Original Research Article

AN APPRAISAL OF THE QUALITY OF LIFE OF GYNAECOLOGICAL CANCER PATIENTS AT A TEACHING HOSPITAL IN SOUTHERN NIGERIA

Abstract

Background: As newer treatment modalities improve survival; quality of life (QoL) issues takes on increasing importance for survivors. Adequate knowledge is required for psychosocial interventions and designing programmes aimed at improving the QoL of cancer patients.

Objectives: To assess the QoL and its association with socio-demographic characteristics and disease-related variables among gynaecological cancer patients.

Methods: A prospective cross-sectional study was carried out between January 1, and December 31, 2023, among gynaecological cancer patients. A semi-structured questionnaire was used to obtain socio-demographic, reproductive, and clinical characteristics. The European Organization for Research and Treatment of Cancer general cancer QoL Score 30 (EORTC QLQ-C30) version 3 was used to evaluate their perceptions about QoL. The QoL domains, socio-demographic and clinical variables were analyzed with SPSS 25. The association between socio-demographic and clinical factors with QoL was analyzed using one-way ANOVA. P value of ≤ 0.05 was considered significant.

Results: The mean age was 55.29±10.77 years, only 26 (53.1%) have had a pap test. Cervical cancer was the most prevalent gynaecological cancer 31 (63.2%), many 27 (55.1%) of them presented with stage III disease. The mean QoL score was 68.20±23.61. Respondents had good level of physical (81.77 ±16.43), cognitive (78.91 ±25.18), and social functioning (71.43 ±27.85) with high mean scores $\geq$ 66.7 and an average level of role (66.67±24.76) and emotional functioning (64.79 ±26.53) with

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mean score between 33.3-66.6. The mean pain score was 43.88±35.95. The major problem experienced was financial difficulties (72.11±33.57). A significant association was observed between QoL and age (p=0.027), occupational status (p=0.024), type of cancer (p=0.001), stage of cancer (p=0.007), length of diagnosis (p=0.033) and number of chemotherapies received (p=0.001).

Conclusions: As cancer incidence is increasing and post treatment survival is improving among cancer patients, the focus is now should be on improving the QoL of survivors.

Keywords: Gynaecological Cancers, Quality of Life, EORTC QLQ-C30, Port Harcourt, Nigeria

1. INTRODUCTION

Gynaecological cancers are an umbrella term used to describe any cancer of the female reproductive tract, which includes those originating in the cervix, endometrium, ovary, vagina or vulva, and fallopian tubes [1].

According to reports, an estimated 1.4 million new gynaecological cancer cases were reported globally in 2020, with the majority occurring in low-and-middle-income countries [2]. Female genital cancer prevalence rates in Nigeria are estimated to be 10.7% [3][3] and 8.7% [4] in the northern and southern regions, respectively, indicating the public health importance of these cancers in the country. Gynaecological cancers are among the leading causes of morbidity and mortality in women worldwide, and the second leading cause of cancer-related death in females after breast cancer [5]. Receiving a diagnosis of genital tract cancer has a negative impact on a woman's life due to concerns about cancer recurrence, sexuality, and death [6]. Pain, infertility, premature menopause, and body-image issues are all possible complications. As a result, affected women are unable to carry out previously established life roles.

Comment [DNK(1): Suggest to use "risks associated with cancer and its treatment" instead of "complications"

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The diagnosis of cancer affects patients and their families physically, financially, emotionally, and markedly impact on their QoL. Cancer is still considered synonymous to death, pain, and suffering [7]. The common psychological and emotional responses to cancer arise from knowledge of life-threatening diagnosis, its prognostic uncertainty and fears about death and dying. The stigma due to cancer and its consequences adds to the negative reactions to the disease [8]. Various factors contribute to changes in the quality of life of women with gynaecological cancers, functional damage secondary to treatment such as pelvic surgery, chemotherapy and radiation therapy such as nausea, vomiting, diarrhea, constipation, mucositis, weight changes and hormonal changes, psychological factors including erroneous beliefs about the origin of cancer, change in self-image and self-esteem, marital tensions, fears, worries, and sleep quality disturbance [9-12]. Patients with gynaecological cancers have an additional source of distress, as not only is their diagnosis synonymous with the possibility of death, but it also adversely impacts women's body image perceptions, such as feeling less feminine, less sexually attractive, and altered in appearance [13,14]. Understanding these impacts has the potential to improve approaches to care, modify therapies and provide supportive care for the duration of the illness [15].

The World Health Organization (WHO) defined quality of life (QoL) as an individual's perception of their own position in life in the context of the cultural and value systems in which they live and in relation to their goals, expectations, standards, and concerns [16]. It is a broad concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships, and their relationship to salient features of their environment. QoL is a complete sense of wellbeing and a combination of objective and subjective individual feelings, and it is known that in case of a disease condition like gynaecological cancers, this sense of

Comment [DNK(2]: " Various factors contribute to changes in the quality of life of women with gynaecological cancers and due to their treatment including surgery, chemotherapy and radiation therapy such as nausea…"

Comment [DNK(3]: Psychological factors should not be clubbed with side effects due to surgery, chemotherapy and radiotherapy. This comment can be added in a separate sentence.

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wellbeing is markedly affected [17,18]. This concept is consistent with the definition of health in the same organization, incorporating physical, psychological, level of independence, social relationships, environmental, and spiritual areas. This definition means that the quality of life is a subjective assessment and stresses that it can only be improved if incorporated into the cultural, social, and environmental life of that person. Since there is no single definition of QoL, the operational definition in this study is based on the three domains of the EORTC QLQ-C30 version 3 instrument [19,20].

QoL varies from culture-to-culture, and country-to-country. Demographic conditions such as age, level of education, occupation, marital status, and social support affect the quality of life.[10,21] Clinical stages of disease, treatment modality, comorbidity such as hypertension, cardiovascular disease, depression, diabetes mellitus, hypothyroidism, and asthma/chronic obstructive pulmonary disease (COPD) also affect QoL [21]. Age and lower educational level negatively affects the QoL, conversely, higher educational level, employment status, marital status, and social support have a positive effect on QoL [21,22].

The survival rate of cancer patients has improved, and focus has shifted to improve the QoL of these survivors. Gynaecological cancer has received much less attention than breast cancer in terms of creating public awareness regarding risk factors and the importance of screening. Although there has been much research about the overall QoL of gynaecological cancer patients, studies that provide the functional status of a gynaecological cancer survivors in daily life is still limited in our environment. Very few studies have examined the QoL of patients with gynaecological cancers in Nigeria [23,24]. Hence, the purpose of this study is to assess QoL among gynaecological cancer patients and its association with socio-demographic and clinical variables. This research is expected to provide a basis for integration of counseling on QoL

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issues in the management of gynaecological cancer. It is also expected to provide information that will have positive implications on improvement of QoL where needed, thus highlighting the need for practitioners to pay more attention to aspects of QoL of these patients, along with holistic comprehensive and integrated treatment of the disease.

2. MATERIALS AND METHODS

2.1 Study area

This study was conducted at the Gynaecologic oncology and Clinical oncology units of the University of Port Harcourt Teaching Hospital (UPTH). The University of Port Harcourt Teaching Hospital is a 988-bed hospital in Alakahia, in Obio-Akpor Local Government Area of Rivers state. It is a tertiary hospital that serves as a referral centre for all levels of healthcare in Rivers state and other neighbouring states. The gynaecologic oncology clinic runs every Friday, while the radiation and clinical oncology clinic runs every Tuesday, both led by consultants. Patients are evaluated in the clinic before they are admitted into the gynaecological ward for surgery. Following surgery, they are co-managed with the radiation and clinical oncologist for administration of chemotherapy and subsequent follow-up.

Comment [DNK(4]: chemotherapy and /or radiotherapy

2.2 Materials and Methods

This was a prspective cross-sectional study of 49 women with histologically confirmed gynaecological cancers managed at the University of Port Harcourt Teaching Hospital between January 1, 2023, and December 31, 2023. The purpose of the study was explained in detail to the women. The patients were recruited by a non-probability convenient sampling technique from the gynaecologic oncology and radiation and clinical oncology units of the hospital. The eligibility criteria were: (1) women diagnosed with gynaecological cancer; (2) being at least 18 years old (3) able to read and write; (4) have undergone chemotherapy and surgical treatment in

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the gynaecology ward and clinical oncology unit and (5) expressed willingness to participate in the study. Women who refused consent, unable to complete the survey due to severe physical diseases, psychological distress, communication difficulties, or cognitive impairment were excluded from the study. The eligible participants who met all the inclusion criteria and who voluntarily participated in this study signed a written informed consent form. Ethical approval for the study was obtained from the Ethics and Research Committee of the University of Port Harcourt Teaching Hospital. Each participant was assigned a unique identifier number to ensure anonymity and ease of identification. The data collection tools were checked daily for accuracy and completeness.

2.3. Study Instruments

2.3.1. Data Collection Tool

Successive women who met the criteria were recruited into the study. The participants were asked to complete two sets of questionnaires. The first questionnaire was a structured interviewer-administered questionnaire designed by the researchers. This was used to obtain socio-demographic, and reproductive characteristics. Type of cancer, stage of cancer, histological type, length of diagnosis, type of treatment, and medical history were among the clinical characteristics obtained. A pretest to ascertain the validity and reliability of the data collection tool was conducted at the River State University Teaching Hospital prior to the commencement of the study.

2.3.2 European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30)

The EORTC QLQ-C30 is a self-reporting cancer specific measure of QoL. The EORTC QLQ C-30 questionnaire comprises 30 questions, which includes five-functional scale (physical, role, cognitive, emotional, social), three-symptom scale for pain, fatigue, nausea, and vomiting, six

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single items for dyspnea, insomnia, appetite loss, constipation, diarrhea, and financial impact, and a global health status score which assesses the overall QoL. Each of the multi-item scales includes a different set of items, no item appears in more than one scale.

The questionnaire uses a four-point response scale (not at all, a little, quite a bit, and very much) to assess each functional or symptom item, and a seven-point response scale is used to assess global health status (from very poor to excellent). For model development, the categorical raw scores were linearly transformed into a score of 0-100 for processing according to the EORTC scoring manual [25]. The principle for scoring was to estimate the average of the items that contributed to the scale; this was the raw score. A high scale score represents a higher response level. The higher scale score for the functional scale or the global health status/QoL represents a higher level of functioning or higher QoL, whereas the higher level of symptoms/problems for the symptom/item scales represents a higher level of dysfunction [10].

These questionnaires have been extensively tested in multicultural and multidisciplinary settings and have been confirmed to be reliable and valid [26,27]. The questionnaires were also validated in different studies [28,29]. Both questionnaires' validity and reliability properties have been evaluated in prior studies [30,31]. Cronbach's α coefficient of the domains was at 0.7-0.9, with no domain below 0.7. The questionnaire was administered to the patients by two trained research staff in the wards and clinics mentioned earlier and took an average of 15 to 30 minutes to complete all questionnaires.

2.4 Statistical Analysis

At first, estimation of the average of all items was done to get the raw score. Then a linear transformation was used to standardize the raw score. The raw score was converted into scales according to the EORTC scoring manual, with all scales ranging from 0 to 100. Interpretations of

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scores were done by using Cohen´s effect size (ES) which relates the observed change to the baseline standard deviation. A high scale score represents a higher response level. Thus, a high score for a functional scale represents a high / healthy level of functioning, a high score for the global health status / QoL represents a high QoL, but a high score for a symptom scale / item represents a high level of symptomatology / problems.

Demographic and clinical data were calculated using descriptive statistics and Chi-square test used to determine the association among categorical variables. A p value ≤ 0.05 was taken as statistically significant.

These scores from QLQ-C30 were divided into three groups: good, moderate, or poor if the score was $\geq$ 66.7%, 33.4 - 66.6%, or $\leq$ 33.3%, respectively, based on the scoring as previously reported.[19,20] Results are expressed as mean, standard deviation, and correlation coefficient analysis.

3. RESULTS

Forty-nine patients answered the questionnaire, most 19 (38.8%) were between 50 and 59 years with a mean age of 55.29±10.77 years, more than half 27 (55.1%) were married, 24 (49.0%) had tertiary education, 25 (51.0%) were businesswomen, and two-third 31 (63.3%) were still actively engaged in their respective occupation. This is shown in Table 1.

Table 2 shows that many 30 (61.2%) have had five or more deliveries, with a mean parity of 4.51±1.99, 41 (83.7%) were referred from other health facilities, of which most 26 (63.4%) were referred from tertiary health facilities. Table 3 displays the gynaecological history, most 25 (51.0%) of the women had coitarche between 16 and 19 years of age, while 16 (32.7%) had coitarche between 20 and 23 years. Of the 49 women, only 26 (53.1%) have had a pap test, majority 44 (89.8%) have not used hormonal contraceptives, and most 32 (65.3%) were postmenopausal.

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Cervical cancer was the most prevalent gynaecological cancer 31 (63.2%), followed by ovarian cancer 11 (22.5%). The most common presenting symptom was vaginal bleeding 29 (44.6%), many 27 (55.1%) presented with stage III disease, and 30 (61.2%) had been diagnosed for 1-2 years. About half 25 (51.0%) had undergone radiotherapy as the modality of treatment, followed by surgery and chemotherapy 20 (40.8%), the mean number of chemotherapies received was 6.12±2.60. This is shown in Tables 4a and 4b Table 5 demonstrates that the women did not have chronic medical conditions. Eight (16.3%) had a family history of breast cancer as depicted in Table 6.

4. Analysis of Quality of Life

The mean QoL score was 68.20±23.61. Respondents had good level of physical (81.77 ±16.43), cognitive (78.91 ±25.18), and social functioning (71.43 ±27.85) with high mean scores ≥ 66.7 whereas they had an average level of role (66.67±24.76) and emotional functioning (64.79 ±26.53) with mean score between 33.3- 66.6.

The mean symptom scale displays a fatigue score of 29.03±26.53. The major problem experienced was financial difficulties (72.11±33.57), however respondents scored low on most of the symptoms (mean score <33.3) except pain (43.88±35.95.). This is depicted in Tables 7 and 8. A significant association was observed between QoL and age (p=0.027) and occupational status (p=0.024). Table 9 shows this. No association was established between QoL, and the reproductive characteristics as shown in Table 10. It however showed a statistically significant correlation between QoL and (p=0.001), stage of cancer (p=0.007), length of diagnosis (p=0.033) and number of chemotherapies received (p=0.001). This is depicted in Table 11.

Table 1: Socio-Demographic Characteristics

Variables	Frequency (n=49)	Percent (%)
Age (years)		
30-39	4	8.2
40-49	9	18.4

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50-59	19	38.8
60-69	14	28.5
70-75	3	6.1
Mean ± SD	55.29±10.77$^{\infty}$	
Range	[30-75]	
Marital Status		
Single	8	16.3
Married	27	55.1
Divorced	3	6.1
Separated	6	12.2
Widowed	5	10.3
Education Completed		
Primary	3	6.1
Secondary	21	42.9
Intermediate	1	2.0
Tertiary	24	49.0
Occupation		
Business	25	51.0
Civil servant	9	18.5
Trading	7	14.3
Health worker (Doctor, Nurse)	2	4.1
Teaching	3	6.1
Artisan	1	2.0
Retired	1	2.0
Clergy	1	2.0
Occupational Status		
Active	31	63.3
Inactive	6	12.2
Retired	12	24.5

∞=Mean ± Standard Deviation

Table 2: Obstetric History

Variables	**Frequency (n=49)**	**Percent (%)**
Parity		
0	3	6.1

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1	2	4.1
2-4	14	28.6
≥5	30	61.2
Mean ± SD	4.51±1.99$^{\infty}$	
Range	[0-8]	
Number of living children		
≤1	5	10.2
2-4	18	36.7
≥5	26	53.1
Mean ± SD	4.29±1.91$^{\infty}$	
Range	[0-8]	
Patient referred to the facility		
Yes	41	83.7
No	8	16.3
Type of referring Facility (n=41)		
Private clinic/Maternity	5	12.2
Primary Health centre	2	4.9
Secondary Health centre/General Hospital	8	19.5
Tertiary Health centre	26	63.4

∞=Mean ± Standard Deviation

Table 3: Gynaecological History

Variables	Frequency (n=49)	Percent (%)
Age at menarche		
10-13	35	71.4
14-17	14	28.6
Mean ± SD	12.69±1.61$^{\infty}$	
Range	[10-17]	
Age at coitarche		
16-19	25	51.0
20-23	16	32.7
24-27	8	16.3
Mean ± SD	20.02±2.71$^{\infty}$	
Range	[16-25]	
Pap smear screening		
Yes	26	53.1
No	23	46.9
Hormonal contraceptive		
Yes	5	10.2

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No	44	89.8
Type of Hormonal contraceptive (n=5)		
Injectable contraceptive	3	60.0
Combined oral contraceptive pill (COCP)	1	20.0
Emergency contraceptive	1	20.0
Menopausal		
Yes	32	65.3
No	17	34.7

∞=Mean ± Standard Deviation

Table 4a: Clinical Characteristics

Variables	Frequency (n=49)	Percent (%)
Type of cancer		
Cervical	31	63.2
Ovarian	11	22.5
Endometrial	7	14.3
Presenting symptoms*		
Vaginal bleeding	29	44.6
Vaginal discharge	10	15.4
Abdominal swelling	11	16.9
Abdominal pain	7	10.8
Weight loss	6	9.3
Loss of appetite	1	1.5
Pains around the waist	1	1.5
Stage of Disease		
Stage I	1	2.0
Stage II	15	30.6
Stage III	27	55.1
Stage IV	6	12.3
Length of diagnosis		
< 1 year	9	18.4
1-2 years	30	61.2
3-4 years	10	20.4
Type of Treatment		
Radiotherapy	25	51.0
Chemotherapy	3	6.1
Surgery	1	2.1
Surgery + Chemotherapy	20	40.8

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If Chemotherapy, regimen given*		
Carboplatin	49	49.5
Paclitaxel	47	47.5
Doxorubicin	2	2.0
Liposome	1	1.0

Multiple responses apply

Table 4b: Clinical Characteristics

Variables	Frequency (n=49)	Percent (%)
Number of chemotherapy courses received		
2-5	9	18.4
6-9	36	73.5
≥10	4	8.1
Mean ± SD	6.12±2.60$^{\infty}$	
Range	[2-18]	
Disease Recurrence		
Yes	4	8.2
No	45	91.8

∞=Mean ± Standard Deviation

Table 5: Medical History

Variables	Frequency (n=49)	Percent (%)
Hypertension		
Yes	19	38.8
No	30	61.2
Diabetes Mellitus		
Yes	5	10.2
No	44	89.8
Hyperlipidaemia		
Yes	1	2.0
No	48	98.0

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HIV status		
Positive	0	0.0
Negative	49	100.0
Peptic Ulcer Disease		
Yes	1	2.0
No	48	98.0

∞=Mean ± Standard Deviation

Table 6: Family and Social History

Variables	Frequency (n=49)	Percent (%)
Family history of cancer		
Yes	8	16.3
No	41	83.7
Type of cancer		
breast cancer	8	100.0
Use of Alcohol		
Yes	8	16.3
No	41	83.7
Use of Tobacco		
Yes	0	0.0
No	49	100.0

∞=Mean ± Standard Deviation

Table 7: Quality of life based on EORTC QLQ C30

Variables	Mean	SD
Global Health Status/QOL		
Global Health Status/QOL	68.20	23.61
Functional Scales		
Physical Functioning	81.77	16.43
Role Functioning	66.67	24.76
Emotional Functioning	64.79	26.53
Cognitive Functioning	78.91	25.18
Social Functioning	71.43	27.85

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Symptom Scales/Items		
Fatigue	29.03	26.53
Nausea and Vomiting	21.77	22.10
Pain	43.88	35.95
Dyspnoea	13.60	21.43
Insomnia	31.97	37.24
Appetite Loss	32.65	36.32
Constipation	14.97	31.23
Diarrhoea	10.20	22.78
Financial Difficulties	72.11	33.57

∞=Mean ± Standard Deviation

Table 8: Quality of life based on EORTC QLQ C30 (n=49)

Variables	Scoring ≤ 33.3 Freq (%)	Scoring 33.4-66.6 Freq (%)	Scoring ≥ 66.7 Freq (%)
Global Health Status/QOL			
Global Health Status/QOL	4 (8.16)	13 (26.53)	32 (65.31)
Functional Scales			
Physical Functioning	1 (2.04)	3 (6.12)	45 (91.84)
Role Functioning	6 (12.24)	11 (22.45)	32 (65.31)
Emotional Functioning	4 (8.16)	5 (10.20)	40 (81.63)
Cognitive Functioning	8 (16.33)	5 (10.20)	36 (73.47)
Social Functioning	12 (24.49)	7 (14.290	30 (61.22)
Symptom Scales/Items			
Fatigue	35 (71.43)	4 (8.16)	10 (20.41)
Nausea and Vomiting	41 (83.67)	3 (6.12)	5 (10.20)
Pain	32 (65.31)	1 (2.04)	16 (32.65)
Dyspnoea	45 (91.84)	0 (0.0)	4 (8.16)
Insomnia	30 (61.22)	0 (0.0)	19 (38.78)
Appetite Loss	33 (67.35)	0 (0.0)	16 (32.65)
Constipation	42 (85.71)	0 (0.0)	7 (14.29)
Diarrhoea	43 (87.76)	0 (0.0)	6 (12.24)
Financial Difficulties	11 (22.45)	0 (0.0)	38 (77.55)

In functional scales*, mean scores[a] < 33.3 have problems, while mean scores[b] > 66.7 (higher scores) have good functioning. In symptoms scales#, higher scores > 66.7 indicate poor functioning.

Table 9: Relationship between socio-demographic characteristics and QOL score

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Variables	Global Health Status/QOL score			Total	Fisher's Exact P
	Scoring ≤ 33.3 n=4	Scoring 33.4-66.6 n=13	Scoring ≥ 66.7 n=32		
	Freq (%)	Freq (%)	Freq (%)		
Age					
30-39	1 (25.0)	2 (50.0)	1 (25.0)	4 (100.0)	
40-49	2 (22.2)	1 (11.1)	6 (66.7)	9 (100.0)	
50-59	1 (5.3)	3 (15.8)	15 (78.9)	19 (100.0)	**0.027*** γ
60-69	0 (0.0)	4 (28.6)	10 (71.4)	14 (100.0)	
70-75	0 (0.0)	3 (100.0)	0 (0.0)	3 (100.0)	
Mean ± SD	45.25±10.72	59.92±13.94	54.66±8.41		3.28 **(0.047) *** μ
Marital Status					
Single	1 (12.5)	3 (37.5)	4 (50.0)	8 (100.0)	
Married	1 (3.7)	5 (18.5)	21 (77.8)	27 (100.0)	
Divorced	0 (0.0)	0 (0.0)	3 (100.0)	3 (100.0)	0.109 γ
Separated	2 (33.3)	2 (33.3)	2 (33.3)	6 (100.0)	
Widowed	0 (0.0)	3 (60.0)	2 (40.0)	5 (100.0)	
Education Completed					
Primary	0 (0.0)	3 (100.0)	0 (0.0)	3 (100.0)	
Secondary	3 (14.3)	4 (19.0)	14 (66.7)	21 (100.0)	0.093 γ
Intermediate	0 (0.0)	0 (0.0)	1 (100.0)	1 (100.0)	
Tertiary	1 (4.2)	6 (25.0)	17 (70.8)	24 (100.0)	
Occupational Status					
Active	2 (6.5)	4 (12.9)	25 (80.6)	31 (100.0)	
Inactive	1 (16.7)	4 (66.7)	1 (16.7)	6 (100.0)	**0.024*** γ
Retired	1 (8.3)	5 (41.7)	6 (50.0)	12 (100.0)	

*Statistically significant (p≤0.5); γ=Fisher's Exact p: μ=ANOVA-test

Table 10: Relationship between reproductive characteristics and QOL score

Comment [DNK(7]: Why do authors expect that the reproductive factors like age at menarche/coitarche or history of Pap smear or Hormonal contraceptive should affect the QoL ? This table can be omitted.

Variables	Global Health Status/QOL score			Total	Fisher's Exact P
	Scoring ≤ 33.3 n=4	Scoring 33.4-66.6 n=13	Scoring ≥ 66.7 n=32		
	Freq (%)	Freq (%)	Freq (%)		
Parity					
0	0 (0.0)	0 (0.0)	3 (100.0)	3 (100.0)	
1	0 (0.0)	1 (50.0)	1 (50.0)	2 (100.0)	0.775 γ

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2-4	2 (14.3)	3 (21.4)	9 (64.3)	14 (100.0)	
≥5	2 (6.7)	9 (30.0)	19 (63.3)	30 (100.0)	
Mean ± SD	3.75±1.50	5.0±1.96	4.41±2.06		0.72 (0.492) μ
Age at menarche (years)					
10-13	4 (11.4)	7 (20.0)	24 (68.6)	35 (100.0)	0.152 γ
14-17	0 (0.0)	6 (42.9)	8 (57.1)	14 (100.0)	
Mean ± SD	11.75±0.49	13.38±1.80	12.53±1.54		2.14 (0.129) μ
Age at coitarche (years)					
16-19	4 (16.0)	8 (32.0)	13 (52.0)	25 (100.0)	
20-23	0 (0.0)	3 (18.8)	13 (81.2)	16 (100.0)	
24-27	0 (0.0)	2 (25.0)	6 (75.0)	8 (100.0)	
Mean ± SD	17.25±1.26	19.69±2.69	20.50±2.68		2.89 (0.065) μ
Pap smear screening					
Yes	0 (0.0)	8 (30.8)	18 (69.2)	26 (100.0)	0.097 γ
No	4 (17.4)	5 (21.7)	14 (60.9)	23 (100.0)	
Hormonal contraceptive					
Yes	0 (0.0)	1 (20.0)	4 (80.0)	5 (100.0)	1.000 γ
No	4 (9.1)	12 (27.3)	28 (63.6)	44 (100.0)	
Menopausal					
Yes	2 (6.2)	8 (25.0)	22 (68.8)	32 (100.0)	0.713 γ
No	2 (11.8)	5 (29.4)	10 (58.8)	17 (100.0)	

*Statistically significant (p≤0.5); γ=Fisher's Exact p: **μ**=ANOVA-test

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Table 11: Relationship between clinical characteristics and QOL score

Variables	Global Health Status/QOL score			Total	Fisher's Exact P
	Scoring ≤ 33.3 n=4	Scoring 33.4-66.6 n=13	Scoring ≥ 66.7 n=32		
	Freq (%)	Freq (%)	Freq (%)		
Type of cancer					
Cervical	0 (0.0)	10 (32.3)	21 (67.7)	31 (100.0)	
Ovarian	4 (36.4)	3 (27.3)	4 (36.4)	11 (100.0)	**0.001*** ɣ
Endometrial	0 (0.0)	0 (0.0)	7 (100.0)	7 (100.0)	
Stage of Disease					
Stage I	0 (0.0)	0 (0.0)	1 (100.0)	1 (100.0)	
Stage II	0 (0.0)	4 (26.7)	11 (73.3)	15 (100.0)	**0.007*** ɣ
Stage III	1 (3.7)	7 (25.9)	19 (70.4)	27 (100.0)	
Stage IV	3 (50.0)	2 (33.3)	1 (16.7)	6 (100.0)	
Length of diagnosis					
< 1 year	1 (11.1)	1 (11.1)	7 (77.8)	9 (100.0)	
1-2 years	0 (0.0)	10 (33.3)	20 (66.67)	30 (100.0)	**0.033*** ɣ
3-4 years	3 (30.0)	2 (20.0)	5 (50.0)	10 (100.0)	
Type of Treatment					
Chemotherapy	0 (0.0)	2 (66.7)	1 (33.3)	3 (100.0)	
Surgery	0 (0.0)	0 (0.0)	1 (100.0)	1 (100.0)	0.529 ɣ
Both	3 (15.0)	4 (20.0)	13 (65.0)	20 (100.0)	
Radiotherapy	1 (4.0)	7 (28.0)	17 (68.0)	25 (100.0)	
Number of chemotherapy courses received					
2-5	0 (0.0)	2 (22.22)	7 (77.8)	9 (100.0)	
6-9	1 (2.8)	11 (30.6)	24 (66.7)	36 (100.0)	**0.001*** ɣ
≥10	3 (75.0)	0 (0.0)	1 (25.0)	4 (100.0)	
Mean ± SD	10.5±3.0	5.54±1.13	5.81±2.53		8.02 **(0.001)*** µ
Disease Recurrence					
Yes	1 (25.0)	0 (0.0)	3 (100.0)	4 (100.0)	0.255 ɣ
No	3 (6.7)	13 (28.9)	29 (64.4)	45 (100.0)	

*Statistically significant (p≤0.5); **ɣ**=Fisher's Exact p: **µ**=ANOVA-test

Comment [DNK(8]: Both meaning ? Surgey + Chemo ? Surgery + Radiation ?

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4. DISCUSSION

This study examined the QoL among women with gynaecological cancer at a Tertiary level health facility in Southern Nigeria. The mean age was 55.29±10.77 years, range (30-75), and most of the women were menopausal. This is consistent with prior studies from an Iranian study [32]. It emphasizes the importance of early screening for women who are sexually active or are over 18 years old, with Pap-test and pelvic examination. However, it was higher than the reported mean age in prior research [33,34].

Comment [DNK(9)]: The starting age for cervical screening is 21 yaers (NOT 18 years)

The Global health status / QoL was 68.20 ± 23.61, which was deemed good. This is similar to the findings in Egypt which had a QoL score of 70.16. This similarity could be explained by the fact that both studies were conducted in Africa [35]. They contradicted earlier research findings, which observed moderate and low QoL in their respective studies [36,37]. The larger sample size employed in the study may account for the discrepancy.

When the sub-domain of functional scales was evaluated; the physical function score (81.77 ± 16.43), Cognitive function score (78.91 ± 25.18) and social function score (71.43 ± 27.85) were good, whereas role function score (66.67 ± 24.76) and emotional function score (64.79 ± 26.53) were moderate. Based on the above, the emotional score had the lowest functional scale score; this may be related to the diagnosis and prognosis of gynaecological cancers, as most of the patients presented with stage 3 disease, coupled with financial difficulties. The emotional aspect is the most difficult to manage in cancer patients, particularly those with children. Patients with the low socio-economic state are frequently more difficult to manage than those with high socio-economic status in this regard [38]. This conclusion is consistent with previous studies [32,36]. Similarly, multiple studies have demonstrated that anxiety and depression increase in cancer

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patients, significantly impacting their QoL, and that most of the cancer patients live in fear of disease recurrence or metastasis [39].

Another low-scoring functional scale was the social function. This was also reported by Turkish researchers [40]. Modern cancer management includes psychological and social components of the patient, which in addition to treating the disease, should be considered to attain a higher QoL [41]. According to a study conducted in Istanbul by Reis et al. (2010), gynaecologic cancer and its treatment procedures have a negative impact on physical, psychological, social, and spiritual quality of life [42].

With regards to the symptom scales, financial difficulties were the most common difficulty reported by the respondents, which could be ascribed to their low socio-economic status. A high symptom scale score indicates an increased level of symptomatology or difficulties. In this study, the pain score was observed to be higher than other symptoms. Pain causes discomfort and disrupts daily activities. This is not surprising given that many of the patients had advanced stage disease. Despite breakthroughs in pain management, pain is a prevalent chronic complaint among cancer patients, with 42% reporting inadequate care [43]. Furthermore, those who experienced discomfort had more advanced disease, resulting in greater symptoms [43]. Appetite loss, insomnia and nausea and vomiting were all symptoms that had a significant impact on the physical wellbeing of the women. This is similar to the report from another study [36]. In contrast, earlier researchers found that fatigue was the most common symptom in gynaecologic cancer patients [32,36,40].

There was significant association of QoL scores with age of the respondents ($p = 0.027$) suggestive of a strong relationship between age and QoL. The recent study found that the percentage of respondents who had good quality of life increased with advancing age. This

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finding is corroborated by many research, which suggest that younger patients' QoL was negatively impacted, and their cancer-specific distress was significantly higher, whereas older patients effectively controlled their stress related to cancer diagnosis [36,44-46]. In contrast, several studies have found that cancer and its treatment typically impact the elderly, thereby lowering the global QoL in patients older than 40 years of age [45,47].

There was no statistically significant relationship between QoL score and education of the patient (p =0.093). However, the current study observed that those with tertiary education had the highest QoL score. This is similar with previous studies, which found that low education levels had a negative impact on QoL [36]. This could be attributed to the poor health-seeking behaviour of those that are less educated.

However, a strong significant correlation was established between QoL score and occupation of the respondents (0.024). The findings of current study clearly show that employed respondents had a higher percentage of good QoL than unemployed respondents. This is consistent with the previous studies, which observed that had lower physical and social wellbeing compared to those with vocations. The lower QoL levels in housewives might be due to lack of social life and poor social support whereas good QoL in employed patients has been associated with good social support and economic stability. Similar findings were reported in a prior study [36].

Comment [DNK(10]: Please check the sentence for completeness and grammar

There was no significant relationship could be established between QoL score and marital status of the patients (p = 0.109). However, married patients had a higher QoL than unmarried patients. Thus, social support may have influenced the QoL. This contradicts another study [36], which reported the opposite. Furthermore, females are associated with household work, pregnancy, and parenting. Women eagerly adjust to these roles, but disruptions in these roles due to disease or treatment can have a significant impact on the QoL [36,50].

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There was no significant correlation between QoL score and reproductive characteristics ($p \geq 0.05$). However, the QoL score improved with parity and menopausal status. The type of cancer had a substantial impact on the QoL. The findings revealed that respondents with cervical cancer had a poorer QoL than those with ovarian and endometrial cancer. This observation is consistent with a previous study that found that patients with endometrial cancer had higher QoL scores than those with other gynaecological cancers. This could be because when diagnosed and treated early, the prognosis is good [48]. However, women with cervical and ovarian cancer receive radiation and/or chemotherapy, which negatively impacts their QoL [36,51].

The current study revealed a significant association between the QOL and the stage of cancer. Most of the respondents had advanced cancer, with poor QoL observed in stage III. These findings are consistent with previous reports, which have shown that role functioning deteriorates as the disease progresses [36,52]. This could be ascribed to extensive treatment in the later stages of gynaecological cancer.

There was no significant correlation between QOL scores and treatment mordality. This is consistent with findings of previous research that states QoL scores were unaffected by different treatments [36,53]. It has been proposed that treatment modality may have no effect on the QOL [36,54].

Some of the merits of the study include the fact that it was a perspective study with only patients with histologic diagnoses of gynaecological cancers, and that the quality of life was assessed using validated tools. The study does, however, have certain limitations, such as a limited sample size and the fact that it was conducted in a single centre, which may not be indicative of the general population of Nigerian women with gynaecological cancer. Hence, larger multicentre clinical research should be conducted to confirm the findings of this study.

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5. CONCLUSION

The QoL in this study was high; however, it is proposed that the scales with lower scores, notably the emotional function and role function scales, receive more precise attention and effective intervention to give a better QoL during and following therapy. Furthermore, treating associated symptoms can improve the QoL and care of patients with gynaecological cancer.

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