that is, needing to leave them behind all alone.

One respondent said, "During chats, I tell my pals that "my womb has been taken away, so cheers, no more painful periods!" and they say "wow, isn't it like loosing your eyes, ears, arms or legs? If you are not a woman any more, are you a man now?", which scares me like hell, given that in fact, I would feel that way. Recently I started to feel different about myself and think whether I am a woman or not…from time to time, I have this sobbing fit coming out of nowhere, so I am receiving psychiatric support cause I want to get better". (48 years old, with cervical cancer).

One of the respondents said, "I got my womb removed, once you loose a limb there is no remedy to put in place of it, even though nothing seems to have changed for an outsider, I know deep inside that I will not be able to bleed any more, deliver any more…Do I even have any hormones? Where should I put myself? I have no idea", says another respondent, turning her eyes away in expression of her feelings. (34 years old, with endometrial cancer).

Another respondent said, "I have really tough times as a mother, my baby is too little and I can't give enough care to him, get him around my arms, sleep with him, cause there is this risk of infection. I have certain things to do for my children. I need to raise them up as fast as I can so that they can take care of themselves, when I'm gone", and cried, as an expression of her feelings (42 years old, with ovarian and endometrial cancer).

Sexual Functions

When asked "How did your diagnosis and the subsequent treatments affect your sexual life, compared to before?" the women indicated worries especially centred around sexuality.

One of the respondents said, "I feel like empty because my womb has been removed and my husband says that he feels as if in a void during the intercourse. My husband favours sexuality most so, what if I cannot satisfy him, would he run away? Start feeling strange from me? That is what I wonder. I was left with nothing in terms of sexual desire after the operation and I have sex only to fulfill a duty for my husband. I want to learn about stuff like artificial uterus implantation, which would fill in the gap left by my missing womb, just to please my husband." (36 years old, with cervical cancer).

Another respondent says, "I am 30 and newly married. When can I function as a real wife after this operation? My husband will have expectations. Will I be able to satisfy his needs? If so, when would that happen? Or, is this the end of our story as sex partners? That forces me to think deeply. Will I be happy ever again? Will I make him happy? I have

intermittent crying jags, so I want to get psychiatric support", and started to cry. (30 years old, with ovarian cancer).

Another respondent says, "My time is over now, it is the young ones to ask about this stuff. In fact we don't do things like that. We have our grandchildren and their children now. Sometimes, my man happens to think about and snatches, but, nothing turns out to be as in the good old days now." (56 years old, with endometrial cancer).

Reproductivity

When women were asked, "How did your condition and the cures applied for treating it afterwards affect your fertility?" especially the younger ones with no children said their uterus was of grave importance to them and they had great worries about losing it, once and forever.

One respondent commented, "I am newly married and won't be able to turn my husband into a dad. I was literally collapsed when I heard about it for the first time and then started to think about myself above anything else only after when I managed to give up the idea of having a baby. We have a cancer experience in my family, which is why I may be considered as prepared." (29 years old, with ovarian cancer).

One of the respondents said, "That I would never have a child of my own in my whole life is my greatest grief. I painfully regret it. I wish have delivered one, before I caught this disease. When I asked my husband if he feels sorry for the lost chance of having our own baby, he said we could always adopt one, if we want too much. But was this really his true mind or just a condolence? You know, he should wish a child of his own blood to carry his generation into the future, right?" (30 years old, with ovarian cancer).

Another respondent said, "My treatment goes just fine, so I think I'll get over with this. We already have a child. May God bless him a good long life. Now that they removed my womb, I am left with no reason to worry about what would happen if I get pregnant again, any further. Thanks to this opportunity, we will feel more comfortable with having sex, my husband and I. You know this is what completely relieves me, now." (41 years old, with endometrial cancer).

Discussion

The World Health Organization defines sexual health as a state of physical, emotional, mental and social well-being in relation to sexuality, rather than merely the absence of disease, dysfunction or infirmity [12]. Therefore, sexuality is a concept that has broader meanings that go beyond just having sexual intercourse [7]. The biggest negative impact of medicinal and surgical treatments applied to gynecological cancers are known to bring concerns primarily and particularly with sexual health [8, 9]. In this case, the average IFSF score of women diagnosed with gynecological cancer revealed to be 20.36 ± 10.32, and SD was observed in a vast majority (80 %) of these women (Table 1). Lutgendorf et al. [13] reported that the post-operative rate of SD in women with gynecological cancers varies between 20 and 100 %, while Corney et al. [14] observed post-operative occurrence of SD in 76 %. Bourgeois et al. [15] suggested that more than half of women with the same condition had SD characterised primarily by dyspareunia and loss of libido. These results suggest that gynecological cancers in women substantially influence the sexual health adversely.

An examination of the IFSF sub-scale scores yielded the presence of discomfort during sexual intercourse, reduction in frequency of sexual intercourse and reduction in libido and satisfaction as major constituents of SD (Table 1). Constantly declining sexual desire and libido are among the most common problems. The symptoms leading to changes in body image, fatigue, nausea, vomiting, pain, intense stress and physical weakness were blamed for causing reductions in sexual desire [16]. During the study interviews, the women stated that problems associated with cancer treatment, such as hair loss, weight gain, and nausea, affected their external appearance in a negative manner. This status, in turn, led to social isolation, which is noteworthy in this study. These problems may trigger anxiety and depression in the individuals experiencing them, and literature suggests that this would have negative effects on sexual desire, excitation and orgasmic abilities [1, 2, 9].

In some studies, it has been indicated that women with gynecological cancers experience SD in the forms of reduced rates of sexual arousal and orgasms, along with increased rates of painful intercourse. The pain thus formed ruins desire and excitement, which, in turn, disrupts the woman's self-confidence and leads her to become fearfual of rejection by her partner [1, 9, 17]. Therefore, when delivering professional guidance to patients with sexual problems, it is essential that the main concerns about sexuality be identified first. At this point, it is advisable for health professionals who have a crucial roles to play in providing guidance on sexual health to consider the use of PLISSIT model, in order to be able to proficiently provide guidance in case of SD and related sexual complaints. The PLISSIT model prompts the health professionals to ask their clients about their sexual concerns, informing them about the effects taht treatments may have on their sexual function, providing suggestions about how to cope with dysfunction that may arise, and guiding them to the relevant clinical wards for further intervention, if there is need [18].

In this study, 46 % of women stressed that they experienced the symptoms of SD, hence sexual aversion, before the development of cancer. Sexual Health Survey for Turkey (SHST), displayed one out of every three individuals suffered SD at any period of their lives. Despite this fact, the rate of those who receive proper treatment for their sexual problems was as low as 8 % [19]. Demirezen et al. [20], determined the SD prevalence in women under the age of 40 to be 67.5 %. This rate was 48.3 % in a respective study [21]. These results prove that despite the high levels of SD occurrence, in Turkey, the percentage of patients who seek professional help tends to be low. Indeed, in this study these findings support that the majority of women experience SD in the disease process, although only 8.3 % of the women take sexual advice.

Heavily impounded by various societal, cultural and social factors and suppressed by predominant religious beliefs, sexuality continues to be a matter that is challenging to discuss openly and is currently treated as a taboo [22]. According to the SHST, sexuality is still a learning topic, information regarding sexuality is acquired from media, through the use of computers and the Internet and from friends, in this country [19]. Yet, sexual training should primarily and principally start in the family and then proceed in proportion to the progression of the child's growth through interpersonal encounters and then in formal education, and continue for the rest of life. This training should not be limited to the cognitive level only, but encompass all related attitudes, values and behaviours. However, the parents and teachers feel reticent about speaking of sexuality and view it as a disgrace, which causes them to act in a restrictive mood and attitude. This fact, in turn, may prevent individuals from expressing their sexual problems to health professionals at later ages [19]. Yet, the recent studies indicate that women do feel a strong need for receiving sexual guidance, especially during gynecological cancer treatment [23, 24]. Therefore, health professionals should encourage their patients and spouses to be receptive to guidance on

sexual matters. Nonetheless, the health professionals mostly tend to regard sexuality as something outside the health domain, due to their own traditional beliefs and attitudes. Consequently, sexual health is never discussed, unless the patients explicitly express problems [25]. Therefore, health professionals caring for patients with gynecological cancers have to be well aware of their own beliefs and attitudes about sexuality first.

We found that SD increases with age. The most significant difference is between the women of the age group 30–39 and 50 or older ($p < 0.05$; Table 2). This finding in gynecological cancers is in accordance with the literature [1, 20, 24]. Aging associated with decreased functional capacity in the genital organs and the feeling of fading beauty and attractiveness in women affect sexual health adversely [23, 24]. The diagnosis of a gynecologic cancer and related therapeutic interventions may enhance the effects of aging. One of the myths widely accepted in society is the belief that sexual life would end with the cessation of fertility at late ages [19]. The statement of a 56-year old lady with endometrial cancer highlights this point. She says,

> My time is over now, it is the young ones to ask about this stuff. In fact we don't do things like that. We have our grandchildren and their children now. Sometimes, my man happens to think about and snatches, but, nothing turns out to be as in the good old days now.

The belief paraphrased by this speech is what causes individuals who suffer from SD at late ages to abstain from attempting to find solutions and view the problem as part of the natural course of life. In accordance with the literature, SD was observed at higher levels among non-working women with a low level of education (Table 2) [4]. Previously, Keskin and Gumus [1] found that low level of education and being a non-worker collectively boost the SD occurrence frequency in patients having undergone hysterectomy and mastectomy, which is parallel to these findings. The role that community groups leading customary lives within patriarchal family structures in this country ascribe to women is that of wife and mother; girls are usually wed in early ages, as a result of which, they experience a rise in social status, but this is at the expense of any means of access to social and professional realms, for further progression as a person [19]. While at present, women living in certain districts have no opportunities to access education in any form or at any level; only 28.8 % of women join the workforce, in Turkey. Those who have joined the national workforce, on the other hand, are employed at underpaid jobs without any social assurances [26]. This sociological setting negatively affects the ways in which women articulate their sexuality. At this end, it is considered appropriate for health professionals to use Kaplan's Model, in evaluating the existing state of the patient's sexual function, her overall health status, family and psychosocial history and past sexual experiences and presenting suggestions concerning the patient's problems [18].

In this sample, most of the participants (50.4 %) had prearranged marriage and their mean IFSF score was lower than those who had consented marriage (Table 2). This finding indicates that women who had a prearranged marriage suffer SD more than their peers who chose to become part of a conjugal community with free will and consent. Prearranged marriages would seem to predispose the couple to more discordance, which in turn, would worsen sexual problems.

SD increases in women who have been married for at least 30 years ($p < 0.05$; Table 2). As a woman's age increases, the occurrence rate of SD increases, and this disease has the potential to increase the incidents of births, therefore increasing the number of children in a household. Also, it has been associated with increasing the number of perineal traumas at birth.

In literature, SD in gynecological cancer, its cases vary greatly depending on the type, stage, and clinical course of action adopted to treat the disease [8, 9, 27–29]. In this study, women diagnosed with endometrial cancer had more SD than women diagnosed with vulvar cancer ($p < 0.05$). No statistically significant difference was observed between the disease stage and the IFSF average score ($p > 0.05$). In addition, SD rates were higher in women who have undergone surgical intervention, especially the TAH-BSO (Tables 3, 4). In previous studies, most women perceive the changes made to or eventual loss of their reproductive organs as an overall loss of their womanhood and fertility. These studies showed that the changes or loss of their reproductive organs affected their sexual functions in an adverse manner [3, 9, 13, 27, 28]. A 48-year old woman who was affected by endometrial cancer stated: "I got my womb removed, once you loose a limb there is no remedy to put in place of it, even though nothing seems to have changed for an outsider, I know deep inside that I will not be able to bleed any more, deliver any more…Do I even have any hormones? Where should I put myself? I have no idea." This study provided evidence that some participants regarded the loss of their uterus as a loss of 'womanhood' in addition to loss of reproductive function. Our society's view is that a woman should have a uterus and should be able to give birth. Therefore, the loss of a woman's uterus is generally considered a loss in her role as a woman. Many of the women who participated in this study reported that they were not sufficiently informed by health care providers on the effects of gynecological cancer on their sexual performance [30]. Therefore, it is important that health care providers give guidance and well informed information to gynecological cancer patients on the effects the disease can have on their sexual performance.

Conclusions and Recommendations

The results of the study demonstrate a high level of sexual problems in women with gynecological cancer. These problems are still considered a taboo, and only a small portion of the women sought sexual guidance. Although the women's age, educational level, employment status, type and years of marriage, gynecological diagnoses and surgical interventions all had varying yet contributory effects on SD. Based on the same qualitative findings, it was further found that the four dimensions of sexual health which include, body image, sexual role, sexual functions, and reproductivity were affected at a great extent as a result of diagnosis and treatment. There is urgent need to improve the communication between patient and health provider in order to enhance the patients' sexual function. Patients should be kept well informed about their illness including any issues that would impact sexual life. In order to make generalization possible, the study can be repeated with a larger sample.

Limitations

The first limitation is that the participants' views may not represent the views of a wider population of patients in hospitals in Turkey. Second, the patients had some emotional moments when answering sensitive questions. Since the interviews were recorded, the participants may be reluctant to complete further questioning, indicating a need for a more private hospital environment. Finally, some patients' treatment extended over a long period of time, creating difficulties for them to remember their experiences.

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