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Prevalence and Predictors of Anxiety and Depression among Gynaecological Cancer Patients at a Tertiary Health Facility in Southern Nigeria

Justina Omoikhefe Alegbeleye[1*], Olusegun Biyi-Olutunde[2]

[1]Department of Obstetrics and Gynaecology, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria
[2]Department of Radiation and Clinical Oncology, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria
Email: *justina.alegbeleye@uniport.edu.ng

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Abstract

Background: Cancer patients frequently suffer from mental health problems because of their reactions to their cancer diagnosis, cancer type, treatment effects, recurrence, fear of the end-of-life, survival, and financial burden. Some hospitals have integrated mental health assessments into cancer care, but our centre has little experience with this practice. **Aim and Objectives:** To ascertain the prevalence and predictors of anxiety and depression in patients with gynaecological cancer at a tertiary health facility in southern Nigeria. **Materials and Methods:** This was a facility-based cross-sectional descriptive study of 75 women with histologically confirmed gynaecological cancer managed at the University of Port Harcourt Teaching Hospital, Port Harcourt, from January 1, 2022, to December 31, 2022. Individuals having a history of drug addiction, severe cognitive impairment, non-consenting patients, and those with communication difficulties were excluded from the study. A data collection form was used to obtain socio-demographic, reproductive, and clinical characteristics, while the Hospital Anxiety and Depression Scale (HADS) was used to assess for anxiety and depression. Data was analyzed using descriptive statistics to determine the association of variables with anxiety and depression. **Results:** Most 27 (36.0%) of the respondents were in 40 - 49 age group with a mean age of 50.4 ± 12.3 years. The study showed that 39 (52.0%) of the respondents exhibited symptoms of anxiety, of which 14 (35.9%) were mild, 20 (51.3%) had moderate anxiety and 5 (12.8%) experienced severe anxiety. In addition, 46 (61.3%) of them showed symptoms of depression, of which 17 (37.0%) were mild, 15 (32.6%) were moderate and 14 (30.4%) experienced severe depression. The ratio of respondents who showed anxiety to those that

showed symptoms of depression was 5: 6. The factors associated with anxiety were partner's educational level (X^2 = 4.745, p = 0.029), parity (X^2 = 6.651, p = 0.036) and duration of diagnosis (X^2 = 8.321, p = 0.004), while partner's educational level (X^2 = 6.810, p = 0.009), parity (X^2 = 7.129, p = 0.028), age of coitarche (X^2 = 6.512, p = 0.039) and duration of diagnosis (X^2 = 4.955, p = 0.026) were significantly associated with depression. **Conclusion:** More than half of the respondents experienced anxiety, while about two-thirds experienced depression. There is a need to incorporate psychological evaluation into the care of gynaecological cancer patients.

Keywords

Prevalence, Predictors, Anxiety, Depression, Gynaecological Cancer

1. Introduction

Gynaecological cancers are only found in women and can develop in the ovary, endometrium, cervix, vagina, or vulva. 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 [1]. Female genital cancer prevalence rates in Nigeria are estimated to be 10.7% [2] and 8.7% [3] 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 [4]. Receiving a diagnosis of genital cancer has a negative impact on a woman's life due to concerns about cancer recurrence, sexuality, and death [5]. 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.

Anxiety and depression are common among females with gynaecological cancers, and they may develop immediately after cancer diagnosis and persist for years after treatment [6]. These mental health issues are known to have a negative impact on cancer patients' functioning, treatment adherence, and treatment outcome. Single marital status, a lack of social support, severe pain, and advanced cancer are all risk factors for depression and anxiety in females with gynaecological cancer [7] [8]. Mental health issues are becoming an increasingly important concern among health professionals with the advent of improved medical technology and cancer survival.

Women with gynaecological cancers in Nigeria are often more vulnerable to the impact of cancers on mental health and quality of life issues due to the additional burden caused by poverty and limited access to oncological services. As a result, it is important to investigate the mental health implications of gynaecological cancers in this context.

In Nigeria, very few studies have investigated the mental health of patients

with gynaecological cancers [9] [10]. These studies are limited in that they focused on a single gynaecological cancer and general psychological distress rather than a comprehensive assessment of mental health. Gynaecological cancers, regardless of location, represent a spectrum of genital tract neoplastic diseases that must be evaluated together. As a result, data on the psychological impact of the entire spectrum of gynaecological cancers on the patient is of greater value in gynaecological oncology clinics. In the same way, information on the full range of potential mental health effects of gynaecological cancers and the bio-social factors influencing it is more helpful in developing an efficient and comprehensive intervention. Cancer-related physical difficulties can be made more difficult to handle by mental health issues, which persist unless they are recognized and treated. The only way to guarantee that the psychological effects of cancers are addressed in busy gynaecological oncology clinics in resource-poor settings, such as Nigeria, is probably to identify them early. Unidentified mental health effects of cancers have a negative impact on quality of life, cancer treatment, and recovery, as well as lower survival rates [11]. The purpose of this study was to determine the prevalence and risk factors for anxiety and depression among women with gynaecological cancer in Southern Nigeria.

2. Materials and Methods

2.1. Study Area

This study was conducted at the Gynaecology ward, Gynaecological Oncology and Radiation and Clinical oncology out-patient clinics 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 including Bayelsa, Imo and Abia. The gynaecological oncology clinic runs every Friday, while the radiation and clinical oncology clinic run every Tuesday, both led by consultants. Patients are evaluated at the clinic before they are admitted into the gynaecogical ward for surgery. Following surgery, they are co-managed with the radiation and clinical oncologist for administration of chemotherapy and subsequent follow-up.

2.2. Methods

A descriptive facility-based cross-sectional study of all women with histologically confirmed gynaecological cancer managed at the University of Port Harcourt Teaching Hospital, Port Harcourt, from January 1, 2022, to December 31, 2022. The study consisted of 75 women that were managed during the period under review. Women who refused consent, very ill patients, those with a history of drug addiction, severe cognitive impairment, and those with communication difficulties were excluded from the study. Informed consent forms were signed by the participants. Ethical approval for the study was obtained from the Ethics

and Research Committee of the University of Port Harcourt Teaching Hospital.

2.3. Study Instrument

2.3.1. Data Collection Tool

A data collection tool designed for this purpose was used to obtain socio-demographic, reproductive, and clinical characteristics. Type of cancer, stage of cancer, histological type, length of diagnosis, type of treatment, type of support, source of funding, prior medical history, and family history of mental disorders 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. The Hospital Anxiety and Depression Scale (HADS)

The Hospital Anxiety and Depression Scale (HADS) [12] was adopted to assess the presence and severity of anxiety and depression. It is a 14-item questionnaire with seven items for each subscale of anxiety and depression. The HADS was graded on a four-point Likert scale from 0 to 3. The first item on the general anxiety scale, "I feel tense or wound-up," has the following responses: "most of the time", "very often," "from time to time/occasionally," and "not at all," with scores of 3, 2, 1, and 0. Depression was scored similarly; for example, item 2 is "I still enjoy the things I used to enjoy," and responses include "definitely as much," "not quite as much," "only a little," and "not at all." These responses are also assigned a score of 0, 1, 2, or 3. Responses to the items were based on how the participants felt the previous week, as recommended by the instrument's original author [12].

The item scores were added together to produce subscale scores ranging from 0 to 21. Higher scores indicate greater anxiety and, or depression. For both anxiety and depression, the total score would then be classified into one of four categories [13]:

- 0 - 7 = Normal;
- 8 - 10 = Mild case of anxiety or depression;
- 11 - 14 = Moderate case of anxiety or depression;
- 11 - 21 = Severe case of anxiety or depression.

2.4. Statistical Analysis

The Statistical Package for Social Sciences (SPSS) version 25.0 was used to analyze the data. The association between sociodemographic characteristics and anxiety, and depression were determined. To examine the relationship between those variables for categorical data, the Chi-square test and the logistic regression test were applied with statistical significance determined at $p < 0.5$.

3. Results

A total of 75 women participated in the study. **Table 1** shows that 27 (36.0%) of them were in the 40 - 49 age group with a mean age of 50.4 ± 12.3 years. With

Table 1. Socio-demographic characteristics.

Variables	Frequency n = 75	Percent (%)
Age group (years)		
<20	2	2.7
20 - 29	3	4.0
30 - 39	6	8.0
40 - 49	27	36.0
50 - 59	22	29.3
60 - 69	15	20.0
Mean ± SD	50.4 ± 12.3	
Marital status		
Single	9	12.0
Married	46	61.3
Divorced	2	2.7
Separated	6	8.0
Cohabiting	12	16.0
Education		
None	5	6.7
Primary	25	33.3
Secondary	16	21.3
Intermediate	2	2.7
Tertiary	27	36.0
Occupation		
Teaching	7	9.3
Business	45	60.0
Artisan	7	9.3
Farming	8	10.7
Others	3	4.0
Unemployed	5	6.7
Occupation status		
Active	55	73.3
Inactive	16	21.3
Retired	4	5.3
Monthly income (naira)		
≤30,000	45	60.0
30,001 - 60,000	10	13.3
60,001 - 90,000	4	5.3
90,000 - 120,000	10	13.3
>120,000	6	8.0

regards to marital status, most of the women, 46 (61.3%) were married, while 12 (16%) were cohabiting. Based on educational level, a higher proportion 27 (36.0%) had tertiary education, with only 5 (6.7%) having no formal education. More than half 45 (60.0%) were businesswomen, about two-third, 55 (73.3%) were active and 45 (60.0%) earned N30,000 ($40) or less.

About half 37 (49.3%) of the women had 1 or 2 children living children, most 63 (84.0%) of the patients were referred, and other tertiary institutions were the predominant source of referral 24 (38.0%). This is shown in Table 2(a).

Table 2(b) shows that most 38 (50.7%) of the respondents had their first sexual debut more than 18 years of age, and only 9 (12.0%) had pap smear screening in the past, while 12 (16.0%) had used hormonal contraceptive.

The study showed that 39 (52.0%) of the respondents exhibited features of anxiety, of which 14 (35.9%) were mild, 20 (51.3%) were moderate and 5 (12.8%) experienced severe anxiety. In addition, 46 (61.3%) of the women had depression, of which 17 (37.0%) were mild, 15 (32.6%) were moderate and 14 (30.4%) experienced severe depression. This is shown in Table 3.

Table 4(a) shows that partner education level ($X^2 = 4.745$, $p = 0.029$), parity ($X^2 = 6.651$, $p = 0.036$) and duration of diagnosis ($X^2 = 8.321$, $p = 0.004$) were significantly associated with anxiety. This implies that women with secondary education or below, and those with fewer children were more likely to have

Table 2. (a) Obstetric History; (b) Gynecological History.

(a)

Variables	Frequency n = 75	Percent (%)
Parity		
≤2	34	45.3
3 - 4	18	24
≥5	23	30.7
No of living children		
≤2	37	49.3
3 - 4	21	28
≥5	17	22.7
Patient referred		
Yes	63	84
No	12	16
Source of referral		
Private clinic/Maternity	8	12.7
Primary Health Centre	9	14.3
General Hospital	22	35.0
Tertiary Health Centre	24	38.0

(b)

Variables	Frequency n = 75	Percent (%)
Age at menarche		
10 - 12	31	41.3
13 - 14	35	46.7
>14	9	12.0
Age at coitarche		
13 - 15	16	21.3
16 - 18	21	28.0
>18	38	50.7
Pap smear screening		
Yes	9	12.0
No	66	88.0
Hormonal contraceptive		
Yes	12	16.0
No	63	84.0
Menopausal		
Yes	48	64.0
No	27	36.0

Table 3. Prevalence and pattern of anxiety and depression.

Variables	Frequency n = 75	Percent (%)
Anxiety		
Yes	39	52.0
No	36	48.0
Pattern of anxiety n = 39		
Mild	14	35.9
Moderate	20	51.3
Severe	5	12.8
Depressed		
Yes	46	61.3
No	29	38.7
Pattern of depression n = 46		
Mild	17	37.0
Moderate	15	32.6
Severe	14	30.4

Table 4. (a) Relationship between socio-demographic and reproductive characteristics with anxiety; (b) Relationship between socio-demographic and reproductive characteristics with depression.

(a)

Variables	Anxiety		X^2 (P-value)
	Yes n (%)	No n (%)	
Age group			
<50 years	20 (52.6)	18 (47.4)	0.012 (0.912)
≥50 years	19 (51.4)	18 (48.60	
Marital status			
No partner	6 (35.3)	11 (64.7)	2.458 (0.117)
Have partner	33 (56.9)	25 (43.1)	
Education			
≤Secondary education	26 (56.5)	20 (43.5)	0.975 (0.324)
>Secondary education	13 (44.8)	16 (55.2)	
Partner education			
≤Secondary education	25 (67.6)	12 (32.4)	4.745 (0.029)*
>Secondary education	8 (38.1)	13 (61.9)	
Occupation			
Active	29 (52.7)	26 (47.3)	0.044 (0.834)
Inactive/Retired	10 (50.0)	10 (50.0)	
Partner occupation			
Active	29 (58.0)	21 (42.0)	0.180 (0.671)
Inactive/Retired	4 (50.0)	4 (50.0)	
Parity			
≤2	16 (47.1)	18 (52.9)	6.651 (0.036)*
3 - 4	14 (77.8)	4 (22.2)	
≥5	9 (39.1)	14 (60.9)	
No of living children			
≤2	18 (48.6)	19 (51.4)	5.243 (0.073)
3 - 4	15 (71.4)	6 (28.6)	
≥5	6 (35.3)	11 (64.7)	
Age at menarche			
10 - 12	13 (56.5)	10 (43.5)	0.845 (0.358)
13 - 14	15 (44.1)	19 (55.9)	
>14			
Age at coitarche			
13 - 15	3 (27.3)	8 (72.7)	3.484 (0.175)

Continued

16 - 18	8 (57.1)	6 (42.9)	
>18	15 (60.0)	10 (40.0)	
Duration of diagnosis			
<One year	26 (68.4)	12 (31.6)	8.321 (0.004)*
≥One year	13 (35.1)	24 (65.9)	

*Statistical significance.

(b)

Variables	Depression		X^2 (P-value)
	Yes n (%)	No n (%)	
Age group			
<50 years	22 (57.9)	16 (42.1)	0.384 (0.535)
≥ 50 years	24 (64.9)	13 (35.1)	
Marital status			
No partner	11 (64.7)	6 (35.3)	0.105 (0.745)
Have partner	35 (60.3)	23 (39.7)	
Education			
≤Secondary education	28 (60.9)	18 (39.1)	0.011 (0.917)
>Secondary education	18 (62.1)	11 (37.9)	
Partner education			
≤Secondary education	27 (73.0)	10 (27.0)	6.810 (0.009) *
>Secondary education	8 (38.1)	13 (61.9)	
Occupation			
Active	37 (67.3)	18 (32.7)	3.068 (0.080)
Inactive/Retired	9 (45.0)	11 (55.0)	
Partner occupation			
Active	31 (62.0)	19 (38.0)	0.415 (0.519)
Inactive/Retired	4 (50.0)	4 (50.0)	
Parity			
≤2	25 (73.5)	9 (26.5)	7.129 (0.028)*
3 - 4	12 (66.7)	6 (33.3)	
≥5	9 (39.1)	14 (60.9)	
No of living children			
≤2	25 (67.6)	12 (32.4)	6.369 (0.041)
3 - 4	15 (71.4)	6 (28.6)	
≥5	6 (35.3)	11 (64.7)	

Continued

Age at menarche			
10 - 12	16 (69.6)	7 (30.4)	1.084 (0.298)
13 - 14	19 (55.9)	15 (44.1)	
>14			
Age at coitarche			
13 - 15	4 (36.4)	7 (63.6)	6.512 (0.039)*
16 - 18	12 (85.7)	2 (14.3)	
>18	16 (64.0)	9 (36.0)	
Duration of diagnosis			
< One year	28 (73.7)	10 (26.3)	4.955 (0.026)*
≥ One year	18 (48.6)	19 (51.4)	

*Statistical significance.

anxiety. In addition, a higher proportion of women whose duration of diagnosis was below one year were anxious. The level of partner education ($X^2 = 6.810$, $p = 0.009$), parity ($X^2 = 7.129$, $p = 0.028$), age of coitarche ($X^2 = 6.512$, $P = 0.039$) and duration of cancer diagnosis ($X^2 = 4.955$, $p = 0.026$) were significantly associated with depression as shown in Table 4(b). This illustrates that the women with secondary education or below, those with fewer children, and duration of diagnosis less than a year were more likely to be depressed.

Table 5 shows the predictors of anxiety and depression. Respondents whose husbands have secondary education or below have 6.2 increased odds of experiencing anxiety, and those with parity 3 - 4 have 16.8 increased odds of experiencing anxiety. Similarly, respondents whose husbands have secondary education or below were 27.3 more likely to be depressed, while those with parity of two or less and 3 - 4 were 19.9 times, and 19.6 times more likely to be depressed respectively, when compared to the respondents whose parity is five or more.

4. Discussion

The study explored the mental health of women diagnosed with gynaecological cancers. Cancer diagnosis and treatment are major life stresses that can lead to a decline in quality of life, including physical, psychological, and social well-being. Our study focused primarily on anxiety and depression in gynaecologic cancer patients because these patients are more likely to have suicidal thoughts and have difficulty adhering to cancer treatments [14].

The prevalence of anxiety was 52% while that of depression was 61.3%, with a ratio of 5:6. This means that approximately five out of every six women with gynaecological cancer will suffer from a mental disorder. The severe anxiety to severe depression ratio was 1:3. This indicates that more people were severely depressed. It follows that for every person suffering from severe anxiety, there were

Table 5. Predictors of anxiety and depression.

Variables	COR (95%CI)	P-value	AOR (95% CI)	P-value
Anxiety				
Partner Education				
≤ Secondary education	3.4 (1.1 - 10.4)	0.032	6.2 (1.7 - 32.3)	0.032*
>Secondary education[R]				
Parity				
≤2	1.4 (0.5 - 4.1)	0.554	2.5 (0.4 - 12.7)	0.272
3 - 4	5.4 (1.4 - 21.9)	0.017	16.8 (2.0 - 140.6)	0.009*
≥5[R]				
Duration of diagnosis				
<One year	4.0 (1.5 - 10.5)	0.005	1.9 (0.5 - 7.0)	0.314
≥One year[R]				
Depression				
Partner education				
≤Secondary education	4.4 (1.4 - 13.7)	0.011	27.2 (3.0 - 247.1)	0.003*
>Secondary education[R]				
Parity				
≤2	4.3 (1.4 - 13.4)	0.011	19.9 (1.9 - 211.3)	0.013*
3 - 4	3.1 (0.9 - 11.3)	0.084	19.6 (1.8 - 205.6)	0.012*
≥5[R]				
Age at coitarche				
13 - 15	0.3 (0.1 - 1.4)	0.132	0.3 (0.1 - 1.4)	0.140
16 - 18	3.4 (0.6 - 18.6)	0.162	3.1 (0.5 - 17.2)	0.201
>18[R]				
Duration of diagnosis				
<One year	3.0 (1.1 - 7.8)	0.028	1.6 (0.5 - 6.0)	0.409
≥One year[R]				

*Statistical significance; [R]Reference category.

three others suffering from severe depression. This could be due to the late stage of presentation, the high cost of treatment, the long waiting time, a lack of financial support, a lack of insurance, insufficient family support, fear of death, isolation, and abandonment. It could also be due to a loss of hair, sexual function, or quality of life, which can be extremely distressing for patients. These findings are consistent with those of other studies [15]-[20]. The findings of this study confirm that gynaecological cancer patients have psychological or psychiatric complications. It also reinforces previous reports from Nigeria, Rwanda,

Ethiopia, and China [21] [22] [23] [24].

Appropriate patient education and counselling could help patients prepare for these changes. Patients become less anxious when they understand what is wrong with them, how treatment will be administered, and, most importantly, what to do when adverse reactions occur. The prevalence, however, is higher than in Nigeria, Canada, Nepal, and USA [21] [25] [26] [27]. The variations in results may be explained by differences in methodology, study instruments, and the respondents' socio-demographic and clinical characteristics. Furthermore, because our study included a hospital-based population, the results may not accurately reflect the prevalence in the general population.

In terms of socio-demographic factors associated with anxiety and depression, the partner's educational status was found to be significantly associated with both anxiety and depression, with women whose partners had lower educational status being more affected by anxiety and depression than those with higher levels of education. The findings of this study clearly demonstrated that the risk of anxiety and depression was higher in participants whose husbands had a secondary education or less (3.4 on a crude regression analysis). However, after controlling for confounding factors, the risk increased to 6.4%. This is similar to the report from Ethiopia, which also found a significant correlation with educational status.

According to the study, women with three to four children are 5.4 times more likely to experience anxiety than those with fewer children. Adjusting for confounding effects, the risk of anxiety increased seventeen-fold among participants who had three to four children. This implies that the risk of anxiety increased as parity increased. This is consistent with previous reports on comparable studies [28] [29] [30].

Conversely, the risk of having depressive symptoms in participants with two or fewer children was 4.3, while the risk in participants with three to four children was 3.1, both of which increased twenty-fold after controlling for confounding effects. According to the findings, those with two or fewer children were more likely to experience depressive symptoms than anxiety symptoms. It implies that they are more prone to depression than anxiety. This is consistent with the findings in Pakistan, Malaysia, and Australia [30] [31] [32].

Our study found no significant relationship between the duration of cancer diagnosis and anxiety and depression, indicating that the prevalence does not change over time. This is consistent with reports from Japan [33]. It did, however, contradict previous findings from Nigeria, Italy, and China [9] [17] [34]. The debilitating impact of cancer on physical, social, and occupational functioning over time may explain the relationship between long duration of cancer illness and mental health morbidity. Given that the duration of cancer illness plays a significant role in the development of depression, treatment for female genital cancer patients should be individualized, taking the duration of cancer illness into account. Physicians caring for women with long-term cancer should have a

high index of suspicion for psychological distress in their patients and screen for it on a regular basis.

The fact that this study is prospective, that it is the first to assess anxiety and depression in women with gynaecological cancers at the centre, and that it was exclusively made up of patients with a histologic diagnosis of the disease are some of its strengths. The study does, however, have some limitations, such as the small sample size and the fact that it was conducted in a single centre, that may not be representative of the general population of Nigerian women with gynaecological cancer. Hence, larger multicentre clinical studies should be carried out to confirm the findings of this study.

5. Conclusion

Anxiety and depression were reported by more than half of the study participants. Thus, psychosocial evaluations and interventions in gynaecological cancer patients may be beneficial in reducing anxiety and depression and improving quality of life. As health care professionals, it is critical that we conduct a comprehensive assessment to evaluate both physical and psychosocial wellbeing and improve these patients' quality of life.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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