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Sexual dysfunction among patients with endometrial cancer at a tertiary training public institution: A cross-sectional study

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Abstract:

OBJECTIVE: Studies on Sexual dysfunctions among gynecologic cancer after treatment are sparse in the Philippines and data on sexual dysfunction varies greatly within the gynecologic oncology literature. This study aims to determine the sexual dysfunction among patients with endometrial cancer managed at a tertiary training public institution.

METHOD: This research was a cross-sectional study, which utilized a self-administered, validated Filipino version of the Female Sexual Function Index (FSFI) questionnaire in assessing the different domains such as desire, arousal, lubrication, orgasm, satisfaction and pain. Descriptive statistics such as frequency and percentages were used in determining the prevalence of sexual dysfunction in patients with endometrial carcinoma while Kruskal Wallis test and Spearman Rank Correlations were used to determine the association of sexual dysfunction with age, body mass index (BMI), duration and stage of endometrial cancer, presence of comorbidities and mode of treatment.

RESULTS: Between May 2020 and January 2021, there were 53 women who participated in this study. Forty-one (77.36%) have sexual dysfunction. Majority of the respondents either reached up to high school level (22.6%) or are college graduates (22.6%). Most of them are also self-employed (58.1%). Fifty eight percent have only 1–3 child/children. Analysis showed no significant correlation of presence of sexual dysfunction to stage of cancer, BMI, presence of comorbidities, period of diagnosis and type of treatment received by the patients.

CONCLUSION: The study showed that there was high prevalence of sexual dysfunction among endometrial cancer patients in this study institution. Furthermore, presence of sexual dysfunction is irregardless of BMI, presence of comorbidities, stage of diagnosis, length of diagnosis and type of treatment. Hence, proper screening, diagnosis and counselling should be done to all patients upon diagnosis to promote better quality of life.

Keywords:

Endometrial cancer, Female Sexual Function Index Filipino version, quality of life, sexual dysfunction

Introduction

Background of the study

Gynecologic cancer in reproductive age women represents a major cause of

morbidity and mortality. In this age group, the treatment involves chemotherapy, radiotherapy, or surgical resection which often results in survivors with impaired sexual dysfunction.^[1] Cancer besides being a leading cause of mortality also creates a myriad of morbidities in survivors whether treated or untreated.^[2] Women treated for cancer often experience issues related to sexual health and intimacy, which are frequently cited as areas of concern, even

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among long-term survivors.^[3] Unfortunately, data suggest that providers infrequently discuss these issues. Moreover, most of Filipino women do not usually verbalize their concerns on any problem of their sexual life. And since, Philippines is one of the countries where sexuality is not openly spoken about within the family and sexual topic is a taboo for many people. Most patients abstain from accepting help regarding sexual problems and at the same time, healthcare professionals overlook this problem despite being identified as an essential aspect of patient care. With the advancement of treatment, survival rate of malignancies increases specially if diagnosed at early stage as like majority of our patients with endometrial cancer. As more and more people are successfully treated for and live longer with cancer, greater attention is being directed toward the survivorship needs of this population.^[3] As the numbers of female cancer survivors continue to grow, there is a growing need to bridge the gap between the high rate of women's cancer-related sexual dysfunction and the lack of attention and intervention available to the majority of survivors who suffer from sexual problems.^[4] With these facts, posttreatment health is a very important aspect to look into including sexual health so as to have a good quality of life.

Uterine cancer is the most common gynecologic cancer in the US, with an estimated 46,470 new cases in 2011^[5] and in the Philippines, it is the 13th most common in both sexes and 8th leading site among women. As of 2012, the incidence rate is 5.6 per 100,000 and in 2015, there were 2451 new cases recorded in the Philippines.^[6] Studies on Sexual dysfunctions among gynecologic cancer after treatment are sparse in the Philippines and data on sexual dysfunction varies greatly within the gynecologic oncology literature. Therefore, little is known about sexual problems of patients who received treatment and this study attempts to link the gap. As the numbers of female cancer survivors continue to grow, there is a growing need to bridge the gap between the high rate of women's cancer-related sexual dysfunction and the lack of attention and intervention available to the majority of survivors who suffer from sexual problems. This will also contribute in enhancing the quality of life through counselling, furthermore permitting proper referral and resolution of symptom.

With the hope to begin eliminating the barriers that hamper oncology providers from addressing the topic of sexual health after cancer. This study in general, aims to determine the sexual dysfunction domains present among patients with endometrial cancer managed in a tertiary training public hospital in Northern Luzon. Specifically, this research aims to (a) determine the sociodemographic data of patients with sexual dysfunction (b) determine the association of sexual dysfunction with the stage of

endometrial cancer (c) determine possible related risk factors that may contribute to the sexual dysfunction among patients with endometrial cancer such as body mass index (BMI), duration of endometrial cancer, presence of comorbidities d) determine the specific sexual domain problems with the following mode of treatment received.

Methods of Research

Research design

This research was a cross-sectional study, which utilized a validated Filipino version of the Female Sexual Function Index (FSFI) questionnaire to measure our primary endpoint of sexual function. The questionnaire has 6 domains: desire, subjective arousal, lubrication, orgasm, satisfaction, and pain.

Population of the study

The study was conducted among endometrial cancer patients 25–65 years old who sought consult at the gyne-oncology outpatient department or admitted at the gynecology ward of a tertiary training public institution who fulfilled the inclusion criteria:

All patients who were diagnosed of endometrial carcinoma provided that they are:

- a. Ages 25–65 years old
- b. Has sexual activity prior to diagnosis
- c. Patient with present partner.

The patients excluded from the study were:

- a. Physiological events such as pregnancy, childbirth
- b. Patients presenting with pelvic organ prolapse, diagnosed with any other gynecologic cancers
- c. Those patients with neurologic diseases (i.e., spinal cord injury, multiple sclerosis), history of aorto-iliac surgery and pelvic trauma.

Sample size

The sample size was computed based on a confidence interval of 95, using power of 80 and odds ratio of 5, using open epi version 3. The study needs 53 respondents to have a significant result.

Materials and procedure

This study was conducted in a course of 9 months from May 2020 to January 2021, at a tertiary training public institution utilizing purposive sampling method. The purpose, methodology and benefits of the study were explained to all patients by the researcher during their consult at the outpatient department or admission at the gynecology ward. Once the patient consented to participate in the study, an informed consent was obtained. They were assured of confidentiality and autonomy.

The first part was socio-demographic data which includes the age, educational level, economic status and number of children. Another table provided for identifying risk factors for the patient such as weight, height and BMI were separately computed by the researcher. The presence of comorbidities, smoking history, treatment received and period of diagnosis was likewise analyzed.

Fifty-three patients were recruited and participated in this study. To determine the presence of sexual dysfunction among the respondents, the FSFI questionnaire Filipino version (FSFI-Fil) was used for assessing the key dimensions of sexual function in women. The FSFI-Fil is a version of the English FSFI translated into the Filipino language, specifically the Tagalog dialect. It was developed in series of stages including translation-validation with panel of experts such as endocrinologist, gynaecologist, clinical epidemiologist, bioethics consultant and sociologist. Overall the questionnaire was acceptable. The FSFI-Fil questionnaire was translated to Ilocano by a language expert for patients who are not well versed with the Tagalog dialect.

The questionnaire was distributed personally by the researcher and 1 research assistant to the respondents after obtaining informed consent from the respondents themselves. Responses were coded to make the data suitable for analysis. Only complete questionnaires were included for analysis and entered into the computer by two separate individuals creating two separate databases which were compared.

Ethical considerations

The right of the patient to informed consent and voluntary participation were observed. All data collected during the study were kept confidential. Anonymity and confidentiality were ensured by not disclosing the patient's name. There was no exposure of other information that can help identify people. Participation in the study was not used for or against the women. All participants had the right to withdraw at any time. There is no conflict of interest. Results of this study will be disseminated through public fora, publication and current stake holders.

Statistical analysis

Descriptive statistics such as frequency and percentages were used in determining the prevalence of sexual dysfunction in patients with endometrial cancer while Kruskal Wallis test and Spearman Rank Correlation were used in determining the association of sexual dysfunction with age, BMI, duration and stage of endometrial cancer, presence of comorbidities and mode of treatment. The statistical level used was a *P* value α 0.05.

In the interpretation of sexual dysfunction, the sum of all domain scores was the total score which represents the

overall sexual function of the subjects. The questionnaire addresses changes in sexual functioning within the previous 1 month and gives scoring for the whole area of functioning as well as for each sexual domain.

Results

Between May 2020 and January 2021, a total of 53 women with endometrial cancer participated in the study. Based on the FSFI, 41 (77.36%) were found out to have sexual dysfunctions as shown in Table 1.

The ages of all the respondents including those without sexual dysfunction ranged from 32 to 62 with a median age of 47. Sexual dysfunction occurred across all age groups. However, the majority, 67.7% belong to age group 40–49. A small percentage at 6.5% belong to 30–39.

Table 1: Prevalence of sexual dysfunction among patients with endometrial cancer

Prevalence	Frequency (%)
With sexual dysfunction	41 (77.36)
No sexual dysfunction	12 (22.6)
Total	53 (100.0)

Table 2: Sociodemographic profile of patients with sexual dysfunction

Sociodemographic	n=41, n (%)
Age	
30-39	2 (6.5)
40-49	21 (67.7)
50-59	14 (45.2)
60-69	4 (12.9)
Education	
Elementary level	2 (6.5)
Elementary graduate	3 (9.7)
Highschool level	7 (22.6)
Highschool graduate	6 (19.4)
Vocational/technical	1 (3.2)
College level	5 (16.1)
College graduate	7 (22.6)
Occupation	
Employed (professional)	9 (29.0)
Self-Employed (agriculture, business, service)	21 (67.7)
Unemployed	11 (35.5)
Number of children	
1-3	23 (74.2)
4-6	8 (25.8)
9-Jul	2 (6.5)
No children	8 (25.8)

Table 3: Association of sexual dysfunction with different cancer stages

Stage of diagnosis	n	Mean rank	Kruskal-Wallis H	P
Stage 1	23	14.13	0.325	0.850
Stage 2	13	15.96		(NS)
Stage 3	5	15.5		

NS: Not significant

Majority of the respondents either reached up to high school level (22.6%) or are college graduates (22.6%). Most of them are also self-employed (67.7%) belonging to various sectors such as agriculture, business and service. 35.5% are unemployed specifically indicated as housewives and 29% are formally employed. The respondents mostly have only 1–3 child/children (74.2%) and 25.8% have no children. Those with 4–6 children composes the 25.8% of the population. Table 2 presented the summary of sociodemographic profile of patients with sexual dysfunction.

Using the Spearman Rank correlation, our results showed that there is no significant association between the presence of sexual dysfunction and the stage of the cancer with correlation coefficient of 0.104 ($P = 0.591$). Furthermore, a more specific analysis using the Kruskal-Wallis was done where each cancer stage was tested on its association with sexual dysfunction. At 0.05

level of confidence, analysis showed consistency with the Spearman Rank correlation, showing no significant association between the two variables [Table 3]

The Spearman Rank Correlation was utilized to determine if BMI, presence of comorbidities and the period of diagnosis will have an effect on the sexual dysfunction of endometrial cancer patients. Results showed that there is no significant correlation on any of the mentioned factors. This is also consistent with the Kruskal-Wallis Test as shown in Table 4. A closer examination of specific sub-variables under each variable was subjected to the test where the result showed that each specific sub-variable shows no significant difference.

Based on the FSFI, there are six domains (desire, arousal, lubrication, orgasm and satisfaction and pain) that were used to determine the presence of sexual dysfunction. Table 5 presented the subjects' scores in relation to the 6 main domains. Under the domains desire, arousal, lubrication, orgasm and satisfaction, a lower mean score than the range is interpreted as having sexual dysfunction. For pain, a higher mean score than the range is interpreted as having sexual dysfunction. Results showed that all of the mean scores for desire, arousal, lubrication, orgasm and satisfaction are lower than the range indicating the presence of sexual dysfunction. For pain, the mean score appeared to be lower than the range which means that problems under this domain was not significant. There were 10 respondents who refused to answer some sexual domains, hence, were not evaluated.

There were five types of treatments identified namely surgery alone, surgery with radiotherapy, surgery with chemotherapy, surgery with radiotherapy and chemotherapy and chemotherapy alone. Surgery alone was the mode of treatment in 31.7% of the respondents, 26.83% received a combined treatment of surgery and

Table 4: Possible risk factors that may contribute to sexual dysfunction

Risks	n=41	Mean rank	Kruskal-Wallis H	P
BMI				
Normalweight	10	13.21	2.62	0.270 (NS)
Overweight	22	14.90		
Obese	9	20.00		
Comorbidities				
Hypertension	10	10.50	2.919	0.571 (NS)
Diabetes	5	9.20		
CH DM	1	1.00		
Breast cancer	1	9.00		
PCOS	1	10.00		
Period of diagnosis				
>12 months	34	15.50	0.633	0.426 (NS)
<12 months	7	19.38		

BMI: Body mass index, DM: Diabetes mellitus, PCOS: Polycystic ovary syndrome, CH DM: Congestive heart failure with Diabetes mellitus

Table 5: Scores per sexual domain

	Desire	Arousal	Lubrication	Orgasm	Pain	Satisfaction
n	31	31	31	31	31	31
Range	3.60	3.60	3.90	3.60	4.40	3.60
Minimum	1.20	1.20	1.20	1.20	1.60	1.20
Maximum	4.80	4.80	5.10	4.80	6.00	4.80
Mean	2.9419	3.0581	3.3097	3.1613	3.8968	3.6516
SD	0.92115	0.90140	1.06626	1.00322	1.03778	1.04175

SD: Standard deviation

Table 6: Specific sexual domain problems following various mode of treatment received

Treatment	Frequency (%)	Mean rank	Kruskal-Wallis H	P
Surgery (EHBSO, +/- PFC, +/- BLND, +/- PALS)	13 (31.7)	14.00	5.279	0.152 (NS)
Surgery + radiotherapy	10 (24.39)	9.86		
Surgery + chemotherapy	11 (26.83)	16.75		
Chemotherapy	7 (17.1)	19.93		

NS: Not significant, EHBSO: Extrafascial hysterectomy with bilateral salpingo-oophorectomy, PFC: Peritoneal fluid cytology, BLND: Bilateral lymph node dissection, PALS: Para aortic lymph node sampling

chemotherapy and another 24.39% received surgery and radiotherapy. The least number of respondents (17.1%) for those who received chemotherapy alone. Statistical data showed no significant difference in the sexual dysfunction and type of treatment received by the patients [Table 6].

Discussion

Sexual health has a broad meaning, as defined by the World Health Organization, is a state of physical, mental and social well-being in relation to sexuality. It requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence.^[7] In general, female sexual dysfunction is complex,^[8,9] hence, it is defined as 'the various ways in which a woman is unable to participate in a sexual relationship as she would wish.'^[7] Debilitating diseases such as Gynecologic cancers affects sexual functions^[10] and sexual problems are common among patients and survivors of gynecologic neoplasm.

With our modern day and advancement of treatment, more and more patients were treated successfully and live longer. Greater attention should be focused in the survivorship needs and one of those is improving the quality of life.

Using the published cut-off score for sexual dysfunction (FSFI score, <26), the rate of sexual dysfunction among endometrial cancer patients at tertiary training public institution was 77.36%. The high prevalence in this report is comparable to the results of other studies ranging from 61 to 97%.^[10,11] This very high prevalence rate indicates that sexual dysfunction among Filipina endometrial cancer patients is a frequent occurrence and is one aspect that should not be ignored in the management of this disease.

In some studies, sexual dysfunction were observed in women who are 50 years of age and older with low levels of educations and low income.^[10,12] However, data in this study showed that sexual dysfunction occur in all age ranges. Majority of these patients were between 40 and 49 years old.

The stage of endometrial cancer ($P = 0.591$), BMI ($P = 0.270$), length of diagnosis ($P = 0.426$) and presence of comorbidities (P value 0.489) were not associated with the development of sexual dysfunction. Most of the respondents who joined the study were at stage I-IIIa, obese, more than 12 months from diagnosis, and had comorbidities (hypertension and diabetes mellitus). The result was comparable to the different studies done, wherein it showed that there is no significant differences in sexual functions or sexual interest in terms of age, obesity, race, and presence of diabetes or hypertension, time since diagnosis or treatment type.^[11-14] Furthermore,

this contradicts the prospective trial by Onujiogu *et al.*^[15] wherein, the study included patients with stage I-IIIa endometrial cancer, without evidence of the disease, and 1–5 years out from primary treatment which utilized the same questionnaire of FSFI. Eighty nine percent had score below 26, with the median score for FSFI of 16.6 which they concluded that early stage endometrial cancer patients suffer from severe sexual dysfunction.

The treatment could either be surgery alone or surgery with adjuvant therapy, either of which can cause sexual dysfunctions. As to mode of treatment, there is no significant difference seen in this study whether surgery alone or with adjuvant treatment (P value of 0.152). One study shows that surgery among those with endometrial cancer causes sexual dysfunction within 1–5 years postsurgery and this is seen mostly in early stage (I-IIIa) endometrial cancer patients. Those who had radiotherapy however showed a low statistics of those who have sexual dysfunction.^[9] This finding is consistent with the study of Quick *et al.*,^[16] wherein they reported that there are similar outcomes as to the quality of life and sexual function in patients treated with adjuvant therapy and patients treated with surgery alone for early stage of endometrial cancer. Moreover, this study contradicts the study of Chedraui *et al.*, saying there have been a high prevalence rate identified in patients with early stages of endometrial cancer who underwent surgical interventions alone as compared to patients who received adjuvant therapy.^[17]

A prospective controlled multi-centre study by Juraskova *et al.*^[18] comparing sexual outcomes of women treated for early stage cervical and endometrial cancer versus benign gynecologic patients revealed that it did not report more severe or longer-lasting sexual sequelae. There were no significant differences between the groups.

Cancer treatment modalities such as surgery, radiotherapy and chemotherapy have all impact on sexual health in several patients.^[9,19,20] There have been a few studies in endometrial cancer patients, but study approaches, cancer treatments, and findings have varied. In a cohort study by Gao *et al.*,^[20] a total of 118 participants who were survivors of endometrial cancer and undergoing surveillance revealed that 68.6% of the survivors of endometrial cancer had sexual dysfunction while 55.9% among them had no sexual intercourse with their partners after surgery.

The FSFI tool used in this study determines 6 domains. In this study, the five domains namely, desire, arousal, lubrication, orgasm and satisfaction, were problematic. On the other hand, pain experienced by the respondents were not significant in this study. In contrast to the study by Demirtas *et al.*,^[12] women frequently reported problem

with dyspareunia (97.1%), vaginal dryness (97.6%) decreased sexual desire (91.1%) and difficulties of sexual arousal (92.9%). And also, According to Carter *et al.*,^[21] women experiencing vaginal discomfort may develop fear of sex due to pain, particularly if open communication is lacking in one's relationship. Therefore, pain in itself affects the desire and excitement that could lead to decrease in self-confidence of a woman leading her to be fearful of rejection by her partner.

Conclusion

The study showed that there was high prevalence of sexual dysfunction among endometrial cancer patients at tertiary training public institution. Furthermore, BMI, presence of comorbidities, stage of malignancy and length from diagnosis were not associated with the development of sexual dysfunction.

Majority of the respondents do not regard sexual dysfunction as a problem. Hence, no intervention was sought to address the problem. Health care workers are still the number one choice of the respondents in seeking assistance to address sexual dysfunction.

Recommendation

Since the study was done in a single institution, it is recommend that a multi center study be conducted. Assessment of sexual dysfunction in other gynecologic malignancies may likewise be studied. Baseline sexual function assessment of endometrial cancer patients prior to the intervention must be included. Strategies such as simple checklists for clinical inquiry on sexual problems among patients with gynecologic malignancies may be adapted as a part of holistic management.

Limitations of the study

For those of received treatment such as radiation and chemotherapy, the study did not account for the dose and length of vagina irradiated and number of cycles of chemotherapy which may influence the sexual function. In addition, there are several drawbacks of the FSFI instrument in this population. It does not permit the patient to specify whether a reported lack of sexual activity is due to treatment/disease or is a lack of sexual activity in general.

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Conflicts of interest

There are no conflicts of interest.

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