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Women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbessa Specialized Hospital Oncology Center, Addis Ababa, Ethiopia: A Qualitative Study

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Title: Women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbessa Specialized Hospital Oncology Center, Addis Ababa- Ethiopia: A Qualitative Study

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Abstract

Objective: This study explored women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center.

Setting: The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country.

Study Design: A Phenomenological qualitative study design was employed for this study.

Study Participants: The participants were recruited using purposeful sampling. Thirteen eligible study participants were interviewed face-to-face. Data were collected from 2nd February to 15th March 2019; and analyzed at the same time. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion.

Results: Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Conclusion: This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients.

Keywords: Cervical cancer; sexual experience; Coping strategies, Addis Ababa, Ethiopia

Strength and Limitations

- . The researchers were self-conscious and aware of their immersion in the study process to ensure that it was as objective as possible.
- . The information obtained from study participants could be subject to recall bias.
- The findings of this research were applied to a similar population in the study area.

Background

Sexuality is typically overlooked in clinical settings when it comes to gynecological cancer treatment because it has little to do with the disease's cure(1, 2). The WHO's 2010 definition of sexuality is used as the underlying understanding of sexuality in this article. Sexuality encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction, and is characterized as the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors(2, 3).

Cancer patients are frequently asexualized because they do not fit into traditional notions of sexuality. Nonetheless, for many people, sexual well-being is a significant aspect of their overall quality of life(2, 4). According to research, 40 to 100 percent of women with gynecological cancer will experience sexual problems following treatment(5, 6). According to research studies, women with cervical cancer endure a variety of physical alterations to their vaginal anatomical structure and size. These alterations can cause women to have distorted body images and have conflicts with their partners(7). For instance, Sexual dysfunction such as low libido and dyspareunia, often persists after other aspects of health, such as mental health and social adjustment, have returned to normal(8).

Population-based screening in the form of free Papanicolaou smears has been the focus of cervical cancer prevention(9). Most women, unfortunately, seek medical help when they are symptomatic and in advanced stages of cancer, most typically stage IIIB, where definitive radiation is the preferred treatment(10). When compared to adjuvant radiotherapy, the higher doses administered are likely to cause more sexual dysfunction(11). After breast cancer, gynecologic cancers are the leading cause of illness and mortality in

women. Gynecologic cancer is the world's fourth most common type of cancer(12). In Ethiopia, cervical cancer is the second most common malignancy among women [4], and there are a rising number of long-term survivors for whom quality of life is a top priority, despite a dearth of rehabilitation support tailored to their needs and interests(13).

Patient-centered care and comprehensive support programs in Ethiopia require a thorough understanding of women's lived experiences of sexuality after treatment. However, there is a scarcity of research on women's sexual experiences and adjustment after cervical cancer treatment in Ethiopia. Little is known about how women with gynecologic cancer deal with changes in their sexuality as a result of treatment, what kinds of sexual issues they have, how distressing they are, or how they deal with them. The purpose of this study was to explore women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center.

Research Method

Research Design

A Phenomenological qualitative study design was employed for this study. The argument for employing qualitative research was that it is best suited for comprehending phenomena in their context, as well as analyzing their feelings, opinions, suggestions, beliefs, and behaviors(14). The study's main goal was not to extrapolate the findings to other situations because they were unique to the situation.

Study setting

The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country. Five senior oncologists, two palliative care experts, thirty-three residents, four radiotherapists, three medical physicists, and twenty-three nurses worked in the TASH oncology unit. Breast, cervical, and colorectal cancers were the most prevalent cancers seen in this institution. This research took place from 2nd February to 15th March 2019.

Participants and sampling method

The participants were recruited using purposeful sampling, a non-random selection approach in which participants are chosen because they have experience with a phenomenon of interest and can thus contribute rich information on the problem(15). Women who had

gynecological cancers treated at a TASH were chosen from the radiation oncology unit's weekly follow-up clinic. To be eligible for the study, participants had to be 18 years old and above, and have had therapy for cervical, uterine, vulval, or ovarian cancer, or a combination of these, in the previous 6–12 months. The radiation oncologist and gynecologist involved in the follow-up clinic looked through their hospital files to find women who satisfied the inclusion criteria. Eligible women were notified about the study after their follow-up session, and those who were interested were directed to the principal researcher. The principal researcher provided additional details about the study and those who wanted to continue completed the informed consent forms. This procedure was carried out in the participant's native tongue. When information redundancy was achieved, recruiting came to an end following recognized qualitative research standards(16).

Data collection and analysis

In-depth face-to-face interviews were done by the lead author and one female research assistant. An interview guide was used to outline the open-ended topics in English and Amharic. The interview guide used in this study was attached as 'Annex 1'. Pilot interviews and actual data collection were conducted in two stages. The data from the pilot interviews were not included in the final analysis because they were utilized to test the interview guide. The interviews were conducted in the participants' local [Amharic] language in both cases. The key research topic was: How do women feel about their sexuality after undergoing gynecological cancer treatment? The following were the sub-questions: How do women feel about their sexual functionality after treatment? What effect has this had on their sexual self-perception? What effect has this had on their sexual relationships? What coping mechanisms did you use to get over sexual issues if you've had them? What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

In-depth interviews were done until saturation was reached, which occurred after 13 interviews when more data failed to reveal any new emergent codes or themes(17). The interviews took place in a private room at selected medical facilities. With the participants' permission, the assistant researcher audio-recorded and took written notes during the interviews. The interviews were done in Amharic and lasted between 30 and 50 minutes.

Data were collected and analyzed at the same time. After reading the transcribed data and sorting it into appropriate units, the principal researcher manually coded it. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion. To ensure the study's dependability, the researcher communicated with the two senior research supervisors via email, personal contact, and phone conversations frequently to track any changes made to the protocol and processes, such as reviewing, defining, and labeling themes uncovered. Furthermore, verbatim quotes were identified and used to clarify study findings.

The trustworthiness of the study

Trustworthiness is the ability of researchers to convince participants and themselves that the findings of the inquiry are direct, truthful, or reliable(14). Before the main study, a pre-test was conducted to assess the instrument's trustworthiness and reliability to correct and make required changes before the study began. To assure the report's credibility, several procedures were used, including the use of the same interview guide throughout the investigation. An audit trail was kept for researchers to confirm the methodologies used in the study. To ensure the transferability of the research results to similar contexts, a detailed explanation of the study area, methods, and sample history were provided. Data were returned to participants to cross-check and validate their responses to ensure legitimacy. By using bracketing, the researchers guaranteed that their attitudes, thoughts, and experiences about the topic under inquiry had no bearing on data collection and analysis. The study's data gathering and analysis techniques were also unaffected by the researchers' backgrounds.

Ethics approval and consent to participate

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University [12/2019]. The TASH administration granted permission to conduct the study. To conduct the interviews, the authors received written informed consent from all participants. The importance of the study's voluntary participation was emphasized. All respondents' identities and other personal information were kept confidential.

Patient and Public Involvement

Patients were not involved in this study.

Research Findings

Participants' Socio-Demographic Characteristics

A total of 13 participants were enlisted to take part in the study. The average age was 48, with a range of 25 to 55 years old. The majority of the women [10/13) were married, although the three women who were described as "single" had a regular sexual relationship.

All of the study subjects were given radiation therapy. For their cervical cancer disease treatment, eight clients had external beam radiation, two received a combination of external beam radiation and surgery, and the remaining three received external beam radiation plus Brachytherapy. The average period after treatment was five months, with the majority of women being between three and nine months after therapy.

Themes:

Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help **[See Table 1].** These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Table 1: Codes, categories, and themes of Women's sexual experiences and coping Strategies for Sexual Problems

CODES	CATEGORIES	THEMES
'Three months after starting cancer therapy, I was uneasy because I experienced a burning feeling when urinating and vaginal discharge; as a result, your sexual being does not exist'' ".....everything I eat comes out, and I had to go to the bathroom now and then." So, how do you anticipate having sex with your husband?" … "I had this uncomfortable feeling and itchiness all the time for months.	Feeling discomfort and uneasy No sexual desire due to treatment side effect	**Treatment Side effect**
''During sexual intercourse, I felt dreadful because of excruciating pain and there was no climax." So you're not a fan of sexual activity? I'm hopeful that after the treatment is over, things will improve." ''I didn't want to have sex after treatment because, as I previously indicated, I would start bleeding during intercourse, which was unpleasant, and that is why we rarely had sex'' "..... I believe I'm overly tight because of the scar tissue induced by the radiation. I believe the dryness is due to the treatment, and it is inconvenient. Sexual intercourse becomes a cause of suffering for me; I would be delighted if I could prevent such agony''	Lack of desire and intimacy Lose of orgasm during intercourse Avoiding sexual intercourse due to treatment side effect Sexual intercourse caused suffering Radiation caused scar tissues and dryness	**Sexual Issues Following Radiation Therapy**
''I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment." ".....No one ever asked me outright about my sexuality. And I'm embarrassed to bring up the issue of [sex]. It didn't seem essential to me."	Lack of information about treatment side effect Providers don't give sexual education Seeking assistance from providers	**Lack of awareness regarding cancer treatment and sexual dysfunction**

‘’We require assistance from clinicians to manage sexuality issues that arise as a result of cancer diagnosis and treatment. However, none of them brought up the subject of [sex] as part of their care for me. This is not a problem I could easily handle by myself or with my husband.’’ I believe that when you come in, they [Health Providers] should sit with you and have a conversation with you about that portion [sexuality issues] since that is the part that you find the most difficult. Unfortunately, none would raise this issue."		
‘’ After my cervical cancer treatment, I respectfully asked my husband to halt sexual contact, and he agreed. I informed my spouse that I had a problem with low sexual drive and that I needed him to realize that I was sick and no longer wanted sex. After this negotiation, we decided to put an end to it [intercourse]. "Following my cancer diagnosis, I agreed with him to stop sexual intercourse due to substantial pain during sexual intercourse and the fear of the 'disease process returning" Any illness, I believe, is a gift from God, thus it is outside of my knowledge. But I need to keep praying and reminding myself that nothing is too difficult for God. Because my body is his, I can accept it if he [God] wishes to affect my private part [Genitalia] If God so desires, he can heal me of this fatal condition; my responsibility is to continue praying until his visitation day. I thank God that my spouse completely understands me when it comes to sexual intercourse; if I'm feeling okay, I'd meet his sexual desires one day... I don't feel like a woman since I'm usually in bed, therefore I lose my desirability and my husband loses interest in me; he doesn't see anything in me because she's not putting herself up because of her health."	Negotiating with a partner to avoid sexual intercourse, Praying for healing, Seeking professional help	**Coping strategies for sexual Problems following gynecologic cancer treatment**

Theme 1: Treatment Side effect

The majority [11/13] of women who received treatment for gynecologic cancer reported a variety of therapeutic side effects [immediate and late] after treatment, causing sexual dysfunction. According to the data, women who received cervical cancer therapy had bleeding during intercourse, dryness, indigestion, vomiting, low appetite, pain, skin changes in texture and color, burning sensation while urinating, and vaginal discharge. Sample responses included:

"Three months after starting cancer therapy, I was uneasy because I experienced a burning feeling when urinating and vaginal discharge; as a result, your sexual being does not exist"

"……everything I eat comes out, and I had to go to the bathroom now and then." So, how do you anticipate having sex with your husband?" …

Theme 2: Sexual Issues Following Radiation Therapy

Cancer treatment procedures have a detrimental impact on women's physical, psychological, emotional, and sexual concerns. Pain, vaginal bleeding, and discomfort were reported by most participants in this study during sexual intercourse, primarily due to vaginal dryness and tightness. Sample responses included:

"During sexual intercourse, I felt dreadful because of excruciating pain and there was no climax." So you're not a fan of sexual activity? I'm hopeful that after the treatment is over, things will improve."

"I didn't want to have sex after treatment because, as I previously indicated, I would start bleeding during intercourse, which was unpleasant, and that is why we rarely had sex"

"…… I believe I'm overly tight because of the scar tissue induced by the radiation. I believe the dryness is due to the treatment, and it is inconvenient. Sexual intercourse becomes a cause of suffering for me; I would be delighted if I could prevent such agony"

Theme 3: Lack of awareness regarding cancer treatment and sexual dysfunction

The data analysis revealed a third theme: a lack of awareness regarding cancer treatment and associated sexual dysfunction. One category within the theme is insufficient information received from health providers about cancer treatment and associated sexual dysfunction. According to the findings of the study, the majority [10/13] of the women interviewed expressed a lack of understanding regarding the treatment procedure and associated sexual problems. Sample responses in this regard included:

"I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment."

".....No one ever asked me outright about my sexuality. And I'm embarrassed to bring up the issue of [sex]. It didn't seem essential to me."

"We require assistance from clinicians to manage sexuality issues that arise as a result of cancer diagnosis and treatment. However, none of them brought up the subject of [sex] as part of their care for me. This is not a problem I could easily handle by myself or with my husband."

I believe that when you come in, they [Health Providers] should sit with you and have a conversation with you about that portion [sexuality issues] since that is the part that you find the most difficult. Unfortunately, none would raise this issue."

Theme 4: Coping strategies for sexual Problems following gynecologic cancer treatment

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. Many of the participants use various avoidance tactics to deal with sexual problems. The majority [10/13] of the participants emphasized the importance of having open and honest conversations with their husbands about their sexual relationships. They believe that alerting their husbands about the effects of cervical cancer on their sexual lives made them more thoughtful and understanding of the situation. In this context, the following quotations were included:

‘’ After my cervical cancer treatment, I respectfully asked my husband to halt sexual contact, and he agreed.”

I informed my spouse that I had a problem with low sexual drive and that I needed him to realize that I was sick and no longer wanted sex. After this negotiation, we decided to put an end to it [intercourse].

"Following my cancer diagnosis, I agreed with him to stop sexual intercourse due to substantial pain during sexual intercourse and the fear of the 'disease process returning"

According to the findings of this study, the majority of the participants utilize prayer as a coping mechanism for dealing with the side effects of gynecologic cancer, such as sexual issues. Coping techniques included accepting the illness and praying for the strength to engage in sexual activity. Some women feel cancer is a test from God designed to test their faith and patience. These women stated that their bodies belong to God and that they must accept it if God chooses to cause cancer in their private regions [Genitalia].

Any illness, I believe, is a gift from God, thus it is outside of my knowledge. But I need to keep praying and reminding myself that nothing is too difficult for God. Because my body is his, I can accept it if he [God] wishes to affect my private part [Genitalia].

If God so desires, he can heal me of this fatal condition; my responsibility is to continue praying until his visitation day. I thank God that my spouse completely understands me when it comes to sexual intercourse; if I'm feeling okay, I'd meet his sexual desires one day.

On the other hand, one participant avoided discussing her concerns with her husband because sexuality in the form of penetrative intercourse was no longer a priority in their lives. This client's lack of desire and intimacy has a major influence as a woman. "I don't feel like a woman since I'm usually in bed, therefore I lose my desirability and my husband loses interest in me; he doesn't see anything in me because she's not putting herself up because of her health."

A few women in this study reported hearing about the potential sexual side effects of adjuvant therapy from healthcare practitioners. One woman attempted to return to normal life, including sexual activity, by following medical advice:

”The oncology nurse recommended me to maintain normal activities, including intercourse, as a cancer patient. So, when I'm not in pain and have a sexual desire, I rarely have sex...”

Discussion

This study explored women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center. As a result of their therapy, the majority of cancer patients in this study report having sexual issues. Physical (e.g., vaginal dryness, discomfort during intercourse) and psychological/emotional (e.g., anxiety during intercourse) (e.g., decreased sexual interest, body image distress, loss of femininity), all of which are consistent with previous research (18). The majority of the women in this study reported changes in their sexual functioning before and after therapy, including a significant disruption in their sexual lives as a result of severe symptoms and/or treatment side effects. For instance, symptoms such as heavy bleeding, unpleasant discharge, and weariness are common in late-stage gynecological cancers, and they might influence a woman's sexuality beyond the therapy and post-treatment periods(2).

Gynecologic cancer, according to the participants in this study, can have a major impact on sexual self-esteem, sexual relationships, and sexual functioning Women's physical, psychological, emotional, and sexual problems are negatively impacted by cancer treatment techniques. Most participants in this study reported pain, vaginal bleeding, and discomfort during sexual intercourse, owing to vaginal dryness and tightness related to therapy. This finding is in line with Cleary et al findings, which found that gynecological cancer patients reported detrimental alterations in sexual relationships and sexual performance, as well as sexual dysfunction at all stages of the sexual response in cervical cancer patients receiving radiotherapy (18). According to a study by Rasmussen and Thom, participants with irradiation cervical cancer reported decreased vaginal lubrication, loss of emotions, decreased desire and shortened vaginal length (19).

Cervical cancer patients experience a variety of physical changes to their vaginal anatomical structure and size, according to research. Women may develop erroneous body images as a result of these changes, as well as experience problems with their spouses (7).

Sexual dysfunction, such as low libido and dyspareunia, for example, frequently persists even when other areas of health, such as mental health and social adjustment, have returned to normal (8).

In this study, we asked participants about sexual relationships and sexual functioning information they had received from healthcare practitioners. According to the findings, the majority of participants said they received no information concerning their sexual functioning after obtaining cancer therapy from a healthcare professional, and the majority of them would prefer more information on these topics from their healthcare professionals. Pitcher et al. observed a similar conclusion in a South African study, where the majority of participants wanted additional information from their healthcare professionals as well as the ability to engage in a support group(2).

According to a previous study conducted by Afiyanti, over 85% of nurses believe that discussing sexuality with patients is a taboo and private topic. This improper attitude and belief about the sexuality of their patients by nurses may become a barrier in assisting cancer patients in managing the sexuality problem induced by cancer and therapy(8). As a result, health care personnel must overcome several challenges to improve cancer patients' quality of life. Providing and discussing information regarding sexuality concerns with patients is one of the most important steps that healthcare professionals, including nurses, should take(19). Oncology nurses should be proactive in detecting and assisting cancer patients with psychosexual issues. Nurses should also be aware of and comprehend psychosexual issues to offer good care for cancer patients and survivors.

Healthcare providers may be able to assist patients with their psychosexual recovery. Because when a healthcare expert legitimizes sexuality themes in a therapy setting, it allows individuals and couples to discuss them on their own. This could lead to more open discussions about sexual issues, as well as a reduction in marital conflict and sexual violence(2). Healthcare workers who work with gynecological cancer patients should strive to improve their understanding of sexuality in the setting of cancer by reading relevant material and attending workshops and conferences(2, 20, 21).

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: praying for healing, avoiding sexual intercourse, and seeking professional help. Almost all of the participants in this study dealt with sexual concerns by taking the normal course of accepting changes and changing their sexual habits. These individuals used their spiritual beliefs to give positive meaning to their sexual problems; two coping techniques were accepting the illness and praying for healing and hoping for the strength to engage in sexual activity. Some women believe that cancer is a test from God, putting their faith and patience to the test, allowing them to embrace their illness. Some of them focus on solutions and utilize conforming tactics by changing their sexual habits to cope with their spouses' sexual needs. To deal with sexual problems, many of the participants adopt various avoidance techniques. Some women said they avoided tricking their husbands into penetrative sex by declining intercourse in subtle ways, such as having open and honest dialogues about their sexual relationships with their husbands. This finding is consistent with other non-Western literature that has described spirituality and religion as coping methods that allow patients to follow their illness's natural course(22, 23).

This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients. This study had some limitations. While the data acquired through Individual Interviews may not be generalizable, the findings may be transferable to other contexts with similar characteristics. However, it should also be noted that the emerging themes were supported by local and international works. Concerns about the small sample size, data interpretation, and bias are common criticisms of qualitative research. The researchers in this study, on the other hand, were self-conscious and mindful of their immersion in the research process for the procedure to be as objective as feasible. The researchers believe that the study's translucent character is revealed by the detailed explanation of the sample, data gathering methods, and data processing procedure.

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Authors' contributions

Hundie, YG, Sendo, EG, and Habte, T made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Competing interests

The authors declare that they have no competing interests.

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Data Availability Statement: All data relevant to the study are included in the article or uploaded as supplementary information.

Ethics Statement

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University. Permission to conduct the study was obtained from the concerned office. The authors obtained informed written consent from all participants to conduct the interviews. The voluntary

nature of participation in this study was underlined. Confidentiality was assured about the identity and other personal information of all interviewees.

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ANNEX 1: IN-DEPTH INTERVIEW GUIDE

Women's sexual experiences and coping mechanisms:

- How do women feel about their sexuality after undergoing gynecological cancer treatment?
- The following were the sub questions:
    - How do women feel about their sexual functionality after treatment?
    - What effect has this had on their sexual self-perception?
    - What effect has this had on their sexual relationships?
    - What coping mechanisms did you use to get over sexual issues if you've had them?
    - What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

Socio Demographic information:

- How old are you? _____
- What is your marital status? _____
- How many years of schooling have you had? _____
- How many children have you had? _____
- Is there anything else that you would like to tell me?

Thank the participant for their time.

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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A QUALITATIVE STUDY OF ETHIOPIAN WOMEN'S SEXUAL EXPERIENCES AND COPING STRATEGIES FOR SEXUAL PROBLEMS AFTER GYNECOLOGICAL CANCER TREATMENT.

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A QUALITATIVE STUDY OF ETHIOPIAN WOMEN'S SEXUAL EXPERIENCES AND COPING STRATEGIES FOR SEXUAL PROBLEMS AFTER GYNECOLOGICAL CANCER TREATMENT.

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Abstract

Objective: This study explored women's sexual experiences and coping strategies for sexual problems after gynecological treatment.

Setting: The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country.

Study Design: A Phenomenological qualitative study design was employed for this study.

Study Participants: The participants were recruited using purposeful sampling. Thirteen eligible study participants were interviewed face-to-face. Data were collected from 2nd February to 15th March 2019; and analyzed at the same time. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion.

Results: Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Conclusion: This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients.

Keywords: Cervical cancer; sexual experience; Coping strategies, Addis Ababa, Ethiopia

Strength and Limitations

- . The researchers were self-conscious and aware of their immersion in the study process to ensure that it was as objective as possible.
- . The information obtained from study participants could be subject to recall bias.
- The findings of this research were applied to a similar population in the study area.

Background

Sexuality is typically overlooked in clinical settings when it comes to gynecological cancer treatment because it has little to do with the disease's cure(1, 2). The WHO's 2010 definition of sexuality is used as the underlying understanding of sexuality in this article. Sexuality encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction, and is characterized as the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors(2, 3).

Cancer patients are frequently asexualized because they do not fit into traditional notions of sexuality. Nonetheless, for many people, sexual well-being is a significant aspect of their overall quality of life(2, 4). According to research, 40 to 100 percent of women with gynecological cancer will experience sexual problems following treatment(5, 6). According to research studies, women with cervical cancer endure a variety of physical alterations to their vaginal anatomical structure and size. These alterations can cause women to have distorted body images and have conflicts with their partners(7). For instance, Sexual dysfunction such as low libido and dyspareunia, often persists after other aspects of health, such as mental health and social adjustment, have returned to normal(8).

Population-based screening in the form of free Papanicolaou smears has been the focus of cervical cancer prevention(9). Most women, unfortunately, seek medical help when they are symptomatic and in advanced stages of cancer, most typically stage IIIB, where definitive radiation is the preferred treatment(10). When compared to adjuvant radiotherapy, the higher doses administered are likely to cause more sexual dysfunction(11). After breast cancer, gynecologic cancers are the leading cause of illness and mortality in

women. Gynecologic cancer is the world's fourth most common type of cancer(12). In Ethiopia, cervical cancer is the second most common malignancy among women [4], and there are a rising number of long-term survivors for whom quality of life is a top priority, despite a dearth of rehabilitation support tailored to their needs and interests(13).

Patient-centered care and comprehensive support programs in Ethiopia require a thorough understanding of women's lived experiences of sexuality after treatment. However, there is a scarcity of research on women's sexual experiences and adjustment after cervical cancer treatment in Ethiopia. Little is known about how women with gynecologic cancer deal with changes in their sexuality as a result of treatment, what kinds of sexual issues they have, how distressing they are, or how they deal with them. The purpose of this study was to explore women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center.

Research Method

Research Design

A Phenomenological qualitative study design was employed for this study. The argument for employing qualitative research was that it is best suited for comprehending phenomena in their context, as well as analyzing their feelings, opinions, suggestions, beliefs, and behaviors(14). The study's main goal was not to extrapolate the findings to other situations because they were unique to the situation.

Study setting

The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country. Five senior oncologists, two palliative care experts, thirty-three residents, four radiotherapists, three medical physicists, and twenty-three nurses worked in the TASH oncology unit. Breast, cervical, and colorectal cancers were the most prevalent cancers seen in this institution. This research took place from 2nd February to 15th March 2019.

Participants and sampling method

The participants were recruited using purposeful sampling, a non-random selection approach in which participants are chosen because they have experience with a phenomenon of interest and can thus contribute rich information on the problem(15). Women who had

gynecological cancers treated at a TASH were chosen from the radiation oncology unit's weekly follow-up clinic. To be eligible for the study, participants had to be 18 years old and above, and have had therapy for cervical, uterine, vulval, or ovarian cancer, or a combination of these, in the previous 6–12 months. The radiation oncologist and gynecologist involved in the follow-up clinic looked through their hospital files to find women who satisfied the inclusion criteria. Eligible women were notified about the study after their follow-up session, and those who were interested were directed to the principal researcher. The principal researcher provided additional details about the study and those who wanted to continue completed the informed consent forms. This procedure was carried out in the participant's native tongue. When information redundancy was achieved, recruiting came to an end following recognized qualitative research standards(16).

Data collection and analysis

In-depth face-to-face interviews were done by the lead author and one female research assistant. An interview guide was used to outline the open-ended topics in English and Amharic. The interview guide used in this study was attached as 'Annex 1'. Pilot interviews and actual data collection were conducted in two stages. The data from the pilot interviews were not included in the final analysis because they were utilized to test the interview guide. The interviews were conducted in the participants' local [Amharic] language in both cases. The key research topic was: How do women feel about their sexuality after undergoing gynecological cancer treatment? The following were the sub-questions: How do women feel about their sexual functionality after treatment? What effect has this had on their sexual self-perception? What effect has this had on their sexual relationships? What coping mechanisms did you use to get over sexual issues if you've had them? What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

In-depth interviews were done until saturation was reached, which occurred after 13 interviews when more data failed to reveal any new emergent codes or themes(17). The interviews took place in a private room at selected medical facilities. With the participants' permission, the assistant researcher audio-recorded and took written notes during the interviews. The interviews were done in Amharic and lasted between 30 and 50 minutes.

Data were collected and analyzed at the same time. After reading the transcribed data and sorting it into appropriate units, the principal researcher manually coded it. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion. To ensure the study's dependability, the researcher communicated with the two senior research supervisors via email, personal contact, and phone conversations frequently to track any changes made to the protocol and processes, such as reviewing, defining, and labeling themes uncovered. Furthermore, verbatim quotes were identified and used to clarify study findings.

The trustworthiness of the study

Trustworthiness is the ability of researchers to convince participants and themselves that the findings of the inquiry are direct, truthful, or reliable(14). Before the main study, a pre-test was conducted to assess the instrument's trustworthiness and reliability to correct and make required changes before the study began. To assure the report's credibility, several procedures were used, including the use of the same interview guide throughout the investigation. An audit trail was kept for researchers to confirm the methodologies used in the study. To ensure the transferability of the research results to similar contexts, a detailed explanation of the study area, methods, and sample history were provided. Data were returned to participants to cross-check and validate their responses to ensure legitimacy. By using bracketing, the researchers guaranteed that their attitudes, thoughts, and experiences about the topic under inquiry had no bearing on data collection and analysis. The study's data gathering and analysis techniques were also unaffected by the researchers' backgrounds.

Ethics approval and consent to participate

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University [12/2019]. The TASH administration granted permission to conduct the study. To conduct the interviews, the authors received written informed consent from all participants. The importance of the study's voluntary participation was emphasized. All respondents' identities and other personal information were kept confidential.

Patient and Public Involvement

Patients were not involved in this study.

Research Findings

Participants' Socio-Demographic Characteristics

A total of 13 participants were enlisted to take part in the study. The average age was 48, with a range of 25 to 55 years old. The majority of the women [10/13) were married, although the three women who were described as "single" had a regular sexual relationship.

All of the study subjects were given radiation therapy. For their cervical cancer disease treatment, eight clients had external beam radiation, two received a combination of external beam radiation and surgery, and the remaining three received external beam radiation plus Brachytherapy. The average period after treatment was five months, with the majority of women being between three and nine months after therapy.

Themes:

Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help **[See Table 1].** These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Table 1: Categories and themes of Women's sexual experiences and coping Strategies for Sexual Problems

CATEGORIES	THEMES
Feeling discomfort and uneasy No sexual desire due to treatment side effect	**Treatment Side effect**
Lack of desire and intimacy Lose of orgasm during intercourse Avoiding sexual intercourse due to treatment side effect Sexual intercourse caused suffering Radiation caused scar tissues and dryness	**Sexual Issues Following Radiation Therapy**
Lack of information about treatment side effect Providers don't give sexual education Seeking assistance from providers	**Lack of awareness regarding cancer treatment and sexual dysfunction**
Negotiating with a partner to avoid sexual intercourse, Praying for healing, Seeking professional help	**Coping strategies for sexual Problems following gynecologic cancer treatment**

Theme 1: Treatment Side effect

The majority [11/13] of women who received treatment for gynecologic cancer reported a variety of therapeutic side effects [immediate and late] after treatment, causing sexual dysfunction. According to the data, women who received cervical cancer therapy had bleeding during intercourse, dryness, indigestion, vomiting, low appetite, pain, skin changes in texture and color, burning sensation while urinating, and vaginal discharge. Sample responses included:

"Three months after starting cancer therapy, I was uneasy because I experienced a burning feeling when urinating and vaginal discharge; as a result, your sexual being does not exist"

".....everything I eat comes out, and I had to go to the bathroom now and then." So, how do you anticipate having sex with your husband?" …

Theme 2: Sexual Issues Following Radiation Therapy

Cancer treatment procedures have a detrimental impact on women's physical, psychological, emotional, and sexual concerns. Pain, vaginal bleeding, and discomfort were reported by most participants in this study during sexual intercourse, primarily due to vaginal dryness and tightness. Sample responses included:

"During sexual intercourse, I felt dreadful because of excruciating pain and there was no climax." So you're not a fan of sexual activity? I'm hopeful that after the treatment is over, things will improve."

"..... I believe I'm overly tight because of the scar tissue induced by the radiation. I believe the dryness is due to the treatment, and it is inconvenient. Sexual intercourse becomes a cause of suffering for me; I would be delighted if I could prevent such agony"

Theme 3: Lack of awareness regarding cancer treatment and sexual dysfunction

The data analysis revealed a third theme: a lack of awareness regarding cancer treatment and associated sexual dysfunction. One category within the theme is insufficient information received from health providers about cancer treatment and associated sexual dysfunction. According to the findings of the study, the majority [10/13] of the women interviewed expressed a lack of understanding regarding the treatment procedure and associated sexual problems. Sample responses in this regard included:

"I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment."

".....No one ever asked me outright about my sexuality. And I'm embarrassed to bring up the issue of [sex]. It didn't seem essential to me."

Theme 4: Coping strategies for sexual Problems following gynecologic cancer treatment

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. Many of the participants use various avoidance tactics to deal with sexual problems. The majority [10/13] of the participants emphasized the importance of having open and honest conversations with their husbands about their sexual relationships. They believe that alerting their husbands about the effects of cervical cancer on their sexual lives made them more thoughtful and understanding of the situation. In this context, the following quotations were included:

‘’ After my cervical cancer treatment, I respectfully asked my husband to halt sexual contact, and he agreed."

"Following my cancer diagnosis, I agreed with him to stop sexual intercourse due to substantial pain during sexual intercourse and the fear of the 'disease process returning"

"I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment." (Interview 9, woman 47 years).

According to the findings of this study, the majority of the participants utilize prayer as a coping mechanism for dealing with the side effects of gynecologic cancer, such as sexual issues. Coping techniques included accepting the illness and praying for the strength to

engage in sexual activity. Some women feel cancer is a test from God designed to test their faith and patience. These women stated that their bodies belong to God and that they must accept it if God chooses to cause cancer in their private regions [Genitalia].

Any illness, I believe, is a gift from God, thus it is outside of my knowledge. But I need to keep praying and reminding myself that nothing is too difficult for God. Because my body is his, I can accept it if he [God] wishes to affect my private part [Genitalia].

On the other hand, one participant avoided discussing her concerns with her husband because sexuality in the form of penetrative intercourse was no longer a priority in their lives. This client's lack of desire and intimacy has a major influence as a woman. "I don't feel like a woman since I'm usually in bed, therefore I lose my desirability and my husband loses interest in me; he doesn't see anything in me because she's not putting herself up because of her health."

A few women in this study reported hearing about the potential sexual side effects of adjuvant therapy from healthcare practitioners. One woman attempted to return to normal life, including sexual activity, by following medical advice:

"The oncology nurse recommended me to maintain normal activities, including intercourse, as a cancer patient. So, when I'm not in pain and have a sexual desire, I rarely have sex...'

Discussion

Understanding the sexuality of women who have undergone gynecological cancer treatment is a crucial tool for improving their care. This study explored women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center. As a result of their therapy, the majority of cancer patients in this study report having sexual issues. Physical (e.g., vaginal dryness, discomfort during intercourse) and psychological/emotional (e.g., anxiety during intercourse) (e.g., decreased sexual interest, body image distress, loss of femininity), all of which are consistent with previous research (18). The majority of the women in this study reported changes in their sexual functioning before and after therapy, including a significant disruption in their sexual lives as a result of severe symptoms and/or treatment side effects. For instance,

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symptoms such as heavy bleeding, unpleasant discharge, and weariness are common in late-stage gynecological cancers, and they might influence a woman's sexuality beyond the therapy and post-treatment periods(2).

Gynecologic cancer, according to the participants in this study, can have a major impact on sexual self-esteem, sexual relationships, and sexual functioning Women's physical, psychological, emotional, and sexual problems are negatively impacted by cancer treatment techniques. Most participants in this study reported pain, vaginal bleeding, and discomfort during sexual intercourse, owing to vaginal dryness and tightness related to therapy. This finding is in line with Cleary et al findings, which found that gynecological cancer patients reported detrimental alterations in sexual relationships and sexual performance, as well as sexual dysfunction at all stages of the sexual response in cervical cancer patients receiving radiotherapy (18). According to a study by Rasmussen and Thom, participants with irradiation cervical cancer reported decreased vaginal lubrication, loss of emotions, decreased desire and shortened vaginal length (19).

Cervical cancer patients experience a variety of physical changes to their vaginal anatomical structure and size, according to research. Women may develop erroneous body images as a result of these changes, as well as experience problems with their spouses (7). Sexual dysfunction, such as low libido and dyspareunia, for example, frequently persists even when other areas of health, such as mental health and social adjustment, have returned to normal (8).

In this study, we asked participants about sexual relationships and sexual functioning information they had received from healthcare practitioners. According to the findings, the majority of participants said they received no information concerning their sexual functioning after obtaining cancer therapy from a healthcare professional, and the majority of them would prefer more information on these topics from their healthcare professionals. Pitcher et al. observed a similar conclusion in a South African study, where the majority of participants wanted additional information from their healthcare professionals as well as the ability to engage in a support group(2).

According to a previous study conducted by Afiyanti, over 85% of nurses believe that discussing sexuality with patients is a taboo and private topic. This improper attitude and belief about the sexuality of their patients by nurses may become a barrier in assisting cancer patients in managing the sexuality problem induced by cancer and therapy(8). As a result, health care personnel must overcome several challenges to improve cancer patients' quality of life. Providing and discussing information regarding sexuality concerns with patients is one of the most important steps that healthcare professionals, including nurses, should take(19). Oncology nurses should be proactive in detecting and assisting cancer patients with psychosexual issues. Nurses should also be aware of and comprehend psychosexual issues to offer good care for cancer patients and survivors.

Healthcare providers may be able to assist patients with their psychosexual recovery. Because when a healthcare expert legitimizes sexuality themes in a therapy setting, it allows individuals and couples to discuss them on their own. This could lead to more open discussions about sexual issues, as well as a reduction in marital conflict and sexual violence(2). Healthcare workers who work with gynecological cancer patients should strive to improve their understanding of sexuality in the setting of cancer by reading relevant material and attending workshops and conferences(2, 20, 21).

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: praying for healing, avoiding sexual intercourse, and seeking professional help. Almost all of the participants in this study dealt with sexual concerns by taking the normal course of accepting changes and changing their sexual habits. These individuals used their spiritual beliefs to give positive meaning to their sexual problems; two coping techniques were accepting the illness and praying for healing and hoping for the strength to engage in sexual activity. Some women believe that cancer is a test from God, putting their faith and patience to the test, allowing them to embrace their illness. Some of them focus on solutions and utilize conforming tactics by changing their sexual habits to cope with their spouses' sexual needs. To deal with sexual problems, many of the participants adopt various avoidance techniques. Some women said they avoided tricking their husbands into penetrative sex by declining intercourse in subtle ways, such as having open and honest dialogues about their sexual relationships with their husbands.

This finding is consistent with other non-Western literature that has described spirituality and religion as coping methods that allow patients to follow their illness's natural course(22, 23).

This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients. This study had some limitations. While the data acquired through Individual Interviews may not be generalizable, the findings may be transferable to other contexts with similar characteristics. However, it should also be noted that the emerging themes were supported by local and international works. As the women's sexual experiences were only reported at one moment following therapy, no conclusions can be drawn about how they regarded their sexuality over time. The study was unable to analyze the experiences of younger unmarried women because the sample comprised mostly of heterosexual women in long-term relationships with men. Concerns about the small sample size, data interpretation, and bias are common criticisms of qualitative research. The researchers in this study, on the other hand, were self-conscious and mindful of their immersion in the research process for the procedure to be as objective as feasible. The researchers believe that the study's translucent character is revealed by the detailed explanation of the sample, data gathering methods, and data processing procedure.

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Authors' contributions

Hundie, YG, Sendo, EG, and Habte, T made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Competing interests

The authors declare that they have no competing interests.

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Data Availability Statement: All data relevant to the study are included in the article or uploaded as supplementary information.

Ethics Statement

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University. Permission to conduct the study was obtained from the concerned office. The authors obtained informed written consent from all participants to conduct the interviews. The voluntary nature of participation in this study was underlined. Confidentiality was assured about the identity and other personal information of all interviewees.

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ANNEX 1: IN-DEPTH INTERVIEW GUIDE

Women's sexual experiences and coping mechanisms:

- How do women feel about their sexuality after undergoing gynecological cancer treatment?
- The following were the sub questions:
    - How do women feel about their sexual functionality after treatment?
    - What effect has this had on their sexual self-perception?
    - What effect has this had on their sexual relationships?
    - What coping mechanisms did you use to get over sexual issues if you've had them?
    - What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

Socio Demographic information:

- How old are you? _____
- What is your marital status? _____
- How many years of schooling have you had? _____
- How many children have you had? _____
- Is there anything else that you would like to tell me?

Thank the participant for their time.

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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A QUALITATIVE STUDY OF ETHIOPIAN WOMEN'S SEXUAL EXPERIENCES AND COPING STRATEGIES FOR SEXUAL PROBLEMS AFTER GYNECOLOGICAL CANCER TREATMENT.

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A QUALITATIVE STUDY OF ETHIOPIAN WOMEN'S SEXUAL EXPERIENCES AND COPING STRATEGIES FOR SEXUAL PROBLEMS AFTER GYNECOLOGICAL CANCER TREATMENT.

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Abstract

Objective: This study explored women's sexual experiences and coping strategies for sexual problems after gynecological treatment.

Setting: The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country.

Study Design: A Phenomenological qualitative study design was employed for this study.

Study Participants: The participants were recruited using purposeful sampling. Thirteen eligible study participants were interviewed face-to-face. Data were collected from 2nd February to 15th March 2019; and analyzed at the same time. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion.

Results: Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Conclusion: This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients.

Keywords: Cervical cancer; sexual experience; Coping strategies, Addis Ababa, Ethiopia

Strength and Limitations

- . The researchers were self-conscious and aware of their immersion in the study process to ensure that it was as objective as possible.
- . The information obtained from study participants could be subject to recall bias.
- The findings of this research were applied to a similar population in the study area.

Background

Sexuality is typically overlooked in clinical settings when it comes to gynecological cancer treatment because it has little to do with the disease's cure(1, 2). The WHO's 2010 definition of sexuality is used as the underlying understanding of sexuality in this article. Sexuality encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction, and is characterized as the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious, and spiritual factors(2, 3).

Cancer patients are frequently asexualized because they do not fit into traditional notions of sexuality. Nonetheless, for many people, sexual well-being is a significant aspect of their overall quality of life(2, 4). According to research, 40 to 100 percent of women with gynecological cancer will experience sexual problems following treatment(5, 6). According to research studies, women with cervical cancer endure a variety of physical alterations to their vaginal anatomical structure and size. These alterations can cause women to have distorted body images and have conflicts with their partners(7). For instance, Sexual dysfunction such as low libido and dyspareunia, often persists after other aspects of health, such as mental health and social adjustment, have returned to normal(8).

Population-based screening in the form of free Papanicolaou smears has been the focus of cervical cancer prevention(9). Most women, unfortunately, seek medical help when they are symptomatic and in advanced stages of cancer, most typically stage IIIB, where definitive radiation is the preferred treatment(10). When compared to adjuvant radiotherapy, the higher doses administered are likely to cause more sexual dysfunction(11). After breast cancer, gynecologic cancers are the leading cause of illness and mortality in

women. Gynecologic cancer is the world's fourth most common type of cancer(12). In Ethiopia, cervical cancer is the second most common malignancy among women [4], and there are a rising number of long-term survivors for whom quality of life is a top priority, despite a dearth of rehabilitation support tailored to their needs and interests(13).

Patient-centered care and comprehensive support programs in Ethiopia require a thorough understanding of women's lived experiences of sexuality after treatment. However, there is a scarcity of research on women's sexual experiences and adjustment after cervical cancer treatment in Ethiopia. Little is known about how women with gynecologic cancer deal with changes in their sexuality as a result of treatment, what kinds of sexual issues they have, how distressing they are, or how they deal with them. The purpose of this study was to explore women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center.

Research Method

Research Design

A Phenomenological qualitative study design was employed for this study. The argument for employing qualitative research was that it is best suited for comprehending phenomena in their context, as well as analyzing their feelings, opinions, suggestions, beliefs, and behaviors(14). The study's main goal was not to extrapolate the findings to other situations because they were unique to the situation.

Study setting

The research was carried out at the Tikur Anbessa Specialized Hospital [TASH], one of the two Cancer Centers Hospitals in the country. Five senior oncologists, two palliative care experts, thirty-three residents, four radiotherapists, three medical physicists, and twenty-three nurses worked in the TASH oncology unit. Breast, cervical, and colorectal cancers were the most prevalent cancers seen in this institution. This research took place from 2nd February to 15th March 2019.

Participants and sampling method

The participants were recruited using purposeful sampling, a non-random selection approach in which participants are chosen because they have experience with a phenomenon of interest and can thus contribute rich information on the problem(15). Women who had

gynecological cancers treated at a TASH were chosen from the radiation oncology unit's weekly follow-up clinic. To be eligible for the study, participants had to be 18 years old and above, and have had therapy for cervical, uterine, vulval, or ovarian cancer, or a combination of these, in the previous 6–12 months. The radiation oncologist and gynecologist involved in the follow-up clinic looked through their hospital files to find women who satisfied the inclusion criteria. Eligible women were notified about the study after their follow-up session, and those who were interested were directed to the principal researcher. The principal researcher provided additional details about the study and those who wanted to continue completed the informed consent forms. This procedure was carried out in the participant's native tongue. When information redundancy was achieved, recruiting came to an end following recognized qualitative research standards(16).

Data collection and analysis

In-depth face-to-face interviews were done by the lead author and one female research assistant. An interview guide was used to outline the open-ended topics in English and Amharic. The interview guide used in this study was attached as 'Annex 1'. Pilot interviews and actual data collection were conducted in two stages. The data from the pilot interviews were not included in the final analysis because they were utilized to test the interview guide. The interviews were conducted in the participants' local [Amharic] language in both cases. The key research topic was: How do women feel about their sexuality after undergoing gynecological cancer treatment? The following were the sub-questions: How do women feel about their sexual functionality after treatment? What effect has this had on their sexual self-perception? What effect has this had on their sexual relationships? What coping mechanisms did you use to get over sexual issues if you've had them? What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

In-depth interviews were done until saturation was reached, which occurred after 13 interviews when more data failed to reveal any new emergent codes or themes(17). The interviews took place in a private room at selected medical facilities. With the participants' permission, the assistant researcher audio-recorded and took written notes during the interviews. The interviews were done in Amharic and lasted between 30 and 50 minutes.

Data were collected and analyzed at the same time. After reading the transcribed data and sorting it into appropriate units, the principal researcher manually coded it. In data analysis, thematic analysis was utilized, which comprises three stages: data reduction, data display, and data conclusion. To ensure the study's dependability, the researcher communicated with the two senior research supervisors via email, personal contact, and phone conversations frequently to track any changes made to the protocol and processes, such as reviewing, defining, and labeling themes uncovered. Furthermore, verbatim quotes were identified and used to clarify study findings.

The trustworthiness of the study

Trustworthiness is the ability of researchers to convince participants and themselves that the findings of the inquiry are direct, truthful, or reliable(14). Before the main study, a pre-test was conducted to assess the instrument's trustworthiness and reliability to correct and make required changes before the study began. To assure the report's credibility, several procedures were used, including the use of the same interview guide throughout the investigation. An audit trail was kept for researchers to confirm the methodologies used in the study. To ensure the transferability of the research results to similar contexts, a detailed explanation of the study area, methods, and sample history were provided. Data were returned to participants to cross-check and validate their responses to ensure legitimacy. By using bracketing, the researchers guaranteed that their attitudes, thoughts, and experiences about the topic under inquiry had no bearing on data collection and analysis. The study's data gathering and analysis techniques were also unaffected by the researchers' backgrounds.

Ethics approval and consent to participate

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University [12/2019]. The TASH administration granted permission to conduct the study. To conduct the interviews, the authors received written informed consent from all participants. The importance of the study's voluntary participation was emphasized. All respondents' identities and other personal information were kept confidential.

Patient and Public Involvement

Patients were not involved in this study.

Research Findings

Participants' Socio-Demographic Characteristics

A total of 13 participants were enlisted to take part in the study. The average age was 48, with a range of 25 to 55 years old. The majority of the women [10/13) were married, although the three women who were described as "single" had a regular sexual relationship.

All of the study subjects were given radiation therapy. For their cervical cancer disease treatment, eight clients had external beam radiation, two received a combination of external beam radiation and surgery, and the remaining three received external beam radiation plus Brachytherapy. The average period after treatment was five months, with the majority of women being between three and nine months after therapy.

Themes:

Four themes resulted from the analysis of individual interview data, including Treatment Side effects, Sexual Issues Following Radiation Therapy, Lack of awareness regarding cancer treatment and sexual dysfunction, and Coping strategies of sexual dysfunction following gynecologic cancer treatment. Three sub-themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help **[See Table 1].** These themes were identified as the rich and detailed account of the experiences of sexually active women who have received treatment for their cervical cancer disease.

Table 1: Categories and themes of Women's sexual experiences and coping Strategies for Sexual Problems

CATEGORIES	THEMES
Feeling discomfort and uneasy No sexual desire due to treatment side effect	**Treatment Side effect**
Lack of desire and intimacy Lose of orgasm during intercourse Avoiding sexual intercourse due to treatment side effect Sexual intercourse caused suffering Radiation caused scar tissues and dryness	**Sexual Issues Following Radiation Therapy**
Lack of information about treatment side effect Providers don't give sexual education Seeking assistance from providers	**Lack of awareness regarding cancer treatment and sexual dysfunction**
Negotiating with a partner to avoid sexual intercourse, Praying for healing, Seeking professional help	**Coping strategies for sexual Problems following gynecologic cancer treatment**

Theme 1: Treatment Side effect

The majority [11/13] of women who received treatment for gynecologic cancer reported a variety of therapeutic side effects [immediate and late] after treatment, causing sexual dysfunction. According to the data, women who received cervical cancer therapy had bleeding during intercourse, dryness, indigestion, vomiting, low appetite, pain, skin changes in texture and color, burning sensation while urinating, and vaginal discharge. Sample responses included:

"Three months after starting cancer therapy, I was uneasy because I experienced a burning feeling when urinating and vaginal discharge; as a result, your sexual being does not exist"

".....everything I eat comes out, and I had to go to the bathroom now and then." So, how do you anticipate having sex with your husband?" …

Theme 2: Sexual Issues Following Radiation Therapy

Cancer treatment procedures have a detrimental impact on women's physical, psychological, emotional, and sexual concerns. Pain, vaginal bleeding, and discomfort were reported by most participants in this study during sexual intercourse, primarily due to vaginal dryness and tightness. Sample responses included:

"During sexual intercourse, I felt dreadful because of excruciating pain and there was no climax." So you're not a fan of sexual activity? I'm hopeful that after the treatment is over, things will improve."

"..... I believe I'm overly tight because of the scar tissue induced by the radiation. I believe the dryness is due to the treatment, and it is inconvenient. Sexual intercourse becomes a cause of suffering for me; I would be delighted if I could prevent such agony"

Theme 3: Lack of awareness regarding cancer treatment and sexual dysfunction

The data analysis revealed a third theme: a lack of awareness regarding cancer treatment and associated sexual dysfunction. One category within the theme is insufficient information received from health providers about cancer treatment and associated sexual dysfunction. According to the findings of the study, the majority [10/13] of the women interviewed expressed a lack of understanding regarding the treatment procedure and associated sexual problems. Sample responses in this regard included:

"I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment."

".....No one ever asked me outright about my sexuality. And I'm embarrassed to bring up the issue of [sex]. It didn't seem essential to me."

Theme 4: Coping strategies for sexual Problems following gynecologic cancer treatment

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: avoiding sexual intercourse, praying for healing, and seeking professional help. Many of the participants use various avoidance tactics to deal with sexual problems. The majority [10/13] of the participants emphasized the importance of having open and honest conversations with their husbands about their sexual relationships. They believe that alerting their husbands about the effects of cervical cancer on their sexual lives made them more thoughtful and understanding of the situation. In this context, the following quotations were included:

‘’ After my cervical cancer treatment, I respectfully asked my husband to halt sexual contact, and he agreed."

"Following my cancer diagnosis, I agreed with him to stop sexual intercourse due to substantial pain during sexual intercourse and the fear of the 'disease process returning"

"I had never heard of cervical cancer treatment affecting sexuality until I was diagnosed with cervical cancer... We were kept in the dark about the treatment technique and the sexual concerns that came with it by health care providers. As a result, I was unsure whether or not to engage in sexual activity while undergoing treatment." (Interview 9, woman 47 years).

According to the findings of this study, the majority of the participants utilize prayer as a coping mechanism for dealing with the side effects of gynecologic cancer, such as sexual issues. Coping techniques included accepting the illness and praying for the strength to

engage in sexual activity. Some women feel cancer is a test from God designed to test their faith and patience. These women stated that their bodies belong to God and that they must accept it if God chooses to cause cancer in their private regions [Genitalia].

Any illness, I believe, is a gift from God, thus it is outside of my knowledge. But I need to keep praying and reminding myself that nothing is too difficult for God. Because my body is his, I can accept it if he [God] wishes to affect my private part [Genitalia].

On the other hand, one participant avoided discussing her concerns with her husband because sexuality in the form of penetrative intercourse was no longer a priority in their lives. This client's lack of desire and intimacy has a major influence as a woman. "I don't feel like a woman since I'm usually in bed, therefore I lose my desirability and my husband loses interest in me; he doesn't see anything in me because she's not putting herself up because of her health."

A few women in this study reported hearing about the potential sexual side effects of adjuvant therapy from healthcare practitioners. One woman attempted to return to normal life, including sexual activity, by following medical advice:

"The oncology nurse recommended me to maintain normal activities, including intercourse, as a cancer patient. So, when I'm not in pain and have a sexual desire, I rarely have sex...'

Discussion

Understanding the sexuality of women who have undergone gynecological cancer treatment is a crucial tool for improving their care. This study explored women's sexual experiences and coping Strategies for Sexual Problems after undergoing gynecological cancer therapy at Tikur Anbesa Specialized hospital Oncology Center. As a result of their therapy, the majority of cancer patients in this study report having sexual issues. Physical (e.g., vaginal dryness, discomfort during intercourse) and psychological/emotional (e.g., anxiety during intercourse) (e.g., decreased sexual interest, body image distress, loss of femininity), all of which are consistent with previous research (18). The majority of the women in this study reported changes in their sexual functioning before and after therapy, including a significant disruption in their sexual lives as a result of severe symptoms and/or treatment side effects. For instance,

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symptoms such as heavy bleeding, unpleasant discharge, and weariness are common in late-stage gynecological cancers, and they might influence a woman's sexuality beyond the therapy and post-treatment periods(2).

Gynecologic cancer, according to the participants in this study, can have a major impact on sexual self-esteem, sexual relationships, and sexual functioning Women's physical, psychological, emotional, and sexual problems are negatively impacted by cancer treatment techniques. Most participants in this study reported pain, vaginal bleeding, and discomfort during sexual intercourse, owing to vaginal dryness and tightness related to therapy. This finding is in line with Cleary et al findings, which found that gynecological cancer patients reported detrimental alterations in sexual relationships and sexual performance, as well as sexual dysfunction at all stages of the sexual response in cervical cancer patients receiving radiotherapy (18). According to a study by Rasmussen and Thom, participants with irradiation cervical cancer reported decreased vaginal lubrication, loss of emotions, decreased desire and shortened vaginal length (19).

Cervical cancer patients experience a variety of physical changes to their vaginal anatomical structure and size, according to research. Women may develop erroneous body images as a result of these changes, as well as experience problems with their spouses (7). Sexual dysfunction, such as low libido and dyspareunia, for example, frequently persists even when other areas of health, such as mental health and social adjustment, have returned to normal (8).

In this study, we asked participants about sexual relationships and sexual functioning information they had received from healthcare practitioners. According to the findings, the majority of participants said they received no information concerning their sexual functioning after obtaining cancer therapy from a healthcare professional, and the majority of them would prefer more information on these topics from their healthcare professionals. Pitcher et al. observed a similar conclusion in a South African study, where the majority of participants wanted additional information from their healthcare professionals as well as the ability to engage in a support group(2).

According to a previous study conducted by Afiyanti, over 85% of nurses believe that discussing sexuality with patients is a taboo and private topic. This improper attitude and belief about the sexuality of their patients by nurses may become a barrier in assisting cancer patients in managing the sexuality problem induced by cancer and therapy(8). As a result, health care personnel must overcome several challenges to improve cancer patients' quality of life. Providing and discussing information regarding sexuality concerns with patients is one of the most important steps that healthcare professionals, including nurses, should take(19). Oncology nurses should be proactive in detecting and assisting cancer patients with psychosexual issues. Nurses should also be aware of and comprehend psychosexual issues to offer good care for cancer patients and survivors.

Healthcare providers may be able to assist patients with their psychosexual recovery. Because when a healthcare expert legitimizes sexuality themes in a therapy setting, it allows individuals and couples to discuss them on their own. This could lead to more open discussions about sexual issues, as well as a reduction in marital conflict and sexual violence(2). Healthcare workers who work with gynecological cancer patients should strive to improve their understanding of sexuality in the setting of cancer by reading relevant material and attending workshops and conferences(2, 20, 21).

Three key themes appeared in Ethiopian women with gynecologic cancer as coping mechanisms for managing sexual issues and dysfunction: praying for healing, avoiding sexual intercourse, and seeking professional help. Almost all of the participants in this study dealt with sexual concerns by taking the normal course of accepting changes and changing their sexual habits. These individuals used their spiritual beliefs to give positive meaning to their sexual problems; two coping techniques were accepting the illness and praying for healing and hoping for the strength to engage in sexual activity. Some women believe that cancer is a test from God, putting their faith and patience to the test, allowing them to embrace their illness. Some of them focus on solutions and utilize conforming tactics by changing their sexual habits to cope with their spouses' sexual needs. To deal with sexual problems, many of the participants adopt various avoidance techniques. Some women said they avoided tricking their husbands into penetrative sex by declining intercourse in subtle ways, such as having open and honest dialogues about their sexual relationships with their husbands.

This finding is consistent with other non-Western literature that has described spirituality and religion as coping methods that allow patients to follow their illness's natural course(22, 23).

This study has broadened perspectives on sexuality in the setting of gynecological cancer and challenged certain commonly held beliefs about sexuality after treatment. Researchers should look into how inclusive sexuality education and training may be better integrated into the training programs of healthcare workers. More research is needed to learn how partners of women with gynecological cancer cope with sexual changes after treatment, how the couple as a partnership negotiates changes after treatment and the facilitators and barriers that healthcare providers face when discussing sexuality issues with patients. This study had some limitations. While the data acquired through Individual Interviews may not be generalizable, the findings may be transferable to other contexts with similar characteristics. However, it should also be noted that the emerging themes were supported by local and international works. As the women's sexual experiences were only reported at one moment following therapy, no conclusions can be drawn about how they regarded their sexuality over time. The study was unable to analyze the experiences of younger unmarried women because the sample comprised mostly of heterosexual women in long-term relationships with men. Concerns about the small sample size, data interpretation, and bias are common criticisms of qualitative research. The researchers in this study, on the other hand, were self-conscious and mindful of their immersion in the research process for the procedure to be as objective as feasible. The researchers believe that the study's translucent character is revealed by the detailed explanation of the sample, data gathering methods, and data processing procedure.

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Authors' contributions

Hundie, YG, Sendo, EG, and Habte, T made substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data; took part in drafting the article or revising it critically for important intellectual content; gave final approval of the version to be published; and agree to be accountable for all aspects of the work.

Competing interests

The authors declare that they have no competing interests.

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Data Availability Statement: All data relevant to the study are included in the article or uploaded as supplementary information.

Ethics Statement

Ethical clearance to conduct this research was sought from the Research and Ethical Review Committee (IRB) of the School of Nursing and Midwifery, College of Health Sciences, Addis Ababa University. Permission to conduct the study was obtained from the concerned office. The authors obtained informed written consent from all participants to conduct the interviews. The voluntary nature of participation in this study was underlined. Confidentiality was assured about the identity and other personal information of all interviewees.

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ANNEX 1: IN-DEPTH INTERVIEW GUIDE

Women's sexual experiences and coping mechanisms:

- How do women feel about their sexuality after undergoing gynecological cancer treatment?
- The following were the sub questions:
    - How do women feel about their sexual functionality after treatment?
    - What effect has this had on their sexual self-perception?
    - What effect has this had on their sexual relationships?
    - What coping mechanisms did you use to get over sexual issues if you've had them?
    - What are your thoughts on how to best manage your sexual health needs while undergoing cancer treatment?

Socio Demographic information:

- How old are you? _____
- What is your marital status? _____
- How many years of schooling have you had? _____
- How many children have you had? _____
- Is there anything else that you would like to tell me?

Thank the participant for their time.

COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
Personal characteristics			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	
Occupation	3	What was their occupation at the time of the study?	
Gender	4	Was the researcher male or female?	
Experience and training	5	What experience or training did the researcher have?	
Relationship with participants			
Relationship established	6	Was a relationship established prior to study commencement?	
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	
Domain 2: Study design			
Theoretical framework			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	
Participant selection			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	
Setting			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	
Data collection			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	
Duration	21	What was the duration of the inter views or focus group?	
Data saturation	22	Was data saturation discussed?	
Transcripts returned	23	Were transcripts returned to participants for comment and/or	

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			
Data analysis			
Number of data coders	24	How many data coders coded the data?	
Description of the coding tree	25	Did authors provide a description of the coding tree?	
Derivation of themes	26	Were themes identified in advance or derived from the data?	
Software	27	What software, if applicable, was used to manage the data?	
Participant checking	28	Did participants provide feedback on the findings?	
Reporting			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	
Data and findings consistent	30	Was there consistency between the data presented and the findings?	
Clarity of major themes	31	Were major themes clearly presented in the findings?	
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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